



Oral History of David T. Morgenthaler

Interviewed by:
John Hollar

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John Hollar: David, let's talk about your upbringing, your education, your mother and father, your early education. Can you tell me a little bit about that?

David Morgenthaler: I was born in South Carolina in a small town, which was my mother's home. And my mother and father were married very young, and were divorced after several years. My father's family were a large farming family. I remember rather flat land down there. And you could see houses about a half-mile away in the distance. And every house was occupied by somebody with the same family name, and it went on for some distances. After my mother and father were divorced, I spent some time—a good deal of time with my grandparents and people of that sort. And I went to school in what had been a historically outstanding school in a town called Winnsboro, which had the so-called Mt. Zion Institute. It had become a public school by that time, but it was very good quality school. And I've always been grateful for that education because unlike a lot of places in the South, it was very rigorous. And my elementary school training was excellent. I never found a school again, I think, short of MIT that was equally challenging.

When I was young my mother moved to Asheville and remarried. And then, I lived partly with them and partly with aunts and uncles in South Carolina. They lived in Asheville, North Carolina. We lived there for a while, went to Florida for the winter. And my stepfather liked it very much, so we moved there permanently. And I went to high school in Florida in a high school there where it was a mixture between a country and country club high school with a sort of a mixture of both populations. I was far more interested in seeing that I got my football letter and joining a high school fraternity, which I did. And got the football letter, barely. And the— it was the kind of place where you were dating when you were 13, and you were driving when you were 14. And so, we didn't have driver's licenses in those days. I happen to be a very good student, but was anything but a nerd. My stepfather was not mechanical at all, and so I mostly played sports. And studying was incidental and fairly easy. And it turned out I was as good, or better perhaps, in English and languages than I was in science and math. But the question comes—you raised the question about further education—

Hollar: I was just going to ask you, before we go to further education, do you remember a particular teacher who was influential on you?

Morgenthaler: Yes, I was just about to tell you that. People ask me why I went to engineering school. And the answer is very simple. My English teacher, where I had won some prizes in English, said to me one day when we were talking about schools with the group, she said, "You're very analytical. You should go to engineering school." I went home and told my stepfather that she'd said that. I'd had no particular thoughts about engineering. It sounded interesting. But I was anything but a nerd. I wasn't a radio bug of those days. And I didn't really do chemistry sets. And my stepfather was a very good driver—automobile driver, but he was anything but mechanical. And so, we didn't do anything particularly mechanical around the house. And about the only thing was that I was very fond of erector sets. And I built a lot of that kind

of thing. But that, literally, was it. So I went home and told my father what had been said about engineering school by my English teacher. And he said, "Oh well, if you want to go to engineering school, you ought to go to MIT. It's the best." And I really hadn't been quite that ambitious because it was a long way from Florida and expensive travel in those days. I didn't want to be a burden to my parents. So, I applied to several engineering schools. I thought maybe going to Georgia Tech. But I got into all of them, and went to MIT, instead—I mean as an example. And that's—so basically I was in engineering school because of my English teacher. And I had done at least as well on the languages side as I had in science and math. And I'd actually won more prizes on the English side, but at any rate went off to MIT.

When we had moved to Florida, I had come out of the Carolina high school systems, which were eleven grades. I got to Florida. I was in the proper grade for my age, although I had spent my early year or two on the farm with one of my—on my grandfather's farm. I was picking cotton when I was six, and I learned to ride a mule when I was about six. I hadn't done anything really but summer camps, and camp counselor and waterfront instructor, and that sort of thing. Got into MIT, but my point was that when I went to Florida, they found I'd been in the eighth grade in Carolina, but everything I was taking in the eighth grade was what was taught in the ninth grade in Florida. So, they advanced me a year and put me in the ninth grade, which in a way I regretted because I was a year younger than my classmates. The academic work was pretty easy. It was not a problem. And they were taking the same things I'd been taking in Carolina. But so I graduated at 16. And I was admitted to MIT and started there just after my 17th birthday.

Hollar: What finally persuaded you to go to MIT?

Morgenthaler: Just it was said to be the best school of the group. And I'd applied to Georgia Tech and Rensselaer [Polytechnic Institute] and MIT. And I would have been admitted anywhere. So, it had been a bit of a disservice in that they gave intelligence tests and aptitude tests in high school. And I, unfortunately, did so well on those that MIT let me in lacking a couple of courses I should have had. That was a big mistake because I walked into calculus and I'd never seen calculus. I walked into a physics course using calculus, and I'd only had a half year of physics and very weak chemistry courses. The science courses at my school were very weak—at my high school. So, I had a bad quarter. I'd never seen a bad grade until that point. And the first three months at MIT were a rude shock and took several months to catch up. And I was always quite offended by that because I ended up with an average record, but that was not what I was used to.

Hollar: How did you overcome this not having had calculus, not having been prepared for things like physics?

Morgenthaler: Work. Simple. I joined a fraternity, and it was Sigma Nu. It was an old fashioned military fraternity. We had an old house in Brookline, Massachusetts, across the river from MIT. And they still had some military discipline theories, and it was said to be a military fraternity. And we had—I remember my first year, we had five people studying in a single room. So, you had to have some rules. And so, the

seniors in the house, wisely, put in rules that after 8 o'clock there was no talking, absolutely no talking in the rooms. If you wanted to speak somebody about something, you went outside the room and talked quietly and briefly in the hall. If you wanted to listen to a radio, you went downstairs. And you were explaining to the senior, as a freshman, why you were not studying. MIT gave quizzes alternatively on Fridays on physics and calculus. And those were very shocking results in the early stages, and the seniors watch these very closely. Well, so after we were—and those were days where hazing was very common and paddling was very common. And so, if you behaved badly, you could expect a smacking. And I tell the stories to my children and grandchildren and they simply don't believe it. But I wasn't too bothered by that. I'd also been in a high school fraternity where brutality was—really made the college fraternity initiation seem quite subtle and quite clever. I remember in the high school fraternity the night of final initiation we were stripped to our underwear, required to raise our arms, and then a mixture of glue, crankcase oil, and sawdust was put under our arms. And then we were made to hold our arms against our sides until the glue had set. Then they put a rope around our necks, in the dark, and put us in—swimming in the swamps down there, which were famous for having alligators. And then you were paddled until, when I went home there were flecks of blood on my fanny. So, I tell this to my children, and they simply don't believe it.

Hollar: And this was considered fun?

Morgenthaler: That was considered normal, and you were expected to be able to take it. It made the Army seem easy. But at any rate, and it made the college fraternity seem—they had rather clever mind games and things in fraternity there. So at any rate, we lived in that disciplined environment. And I caught up. And several of us who had gone to poorer schools, a poorer academic quality school, were competing with the other students at MIT who had gone to very good prep schools, the New York state high schools where there are regent's exams, or others, or had had a year of college. And they'd really had all their first—many of their first year courses. And this, in itself, was a trap because the students felt, "well MIT's not too hard." Basically, what they found they were doing was that they were taking their last high school course over again very quickly and going very rapidly. Well, happily, they coached us the first year. And second year, those of us that had learned to work were coaching them. And after my first term sophomore year, I caught up. And it was not a problem.

Hollar: You explained you were younger in high school because of this advancement by a grade. You mentioned you were only 17 when you went to college. Did that present any sort of social issues?

Morgenthaler: No, I found the MIT types were social retards. Remember I was socially very advanced as I said. We were dating at 13 and necking with 11 year old girls. And were driving at 14, and so on. And we were very used to dancing and parties and things. So that part—the social part was easy. It was just academics that were hard for a little while. So, no that went very nicely.

Hollar: And so, MIT was—you found it to be a real meritocracy in that way?

Morgenthaler: Academically?

Hollar: Yes.

Morgenthaler: Oh, yes. Most of the people, or at least a very high percentage of the people, were what today you'd call nerds. Academically, extremely bright, socially not very advanced. So I found that part of it easy.

Hollar: What year was your freshman year at MIT?

Morgenthaler: 1936.

Hollar: Did you have any mentors or memorable professors at MIT that you recall?

Morgenthaler: Not in the early years. That was one of my—I've been a kind of an academic junkie all my career in that I've spent a lot of time—I don't take college trusteeships because they take too much time, but my wife has been a life emeritus trustee at Carnegie Mellon, which was her school, and at Case Western Reserve. And I have served on—in fact, I'm still on—was on three Dean's advisory committees of business schools, though I never went to business school. And I'm now on one presidential advisory committee. And I spend a good deal of time supporting programs at several schools and very involved with them. And most students at MIT at that time, if they were involved, found it kind of a love/hate relationship.

The school was so demanding at that point that, and worst of all, in my sophomore year, General Electric came and made choices for their cooperative training program. And at that time, General Electric offered a program where after the end of your sophomore year, you either went to school or worked in their plants around the clock, typical cooperative program. While you were at their plants you were given courses at night. And while you were at school you had some plant visits and things of that sort. The courses were—I mean getting into the course was tremendously prized because, remember this was 1937 that this recruiting was being done. And the country had been through 25 percent unemployment. And we were all scared to death of getting a job when we came out of school. And getting into this course meant that you could—you were pretty certain of getting a job if you lasted in the course with General Electric. So, the whole class tried out for it.

One point I haven't made was I went into mechanical engineering. Why? Because I was told it was the most general, which was about how much I knew about engineering. That was another of the things I would change in life if I did again. I would go through electrical engineering, rather than mechanical. And I would have taken something that permitted more business courses.

Our mechanical engineering professors were very good engineering professors. They were not very inspiring people. I've been invited on the visiting committee of the mechanical engineering department, but I didn't retain enough interest in the practice of mechanical engineering that I ever accepted that. So, I've been actually on the advisory committee of the Sloan school, instead, where I have an interest in the business aspect of it.

But at any rate, it was a very intense academic experience. And seven of us were picked out of a class of seventy or eighty for this General Electric program. And it was, you—they regarded anything less than an honor rating as like flunking. So, you pretty well had to keep your academics up. And I had gotten very interested in school activities, fraternity activities, and class politics, and so on. And I ended up—I kept inheriting jobs rather than—I was elected vice president of my fraternity at the end of my sophomore year, which was proper. And the junior who was elected president—the president normally was a senior the following year, of course, was son of a rather rich man, had an airplane. And he did too much flying and too little studying. So MIT flunked him out. The result was they came back and had an election in the fall. And I was a junior and expected to be elected vice president again, instead they elected me president. And I had planned that year to take a scholastic overload. And I had a big academic activity job. I mean a big activity job at the school. And I had not planned for an overload of all that. But I got in the fraternity, and it was my first business turn around experience. I found that the previous president had spent down to where we had 11 dollars in the treasury. We had no alumni support. We had a mortgage payment coming due on the house. And over the summer, somebody had left a window open and the ceiling in the main hall was falling down. And rushing season started in two weeks. Well, I learned about how you turn around a defaulting business very quickly. We went down and bought some of this old fashioned tin things they used to put in very old fashioned barber shops, and nailed it up, painted it over the falling plaster. Then went out and recruited the largest pledge class in history to get the dues. So that we increased the revenue level. And we looked at all the costs and bought them out. And I'm happy to say at the end of the year with no outside injection, we paid the mortgage. We were back in solid condition.

Hollar: Did you see it as a turnaround at the time? Did you think of it as that?

Morgenthaler: Well, I was just desperate to save the fraternity. And you did what you had to do, which is what you do when you're turning around a business. So, then I'd inherited that job, really. Then the next year I was the fraternity's candidate for president of the senior class. And the dorm candidate had more votes and worked harder politicking. And he got elected president. I got elected vice president. I thought his is wonderful. I have all the honor and no work. And so I was prepared to enjoy my senior year, and so forth. And guess what? He flunked out. And back in those days, MIT had a resolve that the tech is a place for men to work and not for boys to play. And they repeated that, and what was worse was that they meant it. And they enforced it. And so they flunked—flunking out the president of the senior class, they did that. So I inherited that job and had a little more work than I had expected. But by then I was a pretty efficient student and didn't have a problem.

Hollar: Which did you enjoy more, the academic side or the fraternity, more social side?

Morgenthaler: Well, I had a pretty good time. I enjoyed—the fraternity provided all of a university experience that we had. I was very glad in one way that I lived in a fraternity because I graduated with honors ratings. And so I got over the academic problem. I probably would have had better grades if I'd been in the dormitories, but life would have been much less colorful and interesting. And I had some lifelong friends out of the fraternity. And I had a very interesting—we were a very self-governing organization. And that was, outside of camp counseling, that was the first leadership experience that I had. And leading a group of that kind, and particularly leading them through an experience where we had to cut costs and make some money and bring in people and that sort of thing—it was a business kind of experience. And the mechanical engineering department just did absolutely nothing to train in leadership as such. Had you asked them, they would have said they were trying to train technical leaders. That was absolute nonsense. The word leadership never came up. They were interested in training the best design engineers in the world ready to start this afternoon.

Jumping ahead a bit, my first job, for example, was after I'd worked at General Electric and after the war. World War II hadn't started. America wasn't in the war, but the war was here and General Electric had a lot of defense business. And the demand for engineers picked up at that point. So everybody in my course got jobs very easily because it was extremely easy to sell two degrees and a year and a half of General Electric training at that point when people suddenly started hiring engineers, after the period during the depression when they'd laid them off. So we all got jobs and the interesting part was that everybody was willing to pay a lot more for GE's training than GE was. So every one of us went to work for other companies, which didn't make GE very happy.

Hollar: Was that influential? Was your internship, your program with GE influential?

Morgenthaler: Oh yes. My first assignment at GE—one of the men that I had only four month's exposure to but was the plant engineer, the head of engineering—power plant engineering at the Lynn Works of General Electric and he was an MIT man about twenty years out of school. A very good, very kind man. They gave me to him as an assistant. And he did the best of all worlds then. He just gave me all his little junk engineering jobs. If he wanted a compressor moved from one installation to another and piped up and electrical calculations done and so on, he just said, go engineer that. Plan it. Plan the hook ups. Plan the electricity that it needs. Plan everything. Call the millwrights and have them move it. Supervise it. See that it's started up and running and come back and tell me if you have any problems. And then, if not, come back and tell me when you're done. I went off to do this and the millwrights hazed me and you know all the factory guys did. I was nineteen years old, but I learned to handle that very easily and it worked out and it was beautiful.

And on my lunch hour I used to go down and the welders would have left their equipment. So I taught myself welding on the job, that kind of thing. And everything was wonderful until one day—and my boss

was a very good man, very kind man. He was 20 years out of school and he was as good in calculus as I was, and I just had the course. And he didn't seem to have lost anything. And I thought he was practically God. Then one sad day I saw his paycheck. This was 1939 and he was making—GE had cut everybody back, he was making about what I'd hoped I'd make when I came out of school. And that gave me a serious prejudice against working for large companies. I've always objected to being underpaid. I thought, if this is what a man as good as this is getting paid, this is no place for me. And then I subsequently had a couple more assignments at GE, turbine test engineering, where I actually ran turbines—turbine research, and then I had a couple months at Schenectady testing searchlights, which is the least useful of the courses that I had, and did some research there. However, when I got my first job—and then I went back to take my graduate year. When I got my first job, it was with a much smaller company. It was a wonderful time. I took 14 job interviews, and I think I had 13 offers. And the one that we didn't get an offer from didn't offer anybody because he found that he wanted to pay far lower than the average that we were getting. Everybody valued our training.

So I reported to this much smaller company and it was involved in power plant engineering. And they said, we have to give you a training course. I said, naturally, I expected that. Nine o'clock in the morning I reported. They pulled out the manuals and engineering specifications and went over the material with me. I expected to be at this for weeks, maybe months in the training and this and three o'clock that Monday afternoon they said, all right, you're trained. We have a customer up the street who's inquired about one of our smaller pieces of equipment. Go up there. Call on him. Engineer it and bring back an order. I've never known whether they planted it or not but I went up, called on the customer, took the engineering sheet along. He and I sat down together. We engineered the thing. He gave me an order and I brought it home. I wasn't sure whether they'd sort of arranged the turkey for me to shoot and get me started, but that was my training program and the next morning they threw me out on the street.

Hollar: And it concluded with your first sale.

Morgenthaler: That concluded my first sale and my first engineering job and from then on it was, do the job.

Hollar: Now let me be clear about the sequence David. Did you leave MIT and then take a job and then go into the Army? Was that the sequence?

Morgenthaler: Yes. MIT had a compulsory two-year ROTC program, which everybody had to take. And then you volunteered for the second two years, which I did. And I was in the corps of engineers option. So I had, when I graduated in June of '41, I was given a second lieutenant's commission in the reserve.

Hollar: And clearly the war was coming.

Morgenthaler: Clearly the war was coming and we were expecting to be called to active duty. In those days, you were being called for a year. But everybody felt that was a joke, and believe me it was. And then I was called to active duty, coincidentally the day after Pearl Harbor. It looked very patriotic, and I've always said if I wanted to make a good story, my war story was that the day they started fighting, I volunteered. I was in the day after Pearl Harbor, and I was in Africa and Italy. And I was actually sent home on rest and recuperation the day the war ended in Europe, on a 45-day leave. I can say that, if I want to tell the story—if they're fighting I want in it. When the fighting is over I come home, I don't want to fool around with the sitting around in peacetime. Actually it was pure coincidence on every count.

Hollar: That's amazing.

Morgenthaler: I came home the day the war ended actually because I was in a big poker game in Casablanca. And I missed the call to go back to the States because the noise level was very high. And they were calling for my flight, and I got up about a half hour later and found that I missed the flight back and took some tall explaining to them to avoid me having to spend another month. I was able to convince them, they hadn't posted it. It was very noisy in the officer's club. Actually I was a big winner in the poker game. I didn't want to leave, but I didn't know. I would not have missed a flight home intentionally. Those are, you know, as I told you earlier, there's a good reason for everything, and there's a real reason. And I'm giving you the real reasons. So, I missed a flight home because of a big poker game.

Hollar: Now you had a real taste of the private sector before you went into the corps of engineers. Were you happy to be going into the Army Corps of Engineers?

Morgenthaler: It was the best thing in the Army. I was very nearsighted, and I couldn't have passed the eye exam for a pilot. So flying was out of the question. I might have been interested in that if I had been able to fly. I mean I had every boy's interest in flying and the fraternity president that had flunked out had a plane, as I said, and he did too much flying. And I flew with him occasionally. And I'd had three or four lessons in flying. Then during the war, we were assigned a plane. And later headquarters, but that's later in the story if you want to include that. But at any rate, military engineering is essentially civil engineering really. But it's very simple for a recent graduate.

And the Army, when I was called to active duty, it looked like a general mobilization because the orders that I received had pages of people being called to active duty. So you look at that and seen dozens of officers were called up on the same thing. So, and then I learned the afternoon of December 7th I heard about Pearl Harbor. I was actually meeting with my old roommates in New York. We were having a final celebration before I was going to active duty, and another one of my roommates in graduate school was going up a little later than I. And eventually three out of four of them were in the service. But, I kept waiting for news. I mean we couldn't believe the Japanese would attack America. It was, and the attitude of America then was such a superiority complex toward the Japanese that we found it just incomprehensible they'd do what they did. We had no idea of the relative strength of the Japanese navy

in particular at that point that they could bring off a raid on Pearl Harbor. And we had no idea that the leadership in Pearl Harbor would be so foolish as to line up all their battleships as they were and be lucky they weren't caught with their aircraft carriers so we kept waiting for news that the Japanese fleet had been sunk on the way home because we thought America must have been prepared for this and the word never came.

So I reported to- I was ordered to Langley field, to this prototype military unit. The 21st Aviation Engineer Regiment was the first regiment that had been converted to service, particularly build and service, maintain and defend airfields, de-mine clear if necessary. We were equipped with 50-caliber anti-aircraft guns and machine guns and we had 37 mm anti-tank gun. We were not a combat engineer unit but we had pretty much the same training and we were very much expected to do mine clearing and we were prepared for combat if we caught it. And the only time, the only significant- I have three combat zone stars for having been in combat zones but nothing fell closer than about 100 yards to me. I was very lucky. We built airfields and the Army was a tremendous leadership experience.

Hollar: How soon was it that you were sent to North Africa?

Morgenthauer: Just over a year, just about a year after- I was brought in the 21st Engineers at Langley Field. Originally, I was assigned as an assistant regimental engineering officer, which was exactly where I belonged and it was a staff job. And I was enjoying it thoroughly but the trouble was, two months later, they changed me to the regimental- they promoted me in a job in that I became the head of a so-called intelligence, survey and drafting function and had my own unit. And I had four months of that and then the way the Army expands in war time is that they take a unit such as ours, which was a peace time regular Army, made up of very experienced people, and they pull the most experienced people out and put them in charge of the new units. And a company commander in a regular Army unit should be a West Point graduate with three to five years of experience as a platoon lieutenant, in charge of a platoon of about 50 men before he heads a company of about 170 or 180 men. That's what you should be if you're to be qualified. They took those West Pointers out and made them battalion commanders of new battalions. They took their most experienced troops and sent them out to cadre these new units and they were expanding hugely and we were just one unit. They just picked us clean.

They took my class, we had, at that point, six months, and they made us company commanders, replacing these West Pointers with a day of company duty in our lives. And we suddenly found—this has influenced my thinking on leadership tremendously because—suddenly I had gone from a staff officer doing engineering work that I was overqualified for into running a company of 178 men with not a volunteer among them, not a person that wanted to be there, not a regular Army person. They gave me eight people that had been in the Army a few months and these were my cadre. They gave me a guy who'd been a fat cook and made him, he was my mess sergeant and they had a whole series of this kind. And if possible, and it would be hard, these people knew less than I did and I knew nearly nothing about this. So I went to my officer's manual that we'd had four years and I looked up leadership in it and we

have a half page of glittering generalities that are absolutely useless about how you deal with these troops. And people like to feel that the Army is a place you can order people to do things. Well, when you have the huge amount of command experience that I had, I got before I got through, you learn that it's one thing to give an order, it's another thing to get it carried out and particularly when you say, "Go clear those mines. Go and get yourself out there where you may get shot and get this done," without them dogging it or- this is a different story. And then, of course, as we got overseas, we found the further thing that ordering was fine but many men would have preferred to be in jail because being in jail was safer than being where you might be in combat. And if you were told to give engineering troops hard labor, now, if you take infantrymen or other units and make them dig ditches, that's punishment. But engineer troops dig ditches for a living. That's what they do. I remember we were digging ditches and moving steel landing mats and that's what they had to do. So we were having to find that kind of problem.

Hollar: So how did you deal with that, this leadership issue, when you had so little background in it?

Morgenthauer: By guess and by God. <laughter> You just figured out what do you do. You work out for yourself how you tell the people. And I'll tell you a little more stories in regard to that. Well, fortunately, leadership, to some degree, is about character. It's what you believe, what your value system is and your willingness to do things by the book.

So I developed a philosophy of, I told my men, "We're here to do a job. First of all, we're going to carry out our missions." As a leader, your men have to feel you are absolutely implacable, you're going to carry out the mission over their dead bodies or over your dead body if need be but the mission is going to happen. But, to personalize that, to put the humanity on it, I said, "If you do that, you cooperate, I'm going to do everything I can to get you home in one piece, not killed, not wounded, and do everything I can and I'm going to do everything I can to make your life here as less bad as it can be. There's no making it good but I'm going to see that our cooks do the best job in the regiment." The colonel was smart enough to start a competition between the mess halls and little things like this, you know?

One of the things about humanity that people just don't realize in this country but, when you're in privation, how well off you feel is relevant. If you're miserable but the guy next to you is considerably more miserable, you feel relatively well off. And so Army food is bad but, if you clearly can see you're getting the best food out of 13 mess halls in the regiment, then, if you win the prize for the best food, then you feel relatively well off. Well, I saw to little things like that in terms of the welfare of the men.

What happened was that, about the fourth day that I got this new group of my men, they burned the pork chops and I called in the mess sergeant, this fat, Polish guy that had been a cook for a few months in the Army and got promoted to running a mess and the Army calls it a mess and, in the other connotation of the word, it often is, and I was used to good food at home. My mother could not cook but she had a real talent, she was a southern girl and she had a real talent for finding little African-American girls and making extremely good cooks out of them. My father was very fussy so I was used to good food. And our

fraternity had had quite good food, at \$1.08 a day. I can't tell you what I paid for lunch yesterday but I can tell you what I was paying for lunch in college as such.

So I called the mess sergeant in, "Sergeant, they burned the pork chops." "Well, sir, you know how it is with Army cooks," he said to me very politely, and you know there's a legend in the Army, I don't know whether you have military experience or not but, in the Army of that time, cooks were kind of a special breed. They were always troublemakers, they were excused from guard duty, and excused from digging latrines and all the unpleasant jobs that everybody else shares. And they got drunk and somehow even regular Army officers, they kind of dominated. Well, I'd heard that. And I said, "No, sergeant, I do not know how it is with Army cooks and I do not mean to learn. You tell them they're in here, in the shade cooking and they're spared a lot of unpleasant work. If I get the pork chops burned again, the cooks are going to be out in the June sun at Langley Field laying steel landing mat, which is about as hard and heavy work as you can find and digging ditches." I said, "Any fool can cook better than this." The quality of the food went up drastically and I really only, I only had to do that once again in Italy when they were throwing food at the men and they were just slopping it into the plate and I told them they were quickly going to be out on a mountain digging ditches in the rain in an airfield there. That got stopped very quickly, too. But you do that kind of thing.

I never let- I mean, our officers were always required to eat from the same food containers the men did. We sat at a different table but they ate where the men could see them taking the same food. And however bad it was, the men saw the officers were doing it. No officer was ever allowed to go to bed before the men were all housed and in bed and taken care of. We just saw to that. And so I ran what was considered the strictest company in the regiment and I got feedback to this extent from my colonel because we were considered very strict but morale was quite high because the men felt they were taken care of. They felt I was fair. They felt I was tough but I was fair. And one day the battalion commander called me in and said, "Morgenthauer, I'm going to make you a defense counsel," you know, the Army runs summary courts and special court martial and gives sentences. They're run as a second duty with officers. Am I getting into...

Hollar: No, no, no, this is fine.

Morgenthauer: You want this?

Hollar: Yes.

Morgenthauer: Okay. So, at any rate, the colonel said, "I'm appointing you as a second job, you know, as a sideline, you are defense counsel." And I said, "Colonel, I don't want that job. I have no sympathy for troublemakers and people that are in jail need to be in jail and so on. I don't want to do that job." He said, "I don't care, Morgenthauer, it's orders, do it." I said, "All right, sir, but you're not going to like it." "What do

you mean?" I said, "Your other company commanders are not doing a good job on their court martial and the men are losing respect for authority, they're losing respect for the fairness of our military system." I said, "I have never court-martialed a man, I court martial fewer men than anybody else does but anybody I court martial is always convicted. He is guilty and I can prove it and I do not send him up there, even if I know he's guilty, if I can't prove it, I don't send him because he loses respect for the court." And I said, "The rest of your company commanders, your other three, they have troublemakers."

In any 200 men of that kind, you will have five to ten real troublemakers and they're just, well, I learned some rules about humanity that I've used in business ever since. One is that about 65 percent of the people you run into, everyday people, trades people, everything, they're good people. They make some mistakes. You may get a little minor cheating or something like that but they're very minor and they really want to do well and they want to stay out of trouble. About 25 or 30 percent more don't start trouble but they will be easily led into it. They're the people that said- somebody says, "Everybody cheats on their expense account," so they cheat on their expense account because everybody does it. Everybody tries to avoid the subway fare, I mean, everybody does it. And then you end up with five or ten troublemakers that will start the trouble. And you find this- it's just a rule in humanity.

For instance, you can trace it right back to this last episode in [the] home loan mortgage [crisis in 2008-09]. What these people did in Wall Street, and it's unforgivable, is that they preyed on that 25 percent of people who were making the liars loans, who were told, "It's all right to lie about your income because everybody does it, you're going to be bailed out because the house price is going to escalate. It's all right to pretend something we don't have here. Everybody does it." And that 25 percent are led into it and they were led into it and that has been- those loans have been the kind of thing. If everybody had done what you or I would have done, if I'm going to take out a loan, I'm making very sure I can repay it. If I can't repay it, I won't take it out. But these people said, "Well, he said I could pay it so he knows more than I do, I know somehow I'm cheating but..." You have that 25 percent in the Army when you're commanding it and so that's a lesson I learned in this period.

Hollar: And then did you develop a technique for each one of those percentage groups? It sounds like you did if you identified them.

Morgenthauer: Yeah. Oh, I took over, jumping ahead a little bit, I had been—the incident I wanted to tell you that Gary has heard. The colonel appointed me defense counsel and I just simply went in and did—the Articles of War are very simple. I mean, it's easy to be a military lawyer and I had had one law course in college and I did pretty well in it, although it probably says something about my character. The professor was another person that I thought well of.

He called me in once and he said, "Morgenthauer, I have to give you an honors grade but I've never given you a perfect paper." And he said, "The reason is that you turn in a perfectly reasoned legal paper holding exactly the way the minority opinion of the Supreme Court does," he said. "Can't you ever argue with the

majority?" <laughter> He said, "I have to give you honors if you can argue exactly like a Supreme Court judge does but why must you always pick the minority of it?" <laughs> So I got honors in the course, anyway, so I just made these guys prove their cases.

We got a lot of people that were guilty acquitted and I knew they were guilty but the point was that you've got to respect the law. I mean, you've got to feel that you are innocent until you're proven guilty and if people believe that, then—and these company commanders would just get sick of the troublemaker without thinking too much about it, he'd been in four or five things and were trouble and they'd give him company punishment and finally he'd do something, the company commander would get sick of it and court martial him. And sometimes he wasn't guilty of what he was accused of, never could they—I mean, often, they couldn't prove it and so then the man was court-martialed and he felt unjustly treated.

So I started getting a lot of people acquitted, as I'd told the colonel I was going to do. <laughs> And I got to the point, for awhile there, where any troublemaker, any real eight ball, any bad guy in the battalion would go 100 yards out of his way to say good morning to me because he thought I was going to end up being his lawyer somewhere along the way. And the nice people wouldn't speak to me. <laughter> So we had that incident. And, later on, I had been—when I first went into Africa, I was given a remote assignment to build an airfield and turned out pretty well. And so they got to trust me with distance and a company commander of an engineer unit in a primitive area in wartime away from headquarters is a little tin god. He is the boss. Regimental headquarters was 100 miles away over bad roads with no telephone connections, no radio connections. If you saw somebody from headquarters once a month, it was frequent. And they would want you to build an airfield and the instructions were practically, somebody from staff would come down and say, "We want you to build an airfield, 10,000 foot field, that direction. Start here, go 10,000 feet, put it in business. When it's operating, come back and tell us." Those were about the extent of the instructions. I loved that.

Hollar: It sounds like your GE experience.

Morgenthaler: That was like my GE experience on a much bigger scale.

Hollar: Yes.

Morgenthaler: So, at any rate, I'd been used to being very away from these and one day I was called in by the same colonel that made me that and he said, "Morgenthaler, you're going up to command the headquarters in service company." I said, "Oh, I don't want to do that." I said, "I've been used to being 100 miles away from the colonel and running my own show and so forth. I do that, I'll be sitting about 100 feet from him and I'll have nothing but brass breathing down my back all day and I'll be paying attention to a lot of staff junk. I'm a line officer." And there's a funny attitude in the military, you get it and I had been originally very disappointed when they made me a company commander but a company commander is a

line officer and I'd been a staff officer, which is much easier if you're qualified for the staff function. But then, when you've really run a unit, when you're, as I said, you get to feel like you're a little tin god and, if you've been successful at it, and I was, then you feel a little superior to the staff people. And they somehow also recognize it, that they're just not sure they could lead this group of troops and make them do what they had to do. But if you've done it then you get a certain attitude of command that you probably never lose.

So the colonel said, "Don't care. Orders. Go." So I walked up, drove up, moved up, walked in, reported, saluted the colonel, "Captain Morgenthaler reporting for duty as ordered, sir." "Morgenthaler, I hear you're the toughest company commander in the regiment. This headquarters and service company is all blanked up." He did not say blanked. <laughter> "Straighten it out. That's all." Those were my instructions. <laughs> I said, "Yes, sir." Saluted, about face, and went out.

He was right. It was all blanked up. It was very easy to straighten out because these were staff-y type people and they were just not used to the hard realities of the line and I got them together and gave them a little talk and I said, "This is called the headquarters and service company of the regiment. You have the cream of the people. You have the best equipment. You have the most equipment. You're the largest company at about 300 men." I said, "Your job is to give service to the line companies. I have been a commander of a line company for a long time. I have experienced your service. What you are is all headquarters and no service." I said, "We're going to change that. These guys are out there in tougher living conditions doing a hard job with less equipment and less trained people than you have. You're going to service them and I'm going to get reports back from them as to how helpful you are or there will be consequences."

I said, "I didn't bring you over here. I don't have the authority to send you home. If you do your job and get the missions accomplished, I'm going to do everything I can to get you home in one piece, alive, and I'm going to do everything I can to see you live as well as we can here. If you don't, I am going to do- don't feel that everybody's going to get treated alike in the company. I don't treat people alike. If you help me and really do this job, I will do everything I can for you. You give me a hard time, I will do everything I can to give grief to you and that is quite considerable. So if you want grief, just give me grief. If you want a happy life and the best we can make out of this miserable situation, because we all want to get home, just help."

I said, "One practical thing. The regiment lets one man a month go home from the company. The company commander selects that man. You all know about incidents where somebody made himself so objectionable that the company commander who couldn't get rid of him otherwise," and remember, in the Army, you can't fire them, "so he'd send him home." I said, "You can be absolutely certain that will never happen here. You will have a long, gray beard before you go home if you give me a problem in operating this." <laughs> Well, I was told, and it showed, the morale just went straight up because all the good guys suddenly thought, it does pay to—I put an incentive in being a worthwhile performer.

Hollar: And do your job.

Morgenthauer: And I put a little fear of God into the others there because most of them were convinced that I was meaner than they were. <laughter> So that was part of it. We had interesting—but it was also a show of loyalty to your troops. We had one case where, again, I may be taking too much of your time on this but...

Hollar: One more story and then I want to ask you a question about the Army and then let's move onto your post-war career.

Morgenthauer: Fine. Well, the last story was, as a headquarters and service company, you put men out on assignment to other officers. We, fairly late in the war, we had quite a good colonel, the second colonel we had, not the one that had told me originally, and that guy originally who gave me the company all blanked up order later became chief of the corps of engineers. He was 37 years old. I was 24. Damn wonder we won the war. But later, he had moved on, he'd been transferred or promoted somewhere, we had another quite good colonel generally but some of my troops were assigned to a young lieutenant who took them up very near the front and bivouacked them in an abandoned house and had some trouble with his men and came back. They were my troops to command but his assigned them for duty. And came back and the first I heard was that the colonel called me in and said, "I want these two men court-martialed." I said, "What for?" and he said, "Well, they had a problem with their lieutenant and he's charging them with looting." I said, "Looting? Colonel, that's the silliest charge..." we'd been in the war a long time, we'd been through the whole African charge, and we'd been through the whole Italian campaign at that point, it was getting late, I said, "That's the silliest charge I can think of." I said, "Where do you think we got the piano in the officer's mess? We looted it. Where do you think we got most of the furniture? We looted it. Where do you think we got most of the nice things we had? We looted it. We're all looters. You want me to court martial my men for looting? What did they loot?" "Well, they looted some cheap little scarves, the kind of thing you'd buy in the dime store here for practically nothing" and there were millions of them in Italy, it was one of the few things around there. I said, "Who would bother to steal those in the first place? But how do we know they did it?" "Well, they were in a room" in this abandoned house that these guys were staying in and he said, "The lieutenant put the room off limits and these scarves were in that room and these scarves were found in their packs afterwards." I said, "Were they seen in the room?" "No." "Did anybody see them take them?" "No." "Have you any proof that those scarves came out of that room?" "No." I said, "How do you possibly think you can make that charge stick? I've been a defense counsel. You can't make that charge."

And so I called my first sergeant and I said, "Find out what happened." He said, "Sir, they're all..." and when he checked around and talked with the men, he said, "They're all looters including the lieutenant. They all were stealing things. This is just a fight between the lieutenant and the men." So the colonel—so I went back and reported to the colonel. I said, "Colonel, this is not fair. I'm a troop commander. My men look to me to look after them if they're being mistreated. This would be a mistreatment of these guys."

"No, I want them court-martialed." He got stubborn on it. I said, "All right, sir, if you court martial the whole group for looting, including the lieutenant, then I will charge my men." "Oh, that's ridiculous. We won't do that. So they're going to be court-martialed."

I said, "All right, sir, it's not a lawful order to tell me to—you cannot force me to court martial them and I've got to command the respect of my men and if you make me court martial them, if you court martial them, you'll have to get somebody else to sign the charges. Furthermore, I will volunteer to defend these men, if they want me, they don't have to take me, but if they want me, I'll volunteer to defend them. And, if I defend them, I guarantee they'll walk out free men and you're going to look silly." "Garbage. Out." So he got somebody else.

The men, we went to the men and we said, "We think, we're not asking you whether you're guilty or not, we do not think this is a charge that should have been brought and we protect our men when we think they're being unfairly treated and we think this was unfair. So I will defend you if you want." One man wanted me, the other man wanted his boss and they wanted to be tried together. <laughs> We tried them. We had—and this was a general court martial, too, this was higher than I'd ever done before. And it could have ordered them shot. It wouldn't, for that, but I mean the court had that much power. It wouldn't do it for that kind of thing but, at any rate, 35 minutes, they were acquitted, they were free men. The colonel, bless his heart, we walked out together and, as we walked out, he says, "Goddamn you, Morgenthaler, let's go have a drink." <laughter> So we had a drink and forgot the whole thing. But, I mean, that's what you do if you care about your men. Enough stories.

That was what I got out of the Army experience. But you run a group, you have to run a group. You have to—and I developed certain theories and I spent an hour last week on the phone with the dean because I'm supporting the leadership program at MIT because I'm tired of the Harvard Business School, and I have probably six partners from the Harvard Business School, and some of them varying degrees of leadership, I am tired of their assuming they are the automatic leaders of the world and that you, and I don't know whether you went to Harvard or not...

Hollar: I went to law school there.

Morgenthaler: You did? Well, you know the business school.

Hollar: Yes.

Morgenthaler: They inculcate the attitude that you are the natural leaders and they vary. I mean, some of them are wonderful, some of them are not. But the attitude is they should lead and, "We want to put your MIT men, we'll lock you up in the closet and let you crunch numbers and pay you well and so forth

but we are ordained by God to lead." I just don't believe that. So I'm working to fund and I partly fund and am doing more funding of the leadership program at MIT.

Hollar: Let me ask you one final question about your Army career. Did you ever consider staying in the Army after the war was over?

Morgenthauer: I'm glad to say I was one of the few people offered a regular Army commission. They offered me a captain's commission to go in the Army. This was in Italy. I thought long about it because the regular Army people got the best jobs and, at that time, it looked like the war was going to go on for a long time. And I knew I could take the commission, get promoted faster but I was being well treated anyway but I also knew I'd never want the Army in peacetime. And I thought the war was going to end sometime and we were going to win it and so I turned it down. I seriously considered it because my colonel, the one that said, "Goddamn you, let's get a drink," also told me afterward, higher headquarters had asked for me to come up to join them because I'd done an assignment for them and they asked for me. But didn't command me, they just told me they'd like to have me and they'd promote me to a major if I did. And he said, "I won't stop you if you want to go but," he said, "if you'll stay with me, I'll promise to make you the next battalion commander," which is a lieutenant-colonel's job, and it's, I mean, a command job. And the idea of commanding 800 troops when you're—I would have been about 26, I was 25 when this conversation took place, and, in a year or two, I'd have been commanding 800 troops and having that job. That is heady to a guy who was thinking that being a battalion commander at 26 in the engineers—, that had a real appeal, so I turned the staff job down. And I also turned down the regular commission. But when the war was over, I didn't want to build airfields the rest of my life. I didn't want the Army in peacetime. So that was the end of it.

Hollar: Okay.

Morgenthauer: But I have a lot of admiration for people like Colin Powell, who really did, I mean, that was almost a prototype of what an Army career should be. And there were appeals to it and I've never had trouble getting along in big organizations. I just find you can't go fast enough in them. So, I mean, I told you why I didn't go with GE and I had offers from GE and Westinghouse, DuPont, practically every big company you could think of because they needed engineers at the time and they needed engineers with a little experience and GE had done that. That's more than enough, I'm sorry.

Hollar: That's good.

Morgenthauer: I get to telling these stories.

Hollar: No, no, no, that's fine. I wanted to talk about your military experience more from that aspect than about the engineering or the other things that you were technical, you know, the technical work. So that was perfect.

Morgenthauer: Oh, building dry weather airfields with that steel landing mat is a frustrating process and there are other stories. Under these two colonels that I mentioned, with me as chief technical officer, that was my additional duty in addition to being headquarters and service company, the Germans had nine airfields in eastern Italy. We turned out, by the time we got through the war, we went in there in the fall of '43. By the beginning of '45, we had 27 airfields operating. We were putting up 1,500 planes a day, raids, out of Italy, not just out of those fields but out of Italy. It was a huge project. I had two factories. I had 600 Italian civilians, which is another story that I won't take time to tell you unless you—because it probably would have gotten me court-martialed but my Italians were going to strike on me when were working around the clock and going mad and getting pilots killed because of those raids. They saw John L. Louis out on strike back in the States and they were going to strike on me and I put an end to that with what might have gotten me court-martialed but, fortunately, the Italians, the final word was, "We thought the Americans were the fools but apparently they're not." Back to work.

Hollar: So the next phase is your early career. And it's interesting the word startup appears pretty early on, it seems, in this phase of your career, I'm just wondering, when you got out of the Army, what did you want to do, what did you think you could do, what did you choose to do?

Morgenthauer: Very straightforward. The company that I had worked at, I had two bosses, and—before the war. This was Drivot Corporation, in Pittsburgh. One of my—one of the two had left during the war and had run a porcelain enameling and stamping plant. Since he had been an MIT man, about 10 years older than I, and he was as close to a mentor as I had in that period, he—we'd gotten on very well, and I'd had very <coughs> successful experience with Drivot under his and under another man's leadership. He had left to run a porcelain enameling and stamping plant. During a war, as you may recall, no civilian goods were made, so everything that was painted rusted out, and you couldn't buy new ones. The only things that stood up were porcelain enamel goods, and the world—he thought, mistakenly, that the world was just going to very heavy usage of porcelain enamel. He wanted to start a company. He came from a wealthy family, and his father offered him money to start a company—money we'd all spill today, but it was enough to start the company up. And this man put together a dream team of—he got the best technical man in the industry, the best manufacturing man in the industry, and a very good plant engineer, and then me as a very inexperienced person. I was by far the weakest of the people that he had, and I was put in charge of sales and application engineering. And he was just, I guess, on faith on what I could do.

So we went into the business, and that—I'd never liked the porcelain enameling industry. That just did not appeal. I was—you get—in that day, at least, you get to be a little bit of a technical snob out of MIT. You really want to work on something that requires some engineering, and porcelain enameling was pretty

simple stuff, and it was into consumer products, which have never interested me very much, but starting up, working with this group and this high-grade team in what he thought was going to be a tremendously growing field, and I've always had an instinct for going after what would be growing-type applications. So I joined him instead, and with a low salary and an uncapped commission, and we started up a porcelain enameling company. And at first, it went moderately well—a shortage of steel. And then he proved unable to raise as much money as he thought he was going to. We expanded more slowly. The technical man was very moody, and he got into a fight with the production man. The production man got fired. Then the technical man got into a fight with the boss, and *he* got fired. And then both were replaced by the boss with much weaker people. The boss didn't live up to expectations. He bought a small airplane, and we started to fly to where he wanted to fly to, rather than where somebody could buy something. And I was—I was on a starvation salary. I'd come back from the war. I was married, and I had a child on the way.

Hollar: And where were you at this point?

Morgenthaler: This was Erie, Pennsylvania, which is where he started the company. And so everything—we started to have quality problems, and basically, really, I'd run a much bigger organization in the Army than he had, and he had what I would call a "Cub Scout" attitude toward everything; that is, if you wanted to build a fire, he'd rig up to—you know, start a fire by friction, and so forth. My attitude was, "Go get a match." <laughs> He just didn't have that sort of practical attitude. And I remember once, the lining of the furnace broke down, and we four executives went in and relined the furnaces with 400-degree temperatures in the walls around us there. We—I mean, we did that kind of thing. I used to go out in the morning and make sales calls for a company that didn't exist, go back at noon, put on coveralls, and lay concrete block to help build it. We didn't build the whole thing, but we would pitch in, help the contractors, and—but, and it was all do-it-yourself. Meantime, we were getting lousy production, and we'd—I went out on the production line often in the afternoon to help get shipments out, and I didn't mind the work, as such. I'd done much tougher work, but—I didn't mind the work, but it was just bad management, bad people, and—but we were—all that was tolerable until the company got into—lost some business because of the quality, and we got into some—way into financial troubles. And I persuaded another company to buy a press that could make something. I persuaded a customer to pay for the tools to make it. I got my father-in-law, who was in the steel business, to get us some steel, and we started turning out shower bases, which saved the company.

And suddenly, money is pouring in. I have an uncapped commission, and I am quickly making more than the president of the company, and that wasn't tolerated. Well, I've always been very narrow-minded about anybody cutting my income. <laughs> So I had an agreement with them, and they violated the agreement, so I said, "I won't stay if that sort of thing"—and, "No, you've got to—we're going to reduce your commission." And I felt mistreated, and left. Went to work for another company. Didn't have any money. We did not have any family backup on either side, so I had to take a job in town. I was not equipped to move. So I went to work back into the power plant business, and spent three years there, doing application and service engineering in a very small but successful company where I did all kinds of interesting things, but I wasn't making a lot of money. And they had told me originally that I would

eventually—I was sort of brought in as reporting to the general manager in an engineering application type job, and I was traveling all over the country.

In fact, in that period, I was sent out to the West Coast, and I gave a series of lectures. They gave me a fancy title of “Associate Director of Research” or something, and I went up and down the West Coast, talking to technical societies, all the way from the atomic energy plant up at Hanford, Vancouver, Portland, Seattle—several around San Francisco. I saw this place in 1949 on the Stanford campus on a beautiful Sunday in January. My wife and two children, at that point, are back deep in the snow in Erie, and I’m out here. It’s lovely, and I thought, “What a lovely place to get a job.” So I ask around about the job, and they said, “Well, we’d love to have you, but we can’t afford you. If you want to pick grapes, fine. You get a job. If you want to raise vegetables, great, or if you’re already rich and you don’t have to work, this is a lovely place to live, but your kind of job doesn’t exist.” Nineteen forty-nine. Nobody mentioned Hewlett-Packard, and I think they were only a few million dollars in sales. It was six years before Bill Shockley had brought Shockley Semiconductor out here.

So I wasn’t badly paid, but a home phone call back east, where both of our families were, a typical phone call was about five percent of my month’s salary. So—and flying home for family was just prohibitive, so I forgot about it, and I didn’t really look into the West Coast again until the sixties, of course.

Meantime, your semiconductor revolution had taken off. So I was then—somebody referred me to a small company in Des Moines, Iowa, which was starting up—was already in a business, doing about a half-million dollars a year, and making about \$20,000 a year profit. And they brought me in as Director of Sales. They had an application for jet engines, and the jet engine business was just picking up, and I saw that as a dynamic growth area. And we had other—it was a fuel atomizing, or atomizing kind of business, and I went into that business at that time. And we built that company from 20, 25 people—we built it to the largest fuel-injection maker of jet engine nozzles in the world.

Hollar: And that was Whitney?

Morgenthaler: Pardon?

Hollar: Whitney?

Morgenthaler: No, no. J.H. Whitney is a venture firm. This was Delavan.

Hollar: Delavan. Okay.

Morgenthaler: Whitney had no connection with it. This is before Whitney. But Pratt & Whitney was one of the customers—unrelated names.

Hollar: And what did you learn about startups, young companies, at that point in all these experiences?

Morgenthaler: Oh, all the hazards, all the problems, all the—the first team failed because of fragmentation. The second team—the second company, after I'd been there a few months, I realized that when I got to the point of engineering and technology and looked at the competition, I found that our technology was really best suited to smaller boilers and smaller power plants, and we had no way of getting to the technology that was necessary to get the biggest jobs. And it had been a wonderful company for smaller applications. It was owned by two Germans that were very—they ran it quite well, but in a very conservative fashion, and I saw I just never was going to make a lot of money there. And then it did a merger after I was there a year or so that pretty well blocked the future. And I learned to look at all the aspects of companies, and I particularly learned to look at the growth possibilities in the industry sector.

I learned industry sectors are very different, and this is, I think, one of the minor things you observe about the younger venture capitalist out here, in they have spent their entire careers in the information technology sector, which has been a wonderful horse to ride for 60 years or so. I mean, since the late fifties, since it really got going, primarily out here and to some degree in Boston, and the people like Texas Instruments in Dallas, that took a license to Shockley's patents, that—those were tremendous economic drivers.

I've learned to—this and other applications, I have learned to look at what are the economic drivers. And a word that was just never used when I was in school—the concept was never thought of, was to look at, "Where are you on"—are you familiar with Clayton Christensen's work? "Where are you on the S-curve? Where *is* S?" That thought was—I fortunately had that concept by the time I started my business, of watching for the S-curve, but out here you've had a roaring, rising S-curve with a lot of little S-curves underneath it, some of them succeeding and failing. I mean, you went from core memories to semiconductor memories, things of that sort. You went to integrated circuits, you went to—and all those kinds of things. But—and opportunities have grown up under there, but the whole thing is going to—the whole information technology sector's, you know better than most people from your museum here, has just been one of the greatest economic opportunities the world's ever seen. There's been nothing like it in America, in my view, since the automobile. And again, what the automobile enabled, if you go back—

I have a way of thinking. Much of this has been developed in later years. But if you look back over history, one of the ways I think about things are that—if you want to know what's going to happen, think to yourself, "How would I advise a bright 18-year-old to put to start their career today?" And look at various—what advice you would've given at various times in history. If you look back to 1700, and you have a bright 18-year-old, and positions are pretty fixed, all the land is owned, all the forests are owned,

all the game is owned, everything, and society has a very [orchestrated?]-type activity, what do you tell the young person? Go to America; that's where the opportunity is. And later on, then you heard, "Go west; that's where the opportunity is." If—skip over a lot of things and go to 1820. What do you tell a young person? "Go in the canal business," because every little town along the canal is going to suddenly get a shot of business when the Erie Canal comes through. The Midwest is going to become a place that can ship wheat to New York, because the cost is going from \$120 a ton before the Erie Canal to ship a ton of wheat to New York—prohibitive—to \$6 a ton, where you can ship it down there, get it on ocean freight. I mean, get it on ocean transport. Then 1840, railroads. You're an idiot not to join a railroad. Then 1860—and I may be careless with the numbers, because I haven't researched them, but around that time, the telegraph. Then 1880, the telephone. Then 1900 or so, you got to be an absolute idiot not to go in the automobile business, with—and what's wrong with the rustbelt today—and they've heard so much nonsense about it—what's wrong with it is they had a glorious economic driver for 60 years, and they rode it for 100.

About 45 years ago, I sold my General Motors stock. So my adviser had put some General Motors in my account, and I looked at it, and he had discretion, and so it was there before I knew he was buying it. I said—called him up and said, "What the hell is this stock doing in my account?" "Well, General Motors—heart of America. It's just un-American not to own General Motors. Pays a \$5 dividend like a bond, or something. Every American should own it." I said, "Garbage! They've got a 58 percent market share." The first company I was president of, I had a director who'd been Assistant Attorney General in charge of antitrust, and he gave me a lot of free lectures on antitrust. "They get any more, they're going to be in trouble with the Justice Department. And they've—I sell to them. I'll tell you how arrogant they are. I'll tell you they won't listen to advice on things we know more about than they do. Their unions are situations that're terrible. They'll never—just everything is just going wrong. This is a peak for them." "You—well, you're crazy. That's un-American." I said, "Get it out." Stock's never done better. I mean, it—they've been slowly—and where I was wrong was it took longer to go down. <laughs> And where do we end up? General Motors broke.

Hollar: Bankrupt.

Morgenthauer: Mm-hmm.

Hollar: We've skipped way ahead. I want to come back a bit if I can, back to Delavan. And after you've finished that—I know that was a very successful period for you, but—

Morgenthauer: It was.

Hollar: What kept moving you? What were you looking for?

Morgenthaler: One of the things that I always lacked before venture capital was a feeling that I was where the great opportunity was. We had that with a huge opportunity at Delavan, because we found—one of the things I always look for in a business is a comparative advantage, and we've—I've—Delavan made—it had—its basic technology was atomizing technique, and we had a few engineers, but they were quite good at that, and I was well trained in engineering, so it was easy to grasp the concept. And it was clear that the jet engine business was going to be very large, and one of the things I dearly loved about it was that I thought of aircraft engines as “nozzle eaters.” If you sell an aircraft engine frame, or structure, it lasts for thousands of hours, but a nozzle burns out in 1,000 hours, or 2,000 hours at the most, so they're just sitting there eating your product and needing replacements. They were very, very precise pieces, and at first we were making them under magnifiers, using Des Moines farmwomen, polishing them with rouge powder and toothpicks. Well, <coughs> I said, <coughs> “This is ridiculously archaic. Surely there is a way to automate this.”

Well, we had some bright, good manufacturing people, some of whom had never been to college, even, but they were quite good, and they kept hunting for ways to automate it. We sent them to Switzerland, and they bought Swiss automatic screw machines and watchmaking machines, and all kinds of things. And they came back and said, “Dave, there *is* no way to automate this. We're going to have to do it. We're going to have to continue to do this polishing under magnifiers.” I said, “Are we absolutely sure we've exhausted everything else? We're competing against a couple of machine tool companies—Ex-Cell-O in Detroit, and Parker Hannifin in Cleveland”—or Parker, then, Appliance in Cleveland—“and the diesel division of General Motors—these people.” They said, “Absolutely.” I said, “Are you certain these people can't find a way to automate that?” “Absolutely not.” I said, “Well, then we have a comparative advantage, and we are going to kill them.” “Why?” “Because we can do this job. We're all going to have to take a \$500 capital installation,” where I was expecting somebody would be using a \$100,000 of that day, which is close to a million dollars of today, machine tool. I thought we'd have to have a million-dollar machine tool. We have a \$500 installation and a little magnifier, and a Des Moines farmwoman polishing this under a magnifier. It was just little crocheting skills. I said, “Detroit and Cleveland are going to have to compete against that, with UAW workers? We will kill them.” And, oh, we did. <laughs> We just—they could not understand. They didn't figure out the differences. But we had—we dominated four out of five of the Century Series of engines. We became the preferred supplier. We were just limited by capacity.

And the company was very successful, and I got on very well there, and once or twice I got some credit because one thing that a Pratt & Whitney would do was shut you down for a few months if they delayed an engine or something, so you had to go out and get contract work, and I did that, and they were quite grateful. They told me I was going to be the next president of the company. And then Whitney came along—J.H. Whitney—in 1950. They'd run across me through MIT's placement office, and offered me a job with the company in 1950. I was very interested in them. I had an MIT contemporary who was a young partner at Whitney, and he tried to recruit me. I was interested in them, but not in the company, and I turned it down. And then they came back about every two years for the next seven years, and they—I finally told them, I said, “I don't think you guys think very much of me.” They said, “What do you mean? We keep offering you jobs.” <laughs> And I said, “Well, yes, but you offer me these dogs of

companies.” And they said, “You know, we have had trouble with every company you turned down. <laughs> Maybe you *do* know something.”

So they came along in 1957 and said, “We have an international company that we think you won’t turn down.” And several things conspired at that point. I was sort of ready to be president. The company said I would be their next president, but they had a 45-year-old, 47-year-old guy that was perfectly satisfactory and a good guy, and I was 37, and I was very interested in the international business—was very interested—and I had done about all that we could do there. I had stock in the company, and that’s another story of—but I won’t go into. But I had—we didn’t get options. I had borrowed money, and had persuaded the bank to give me more money than I expected them to give me, <laughs> so my money was pretty tight around the house until I got a raise and some bonuses. But any rate, so I left and took the job with J.H. Whitney, running originally the American licensing of the British company. It was a very small company at the time, but they were very internationally minded. It was founded by a couple of Jewish refugees from Germany, and they had the experience of being driven out of various countries, and, you know, the “wandering Jew” way of thinking, and so they were very eager to get a little operation going in a lot of countries, so they had money in a lot of countries.

They were—the boss had been driven out of—the founder—had been driven out of Germany in 1933, and had taken many years to build up to—they’re still a very tiny company. And I was asked to run the American company, and did; ran that for six years. It did very extremely well. And then they had originally promised us we could go public in America, but they came back and said a better idea is to merge with the parent in England and let us take a multinational public under the London Exchange, and get more involved with us. And so we thought about that, and it was the only obvious route to liquidity. They had 51 percent, so we couldn’t go public, and it made a much more attractive offering the way we did. And it had another wonderful feature to it, which was that it was owned primarily by British financial institutions who reported in pound sterling, paid dividends in pound sterling. The company reported in pound sterling, paid dividends in pound sterling, but the company collected revenue in about 75 different currencies. So—and the British pound was a controlled currency, very overvalued at that point, and everybody knew it. But the British Treasury was holding the value at \$5 to the Pound, and this was way too high, and we knew devaluation was coming. But our company—but if you were a British financial institution and you had huge amount of money, but if you wanted to convert it from pounds to dollars, you (a) had to get Treasury permission, and (b) you had to pay a huge premium for doing it. But if you bought our stock, it was an automatic hedge. So that, and the fact the British were pretty good managers—unlike many, they were good—and so we were very successful, and the stock was a very successful offering, and Whitney said at the time that we were their best cash-on-cash return they’d ever had at that time, partly because, in my opinion, they were very chary with using any cash. <laughs> They used almost nothing, so I could have nearly an infinite return on it. Whitney was marvelous at selling their reputation and mystique.

Hollar: This was your first time to be a president, so how did you like it? Was it everything you’d hoped it would be?

Morgenthaler: Loved it. I worked out very well as a president. I was never ecstatic about metallurgical chemicals. It was, as one of my directors described, it was kind of a grubby business, and Gary [Morgenthaler] worked there at the plant one summer, and he found it—but we—my wife was quite insistent and particular that my sons get an experience, and the first two did, working in the plant. But what—I loved the international aspect, and we ended up—we had 57 corporations. We manufactured in 22 countries. We sold in about 75 countries. We were a very sophisticated operation. We had Swiss-base licensing companies and Swiss-base holding companies. We were sophisticated enough to know which county in Switzerland was better for what kind of company. I mean, we were into that depth of international. We knew not only to *put* it in Switzerland, we knew *where* to put it in Switzerland, for we had better laws, effectively, in one county than in another.

After—when the merger came, the British, instead of replacing me, asked me to become chairman for North America, and run all the companies they had over here, which included the Mexican company, the Canadian company, another company I had bought for them, and I bought a company very advantageously for them. I became chairman of America and chairman for Canada. Went down there and found that we had sent an Englishman to Mexico, and the Englishman went down there and was told you had to bribe to do business in Mexico, so I think everybody who put their hand out to shake hands with him, he put money in it. <laughs> So I had to clean up a bribery situation in Mexico, which I did with the Mexican president, and we straightened it out, got an honest operation, and made it all very successful.

And I ran North America, went on the parent board, and started the shuttle to London that American companies that are controlled do, and, well, we had gone from a little, low-grade company in Birmingham headquartered, to where we had—we bought and were—our London headquarters was practically in the palace grounds. It was 36 Queen Anne's Gate, one of the streets leading up to the palace. It was the old Esso European headquarters, as such—gorgeous gardens, Henry Moore statuary in the garden. We were living the high life, there's no doubt about it, and that was just fine. But then I ran that for five years or so, and partly I was getting tired of it, partly I was—I mean, I'd done the same thing. Partly, I saw changes coming in the steel industry that threatened some of our best products. I mean, the steel technology was changing.

Hollar: This was in the late sixties?

Morgenthaler: This was in—yes. This was—it reached a head in about '67. Whitney sold out in '67 with this very high return of a very small amount of cash, and I thought they were going too soon and told them so, and I stayed another year. The stock doubled again. And I didn't sell at the top, but I sold when I left. And I had gotten—I'd become chairman of a—I mean, I'd become a director of an electronics company on the side from friends. I'd been very active in the Young Presidents' Organization, and I did every top job in that except president, and they asked me about it, and my board would not have let me take that job on, and they were right, and—but I will say later, after I started my own business, I was

invited into the honorary organization of the Young Presidents', which is called the Chief Executives, which takes about one out of five YPO graduates, and I was subsequently asked to be and became president of it, so I would—but I had been Senior Vice President International for YPO, and I'd been National Membership Chairman, and I'd been National Secretary, I think, and it was all those kind of jobs. I'd been Chapter Chairman, and I did some integrating of the organization.

But having said that, what happened was Whitney sold out, very happy, and I stayed on and watched my stock double again, and it was very high. And I wanted to grow by acquisition, and the British in '67 had agreed to that, but the—because I felt that technological changes were menacing some of our products, and the high growth rate we'd been on had to slow down. The—I felt we were—we weren't going to hell, or anything of that kind, but the S-curve was topping out, and they didn't have new products coming. The future of some products worried me, the nature of some others worried me, and I wanted—and I just was ready to do acquisitions, to grow by something else. The British originally agreed to do that, and I was actually looking for offices and to set up a separate operation and spend my time acquiring, and hire another president end to run the American company. And then the conglomeration boom of the mid-sixties collapsed, and particularly Litton Industries went to hell. You may remember when—

Hollar: I remember.

Morgenthaler: And they were very sensitive to that around Cleveland, because they came into town and bought Stouffer, buying Stouffer's company with their stock at about 125, and bought Vernon out completely. And Litton—and soon thereafter, quite soon, almost months thereafter, stock was down around 10. I talked with one of his in-laws the other day, and—just recently—and he said some of that stock went into Vernon's estate at \$3 a share. That's tragic. And he'd sold out at 125. Well, the British—the investment bankers told the British that the conglomeration boom—and this was the Chinese money era, when the big companies were buying because their stock was trading at 15; they'd find a private company who, if the owner wanted to sell a private company, he couldn't get more than seven or eight times earnings, and his buyers were limited.

So they could go in and offer him ten times his earnings in their stock, add his earnings to theirs, and, through accretion, it immediately marked them up so they'd get a jump in earnings every time to fit up with their growth. And that went on, and the stock got to be known as "Chinese money," back when Chinese money wasn't as good as it is now. <laughs> And the—so the British had never liked my idea. They were mostly doing it to keep me. But they finally said they wouldn't do it, and I said—well, I had said before I had no further interest in the group if they wouldn't let me do that, so that's when I sold out.

Hollar: I see. And were you aware as you were doing that, that this whole industry called "venture investing" was beginning to get started? Was it in your mind, that you wanted to take your money and begin with that?

Morgenthaler: Well, I was imminently familiar with venture investing because I'd been close to Whitney since 1950, and this was 1968, and I'd run a company for Whitney, and with them on my board. And when they sold out, even, they didn't get off the board, from '57 to '68, so I was—and I knew the Whitney situation. I mean, I played bridge with Jock Whitney, that kind of thing, on occasion. But—and I'm imminently close to their people, and heard a lot of the inside characteristics of venture capital. And this, of course, was '57 to '59. When I went to Facica [ph?] was just about the time your angel investing was starting out here. There's an article I have out of something like *Time* or *Fortune*, maybe, or something, talking about "The Group," or "The Bunch"—whatever they called them—and it was Reid Dennis and John Bryan and Bill... what's his name?

Hollar: Bill Draper.

Morgenthaler: Well, Bill came a little later, I think. This was—these people were doing something else, but they were meeting for lunch. And Reid tells a story—

Hollar: In downtown San Francisco.

Morgenthaler: Yeah. And, well, Reid was with the Fireman's Fund at the time, and—but Reid had—he told me he had something like \$20,000 left over from his college fund that his grandmother'd given him, and he stuck that into Ampex and made some money, and got off as an angel investor on the side. And these guys would meet for lunch and hear a pitch from an entrepreneur, and go out on a sidewalk afterwards and decide among them how they'd—if they were interested and if they'd piece up the investment. And they'd do—that got started out here in the late fifties. Whitney had been going since '45. Jock came home and started it, and American Research started in Boston within months of that, unclear—the whole thing happened—both were doing it within three or four months of each other. Whitney was late '45, I know.

Hollar: So, this was well established at that point. And I'm thinking more about you, personally, or the fact that an individual, which is how all funds start, but I'm just thinking about you as an individual deciding at that point that you were going to begin venture investing as the next phase.

Morgenthaler: Well, let me explain a little of my thinking on that. I had always had the feeling that I was interested in the bigger picture, and every industry sector that you get into confines you to that sector. And you develop more or less expertise—you develop more and more expertise, you know more and more about less and less, in a way. And I had felt that the industry sectors—nobody used the words like that, but I had picked the power plant sector primarily because I happened to be very good in thermodynamics in college, in particular. And I had a better than average professor who had a good deal of practical industrial experience. And my machine design professors were rather less attractive people. And machine design in those days had a lot of drudgery in it because we didn't have computers. We

didn't have electronic calculators. And so, you were doing a lot of things that were cumbersome and time consuming. And it just never thrilled me quite as much. And I like the math of thermodynamics, and the concept. And for some reason, mechanical engineers seem to kind of divide into two categories, those that concepts like entropy and enthalpy and things of that sort appeal to, and those that don't like that, but they like a practical machine design. And they'd rather design gear trains than they would evaporating boilers and things like that. Well, I liked the math. I like the enthalpy and entropy. And I got on very well with it.

So, I was interested in thermodynamics, but in those days that was—and still is. I mean that really was a mature industry, comparatively speaking, in that the way we made turbines—well, I haven't been involved in turbines for a long time, but they aren't that different today. And the calculations I did in graduate school in turbine blade design probably they'd be done by machine today by CAD machines. But probably they're done just about the same way. Well, information technology didn't exist. And so, that was a relatively mature industry. And boilers, they've been—but it's been sustaining research in boilers for fifty years, probably, or more.

And so, I was always concerned that I wanted to be at the edge of the new. I didn't want to be so new that you had too high a risk of failure.

I share the discovery that's been made about entrepreneurs, which is that the best entrepreneurs really are moderate risk takers. They're not shoot the moon. You occasionally get a guy that will shoot the moon, but generally speaking, the good ones calculate their risk pretty carefully. And they—I want a very good risk reward ratio. If I take a big risk, I want a really big payoff if I win. And so, and I have never really liked—I certainly didn't want to stay in the—I found, going back to it, I really didn't want to stay in the power plant field, or power generation field. I had briefly thought after the atomic bomb was dropped in 1945—I thought, God that obsoletes everything I know about power generation because even my wrist watch, if you read the Dick Tracy comics, even that's going to be powered atomically. I maybe need to go back to school and learn about this. Fortunately, I didn't because atomic energy has been a waste of most people's career. And, God knows there's no future in building dry weather fields in Africa and Italy. And I—civil engineering never appealed to me very much. If I'd been smarter, I probably would have gone into that and built shopping centers. One of my friends in Cleveland was one of the owners of the Cleveland Indians. And they built shopping centers and built hundreds of millions of dollars—was a fortune. Well, I easily knew enough coming out of the Army to build shopping centers, but it didn't appeal at all. Again, as I said it earlier, you got a little—you wanted a technically appealing thing. And I just didn't find information technology. And I didn't have any training the electrical end of it. And, of course, all of our training had been with electricity of electric motors and power generators—electric generators, moderate amount of electrical transmission, and vacuum tubes. And semiconductor had not existed. Transistors didn't exist when I was in school.

So, I wanted—and I'd always felt what I really wanted to do was set up shop at—my metaphor was set up shop at the crossroads of the world where all of these opportunities pass you by because I felt when you're in the porcelain enameling business and there's so many things you can't do, this is a confining place. And the power plant place, you weren't going to go out and start another boiler company. There was no obvious technology you could bring into it. The jet engine business we had milked thoroughly. I would not have remotely—Delavan would have been hopeless competition to start a company against. And today, fifty years later, the same people are still leading in the industry. And metallurgical chemicals, I think the British feared when I left I might compete with them, I wouldn't dream of it. I thought that field was very over the hill.

But venture capital offered me the opportunity. It really was setting up your shop by this side of the world. And where countless opportunities pass you by. And that emotionally appeals to me, constantly, immensely. And I have—just the other day one of my investment advisors said that one of the reasons that he liked to work with me was that I have such a curiosity about new things, that I was—at my age I should be 92 percent in bonds. And I don't own a bond. And I was driving him into a more elaborate, sophisticated investment technique than he was used to using. And he's 30 years younger than I am. But, I said all right, let's put a small amount of money in there and experiment in that area. So this gave me an opportunity to indulge my curiosity, to look at new things.

And right now, in the venture industry, in my opinion—again, and I'm not hearing anybody else say this, but in my opinion, one of the problems we have is that the new, new thing hasn't appeared. We are well up the curve of what is done with information technology. And I'll get a good deal of argument from people like our IT team, and Gary, and others because they feel that there's huge opportunity left. We're not down—Moore's Law hasn't hit its asymptote. And we are—but now, to some degree, you can make a point that all these social media advertising and so on is a certain amount of froth on the surface of things. But let's put it out there, this is a world that will buy a certain amount of froth. The hula-hoop doesn't make a hell of a lot of sense, but they sold a lot of them. Facebook and a lot of this exchanging of information with people don't make a lot of sense, but it sells. And I've learned since—long since don't use myself as a market test. I'm a very poor judge because the fact that I want it or don't want it doesn't mean that many others are going to want it.

So the important question as a marketer, and I've been one most of my career, is do they want it? Go out there and find out, are they going to buy it? And the—it's been somewhat unbelievable to our generation that people will spend time emailing all their friends in one form saying I feel like sushi for dinner, what do you feel like. With all courtesy, I like you very much, but I don't give a damn what you want for dinner, unless I'm going to order it for you. I don't care. I don't want you to tell me you want sushi for dinner. I don't want to waste my time reading that email. But, so you wonder whether—how far are we up on that curve.

And another thought I've always had about venture capital, as a way of looking at it—you have technologies that are looking for a market. You have markets that are looking for a technology. What, for instance, what can you do with a cure for cancer. If you had a cure for cancer, you've got a staggering market. If you got a cure of a whole series of other—those are markets waiting for a technology. Today you take nano-tech, what have you got? You've got a technology. We know a number of ways to make very small particles, we just don't know anybody that wants to buy a lot of them, at this point—to buy tons of them. And we've seen a good deal of money wasted. We wasted a bit ourselves in trying to take a reasonable technology, and we're hunting desperately for somebody who wants a lot of it. We have an interesting new idea at this point that may make us successful on our ability to make small particles and blend. We'll see. It relates to fuel.

Hollar: Can you talk, now, a little bit about how you made that transition from the first investments you made, not being involved in information technology much, to the follow on investments you made, to establishing an office out here, and then really getting involved in technology? Can you just talk about that migration?

Morgenthaler: Yes. As I said, when I, basically, in a way I left Foseco, as I indicated because they wouldn't let me do what I thought was indicated, and what I wanted to do. And had they let me do so, I might have finished my career there because I would have gone in and bought companies for them. Now, this a part of what we do today. We have—part of our activity is what you would call private equity, rather than early stage venture capital. We buy companies. And, but we didn't start there.

One of the things I considered when I left Foseco, and I had the first substantial amount of liquid capital that I'd had—and I started my business, as I think you're aware, with my own capital entirely. I used no outside capital. I didn't raise any money. I borrowed money, at times, but it was never 90 percent or anything of that kind. And I didn't raise money. I wasn't used to raising money from institutions. And I didn't—I was, frankly, at 48 I was sort of tired of having a boss. And my British stockholders had been bosses at the board level. I never had any difficulty getting on with the board. I'm not a guy that has a problem when dealing with authority, but when you have many—when you're disagreeing with policy on people, and you think you're right, you get an urge to run your own show. And at 48, if I was going to—so, I was looking around.

And while I was looking and deciding, I'd made two or three angel type investments already when I started. And one of the original investment banks heard that I was starting out, and they had a kind of experience with inviting executives in residence. So they immediately contacted me, and asked if I'd like to come in and live inside the bank—the investment bank, for a while. And I did that, started my business out of the investment bank. They didn't—weren't primarily seeking me as a partner, they were looking me as a guy who would start or buy companies and let them coinvest. And I went in on that basis. I didn't become a partner in their firm. I didn't want to. And those were partnerships where you opened up your net worth. And they were a regional bank, and not—nothing that exciting. But it was a convenient place

and quite an education for me because most people have not lived inside an investment bank. And I— one of the traders offices was right outside my office. And so, I often would go and lean over his shoulder as he traded. Once in awhile, I'd have him trade my stock. And I would watch that. And I had myself an education program there every day, if I didn't have a business date, I'd invite one of their people to lunch. I bought a lot of lunches. I've took traders to lunch. I took syndicate managers to lunch. I took account executives to lunch. If things were desperate, I'd even take a broker to lunch and talked about the investment banking from the inside.

And I had a lot of fun with—later I became a limited partner in Hambrecht and Quist. And when I —used to—was on a couple of boards with Bill Hambrecht, and Bill and I formed a close affiliation. And they offered me a general partnership or a limited partnership, or anything I wanted to join their firm. But they were only expecting a limited partnership. And I—because I didn't—in those days, you'd open your net worth up. And they looked riskier than I did. But at any rate, Bill—occasionally I'd be representing a company in a negotiation, usually. And we were all on the board. Bill and Tommy Unterberg, and they'd give me some of this investment banker standard line. And I would come through with a piercing remark in regard to it. Bill would say, "How do you know that? I forgot you lived with an investment bank. I forgot that."

And you learn how different a transactional mentality is. And I was living there as we evolved from the relationship investment banking toward the transactional investment banking that's being done today. I'm just coincidentally currently reading book about Goldman Sachs and John Weinberg, whom I got to know socially, extensively in the later part of his life and my career. He just died several years ago. But I know he and his wife take the cottage next to us at the Leifert Key Club. So we socialized a good deal when we were down there, and see each other—saw each other in New York, occasionally. Weinberg was sort of the last of the old honest to God high ethical relational investment bankers. And I was—I got a good deal of that early tradition and watched it evolve into translational. So, I have had the advantage of a little better understanding of investment banks that many people in the business have who've never been in one because it's—to an operating guy, it's a different world.

Hollar: And what were the first investments you made? What were the first important investments when you first started up?

Morgenthauer: One of the first—well, I made a—as I told Gary the other day, I tend to forget the investments I lose money on. I forget their names. But, I don't stay up nights brooding about them.

The first really significant one I made that really worked out very nicely, was a company called Manufacturing Data Systems in Ann Arbor, Michigan, which was essentially a time shared computer application for manufacturing operations. It was the programming of numerically controlled machine tools. There as a niche in time where machine tool makers made the controls for their machines and provided a programming language. And they would program their machines, but not others. And then they got into

computer assistance of this, and a couple of the time sharing companies provided the assistance. And people in Ann Arbor, spinning out of the University of Michigan—a time sharing company spun out of that. And it, in turn, was quite creative at throwing off a half dozen companies. And one of the ideas, the business concepts, that it turned out was this computer programming for numerically controlled machine tools. And I knew a good deal about machine shops from my Delavan and Northern Equipment days, in particular. And was intimately familiar with how you ran them and how they thought. And I found, as I looked at this, that General Electric was offering up a big program to program numerically controlled machine tools, but it was designed by mathematicians. It was cumbersome and elaborate. You could do far more things than the average machine shop wanted or needed, but it was troublesome. And the machine tool makers would program their own machines but not others, which was a terrible mistake.

These people in Ann Arbor had come up with quite a simplified version that with modifications would apply to a lot of machines. And they were going out to sell this service. And the company had a concept that troubled me, which was they thought they'd go out and sell to machine shops and get each shop to pay for the programming necessary to tailor it for them. I'd been in the machine shop, and I didn't think in smaller shops that would sell. And it didn't. But so, I invested in this. And, in the beginning, and we got one or two other individual investors to invest in it, but I was the largest stockholder.

And in those happy days, I had only a small 10 percent partner. I didn't have any limited partners. I did it with my money. And we had—the concept failed. And we had to raise some more money. The management listened to their lawyer a bit too much, and I offered them a proposition. They thought they could do better. They went out and looked and found they couldn't, and were giving up or going out of business. So, I went out and raised them some more money from several of my sources. And we built them up, and we got it—it was down to the last 50 thousand dollars when it turned cash flow positive. And it went on. It was quite successful by '74 and '75. I'd invested in '69. And in August of '75, I decided it was time we could take it public. And I called Bill Hambrecht. And Bill said, in essence—that was at the tail end of the recession in '75, you're out of your mind. I said well come in and have a look. So Bill met me at the airport in Detroit. And I remember sitting in the garden of the motel with him talking the night before. He was just doing me a favor to be there. He—no faith. I took him in the next day, and the company made its pitch to him. He sat there for three or four hours, and I watched his face. By God, we can take this public. So, he got Tommy Unterberg with Unterberg, Towbin —two of them in there.

And we took the company public in February of '76. And it was really the first significant offering of the turn around. We came out of the recession. And the company—we had figured initial weigh in between what the other people were doing. And I had figured out, if they let us alone long enough to get out specialized software written and paid for, then we were going to be almost un—they could almost do nothing to get us out because we changed our business model from making them pay for the software to where we would pay for it. And we'd let them sign up for very short-term leases. They could do month to month, but we were habit-forming. Once they got us in, it was just too easy to keep paying us. And it was so hard to throw us out and get somebody else to program it.

And we had all kinds of things. McKinsey came in and wanted to do a study. And they sent one of their bright young men in. and they wanted—they said, “Oh you’re using a second generation computer. You should use a third generation computer.” Well, we were using second generation computers, true. But on the particular function they were doing, they were about as good as third generation were. And the time—two time sharing companies had a lot of these 928 computers that I recall, SDS computers, that were perfect for this application, miserable for a number of others. And the only thing wrong with them was they could only handle about a dozen people at a time. But there was a lot of them. And they—so they provided the communications network. We bought computer time at \$6.00 at the half an hour. And we found that the guys weren’t very sensitive to the hourly charge. We sold it for \$65.00 an hour. So, with this huge mark up, why—the company became very successful.

And we—our program—we made sure training a lot people in the industry. And the industry got where our program was called Compact II. And you just find an ad: “Wanted: Compact II programmer.” These people were—and we just dominated the field completely. And we eventually were operating in 12 countries. As I think we had timesharing all over the world, very successful. Then, we got too successful for the big companies, and they demanded that we sell the machines and software so they could do it for themselves. And we saw controls coming where this could be on the machines as it’s done more today. That worried me. And also I found that we had kind of outgrown our management. They had gotten a bit—they were running brilliantly on their own, but they—I told the president that he was like a foreign car with six gear speeds in it. But his problem was, the four in the middle were missing. He had the strongest low gear I ever saw because he could do anything. But if he wasn’t doing it himself, he went all the way over to overdrive. There was just nothing where you controlled a program and stayed on top of it, but didn’t have to carry it out yourself. And he was getting to the point where he was taking a month for his managers to get in to see him, which is ridiculous in any company, but particularly in a smaller company. The stock did very well. It was trading up.

And our partners in the investment banking firm had coninvested with us and paid—not partners, but the people that I was living with. They had coinvested and paid me a fee. They let me use their fund like a fund. So, I had a coinvestor and we got paid for it. They were eager, screaming to sell because the highest price they’d paid was a dollar and eleven cents a share. The stock was trading—went public at six. The stock was trading then at thirty. They were screaming to sell, a lot of them were, investment bankers and brokers. That kind of profit, they’d just never seen. I wouldn’t let them sell. Held them out, and I hunted around, heard through Whitney that Schlumberger one of the Whitney partners was on the Schlumberger board. Schlumberger wanted—was interested in the field. Jean Rebeau, the then chairman, wanted to diversify into electronics, not his greatest idea. But he wanted to do that. And he’d gotten interested in one of the Whitney companies, but he didn’t like the president. And Whitney—the Whitney company and our company fitted.

And so I got together with the Whitney people. And we made a deal to merge the companies, but then we couldn’t get the presidents to accept it. Ours was much senior and wanted to run it for a while. And the Whitney president wouldn’t accept that, so that deal fell apart. Well, I walked out of the Whitney office and

walked over to Lazard, and said, “You have Felix Riordan on the board of Schlumberger. Can you represent us?” And we got Hambrecht and Quist to introduce us to Lazard. “Can you represent us and sell this to Lazard?” Well, an investment banker will find any way in the world that brings a commission. He’ll resolve the conflict. So, to my non-surprise, Felix said absolutely. So, he went and sold Lazard and JH, and Hambrecht and Quist, but mostly Lazard—sold the company to Schlumberger. We got paid in Schlumberger stock at about 64 dollars a share. My original cost on the stock had been 22 cents. And it was liquid in 30 days. And Schlumberger stock went up after we had—So, we sold out to Schlumberger. And then Schlumberger—the president—our president persuaded them to go back and buy the other company. And then, Rebeau had fallen in love with him. Our president was a nut on planes. But he didn’t understand the French. And unfortunately, Rebeau had him picked for a big job, and he didn’t have the patience to wait for it. So he went off on his own. That was 22 cents—and the highest I ever paid for any of his stock was about a dollar, and selling it at 64 into Schlumberger stock. I still have a fair amount of their stock.

Hollar: So with that anecdote, right there, about that investment, can I ask you a couple of questions about your philosophy? I saw a piece of film, recently, where a series of venture investors were lined up. They were interviews just like this. And the one question they were asked was, is it the person? Or is it the idea? And they went down the line and answered. And all these clips were cut together. And the string of clips was, oh the person. No, it’s the idea. No, it’s the person. No, it’s the idea. And it was clear that from all of these investors, there was not consensus on whether the best thing to invest in is the person or the idea. Do you have a philosophy about that?

Morgenthaler: Absolutely. It’s—this is something I’ve thought through very carefully. And the—because I found when I started the business in Cleveland, and was talking to people about it, and they would come and pitch something to me, and I turn it down, they’d say, “Oh, you only invest in star performers like Bob Noyce,” or somebody of that sort. Or others would say, “Oh, you only invest in a huge market.” Or, “You only invest in a really state of the art patented technology.”

And I said wrong, absolutely wrong. I want all three. Venture investing is like a stool, a three legged stool. And take a look at the metaphor I use regularly. And I use—I’ve taught this extensively around the Midwest. Let’s say you have a superb technology. Let’s say it addresses a big market. Let’s say you have a lousy management. You’ve got a strong leg for the technology. You’ve got a strong leg for the market. You’ve got a weak leg for the management. What does a three legged stool with a weak leg do? It collapses you put some load on it.

Let’s say you’ve got a wonderful management, but you’ve got a lousy technology, and they can’t find another one. You’re into really what my second company at Northern Equipment was. It had a technology suited only for certain applications. And there just was no way to get that technology from here to there. Or, let’s say today you was one of our recently failed companies. You’ve got this wonderful nano-tech technology. We can do all these kinds of things. We just can’t get anybody to buy it. If you don’t have the

three, or use the other horse race metaphor that I like, which is the concept is the horse, the technology is usually. I mean McDonald's is a non-technical concept. Or any commercial good, the Gap was a non-technology concept. You have a concept there, a good one or a bad one, but you're riding that concept. And if you can't get out of it or find another one, you're a prisoner of it.

Let's say you address a small market. That is running your horse at the county fair. And let's say you have a good jockey. If you have a wonderful jockey and a wonderful horse, and you run him at the county fair, small market, you win easily. But the prize is 50 bucks. That's a small market problem. Let's say you're running in the Kentucky Derby, and you've got a moderately good horse, you haven't the chance of—which is you've got a mediocre technology. You haven't a chance in hell. Or let's say you've got a wonderful technology, and you're in a big, big market, but you've got a weak entrepreneur. He falls off the horse.

I did an analysis in—many years ago, in our information technology companies, of our disappointments, of one's that had not performed too well. And I found, to my amazement, only about 10 percent of our disappointments came from the technology not doing what we thought it would do. This is in the IT sector. I was surprised we were that good. I didn't really expect it. But we got a lot of consulting help on this. We talk to people that really know. And if you have a competent—good technology, and a competent team, they would usually execute, 10 percent of the failures. About 30 percent of the time, something will happen to the market that you didn't or couldn't anticipate. A competitor—you're going to do a subscription model company. And the competitor comes out, gives it away for free and sells it on advertising. That blows up your concept, and maybe you can't be economical. The market changed on you, or something else happens. What happened with Foseco, my metallurgical company, the steel mill changed. Nothing went wrong with our product, they just didn't need it anymore because they changed the way they were making steel. So, something happens to the market that wasn't your fault or you couldn't see, or just plain otherwise. But when I got—that was about 30 percent in the IT area.

But the rest of it was the entrepreneur just fell off the horse. The jockey just fell off the horse. The technology worked as expected, the market was as expected, the guys just didn't execute. Either of various mistakes that might make it. They spend too much. They expand too soon. They build a sales force before it's ready. They fail to follow the industry trends. Something that with a better management, you tell yourself, would have avoided that mistake. And that was about 60 percent of our failures.

Hollar: So, let me ask you the second question, then because it follows right on what you just said. In taking a lot of these oral histories of venture investors, my observation has been that the first generation investors, let's say '50s, '60s, '70s, and the second generation, '80s, maybe right up to the early '90s, just before the Internet explosion, were hands on investors. They simply didn't just put their money in. They go in there with the companies and really helped build those companies and were more hands on. Today you find all sorts of approaches. It seems to me there are fewer hands on investors than there were when you were first starting out and building Morgenthaler. Was that your approach? Were you really hands on

with the entrepreneurs, the companies, the boards, and really helping to think their business models, and make changes, and even change the entrepreneur if he fell off the horse?

Morgenthaler: Oh yeah, absolutely. I mean to me that was absolutely paramount. That was a big part of the value-add.

We didn't hesitate to take a strong point of view, and then to replace the management, and to face down the management.

My star company that I was telling you about in the beginning there, one day the management was trying to promote—we were quite successful by that time, and the management was trying to promote really pretty outrageous increases in salaries. And I said well we'll bring in—I was the chairman and the largest stockholder. I said we'll bring in a consultant. And we brought in Towers Perrin. And they brought in a sensible set of recommendations, more or less industry standard. And the president didn't like that. He was full of how successful they were. And said the—without my permission as chairman, he went and got another consultant. And I would have expected to be consulted on bringing that kind of policy thing, and something I knew a good deal more about than he did. And he brought another consultant in. And a tame one, being paid for it, this guy came in with an outrageous recommendation of what we should pay, which is what the president wanted to hear. And I said absolutely not. I said I'm already getting complaints from the investment bankers and the analysts on our stock. We were public. The analysts are coming in here and looking around the parking lot. And this is Michigan. And nevertheless, they're seeing a good many Mercedes and Porches, and companies of that kind. And they're already commenting about the way our managers are spending here.

And this guy said, "You mean you'd pay attention to what the analysts say on a thing like that—on your compensation?" I said you're damn right I would. I'm concerned about what the stock sells for. I'm vitally concerned about the analysts. And we're not going to pay this ridiculous price. So, the president came back to me and said, "Well, if you won't pay this, you just may not have a management team." And I said well, Bill—and his name wasn't Bill. I said well, Bill. I've found as companies grow, there comes a time you outgrow a management team. And maybe this incident is illustrating to us that we have just outgrown the management team we've got. And that's the last I ever heard of the subject. We accepted the Towers Perrin and the end of it. The chief financial officer told me later, can he do that? The CFO says, "He's got the votes. He can do it." And I would do it. And I'd have fired him because I mean it was—he had—it as more than just this. It was—he was getting to be the village squire. He wanted to be on this board, that board, the other board. And he'd go out to—I mean he wanted to spread himself very thin. He had to have a company plane.

And I used an incident there that I've always—management technique that's always kind of amusing, but it worked. And the point about the company place was, it was flying all too often to Bermuda and the Bahamas. And you're surprised how few machine shops there are in Bermuda and Bahamas, and so on.

So, it was too much of the good thing. But he was a plane nut—I mean P-L-A-N-E, plane nut, just couldn't stop it. So, finally—and he made the point, and it was a good marketing point, that we were selling to hundreds of little machine shops around the Midwest. And it was very easy to send the plane out in the morning, pick up the machine shop owner. Fly him into Ann Arbor for the day. Give him a demonstration of everything we could do and show him around there, and the plane ride. And then give him an elaborate dinner, and then fly him home that night. And he'd only lose a day of business. And the smaller shop owner, it was kind of a thrill to be flown in and out. So, that was a good deal when we were doing that, and so on.

But the president still, an awful lot of this was personal flying. And so, when we just couldn't stop him, I found—I refused it early in the game when he wanted one. And I found that he joined some flying club, and his plane had landed on an ice floe in Lake Michigan at this point. God, he's taking this kind of thing. So finally we made him get a pilot, so he was a pilot, too. So the two of them were flying the plane. And so when we finally agreed on it that he wanted to buy a jet. So I brought him in with the CFO. And I said, "Fellas, I want to explain to you how things are. Here's the door. Next to it is sitting the jet. If anything next to it is sitting the chief financial officer and next to it is the president. If anything at all happens, you miss a forecast, anything bad goes wrong, the jet is out the door. You, the chief financial officer, if you haven't warned me of the trouble, it probably is his fault, but I'll need him to straighten it out, but you're gone. I can replace you with somebody from the accounting firm tomorrow to keep the books at least until we can hire a new controller. So, if you let me be unwarned about some problem, you're fired. I should fire him, but I need him. You're gone." I said, "But the jet goes first."

So, I took—later, it was a young CFO. And he was very shocked at my seeming brutality. I said—took him aside, later, and said, "John, I have just strengthened your hand immensely because what I've done here is one day—this is a strong president. One day he is going to want you to do something you shouldn't do. He's going to—You're going to miss a quarter by a couple of things. And he's going to want you to pull down some reserves, and thinks that I won't pick it up in accounting. Or he's going to want you to bend a rule somewhere along here. And you're going to say, 'Gee, Ken, you're my boss.'" I did use his name there. "You're my boss. I would do what you tell him and so forth, but that bastard Morgenthaler will find out about it, and he'll fire me. And you won't be able to stop it because you'll be too busy protecting your own job." And I said, "Your job is to walk around with everything he wants to do because he's full of ideas, and say do you realize this is x cents per share off that. Do you realize how this is going to hit that budget? Do you realize what this is going to do to our sales in such and such and area? Do you realize how much capital investment this—? Do you realize is the first thing—when you pull him back to results, then he gets pretty sensible." So that was our technique. That company ran like a charm. And he never lost his plane.

Hollar: I call that very hands on.

Morgenthaler: Well, that was my style always.

Hollar: Why and when expand to California?

Morgenthaler: Well, first of all, we went where the opportunities were. Now, my original partnership, I had just one young associate who was 27 when I hired him. I'd hired him out of business school for the company I was operating. And he became—I made him a small partner very quickly because I wanted him to work on everything, including some of my personal investments because I had personal investments in various things. And I wanted to put that in the partnership—the original partnership, Morgenthaler Associates, which had all these other things in it. And we had no outside money in Morgenthaler Associates, ever. We had this coinvesting with this other group, but they had a stand alone set of investments, which we got a carry on and a special deal with them. But it was not—money was not mixed. And so, what's my point? That the—what was your question, again? I'm sorry.

Hollar: Why and when move to California? You were talking about you had—

Morgenthaler: Oh, well because at that time, we went—we were going everywhere. But it became more and more clear, especially in the '80s, that California was going to be the big winner. And we were—I'd say one of my strategic misjudgments was that I thought there would be bigger opportunities in robotics and in application of computers to manufacturing in the Midwest than there proved to be. And we had a couple of unsuccessful investments in that area.

It became increasingly clear that activity was here. It became increasingly clear that Boston was losing first place to Silicon Valley. And I waited until we had—I wanted somebody strong in IT. And that was—I didn't want to just put a body out here, and I didn't have anybody in Cleveland strong enough in information technology. And so, we waited actually until Gary's company was sold and he became available. And he had, of course, a very, very strong IT background at that point. And he'd had a success in—several smaller successes, and a big success at Angers [ph?]. And so, when he became available, we opened up an office out here. But I wanted to start with a strong IT person because, particularly—and that was—you came out here, Gary, about '89 or so, didn't it? I waited too long, partly waiting for the right person. Partly, again, we'd been so successful on our own. Because we've managed a lot of money, we've made obviously a lot more money since then, but cash on cash, which is when you've used your own cash, you're very conscious, I'm putting x dollars out there. And I'm looking for—I'm not looking for two or three x. I'm looking for five or ten x or more. And I never forgot my 22 cents to 64 dollar arithmetic in there. And I've tried very hard to do it again ever since. But the only way I find to do that is get that 22 cents down to nothing. I can get a better <inaudible>.

Hollar: What are the investments here in Silicon Valley and in ventures here that really stand out for you?

Morgenthaler: Well, we get more credit for the fact we put money in Apple Computer than anything else. Oh, nothing particularly remarkable beyond that.

Hollar: Talk about the Apple investment. Could you just talk about that a bit?

Morgenthaler: Oh, yes. That was another one of my partial mistakes. It was—we had—when I came into this business, it was very clear in '68, it was really too late to do anything in the mainframe business. And we did—we invested in a couple of supercomputer companies along the way, but nothing ever—the last big winner there was Control Data. And we invested in a couple of others, Masscomp and one or two there that I've almost forgotten. Remember we've done over 350 investments at this point. And increasingly, others were doing these.

And I can tell you the first few intimately because I did them all. The others, people did them and I didn't have as much to do with them. But the sequence was that, we were too late for mainframes, clearly. And we were late in '68 and nine—we were late for minicomputers because DEC was already pretty strong by them. Data General had spun out of DEC and was doing well. And there were a couple of others. Prime came along behind us. But it was clear to me we found a particular application in Florida, Modular Computer Systems. That was the one we were talking about earlier today. That was a powerful opportunity. And we went into it. And it was comparatively successful. But in that case, management—the technology worked beautifully. The market was excellent for what it did. And had we been able to—the management was both stubborn and finally fell off the horse in that case. And I caught the aberration they were involved in, made them stop, but it wasn't soon enough. They'd gotten in deep trouble. The infuriating part about it was that the accountants knew it all along. But they basically were involved in premature revenue recognition, which has happened with so many computer companies. And we have been told—I won't name names, but we've been told others that were very involved in this. And this management team had worked at a place that had been heavily involved in premature revenue recognition. And, of course, Gary's had painful experience in that area, also—later on, much later on.

But, it was clear to me, we got into this company. And when we went in, computers were based on core memories. Then, soon after we got in, the integrated circuit was developed and the microprocessor. Well, it was clear, quickly, that the microprocessor was going to make a smaller computer readily available and practicable. And from my earlier—the work we were talking about as we walked through here, about the computer modeling and so on. To me it was clear from the beginning, there would be a large market for a lot of these things.

And we must have looked at 25 personal computer companies. My young partner used to get a sample and take it home and have his children play with it. Most of these had what, at the time, seemed to be more experience and better looking managements than Apple. And we were a little put off by the stories about Apple that the two Steves were seen pretty much as kids at that point. So, we didn't make an early round in Apple. But it became clear to me looking further that despite all these other 24, Apple was going to be the winner. For whatever reason, they were going to win.

So, we made a conscious effort to get into Apple at that point. And we talked—in those days, Mike Markkula and Mike Scott were running it. The Steves were not as important in the activity. Steve Wozniak had designed a very good and very successful machine. And you weren't seeing a lot of Steve Jobs at that point. We didn't have a lot of contact with Steve. Markkula was very sensible. And I think Markkula made a great contribution to the early stage. And he was one of the people that, as far as we could tell, genuinely did not want to be president. He did not want to be chief executive. When he invested, I think Don Valentine introduced him as an investor. And he came in really as an Angel investor. And he agreed—he came with him as vice president of marketing. And he agreed he would pick the president. And picked Mike Scott who had worked for him. Scott came in as president. And Mike Markkula would do the marketing job for the month. And then once a month at a board meeting, he'd put his chairman's hat on and act as chairman. And that ran pretty well. And Scott ran quite well up to where Apple was doing about 250 million in revenue.

And then at that point something unclear when wrong. And Scott was out. And then Markkula just never wanted to be president. He was president briefly and so on, but he was one of these honest people that just didn't like the job, didn't want the job, and didn't feel he was the man for it. And so, we had—when we found out about it in about this period, we found they were doing—some stock was available. We bought it up. We bought some stock from people. We paid what was at that time a very high price for it. And others were looking at it. And other very good firms out here, who knew it as much as we did—or should have, felt it was just too expensive and wouldn't buy in. I was convinced that the market was going to get very big and that Apple was going to be the winner. And I wanted to ride a winner and thought that I'd make money at it. And we bought stock from people. We bought—I've forgotten how we got it all. I'd missed a round in there earlier. I think where probably Art Rock went in. And I think Art made a lot more money. I'm sure he made a lot more money out of it than we did because I think he got it at about a fifth to a tenth the price.

But I just saw that—felt, rightly or wrongly, it was going to have a big future, big market. And I was more convinced—a lot of the people in the computer business, as you know, have been very wrong. Tom Watson was famous for saying there'd only be a few computers sold. Ken Olsen said there's room for a minicomputer, but nobody will ever want a personal computer. Gordon Moore said what would you do with a home computer? Would my wife keep her recipes on it? That's in his writing. So, these people were all just wrong in judging the size of the market, which is very common.

The only reason—the major reason Henry Ford isn't in Cleveland today is because the patent cartel that controlled automotive patents in Cleveland knew he wanted to make a low priced machine. They felt that automobiles—there would only be a few automobiles sold. And they needed to be high priced to be profitable. So, they froze him out. He went to Dearborn and built his factory there, violated their patents, and litigated back and forth until he had way more money than they did. And they gave up. So, the ability of founders to guess how big their market's going to be is not very good.

Hollar: Let me ask you one final question in this section. And then, we'll take a short break. And I want to come back to your policy work with the ERISA Prudent Man rule change. I want to ask you a question about comparing the kind of entrepreneur you found in the Midwest, Michigan, Florida, with the kind of sensibility and orientation of an entrepreneur here in California. You're the first venture investor we've interviewed who could ever make that kind of comparison at this point. And maybe you're going to say there really is no difference—an entrepreneur's an entrepreneur. But I'm just interested in whether people you encountered in California, Silicon Valley, the way they thought was different, qualitatively, from the entrepreneurs you encountered in other areas?

Morgenthaler: Well, I think first it's harder to generalize about entrepreneurs, or try to fit them into one category. I've never—I don't think that way. I mean I don't think there is a breed of entrepreneurs, as such. I take a look at the whole situation. And everything is a situation. I mean life is a series of situations. And how you do is what kind of situation you find and how you cope with it. You have—and I've seen entrepreneurs in all shapes and sizes and different categories. And some are very good in one area. They're usually one sided in one form or another.

The things I try to make sure of is that, again, that three legged stool to me is just absolutely paramount. I have heard people say repeatedly oh he's wonderful. I'd back him in any business. I think that's nonsense. There are a whole hell of a lot of businesses I wouldn't back him or her or the other one in. they're not fitted to that situation. So, I'm saying what's the situation? What's this market? What's needed? And can this person do it? Will this person do it? Are they motivated? Will they stick to it? Will they have the—I remember two kids that came to me right at the beginning of my career and said we have some ideas for competing in the computer field, more or less competing with IBM. And they were sent in by—one of them was the son of a friend of mine. We'd like to see what you think of our doing this. And I said—well, we talked about it a bit. And they were very loose on it. I said if I turn you down on this, what are you going to do next? Oh, well we think we'll go to Paris, and we'll go into something completely different. Or go to Harvard or some other school. Had no stick-to-itiveness.

I want somebody that is going to be in there, hanging in there where they're really attached to the idea, and they really mean to see it through. And that drive that—as I teach entrepreneurs often in leadership you need a sense—and you have to convey to your people a sense of implacability. You need to use the current—you heard Steve Jobs was going to kill them, but he'd get his way done. He was absolutely implacable in terms of what he got out of his team. And he didn't care who he killed in the process. Well, you need a bit of that in terms of your people feeling that by God this guy is going to see this through.

You need—do they know what they need to know to do that job? And sometimes that's a lot of technical knowledge. Are their judgments any good? The whole series of things that do you think this man or this woman can cope with a situation? Are they married to it? Will they stick with it? Do they know enough to do this?

What we find about the Midwest, partly—the misunderstanding between the two, I think, is that so many of the Midwestern entrepreneurs are not deeply steeped in the industry knowledge. They don't have Gary's 40 years at this point. Or back 20 years ago, they don't have a Gary's deep knowledge of the industry. Granted that's more needed for a chief technical officer, perhaps, than a CEO.

I've been pretty successful in several fields where I didn't have a deep industry knowledge, but one of the things I've learned when I go to a new industry, one of the things I kind of hate about changing. And I wish my life had been a little different in that area is that I find that, generally, I have pretty good judgment. But the first—I just hate the first two years in a new industry because my own personal judgment isn't worth a damn. I don't know enough about the industry to—and I think this guy is giving me bologna, but I don't know enough for sure. And I have to ride on his knowledge and his recommendation until I know the industry well enough, I can substitute my judgment for his.

You give me five years—in my history at least, give me five years in industry, and I'll easily be a director of the trade association. But the first couple of years, my judgment isn't worth a damn. And I'm used to my judgment being pretty good. So, you've got to know a certain amount to have your judgment be worth something.

I think you get a lot of—particularly in young and inexperienced entrepreneurs, you get a lot of superficial, I want this. I want that. I want the other thing, in it. And I don't—I think it's more subtle than that. I don't think it's that simple. I think the—I mean if they're not attached to the situation like my young friends that were going to go to Paris, no I mean that's—there are whole knockout factors.

One of the jokes of the early years was the guy would come into a venture capitalist. And the venture capitalist says, "Tell me about some of your policies that you plan to practice." And the young entrepreneur says, "Well I'm just a clean American boy. All I want is an equal chance. And I'm willing to work hard and give it a really good try. And my pricing, all I want is a fair profit on my products, and so forth. And all I want is just a good American all around chance." And a good experienced venture capitalist will say, "Out! What I want is an unfair advantage. What I want is a comparative edge over other people. I want to have it locked up. I want to do a Warren Buffet. I want a moat around it. I want it just as hard for the competitors as possible. My attitude is the competitor's fair share of this market is zero. I'll get every bit I possibly can."

How do I price? I'll charge what the traffic will bear. If I can charge a little more, and I leave money on the table—One of the stories I love to tell about the aircraft business was I had a negotiation every year with Pratt & Whitney. I was the vice president and chief salesman on the account. And I negotiated every year on the price we were selling them about the nozzles. And we were told by them, very reasonably, it was under renegotiation at that time. At the end of the year we would have our profits audited by federal auditors. And if we had made more than they regarded as a fair profit, we were renegotiated. And they took back some money. And the government took that money back directly. We charged it through Pratt

and Whitney, or GE, or one of the other manufacturers, but the government would take it back. They would not give it back to Pratt & Whitney or whatever because they had the attitude it's our money. And Pratt & Whitney should have negotiated better. And we just take it back directly. Well, we were told—Pratt & Whitney said if you're making too much money—Pratt & Whitney never are because we're way below it. So we can always use money back. So, if you're making too much money, we'll be angry at you for negotiating too much, but you won't get fired if you give it back to us. But if you don't give it back to us, and you get renegotiated, then the federal government will take it. We won't get it. And that we won't forgive you. You go down or out as a supplier if they let that happen. So, we believed them. We believed we had to give them—we had to renegotiate.

Well I conducted a very good negotiation with this purchasing agent. And he was just God. He controlled so much of our production. And he was buying what today would be billions of dollars of material from people. And those were days that things were very—pretty hard on salesmen and people coming in. Well I negotiated first of the year, and we had a strong argument about it. I made my prices stick. The end of the year, our accounting people came to me and said, "Dave, we're making so much money, we've got to turn a substantial amount back. We are making twice as much as we're going to be allowed to keep. Even if we stretch it as much, we've got to give a big chunk back." Well, I didn't like what I was going to go through, but I got credited memos, went in and called on the purchasing agent. And said, "Earl, we found we're doing much better than we expected this year. Our costs are better. We're going to have to give you a refund on a lot of this." The refund was half our profit. And we still were pushing it all we possibly could. And he said, "How much is it?" So I showed him the—and he looks up and starts off, "Goddamn you Morgenthauer." And it went down from there. And the profanity went down from there. He said, "I told you you made too much." So, that was the environment of the day, these were the 1950s. When purchase agents were God. And he just had—I mean had he been able to shut us off, it would have been just practically death for our company.

But those were—you get those circumstances. It's a very personal—and you're asking about entrepreneurs, but you got people, can they cope with that? Can they smell the situation? Can they—I took over the pricing function because when I was brought in as president of this little company, the manufacturing people were very afraid of letting sales people have pricing function. I said you just tell me the lowest price I can't go below. And don't cheat it on me, be honest with me. Tell me the lowest price. I will get you more than that, but don't give me this you're trying to guess. You don't know the customers. You're not dealing with them. I know what I can get. And so, I got them to trust me completely because I always got more for the product than they were willing to take for it. And I think you—you're looking for all those rules, and all those things, but to me it's a judgment, subjective judgment on the part of the venture capitalist. Can this guy do that? Can this guy cope with the situation? Does—I think there—I got very deeply into, as Gary indicated, got very deeply into group dynamics and sensitivity training back in the '60s. I used it as a device and became very aware of its imperfections as well as its important things. But the—and I learned in that that you—everything is very situational. And I got interested in intelligence testing. And I read Howard Gardner's book out of—you know Gardner's book? You're familiar with that? "Frames of Mind: Theory of multiple intelligences"?

Hollar: Yes.

Morgenthaler: Well, I read that. It's an imperfect book in a lot of ways. It's very repetitious and so on. But I went up to Harvard and spent an afternoon with Howard. And said I'm trying to develop some thoughts about the qualities that are useful, practical in judging venture capitalists, and the kinds of intelligence that they need. And I want to come up with some intelligence—I've taken yours, and I've condensed them. And tell me what you think.

And Howard was very reasonable. He agreed, first, you could subdivide his seven into a lot more if you wanted to get down into detail. And, secondly, three or four of those didn't apply very much to what I was doing. But I came down to where you ought to think about people in three ways. You ought to think about them as thing-smart, people-smart, and situational-smart. Now what do I mean? Thing-smart is usually school bright. I mean you go in there. You learn new things fast, complicated fast. But the emphasis is on the word things, nothing to do with people. Thing-smart people are most venture capitalists, not everyone I've met, but most venture capitalists are pretty thing-bright. They just don't get in the business. You don't get into a top school like Harvard or MIT or Yale or one of those schools, if you aren't thing-bright enough, as a rule. Maybe if you're an—what's the word? You're a young Bush going in following your father—

Hollar: Legacy.

Morgenthaler: A legacy type person, but mostly it's people bright. I mean it's thing-bright. The trouble that we find in this business repeatedly is that all the extremely people-bright people—I mean all the extremely thing-bright people feel they are people-bright, and they're not. Some of them are. Some of them aren't. And the people-bright guys remind me of a psychologist that I hired—I used to screen a lot of people. He was a little gray man. He—no personality, no impacting with people or something. But he'd sit and talk to you. He'd interview you for about an hour. And he'd give you the most accurate appraisal of the individual that you ever saw. He was a wonderful interviewer and screener. He was a lousy group dynamics trainer, interacting with people was nothing. He was just mush. But reading you, like a charm. And wasn't that thing-bright. I wouldn't have used him in complicated math, or semi-conductor manufacturing, or something.

And then there is situational sensitivity, which to me is the greatest of all. That's the high-grade street smarts. That's the kid that smells money. One of my partners said about me something that I've always been pleased about and tried to live up to. I don't say I've made it. I just try to do it—aspire to it. He said you can be working on business plans. And you can show one to Dave. And he'll look at it. If he doesn't smell money in it, you can't interest him in the thing. And he'd say work on it if you want to, but I'm busy on something else. If he doesn't smell money—if he smells money in it, then you can go get back—

Well it's that smell for money. It's that sense that this is what they'd buy a lot of if I had it, this is what I need to do. This is how that person's going to react. This is the street kid that walks down the street, sees a dark alley on the side there, and thinks oops, I go past that, somebody's liable to reach out and crack me. I cross the street. It's that smell for trouble.

And so, I look for all I can find. And the biggest trap I find is, Gary and I have often talked about this, is the thing-smart people, which we have in plenty, think they're so smart about people. And they are so hard to convince that they aren't. And so you get—it makes them—they don't use enough resources to check on them. They don't go find my little gray man psychologist that really reads people well, though they'd run rings around him on learning new complicated things, or God help him if he had to analyze something complicated in a computer problem. But he reads people. And so, that was—to me it's an aggregate of that. You get in there and you find people that are just—some of them are just so situationally dumb, you have this kind of—how could they do that? I mean one of the questions that often comes up in an experienced venture capital group is what were they thinking when they did that? You wonder how the hell would anybody reach those kind of conclusions that they would do that kind of thing?

I saw a lawsuit recently. A man sued an entrepreneur. If I'd been in his situation suing that entrepreneur, that entrepreneur would have lost so completely. But this guy, working with his lawyer, went at this in such a dumb way that he lost it and got his suit thrown out, got counter sued, got charged several million dollars in settling the counter suit, just because of a very dumb way of going at it. And you find so much of that.

Hollar: That's a great answer, I think, on that score. You said a lot about entrepreneurship and entrepreneurs with that whole answer. That was very good.

<break in audio>

Hollar: Now I want to cover your work in Washington on a couple levels. First of all, there's a kind of natural allergy to Washington that I find out here in California, in particular. Nobody really wants to have anything to do with it [Washington]. In fact, the more at bay you can keep it, the happier everybody is. But you understood it. It seems to me you long understood the relationship between Washington policy and the effect on venture investing and entrepreneurship in California. And you, not only understood it, but you were attracted to it. You wanted to play a role and actually see some change made. And I would like for you to talk a little bit about why you took that approach, and what was attractive to you, and how you found working through all these very complicated issues in Washington.

Morgenthaler: I always had a mild interest in how we were governed. I never wanted the life of a politician; I never wanted to be constantly running for office, and I didn't want a lot of the living with the type of people and other things of that sort. But I am vitally concerned at how you govern things.

And the fundamental way that I think, always, on any problem—and I think a lot of this defines me—is when I hear about a problem —the president did, or the president did that, or didn't do this; so and so has this position or that —the first thing I'd term is not—the last thing I want is this blind prejudice. I want, first of all—and my thinking on it is: what would I do if I were leading the organization, whatever it is, and I had to solve this problem? What would I do? And if I can't find all that good an answer to it—though I'm no fan of Obama's—if I can't find all that good an answer to it, then I'd better view what Obama's doing a little differently. I mustn't have this blind antipathy to him. Sometimes he's right, sometimes he's wrong.

What's the situation? What's the reality? I mean, "reality's" a big word to me. And, "What is this situation?" is a big word to me. And so often, people see the situation the way they want to see it, not the way it really is. And that so often—and I'm constantly struggling to find what is the situation, even though I know I may not like what I'm going to find. But I've got to deal with the way it is, I've got to deal with the facts that are there.

There are always a set of inanimate facts that anybody dealing with the problem has to deal with those. The speed of light is the speed of light; it doesn't give a damn whether you feel this way about it. I'm always a little amused about the scientist that—I think they fundamentally don't understand their education when they're saying that a phenomenon in nature, and we write an equation that describes it. And our equation works well until we get to certain situations. And then nature turns left, and the equation didn't predict it. And nature's wrong. They're damn fools. <laughs>

If nature doesn't follow your equation, you'd better rewrite your equation. That was one of the best things MIT taught me: don't have your theory of what will work, and then when reality proves different, then deny it, and stick to your—and I find so often that this is true. I find people often would come in and say, "I will prove to you conclusively, scientifically there is no God," or, "I will prove to you scientifically, conclusively there is a God." And I would say, "All you have just proven is you are no scientist. If you were a competent scientist, you'd simply say, 'There isn't remotely enough evidence.'" You've got five senses and the perception. I will agree with you that the Bible seems like a collection of a lot of legends, and it's pretty hard to believe every word that's in the Bible, as such, and to believe the world was created in six days, and so on. But you have to remember this was written by people 300 years after Christ. And God knows what was done and put into that.

But this is the work of man; man is very imperfect. You just don't know, in regard to this. Maybe there is an alternative universe. That seems silly? Well, take a savage in the middle of the jungle, and tell him there are radio waves passing through him and around him, all the way through there, and you can hear what has just passed through him out of this little black box in your pocket radio. He'll think you're out of your mind. But there's a reality here you just don't know about, we don't know about. Nobody's I haven't heard come up with a really good explanation for black holes in society at this stage. To me, it's—get to reality. And these people seem to me to be so foolish. And we found a lot of this in the NVCA, after we did such a good job of getting the capital gains tax rolled back, and educating Congress on this. And we

walked the halls for weeks. And we were told—forgive me if I'm being repetitious on this, but I've talked to several people about it lately, and I'm not sure what I said and what I didn't.

Hollar: No, we haven't talked about any of this before, you and I.

Morgenthaler: Well, what happened was that Ned Heizer raised a large fund in 1968, about the time Intel got started. "Red Ned" raised, I recall, it was around \$70 million. It could have been 60, it could have been 80. But within plus or minus 10 million. He had been running venture investing for Allstate Insurance. And Ned raised this very large fund. And he had a concept that he was going to staff his venture firm like a business. In other words, he was gonna have people for marketing, and people for technical, and was really going to staff it the way you would a business. That concept didn't work at all well.

But at the same time, Ned—that \$60-million fund—or \$70-million fund—was much bigger than most of us. He decided we oughta have an association. And venture capitalists had been very much opposed to that kind of thing before. Whitney and American Research had no love for each other, and both were—General Doriot rightly went after financing bright, young men out of technical places. That's what Dr. Compton and Ralph Flanders wanted him to do, and he raised \$6- or \$8 million publicly, and was going to finance bright, young, technical ideas. Well, he didn't do the DEC investment until 1957, as I recall. He'd been in business since late '45 or early '46, and he hadn't had a lot of success.

So, one of my classmates worked for one of his company, which I think was Ionics [ph?], or something. And that was about the most success—but he was financing technology start-ups. And, without very experienced managers. And Ken Olsen and his team came out of Lincoln Laboratories, as I recall, and they were all technologists as such; I don't think they had much management background. Well, Whitney and Doriot were like that. And then, you had Bessemer, which, of course, was the old Henry Phipps money out of Carnegie Steel, was in operation. And then, you had the Rothschild money in here, and—I've forgotten the name of it: Charlie Leahy's company. Charlie was the second president of the NVCA.

Hollar: Newcourt.

Morgenthaler: Newcourt, exactly; yeah. And you had a few like that. But there were a limited number.

Well, Ned rounded up all these people. I think what Ned really had in mind was that he wanted to develop what he called a "business development company," that category. None of the rest of us were thinking, particularly, in that area, but we liked the idea of an association. Well, we got together, and formed—and, of course, elected Ned. Ned had, by far, the biggest fund. And we elected him president. But Ned kind of worked a little independently of the association. He got us together, but then he sort of went off and did his own lobbying for business development.

One of our earliest meetings was in San Diego. I think Dave Dunn, who came out of Whitney, was involved in that, if I recall correctly. And I remember how our activity got started, which was we were sitting in a directors' meeting, I believe in San Diego. And a guy by the name of Dick Hanchin, who was running about a \$6 million fund that he had gotten out of the Stephens Investment Banking firm out of Little Rock—had asked Dick's—we were talking about what we were gonna do. And somebody said, "Well, let's form an association. Let's get together for outings and resorts, and play golf." And we said, "Oh, we've already got too much of that already; we can't spend any more time on it." And then, somebody else said, "Let's get together and fix the price of deals on—" what we offer entrepreneurs, you know. Just collude when the <inaudible>. Some of us—I've said this to some—that one of my first directors, when I first became a president, had been an assistant attorney general to the United States. And he gave me a lot of free education on antitrust problems. He was always concerned we were going to get into an antitrust problem. You know, it was big lawyer and little company. And I'd say, "John, I'd be so flattered if somebody—I've got about 1 percent of the market—if I had an anti-trust problem, it'd be the best thing in the world for me if somebody sued me." But he wanted to help, you know, but he was way up here, and we were way down here. But I said, "There are very real antitrust problems, and fixing prices on things is not something we're gonna be involved in. And the government does not take that very kindly." And I'm not sure the guy was too serious, anyway, but that went away.

And then, Hanchin got up and said, "You know, we support these little guys, we start these companies, we take losses and risks, and so on. We oughta get Congress to give us something for this. They oughta recognize this." And, instead, we realized—when I went into business, the capital gains tax rate was 25 percent. This was—ooh, '72, '73 when I'm talking about in the time frame, here. The rate had gone up to 48, 49 percent at that point. It had just crept up there; most of us hadn't even noticed it. We weren't making enough capital gains and cashing them in to be as concerned about it, but it had crept up there. And they'd made offerings harder, and that sort of thing.

Hanchin said, "I would go to Washington and work on this, and try to get Congress to give us something if you'd help me." He turned to me. And I said, "Yeah, I would do that. I've never had a Washington experience; I've always been interested. And I don't know anything about it, but I would be glad to do it." In a way, it's a salesman's-type job. It's an educative—lobbying, good lobbying is education. And, so I said, "I'll go." So, we proposed that to the group, and they eagerly snapped it up, because somebody else was willing to do some work. And we volunteered.

And we go down to Washington. And Hanchin, I think, had heard that there was a lobbying lawyer who worked for Nelson Rockefeller. So, we called this guy, and said, "We're representing this trade association. We're co-chairman of the incentives committee, and we want to talk to Congress about improving the tax legislation and some of the other conditions for Washington." Well, like any good lawyer, he's looking at the business. But he hears we're venture capitalists, and he's gotten Nelson Rockefeller as some kind of a client, and he knows Nelson is a venture capitalist. So, that was enough that he—yes, he'd take us on. And we had so piddling little money. We were gonna spend about \$15,000 a year, most of which we had to put up. And a firm would spend that on a small party, now. But

that was what we had to work with. And none of us had very much money. So, we deal with him for a little while.

The only thing that I can recall his doing that was of any use, whatever, was: he said, "You guys are an industry. You should be allowed to testify as an industry. We'll get you a hearing before Lloyd Bentsen's Joint Economic Committee." So, he got us a hearing, and we went in to testify before Congress. Green as grass. Well, we went out with one of his lawyers. The guy didn't know where to park. The guy walked into—we called on a number of senators, and one or two of them said, "Well"—I mean, the receptionist said, "Well, I haven't seen you in a long time," or, "Who are you?" to the lawyer, and so forth. Clearly, they had no entrée, and so forth. And I told Dick later, I said, "Dick, I'm an old sales manager at this point, and if all I know is this is a sales job, and this lawyer is a salesman that doesn't know the territory." He had no rapport with his customer. When you don't know where to park, you're not calling on these people very often. So, at any rate, we got this opportunity to testify.

We had the theory that these congressmen were naïve, and they just didn't know about business. So, we started out to explain. We found out very quickly that a number of them knew about business; they just didn't like it. We had a different selling problem.

And at first, we readily equated ourselves with the New York boys, and we were friendly with them. And I went to Whitney, and I went to Rockefeller—we were friends—and said, "We'd like to have some support from you, and some money, and some help getting it." He said, "Dave, you're out of your mind. You're going to Congress, and you're asking them to reduce Jock Whitney's taxes? You're asking them to reduce Nelson Rockefeller's taxes? You think you can get that done, you're crazy. No, we won't give you a dime."

And Whitney always had a very nice attitude toward me, because I'd made him a lot of money, and I've never found anybody that I've made a good deal of money for that doesn't like me. Somehow, people are like that <laughs>. So, we went away sadly, and we discovered, then—well, Hanchin and I said, "Well, we're a couple of country boys. I'm this little guy from Cleveland, using his own money. And Dick's this little guy from Texas, with this small fund, here. And we're helping these entrepreneurs." So, Congress—we quickly had ourselves as good guys. And we started making the rounds, and educating them. And we start in, and then I was pushing for electing the presidents of the bigger funds, the heads of the bigger funds, presidents of NVCA, because I was very sure that if the big guys dropped out, the little guys weren't gonna come anymore. So, the little guys were flocking in because the big guys were there.

I would have liked to be president, but I didn't want the aura; I was too small to really want it. So, we elected—Ned was the first president, and then Charlie Leahy, of Newcourt, supposedly had the second biggest fund, so we made him second president. And Pete Bancroft was head of venture for Bessemer, which supposedly had the third largest. So, we made Pete president. Well, unfortunately, very quickly—and they made me vice president at that point. And very quickly, Pete got promoted to head all of

Bessemer. The guy that had been head of the whole firm had screwed up in some kind of real estate investment or something, and they put in—Pete's a pretty good man—and they put Pete in to head the whole thing. And Pete said, "Dave, I'm not gonna be able to do very much; you're gonna have to—I'm so busy with this, I can't help much." But one thing he did do was that he headed a paper on "Emerging Small Business: An Endangered Species," or whatever. And Pete pretty much well supervised the writing of it; some of us helped him. But he got that done. Then I was doing most of the going to Congress. Oh, Hanshin by then had quickly decided—you see, what he wanted to do was buy a company for his family: buy it and run it. And he dropped out.

But I continued with the program, and I was still interested. I was enjoying talking to congressmen. And, as I said, it's a sales and educational job, and I was spending a little time on it, and learning, and helping, and becoming more clear all the time. Because were able to make the case to Congress; we said, "We're not alleging any conspiracy, but if you wanted to get together with big business and strangle small business, you'd do just about the things you've done." And the congressmen said, "We're not that smart, but we see your point." And we kept on. And the other thing they didn't realize was that we pointed out: most of the new jobs are being created by small and innovative businesses. The big companies are not hiring; they're starting to lay off people, they're going overseas. Everybody caters to the big companies, but they're not where your future is, because they're gonna be all over the world, moving toward a global industry.

But we kept on pushing that, and pushing it, and going to see these people. And we got legislation introduced. I wrote a model bill. I got a senator that agreed he would write the proper bill for this, and he introduced it. And nothing happened. I learned the difference between: any fool can get a bill introduced in the Senate; getting it passed is a—you've got to get behind it and push, and—

Hollar: So you got the old civics lesson, right: how a bill becomes law?

Morgenthauer: Absolutely. And the practicalities of it. Well, we got round and round, but I discovered a marvelous thing. We didn't have much money, but I discovered if you testify before a committee, and you submit some written remarks, they will print them up, in large quantities. So, the government became our free printing press, because I went everywhere I could, spoke at everything I could get into, introduced this "Emerging" paper, and it got all over Washington.

And, after a while, we got back to—we were going into see a congressman for the first time, and said, "Do you know—" And he's quoting from our paper, you know, and all the facts that we had. And, "Oh, is that right?" And he's quoting back to us what we've told him. And that went on, and finally, the capital gains tax was just an idea whose time had come. My bill that I would have ended—I had worked with the Treasury, and the Treasury was very cooperative. And I was able to sell them on the narrow idea that financing small, high-growth companies was a very worthwhile idea. Financing almost inventions and innovations. That was an excellent idea. I didn't give a damn about supporting real estate. I didn't give a

hoot, really, about supporting even a lot of consumer-type things; I wanted to support technology-oriented companies. And I was perfectly willing to go for a holding period longer than a year because we were all always locked up for four or five years, anyway. We had that all in the bill; just nothing happened. But then, when the other people came in to get the support of the real estate people and the others, we had to go to the one-year holding period, which is fine with us. But it just doesn't make—very few venture capital firms are able to liquidate within a year, anyhow, so it's—

Hollar: It didn't hurt you, right?

Morgenthaler: It didn't hurt us, but it didn't help any. And we've made a lot of other people. And now, Warren Buffett is trying to undo all that. And I would have accepted a much narrower law. And the capital gains rate came down from 49. We got it down to 28, and somebody, I think, brought it to 25. And then, Bush—I've forgotten whether there was a 20 in between. Then Bush got it down to 15. So, that was it.

Hollar: Then what about ERISA? Did that give you confidence that you go in and make this other change?

Morgenthaler: Yes. And other people in the firm were very interested. Several people worked on it. Lionel Pincus worked extensively, and Warburg Pincus was raising a good deal of that kind of money. And the people that were—I did not work as extensively on the ERISA portion—I didn't do much on it, personally. But that was part of the effort of the NVCA. We were able to marshal that. And then, there were some changes in the SEC laws that had made it more difficult for offerings. And somebody worked on those, and we got it changed.

Hollar: And that really was a sea change for venture—

Morgenthaler: Oh, yes.

Hollar: At that point, wasn't it?

Morgenthaler: Well, the first two were the important ones, really. But then, the changes with the SEC enabled—made liquidity much easier.

Hollar: Let me talk to you, finally, just for maybe five minutes or so, about choosing a life in philanthropy, and your commitment to non-profit work and community service, especially in Cleveland. You've been so involved in that for so long; why is that important to you?

Morgenthaler: I guess it's the way you were raised. And I had a southern, Protestant education, I guess. And I had some idea about service. I felt that you could be of more service to the world if you'd made some money to be of service with. So, I was always interested in making money. And, as I've said, I treasure that comment that you can't get Dave interested in it if it won't make any money. I like that. I mean, if that were totally true.

Beyond that, I kind of like to do good. I like to give back. The world's been, on balance, pretty good to me. I didn't inherit anything, and I just was given opportunities, which I pretty well took advantage of. I like to give back, and I like to try to make this a better world. And it's a little naïve. If you ask me what has been one of my major deficiencies in life, I'd say I've been a little too nice a guy. You don't find a lot of people that agree with that, incidentally, but I would sort of say I'm too nice a guy.

On the other hand, I'm a realist, and I understand very fully one of the things that the world has tuned into, in particular, is that if you are a mean, stupid, hard-to-get-along-with, terrible, dumb, miserable person, and you have a lot of stock in a company that does extremely well, you're a very successful venture capitalist in the eyes of our limited partners today. If you are a wonderful, loving, kind, happy, intelligent, ideal human being, and you don't have any stock in anything that does very well, you don't cut much ice in getting support from your limited partners. So, it is not so much the kind of guy you are as it is: do you have stock in something that wins?

So, the first thing is to make sure you get in something that's gonna win. The second thing is: do all you can to add value to it and make it more likely that it's gonna win. And, beyond that, there's not much else.

Philanthropy: I think we all, most of us, in one way and another, we'd like to do some good. We'd like to feel the world is a little better. One of my other failures has been—and one of my characteristics that I try to tell our children is: I think you do people a favor if you are willing to admit your failures or your disappointments, and that sort of thing. And I feel that if you're secure enough, you're willing to do that. I'm lucky to feel that I've won a few more than I lost, so I can afford to be honest. I have a bit of a—I guess I have a horror of saying something where I've taken credit that other people deserve. And I've tried in this conversation with you to tell you who really did what. I didn't found NVCA; Ned did. I mean, Ned was the guy. I've tried for years to get NVCA to give Ned a founder's medal, and give the rest of us co-founders' medals. And people jokingly said, "Well, you practically founded Venture Capital." I didn't. That's wrong. My contribution in building up NVCA, and in getting the capital gains tax rolled back, which drew so many more people into the business, which drew money into it, may have been one of the greatest contributions of all time to venture capital.

In terms of the poster boys for the greatest venture capitalist: probably Tom Perkins is the poster boy. You've got a lot of—I don't think you'd get agreement on the West Coast as to who was the greatest venture capitalist. And, again, it's who had stock in the big winners? And, you have a lot of quiet guys who may have made more money than any of us; I don't know. But I've enjoyed the doing good. I've

enjoyed the ability to leave the world a better place. I've tried to set a good example for my children; I'm proud of my children. And nobody's perfect; I'm certainly not. I wouldn't hold them out as perfect, but I think they're way above average, and pretty good guys. And I just enjoy making things better. And one of my disappointments, I started to say, and went off on that, that I'm willing to admit—I had hoped, as kind of a crowning cap, that I would have some part in curing a major disease. And several of my life sciences investments I got involved in with the hope we could do that, and always, with what we thought was good evidence that there was a good gamble that we could do it. And the last company that I retired from as chairman, after almost ten years, had three drugs that looked as if, in phase one trials, that looked as if they could cure, or alleviate, major, very high-volume worldwide diseases. None of the three worked out. The company later, after I'd retired, later was found to have a technology that was so valuable in a different species than we'd been working, different area than we'd been working, that Merck paid a billion and a half for the company, or a billion and a quarter, for the company, and bought the company. So, we were not wasting our time. But that need that Merck solved for its technology had not come along before. And the medicines it had developed were unsuccessful during my career, and the rest <inaudible>.

So, I go to my grave without having cured a major disease. I'd just like to have had the satisfaction to have done that, to contribute something to it. But, we have some successes and some failures. And you could have a big ego about this, but if you're realistic, all too often, you face up to the fact that you do your best, but you put medicine in people, and you don't know what it's gonna do until you've run your clinical trials. You just do not know what a medicine will do until it's tested in people. A joke I use regularly is that if rats had any purchasing power, I'd be a billionaire because I've cured so many rats, or been part of curing so many rats. And I like to do the things that help a region be better. I've lived in the Midwest most of my career. A very large part of that, I have been part of the international business community, rather than—I've never been a local businessman, as such; I've always been at least a national businessman.

People used to ask what I did for the community, and my wife is civically very active, and served on college boards, and a number of things, and did a lot of things through the city. I said, simply—her name's Lindsay—I said, "What do I do? I donate Lindsay's time." So, for a long time, 'til I started to step down in this, I was mostly business-preoccupied, except for hospitals. I've been a hospital trustee for over 40 years. I was 12 years on a community hospital, and then I've been on the clinic board about 30 years. And I continue. Now, I'm still very active on two National Academy of Science boards—we should call them "committees," really, but they like to call them "boards." A scientist, somehow, likes to say, "I'm a member of the board." And people think it's a board of directors, but we don't direct. We direct some of the work, or we influence some of the work, but we're certainly no board of directors. But I'm very active on those, and I headed a major study for the science, technology, and economic policy board a couple of years ago, where we were studying global innovation systems.

So I'm very interested in what promotes American innovation today. I think the solution we've absolutely got to have, and I focus on more to the degree than a lot of younger people do—what's next? What's the

new thing that's coming? And if we don't keep that, then I think we're going to see America's predominance in the world slip away. And I'm extremely American from that standpoint; I still think we're a very imperfect country, doing a lot of very imperfect and very foolish things. But we're better than what's in second place that I've seen anywhere. We're not good, we're not perfect, but they're a lot worse. So, I'm concentrating on trying to make American better, trying to make my region better. And I find so much of it is: people just don't think clearly. They don't understand the kind of things we've been talking about: that this region was fruits and grapes and vegetables, and that kind of thing, 'til it got the semiconductor, and it had some radio and other things of that kind building up in it. I'm aware of de Forest [ph?] and some of the others that were there. But that was your real driver. Also, you do have the culture and exchange of information, and Annelise <inaudible> at Berkeley, I think, has written a superb series of books, and she really understands why this region did better than the Boston region did. I think she's right on. So, I think that's probably what I would say. Any more questions? Have I—

Hollar: You've covered it. This has been terrific.

Morgenthaler: Thank you.

Hollar: Thank you, David.

Morgenthaler: Thank you.

Hollar: For your generous amount of time, and sharing so many of your personal stories.

Morgenthaler: Well, I hope it's worthwhile; I hope the-

Hollar: Well, we take the long view of the museum. I'm lucky; I've got a board that thinks we're going to be here for 250 years. So, when we take these oral histories—

Morgenthaler: We still study Columbus' voyages, don't we?

Hollar: That's right. Well, we know how people would have loved to have sat down with Rockefeller, or Carnegie, or Mellon, and heard from them, personally. But we'll never have that opportunity. So, what we're trying to do is create that opportunity, and hold it for the next generation.

Morgenthaler: Well, you read those books, and I've read a great many, particularly about Carnegie, because my wife was a trustee and principal volunteer fundraiser for them, the head of their fundraising for many years. And she once asked if I would take her to call on Margaret Carnegie, Andrew's daughter,

because they were running a drive, and they wanted Margaret to be honorary chairman. So, I said, "Yes, if you get me a couple books." So, she did, and I read the books on the way. And we called on Margaret Carnegie. So, I got interested, in particular, in Andrew Carnegie, and the Pittsburgh stories. And my first job was in Pittsburgh, after graduate school. It's a wonderful understanding, and I think you've had some remarkable and enlightened people out here. I don't know Gordon Moore, but I've read some of his writings. And I met Bill Hewlett; I didn't know Dave Packard. But they've been remarkable men.

Of course, you had many, many billions thrown into the region: money they produced. And people just don't realize the dynamic impact that it has on a region to throw a bunch of new millionaires into the region. And when, I'm told, and I can't verify the number, that Google's public offering and subsequent <inaudible> created 3,000 new millionaires. Well, we have a very highly developed philanthropic fundraising community around Cleveland. Our averages are much higher than the rest of the country. It is older money. We don't have a huge number of new millionaires in the area.

My disappointment as a venture capitalist in Cleveland is not how many deals I've missed; it's how few. There are two deals over the vast period of my time there that I really wish I'd done, one of which was carefully studied by two of my partners, and turned down twice. They turned it down for a flaw that they proved to be right on, but the company had attained \$800 million in revenues before it manifested itself. The other one: the entrepreneur kidded me for years about not investing in it. I finally told him, I said, "Mel, when you came along, I was using my own money. And I had just enough cash for one investment. I had a choice between you and another company. The other company was Apple. And with courtesy, I chose Apple." And he stopped kidding me.

Hollar: It's hard to argue with that.

END OF INTERVIEW