An Interview with

ARNOLD J. RYDEN

OH 314

Conducted by Judy E. O'Neill

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Abstract

After briefly discussing his educational background, Ryden explains his role as treasurer for Engineering Research Associates (ERA), the formation of Midwest Technical Development Corporation to supply venture capital to start up high tech companies, and his later role in the formation of Control Data Corporation. He relates the circumstances surrounding his purchase of Telex and the spinoff of the data products division as Dataproducts Corporation. Ryden discusses his involvement in arranging financing for start up companies and concludes the interview with an

explanation of his research on entrepreneurship.

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O'NEILL: I'd like to start with just getting a little bit of your background. I know that you worked at ERA in 1950, but I'd like to get your general background, your education, and how you got to where you were when you started with ERA?

RYDEN: I grew up in Minneapolis and went to the University of Minnesota . My senior year started in 1941 and there was a big event on December 7, 1941. I saw a note in the daily paper over there about an opportunity to go to Harvard Business School and get in a quartermaster ROTC program, and I had taken ROTC two years at the University, so in the middle of my senior year I left and went to Harvard Business School, got an MBA there, and went directly into the quartermaster program during World War II. So at the end of that I came back to Minneapolis and looked around for a job. Nobody in my family had ever been in business. I didn't know many people in business, but I did have help from the Harvard alumni. Anyway, I ended up taking a job with Northwestern National Bank, which is now Norwest, in kind of a training program. Needless to say, it wasn't very exciting. One of the individuals that I had gotten acquainted with was a fellow by the name of Harold Solstad who was a Harvard business graduate who at that time was the managing partner of Peat, Marwick, Mitchell here in the Twin Cities, and he let me know that the treasurer of ERA had died, a fellow by the name of Plufka, so I went over there and was interviewed and was his replacement. I was thirty, I guess, at the time, but almost everybody was young at ERA. So that was my introduction to technology. I'd started at the University in chemical engineering and really made a strange shift and my degree ended up in sociology. Right now I'm toying with doing work on a doctorate in psychology. So I've had a pretty diverse background. Of course, the exposure at ERA was exciting.

O'NEILL: Was there anything in your background at the Harvard Business School which was any way related to technology or what we call now high tech?

RYDEN: Nothing at all, but I'm a tremendous advocate of the case study method that Harvard uses and their emphasis on general management. I really think that it doesn't serve you well on your first job, but it sure serves you well as you progress. You've got to hand it to John Parker, who was the president of ERA. Do you know how ERA happened to be in Minnesota? Have you heard that?

O'NEILL: Yes, I have the basics of the story in terms of the Navy work and the Parker's connection.

RYDEN: It was really the empty plant that Parker had because he was from Washington. So that's how it happened to get to St. Paul. There was a facility. He was probably 48 years old at the time. There was a Dr. Engstrom who was also of comparable age, and Norris who was younger, but all of the technical people were young, of course, and there were quite a few of them. I can remember going to lunch with several of the technical people like Dr. Sid Rubens and so on, and speculating -- this was in 1950 -- whether there was ever going to be a commercial computer business because all of their work predominately was for the Navy, and there was a Navy captain there who overlooked the costs and performance. So I took advantage of getting acquainted with an awful lot of the technical people and became very good friends with some of them such as Bill Drake, Erv Tomash, and quite a number of them.

O'NEILL: You left the area after about a year and a half as I understand it.

RYDEN: I left as soon as I helped Parker sell it to Remington Rand. It was a real eye opener to me to get acquainted with some of the Remington Rand people. I just knew it as a big corporation. I had no idea how lousy the management was. I didn't want to be a financial officer in a little offshoot of a very large corporation. That's what I decided after I'd helped them make the sale. We came up with a pretty interesting way of valuing the company. You couldn't do it on net worth which was like $150,000 or something at the time. They were doing $5 million volume, and we would rush down to the bank every Friday to borrow on the invoices to the Navy to cover the checks that had already been written. So you couldn't value it on that basis. So I figured out a way to, in a sense, capitalize an

engineering staff. In other words, what would it cost you to rebuild that staff from zero, and that was one of the techniques. Of course, you probably know that they wanted to sell it to IBM.

O'NEILL: Were you involved in those negotiations?

RYDEN: Yes, and Parker primarily, of course, but they couldn't get the attention of the top guy. A lot of the vice presidents wanted to buy it. I really don't know for sure why Parker wanted to sell it. I never did know for sure.

O'NEILL: You were just acting as the treasurer of the company?

RYDEN: Yes, right, financial advisor and so on. The interesting thing, and it's a key factor in why it was so easy to get Control Data going, a number of the people he had let buy shares for 10 cents, so Parker owned about 50% and the rest was spread out among several people. They saw that turn into about $3 of Remington Rand stock on a tax free exchange. So later on when we were going to start Control Data you didn't have to convince those people that they might have a real big capital gain. They had already been through it. I think that was significant in terms of their interest in putting money into Control Data which a number of them did. That was a really exciting time for me. That was my first exposure, really, to technology.

O'NEILL: What did you do when you left ERA?

RYDEN: I became the controller of the aeronautical division of Honeywell.

O'NEILL: So another technology firm?

RYDEN: It was technology, right, but still in the controllership function, negotiating government contracts and that sort of thing.

O'NEILL: Then in 1955 you went back to what was then . . .

RYDEN: Then I became a consultant. I decided to be on my own.

O'NEILL: After Honeywell?

RYDEN: I decided to be on my own and I had a few clients, but Norris had sought me out. He had been given, as I understand it, the challenge of combining Eckert Mauchly, the Remington Rand laboratory in Norwalk, and the St. Paul operations into a Univac division, and he thought he could use some help. So I spent maybe about half my time beginning sometime in 1955 up until I resigned with the plans to organize Control Data and tried to pulled all the figures and the management planning together in a fashion that made some sense. Remington Rand was in business systems and so on, but they didn't have any business systems. The financial reports, tragically, were typed accounting worksheets almost. The controllership office at Remington was in Buffalo, NY and the top brass were at this Rockledge place, and of course the sales offices and all that stuff were in New York City. So I did have occasion to meet several of the top people at Remington Rand and that was helpful in getting the kind of feedback that lead to the formation of Control Data. I resigned in April, I think it was, and Bill Drake and I and a fellow by the name of Byron Smith had extensive conversations about organizing the company. Primarily Bill Drake and I. We heard that Norris was going to be demoted or fired. I was very careful. I never talked to Norris about it at the plant. We met for lunch at a Coleman's restaurant, since burned down on Ford Parkway, sometime in April I think it was, and he didn't like to fly at that time, he always took the train. So he was leaving that afternoon to go out east and I told him what the scuttlebut was, that he was going to be demoted or fired but not to worry about it because when he got back we'd give him a plan. So he went out there on a Monday sometime in April. He was demoted. He had been general manager of this division and he was demoted to vice president of engineering. I think you have stuff on file, letters from Remington Rand and so on on that. So on the following Wednesday we had lunch at what was then the Ranch House, most recently it was Gregory's, and now it just closed, on about 80th and Lyndale, and I gave him a very brief

business plan entitled "Control Data Corporation." Bill Drake and I and to some extent Byron Smith had come up

with the name, and the way we did it was we simply had a piece of paper and drew two lines and we headed it

"Investor Sizzle Words" and we put a bunch of words here and a bunch of words here and then we had company,

corporation, and so on over here, and then we just ended up going like that. It was kind of strange because not long

after it was incorporated we discovered one called Data Control in Connecticut. I don't know what happened to that,

but then we had all kinds of jokes about the name. Norris didn't like it and a lot of other people didn't like it and so

the challenge was to come up with a better one. Nobody did. But one interesting concept, because since then I've

had a hand in helping start lots of companies and it seems that almost always there is what I call a precipitating

factor, some event is triggered, there may be a latent interest in doing it but there is some event that triggers it, and it

was Norris' demotion that triggered it.

O'NEILL: So that triggered it for you and Drake and Smith?

RYDEN: Well, no we had started to think about it and plan it, but we didn't do it, you see. Norris was the leader,

obviously, of the technical people.

O'NEILL: In your consulting duties with Norris, who else were you talking to at the company? Were you still

involved with the engineers?

RYDEN: Yes, indeed, sure. I talked with a number of them.

O'NEILL: Would you say there was a general feeling afloat of dissatifaction with Remington?

RYDEN: No, I wouldn't say so because -- this is true of any larger organization -- only a relatively few people really

sensed it or had any contact or reason to be aware of it. So I wouldn't say it was pervasive, but it was certainly more

significant among the more key people who were aware of it. As always it takes a certain amount of initiative to

leave a fairly decent job and take the risks of doing something. Now obviously these all people believed in what they were doing strongly and that's important, but they also had that money making experience at ERA. It was really the same group of people in a sense acquired by Remington Rand and just moved over here. One of the funniest quirks, Norris had a management technique and I'm not being critical here, I'm just reporting, of always having a fall guy that took the heat for things that people didn't like and that fall guy was Bob McDonald, and so when Control Data was being organized nobody wanted Bob McDonald. As you know he went on to become president of Sperry, but it's kind of interesting, and he's a good guy, but he had been the guy who Norris had used to take all the heat for things that people didn't like.

O'NEILL: You mentioned Byron Smith. What was his capacity?

RYDEN: I can't remember the exact titles.

O'NEILL: But generally was he a technical person?

RYDEN: Yes, he was a mathematician by education, but he was more in some kind of strategic planning. He wasn't an engineer.

O'NEILL: Had you known Smith and Drake at ERA?

RYDEN: Yes.

O'NEILL: Had you kept contact with them while you were gone?

RYDEN: Somewhat. Not extensively until I went back as a consultant and then of course I started to have lunch with them as I did with several people. I always made a point to have lunch with the engineers and find out what was

going on.

O'NEILL: I think a basic story of the stock offering for CDC -- in fact I do have, I should have mentioned this earlier, available to me the interview you did with CDC archives about ten years maybe -- is sort of laid out.

RYDEN: It's one of the interesting things as I mentioned because of the ERA experience, Drake and I were really surprised, and we were the ones that were handling all of this because Norris hadn't resigned . Part of our concept was that future employees would have the first opportunity to buy the shares and we thought some of them would do it, but we didn't think a large number would and we didn't think they'd do it to the amount they did. I had arranged with the vice president of First National Bank that they could borrow 80% so somebody instead of investing $1,000 they invested $5,000 and they repaid the loan over the next two years. It was amazing. These were engineers, not a big salary -- $20-$30,000 typically -- with children. Amazing the number of people that came up with $5,000 from somewhere. We had a series of three night meetings at Drake's house in Edina here and we were greatly concerned that Remington would find out what we were doing and take legal action which would make it very difficult to raise money. So we had one prospectus in a ring binder and we followed what was called a pre-registration subscription, which I don't think they have now in the state of Minnesota, but at that time you could have people read the prospectus and sign the pre-registration subscription without filing anything with the state of Minnesota other than your corporation papers.

O'NEILL: Was there any thought at all or was it just sort of a given that this new company would be begin in the Twin Cities in Minnesota?

RYDEN: It was a given because all of the people were here. You certainly wouldn't get them to move.

O'NEILL: So that was one of the strengths was the fact that these people were all here?

RYDEN: Oh, sure. I don't think there was ever a thought about having it anywhere else. There was a thought about whether it should start in St. Paul or Minneapolis, but no, no question. Of course it did start the dollar stock concept in Minnesota which was a big success and lead to all kinds of companies starting and going public at the outset which had been unheard of. Companies didn't do that.

O'NEILL: How did you come up with that idea of the dollar stock?

RYDEN: I can't tell you exactly. I'm the one that did it. I laid it out.

O'NEILL: Were there any other models in your mind from case studies?

RYDEN: No, not really. I don't think so. Not that I can recall. There's some interesting stories. I don't know if I've told them before, but we wanted financial people of significance in Minneapolis and St. Paul to have an interest if we could get some.

O'NEILL: That was just to get the money?

RYDEN: To get some money, but more to have their support and interest.

O'NEILL: For what purpose?

RYDEN: Well, for when we go public, in the broad sense, you always need more money. We just thought it was a good idea. So at one point I arranged a meeting with Piper Jaffray and Norris and I went in there and we offered them 20,000 shares of the 600,000 at one dollar, and they asked us to step out and we did and we came back in and heard about a half hour dissertation on the value of the Piper Jaffray name and things of that sort, and they said they wanted 50,000 shares and two seats on the board of directors. So we were pretty brash. We picked up our papers

and walked out. That's absolutely the fact. But I made 5,000 shares available to four lesser partners who were not in that meeting. I had a similar experience. I went to Dain, which was then headed by Merrill Cohen, and he didn't like these high flying technology deals at all. They shouldn't be going public. The guy who had the main financial interest was a young fellow by the name of Wheelock Whitney and he was interested, but he wasn't calling the shots at that time - Merrill Cohen was - about six months later Wheelock came in and wanted to be a participant.

O'NEILL: How were you selling the company? I've seen things that indicated that the plan was to just get government contracts.

RYDEN: Yes. We were pretty naive in looking back. We really thought that because of their work for the Navy primarily that it would be possible to get government contracts rather quickly and that turned out to be pretty naive. In fact people would come out and visit us and they would want to see the plant. There wasn't any plant. We got a real bargain on a rental deal at 501 Park Avenue because Don McNealy of St. Paul, whom I'd gotten involved, had owned the building and they sold it to the *Star and Tribune*, but that was probably one of the big reasons why we early on acquired Cedar Engineering which is a machine shop. And then when people would come to town they would be taken out to Cedar to see the machinery, and then they would be taken downtown to talk to engineering, and that was a big factor in getting government contracts.

O'NEILL: So it was prior to this, when you were trying to sell the dollar shares and that sort of thing, it sold primarily on the strength of the engineers, on the human capital?

RYDEN: Oh, yes. Absolutely. And the concept of an emerging computer industry at that time.

O'NEILL: Did you have agreements with any of the engineers that they were going to come to the new company?

RYDEN: No.

O'NEILL: This was still just you and Drake?

RYDEN: Well, no. Norris got involved. We had a key meeting at his house. I can't tell you when. It might have been June of 1957. So people knew he was going to be involved.

O'NEILL: But you didn't have any actual engineers on board?

RYDEN: No. Frank Mullaney was the key guy. He came on board rather quickly, but not at day one. Everyone envisioned that that would be the case. These people all worked together, so they had great concept.

O'NEILL: I was under the impression that there was nobody else really working with you, but I wanted to be sure and that in fact you were selling the company on the strength of being able to attract those people to the new company.

RYDEN: Of course. In other words, that's why they invested as individuals. A good number of them did.

O'NEILL: Do you think they did that just to find a new opportunity? You said there hadn't been a lot of displeasure with Remington Rand within the rank and file.

RYDEN: Well, they had that at the upper levels. I get back to the ERA thing. I really think the spirit at ERA was something. I think these guys, as Univac unfolded, found they're part of a bigger company and they'd hear stories about difficulties with the brass and so on. I believe it was on the part of a number of them, "We can do better without those people, and we'll turn ourselves to the spirit we had with ERA, and we'll be owners." I think it was that kind of mixture of things -- I don't know if anybody ever sat down and did that -- but I think that's the reason why it came off so well.

O'NEILL: Let's move ahead then to when you left CDC. You were there for how long?

RYDEN: Not very long. Here again I have no reason to be very derogatory about anybody, but when asked to deal with the facts, Bill Drake was the first employee. Unfortunately, he was the first one let go. We all know it wasn't for incompetence. We're all human beings and we're motivated by different things and our visions are different, and so on, and that really hurt me because I knew of the tremendous role he'd played in all the groundwork to get it started. So in spite of all the rationales that we couldn't afford him, I knew that wasn't the real reason, and rightly or wrongly I concluded in my own head that Norris really wanted to be identified as the sole founder which meant he'd have to get rid of all the guys, and if he got rid of Drake, I'm the next one. But here again, you know, I've indicated that precipitating factors lead to interesting events. When Bill was terminated, he didn't have a job, and I'd been toying with creating a venture capital company. So we started Midwest Technical Development Corporation. We started it as a private company with the idea of having it would go public. It would be an investment company similar to American Research and Development Corporation which in 1958 when we started was the only publicly owned venture capital fund in the country. We were then the second. Of course starting that lead to our participation in the founding of National Semiconductor Corporation.

O'NEILL: Okay, we'll get to that in a few minutes.

RYDEN: But I wanted to relate it to the precipitating event of Bill's termination was what caused us to form Midwest Technical Development Corporation.

O'NEILL: So you and Drake again went out into a new adventure.

RYDEN: Right. Now, I was still an officer and director of Control Data at the time, this was November of 1958, but I knew, at least in my judgment, that Norris would find some reason to have me leave so I preempted it and bought Telex in February of 1959.

O'NEILL: Okay, I'm a little confused. You start Midwest Technical Development Corporation at the end of 1958. Is it the Corporation that buys Telex or you as an individual?

RYDEN: Me and some other people.

O'NEILL: So your involvement with Midwest Technical Development Corporation was only in the setup phase?

RYDEN: Oh, no. I was the president of it. After I bought Telex I resigned from Control Data.

O'NEILL: So you resigned from Control Data in February of 1959 when you bought Telex?

RYDEN: Right. So I was president of Telex and I was president of Midwest Technical Development Corporation.

O'NEILL: And the Midwest Technical Development Corporation just had Drake, pretty much, working for it?

RYDEN: Well, Byron Smith, who incidently had been left out just the way Bob McDonald had been left out. They didn't want Byron Smith either. Now, Byron had personal difficulties which later showed up in a more serious form, but the people recognized it way back then and so they didn't want him even though he had been very helpful in the conceptual aspects of it.

TAPE 1/SIDE 2

RYDEN: We had Byron Smith, and then we had a lot of people later on.

O'NEILL: Had you studied the other venture capital company that you mentioned, the American Research and

Development?

RYDEN: Oh, yes.

O'NEILL: So it was consciously modeled on it?

RYDEN: Yes, I would say so. See that was started by Professor Dorio of Harvard Business School and I was aware

of it, and, in fact, when we started National Semiconductor, I went to American Research and Development to see if

they wanted to participate and they at that time had owned a huge amount of Digital Equipment. In fact I remember

visiting Digital Equipment, but they declined to participate in National Semiconductor.

O'NEILL: Tell me a little more about National Semiconductor and how that got started.

RYDEN: We had Midwest Technical Development Corporation. We raised some money privately and then

subsequently had a public offering, and I can't remember how we were approached. The interesting thing is that the

three Ph.D.s that came to us, were all in Remington Rand Norwalk laboratory [laughs]. So you can see Remington

Rand thinking that we were targeting them because as you probably know they did sue us in Control Data. They

sued us in National Semiconductor, too. Even though I'd cautioned the people that they were not to take anything

that could be construed as property, which would be drawings, etc., they apparently took some, but it wasn't a

serious lawsuit.

O'NEILL: Did they know about you through your connections?

RYDEN: I can't remember. I really don't recall how they got to us. But I know Drake and I went out there and met the

three Ph.D.s at this Norwalk laboratory, and of course this was in the infancy of the semiconductor business. I guess

you had Fairchild and maybe Texas Instruments at the time. Again we targeted $600,000 which is what we targeted at

Control Data and placed it privately. Midwest Tech took $150,000. Some people in New York, I'd gotten acquainted with a fellow at Smith Barney and they were all set to take $150,000, but backed out at the last minute, but one of the younger fellows at that time who later became identified with DataCard and so on, Don Lucas, was at Smith Barney, and he got a friend of his by the name of Bill Witter who was the son of Dean Witter, and that group took $150,000, and then we placed $150,000 with various individuals around here. I can't remember where the fourth one came from.

O'NEILL: I'm just curious about the name and the connection to the Middle West. Was there an intent to fund things or to do things in the Midwest?

RYDEN: Yes. It was to be here. That was our objective to be a capital source. It was right at the time that Congress had created the SBICs.

O'NEILL: The Small Business . . .

RYDEN: Yes. And the first Midwest here was the first SBIC in the country. We were organizing Midwest Tech, but the regulations weren't out yet on the SBICs so we went ahead under the investment company act of 1940 even though there were reasons why the SBICs were more attractive. At that time there weren't many sources of capital. At Control Data I had gotten the second round of money from Allstate Insurance who took the preferred stock issue, but there weren't many pockets of capital. Allstate was one, and there was a group of insurance companies in Wooster, Massachusetts -- Paul Revere Life and a few others -- but they were pretty scarce in 1957-58.

O'NEILL: So what did you do to try to get the company started in this area?

RYDEN: Well, of course, once the word gets out, you're besieged by them so you don't have to do much to seek them out. They seek you out. I don't remember how the people who helped start National Semiconductor came to us, but at the same time I was trying to build up Telex and I hired some engineers from Univac to work on a big disk file.

O'NEILL: Now, Telex was located in St. Paul, correct?

RYDEN: Yes. Correct. So we created a data products division and I acquired two patents.

O'NEILL: Wait, it wasn't data products division?

RYDEN: Yes it was, and I'll tell you how that ties in.

O'NEILL: At that time it was data products division?

RYDEN: Yes it was. Data products division of Telex.

O'NEILL: I thought Dataproducts was later. Maybe my times are confused.

RYDEN: It was. Dataproducts came in 1962.

O'NEILL: And you'd bought Telex in 1959?

RYDEN: In 1959, but right away I hired some engineers from Univac and created this data products division. It had two product areas that I pursued. I had acquired some patents from a guy in Detroit relating to a printer. Two patents. One that had to do with a hammer mechanism and one that had to do with an arraying technique. So this group was working on a printer and it was working on a disk file and the disks were 31" in diameter and they had a actuator that mo ved the flying heads and all that sort of stuff. I had put this Byron Smith again in charge of that. As it became increasingly apparent that he just didn't have the general management abilities, I started casting around for who in the world am I going to get to run that. Here again I get back to precipitating factors because Tomash had left

as the head of Telemeter Magnetics which was owned by Paramount, and he went on the board of Midwest Tech. He was one of the directors of Midwest Tech along with Drake and others. We had a 15-man board -- several technical people, and several business people -- he had asked my help in exploring with Paramount the purchasing of Telemeter Magnetics. So he and I went out to meet with Barney Balaban who was then the president out in New York City. We probably met with him an hour, but it was clear that he wasn't going to sell it. About a month later it was announced that he'd sold it to Ampex. So we were late, but the point is that for Tomash, who was of course president of Telemeter Magnetics, it was probably a good thing that he didn't buy it because you know in time that core memories were replaced by semiconductors. A person such as Tomash with tremendous general management abilities wants to exercise them and even though he was vice president of Ampex, he wasn't real happy about it. So I knew that, of course, so I approached him with a plan and I knew he wouldn't work as a division head of Telex so I concocted the idea that we'd spin this data products division off to the Telex shareholders and it would be a public entity and he could create Dataproducts of California to get part of the stock, merge them, and then he'd run that operation. So that's how Dataproducts was created.

O'NEILL: I'm sorry, I didn't quite understand that part about he would do it in California.

RYDEN: Well, yes, in two steps. You have Telex and its got shareholders so you carve off this Dataproducts division and spin it off to those shareholders so that's now public. He created a private company, Dataproducts Corporation in California. Then he got his group, bought bargain priced stock in the private company, and then we merged those two. So that's how Dataproducts was created.

O'NEILL: Did Drake have any role in this?

RYDEN: Not at that time. He and I were on the board of Dataproducts day one, but Drake's role came a little later, and as you know, DataCard came out of Dataproducts. You probably know that already. He and Tomash were close friends going way back to the ERA days, but that wasn't the case right at that time. There again you see it was a

precipitating event -- the sale of Telemeter Magnetics -- that created the situation where Tomash really didn't have what he wanted, and I recognized his terrific abilities, of course, presented him the idea, and we went ahead.

O'NEILL: Was there a reason that this wasn't located in Minnesota?

RYDEN: It was initially. He took over the entity.

O'NEILL: He took over the St. Paul operation?

RYDEN: He took over the Dataproducts portion of it.

O'NEILL: The division that you had created of Telex?

RYDEN: Yes. There's a building over there near east Hennepin and it had a fairly large metal building in the back which was the Dataproducts division. So it was there initially.

O'NEILL: Okay, because it sounded like it was in California.

RYDEN: Well it was, the corporate staff and so on, but what operations there were day one were here in St. Paul. They later moved, of course. But you've got to say, "How did they get in the printer business?" They got in the printer business because I acquired two patents from a guy in Detroit for Telex and assigned them to the Data Products Division which became Data Products Corporation. It started with those two patents.

O'NEILL: I also saw where the Midwest Technical Development Corporation was involved in the startup of Scientific Data Systems. Does that ring any bell?

RYDEN: Yes. I can't remember all of these things. I remember it vaguely. There were several. And as an adjunct I'd started a company called International Properties and our vision was to create what we called the Science Industry Center and it's out on Highway 169 and Bass Lake Road and there were some companies started out there. I can't remember them now. In fact it's kind of interesting because at the time we were exploring this property out here which wasn't much, but the one in New Hope where the Science Industry Center was a lot cheaper, so our idea was that we'd facilitate actually building buildings and have a Science Industry Center, sort of like Palo Alto, that sort of thing.

O'NEILL: Were there any incentives or disincentives for starting high-tech companies in Minnesota?

RYDEN: I don't think we really sat down and deliberated on those things. Most scientific companies really get started where the key people are and want to be. National Semiconductor started in Connecticut because that's where the people lived. They didn't want to do it in Norwalk, but they started in Danbury which was about 30 miles from there. So I don't think there were any compelling reasons. We didn't do any cost analysis, property taxes, workmens' comp, or things of that sort at the time. It's mo re where the people are and an appraisal of the opportunity. That's really the key point, I think, and where you can raise money for ventures. Because of the success of Control Data it was very easy to start new companies and raise public money.

O'NEILL: Because the population in the Twin Cities was familiar with CDC?

RYDEN: Sure. Right. And there were all kinds of new brokerage firms. Several of them didn't survive or got in trouble, but it was pretty flamboyant times.

O'NEILL: One of the things I'd like to do is sort out the influence of CDC and you've just described one influence which would be that people were more willing to spend money on startups because they saw the potential to succeed.

RYDEN: Sure. They say the stock keep going up and there were endless stories about people. I hear them to this day.

O'NEILL: About people becoming millionaires?

RYDEN: Yes, all kinds of stories. In fact, you hear an awful lot of fiction [laughs]. A tremendous amount of fiction. I heard one just the other day. So it's pretty common, but there are some funny ones. I wanted to get people with money invested initially and they'd buy $10,000-15,000-20,000, but as it became apparent that the prospective employees were putting in so much, I actually went back to several of those and cut them in half. That's a true story. But there was one doctor, he's since dead, a Dr. Gieri, that he'd being operating down at the old Swedish Hospital and all he did was talk about his stocks [laughs]. So they're true stories about that sort of stuff. It's really amazing.

O'NEILL: Was it also the case that the people from CDC were doing the startups? I mean the technical people. Were the startup companies from your experience based on the human capital again the way that it had been from ERA?

RYDEN: Sure. You know an interesting thing, I don't know if anybody has really made an attempt to document it, I think it's absolutely astounding the number of company presidents that came out of ERA: Bill Drake, Tomash obviously, a guy that became President & CEO of Perkin-Elmer -- Sorensen, the guy who started a company, McCauley, Orenstein. If you went back to the original roster at ERA at the time they were sold to Remington Rand, you'd find a surprising number of individuals that became presidents of companies, and successful companies. Really remarkable.

O'NEILL: There was some entrepreneurial spirit there?

RYDEN: Yes. I'm a great believer that entrepreneural spirit is created by parents in the first seven years. In fact, if I pursue this psychology study I'm going to try to analysis with some specificity where entrepreneurs come from. In

fact, I worked out a little questionnaire on family background. And, of course, the people that were willing to go to work for ERA instead of Honeywell or 3M have a certain risk taking character that lead them to do that. So you had those people who were inherent risk takers. But they also, and I can't explain why it is that there was that reservoir of general management talent. That I don't know, but I think it's quite amazing.

O'NEILL: Would you say that your own background contributed to your risk taking?

RYDEN: Oh, no doubt about it.

O'NEILL: So you're basing it on your own experience and those of the other people?

RYDEN: I'll show you. I'll give you a little form I've got. I've been a trustee at Gustavus Adolphus college for about 25 years and they have a professor of entrepreneurship and he used some of these materials and interviewed about 35 successful entrepreneurs and somewhat confirmed my theories as to where they come from. Three overriding characteristics, necessary, but not sufficient perhaps. We all know that there's ample psychological evidence that the first born tends to be the higher achiever of the siblings a lot of the time. But I found that almost all the successful entrepreneurs I've talked to, their mother was the stronger personality of the parents. That's point two. Point three which is probably determinative -- this is a scale at one end of positive affirmation, reward, compliments, recognition, and so on, and at the other extreme is criticisms, complaints, and so on. And invariably the mother of the entrepreneur is way over here. I had one guy who put it off here. Now that's where, in my opinion, entrepreneurs come from because if you're criticized every time you stick your head up, pretty soon you don't stick your head up, so you don't become a risk taker. I've got other characteristics such as discipline, because it isn't enough, you know you've got to be pretty disciplined if you're going to do anything. Now, take Drake for example. His father left when he was pretty young. He had an alcohol problem. And I knew his mother. He was first born. So he meets those criteria. I have found in talking to so many people about this, they haven't thought about it, but when you bring it out to them they say, "Oh, yes." In fact, I was talking to one guy who said, "I've got to call my mother" [laughs].

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Along with that is a form I made up to facilitate doing the things in there and I quote from the third chapter of *In Search of Excellence* which has to do with the psychology of it. There's no doubt that rewards influence behavior much more than punishment. Things of that sort.

O'NEILL: So you're going to follow up on this?

RYDEN: Yes. I have fun with it.

O'NEILL: Okay, how long did you stay involved with Dataproducts spinoff as you explained?

RYDEN: It's a very interesting thing. At that time I was doing all kinds of things.

O'NEILL: And this is what, 1962?

RYDEN: 1962, along in there. I'd been active in the Lutheran church for many years and some people came to me from Lutheran Brotherhood Insurance which is a large fraternal insurance company. They had been trying to get control of and kick out the then president, a fellow by the name of Granrud, for some time, and they kept pressuring me to help them. So finally I said, "Well, we'll give it a whirl," and being a fraternal the members are owners. They're the voting people so you have to have a special election if you're going to do that. So I hired the Dorsey firm to work with us. I was pretty naive and young in a lot of ways at that time. I had a lot of good ideas like getting them into mutual funds, which they weren't, things of that sort. I didn't realize that I might be going into a hornet's nest in terms of political ramifications. I can't say to this date that this activity lead to what I'm going to tell you about next, but in 1962 the SEC sued everybody involved in Midwest Tech, and you know when they do that they make all kinds of horrendous allegations. "Disgorge these unseemly profits such you did illegally," and so on. Well, in many cases the SEC simply gets people to sign a consent decree, but we decided that we hadn't done anything wrong and that we would fight it legally and we hired the Dorsey firm to represent us.

O'NEILL: How many people were involved here?

RYDEN: All of the officers and directors of Midwest Tech.

O'NEILL: You mentioned before that Drake was on the board, not Drake, but Tomash. So all of these people.

RYDEN: All of these people. Another outstanding guy was Dr. Neil Amundson who was chairman of the chemical engineering department at the University of Minnesota. He had been a consultant to Univac, by the way, quite a mathematician, and a partner of Piper Jaffray. We had a very prestigious board of directors. They sued all of the officers and directors, about 20 people. To shorten the story, we were exonerated after a five week trial in January and February of 1963, but it wasn't until late in that year that the judge gave his verdict. He threw the SEC a bone in that none of us could be officers or directors of funds under the investment company act without prior SEC approval. So we all resigned. That led to a group that sought to take control of Telex and did succeed. So at that point Drake and I are back to square one in terms of what we would do, but Dataproducts had gotten organized and he eventually went to work -- stayed here, lived here -- but went to work for Dataproducts. So that was an interesting experience.

O'NEILL: What did you do?

RYDEN: That's when I decided that I, just on a personal level, get involved more on a venture capital basis working with young companies, trying this and that.

O'NEILL: So you were consulting?

RYDEN: Yes, but in a somewhat unusual way where you'd be active in it to some degree and invest. Really that's what I've been doing for a long time. It's something you don't retire from. You just kind of don't do as much. I don't

do very much, but I worked on several deals and I typically get "bargain" stock and sometimes modest fees and try to apply my experience.

O'NEILL: Are these mostly computer related?

RYDEN: They have been, yes. In fact, one I'm working on right now is a software company that happens to be in Denver. First time I've worked with a young lady entrepreneur and I don't know where they fit in on this. I think a lot of it is similar, but whether it's the father or mother I don't know. She's got an unusual combination of technical competence, sales ability, and general management ability. She started working for McDonnell Douglas out of high school in the data conversion business of software for utilities. She went to college at nights and graduated with honors. Then McDonnell Douglas sold that operation to EDS. Another precipitating factor, right? So she left with a few people there and started this company called Expertech Corporation and targeted developing software to reduce the costs of data conversion and specializing in utilities. And as you know, getting the maps and related data into the computers is an extremely costly process, and she's just on the threshold of significant success. She got a contract on a company in Clearwater, Florida called Baymont Technologies that was doing the data conversion for U. S. West and sold her software system, which cuts the cost more than in half, so it's a pretty significant step. And then she's got modules that enhance the quality and the fact that it's being used here in the Twin Cities by U. S. West up in Fridley or Brooklyn Center, and she's just making the sale to Q. C. Data and they're doing the data conversion for Northern States Power. So while it's in Denver, it still relates to activities here.

O'NEILL: Do you want to put her name in?

RYDEN: Oh, sure. It's Karen Ingersoll (?). She's just a remarkable -- at 34, something like that -- and she's extremely talented.

O'NEILL: So you're still involved in a lot of these things?

RYDEN: Not a lot. A few.

O'NEILL: I hope I mentioned over the phone we're doing a project now and trying to get at an understanding of the computer industry in Minnesota and that's a part of why this interview is being done. As someone who's been around that industry for several years now, can you tell me anything about how it's changed over time? We talked obviously about the CDC impact in the late 1950s and that carried through maybe through the early 1960s.

RYDEN: One thing that's changed for the worse relates to SEC regulations. Certainly the whole idea of dollar stocks, etc. was abused. There were any number of companies that went public at a dollar in the 1960s into the 1970s that shouldn't have, and there was a lot of trading in these stocks, and of course if a dollar stock goes to two that's a pretty big increase percentage wise. Then so the SEC classified everything -- just a few years ago now -- everything under five dollars they call a penny stock, which is not truth in advertising.

TAPE 2/SIDE 1

RYDEN: So if a brokerage firm wants to bring out a stock issued at under five dollars they've got to get the customer to sign these kind of disclaimers and it's just a lot of paperwork. So they don't do it except in rare cases. In fact, there's a new stock issue by a good firm in town, Miller Johnson & Kuehn, Liferate (?) Systems, and of course it's at five dollars for that very reason. This is certainly a real startup. If you look at the sales, calendar year 1992, the sales were $50,500, calendar year 1993 they were $74,600, calendar year 1994 $119,700 and they lost $872,000. Now they're going public and raising four and a half million dollars at five. There aren't too many of these any more. And if you look back -- I'm sure you have a copy of the prospectus of Control Data when it was first started.

O'NEILL: We do have the Control Data records, but they're not processed so I don't know exactly what we have in there.

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RYDEN: If you need a copy, I've got a copy of it. I'd be happy to give you one. And of course, if you were to compare the disclosures here, particularly the risk section -- Drake and I used to joke that what we'd do is we'd publish a standard set of risk factors, just put them in every deal because nobody reads them anyway, and you don't protect the investors, really. What you're protecting is the people in the company from lawsuits. The prospectus for Control Data was about as abbreviated as you could ever get, but you're investing in people in these deals, particularly software deals. It's all people.

O'NEILL: So the SEC regulations about penny stocks have an impact on the number of startups?

RYDEN: Negative impact. The financing of them.

O'NEILL: But that would be something across the board, across the country.

RYDEN: The other thing that I've felt strongly about is the capital gains tax, and you see when Control Data started there was a enormous difference between the top tax rates on ordinary income and capital gains because you only put half of your gain in and paid your regular tax on it. And then, of course, under the Bush tax plan which was, I think, a disaster, you taxed capital gains and ordinary income at the same rate so there wasn't the big incentive, and I think the greatest thing we could do to stimulate new ventures would be to greatly reduce or eliminate the capital gains tax. For lots of reasons because people who would be investors, say they bought Medtronics or something, Control Data, they hang onto it because they don't want to pay the tax where if they don't pay the tax they turn it over and you'd have a big rollover effect of investment and new deals. I think that would be a dramatic improvement.

O'NEILL: Is there anything that's specific to Minnesota that you can think of?

RYDEN: No.

O'NEILL: Either way?

RYDEN: I think you've got a tremendous environment here in Minnesota. I worked with a company that had its founding in Melbourne, Florida and we were going to go look for some of these mini buildings that you see, with this little office in the front and a warehouse type factory. Couldn't find any. We've got them all over the place. They're just all over here on Washington Avenue and elsewhere and I was really shocked. Now, Melbourne's not a huge city, but I don't know what it is. You can speculate. Is it the northern climates, great people that are more energetic? I don't know. I don't know whether it's personal characteristics or what it is that you create more venturesome people up here, and people don't want to move usually. Spinoffs from, whether it's Honeywell or Control Data or 3M or what have you, get started here because that's where the people are. So I don't think Minnesota has any negatives in terms of new ventures. You can move to South Dakota, but not many people want to do that. I did create a division in Watertown, South Dakota for Telex because we had an unusual labor rate and an unusual building deal, a manufacturing facility, but the small towns in Minnesota are terrific for manufacturing now. I was talking to a company that was barely running and they got a deal in Jamestown, North Dakota where the local community put quite a bit of money into preferred stock in order to have the manufacturing there, but there are communities in Minnesota that do that, too. It's been my experience and I think most people's, that the work ethic in small towns is terrific, particularly in Minnesota. It's a different work ethic here than in Florida.

O'NEILL: We've pretty much come to the end of all the questions I had, but I'd like to give you an opportunity if there are any general statements that you'd like to make or anything that we skimmed over that you'd like to expand upon or anything that we didn't touch on that you'd like to talk about.

RYDEN: Well, let me think just a minute. We do have a significant number of venture capital firms in this area.

O'NEILL: And you would ascribe that to?

RYDEN: I'm not sure. It's so interesting because when I went to Allstate through an associate at Dean Witter. That's how I happened to go to Allstate.

O'NEILL: This is on the second financing of CDC?

RYDEN: Of Control Data, the preferred stock issue. And of course it was preferred stock because of the dividends are largely tax free versus debt, and a young fellow at Allstate was a guy by the name of Zacarelli and of course he got the credit for being smart and investing in Control Data. He ended up being the president of Norwest Capital, so I'm sure that the Control Data experience was part what led him to come up here and Norwest had started that as a venture capital group. You've got several other groups here. The Cherry Tree group got their money initially from Charlie Oswald of National Computer Systems. One of the best ones now is the St. Paul venture capital group. I've had the view that one of the missing ingredients in venture capital groups is that they have very intelligent analysts, MBAs and so on, but not enough people who have broad general management experience. The St. Paul ventures has a fellow, for example, Rick Boswell, an engineer by education, Harvard MBA, Ph.D. in computer science, but more importantly he was president of E. F. Johnson and subsequently president of ADC Telecommunications. What a remarkable background. I'm not implying criticism of other venture capitalists, but I think that if there were more people with broad general management experience, they're in a position to give better advice and counsel to new ventures which in my view they frequently needed. So I think, I don't know how you do that, but I think it would increase their batting average somewhat. And it's so interesting because I told you about the Midwest Tech group being sued and the things that we were criticized for doing showed up in a 1980 amendment to the investment company act of 1940 and it specifically permitted almost all of the things that we were criticized for doing in 1962 [laughs] which is, I don't know what comment I wanted to make on that, but I remember when I first saw that I was just flabbergasted. Here all of the things they criticized us for doing they recognized were important and they specifically permitted them.

O'NEILL: What kinds of things are you referring to?

RYDEN: Like being a consultant and being a paid consultant and having equity interests and things of that sort.

O'NEILL: So these were all the kinds of issues that were brought up in 1962?

RYDEN: Yes. Right. Exactly. Just amazing to see in 1980 they amend the law.

O'NEILL: Well, a lot changes in 20 years.

RYDEN: Yes. I was surprised to see that, and that's constructive.

Perhaps with these forms big companies could identify better the people with entrepreneurial capabilities in their own organization.

O'NEILL: Similar to the kinds of things at 3M?

RYDEN: Yes. Provide an environment where they foster those people and give them a little more leeway, but it's the problem of identifying them.

O'NEILL: Well, it's also now clear that someone who really has that entrepreneurial spirit wouldn't be happy in the confines of a big company even if they did have more leeway.

RYDEN: That's correct. Certainly true.

O'NEILL: Because there's something about that whole risk taking that really within a large company isn't the same

kind of risk.

RYDEN: Absolutely right, and the strong desire to run your own show. That was there. It was very important. Psychological aspects are very important. That's why I want to find out more about them if I can. I gave a talk at a Rotary in St. Louis Park on the psychology of new enterprise and the fellow that asked me to speak, he used to belong to my country club and he's the guy who founded Braun's, the stores. The one store in Miracle Mile is where he started and it became a very successful chain. So I tried some of my questions on him, you know the mother or father with the stronger personality. "Oh, my mother," and then I listened to about a half hour talk about his mother. I had another guy. He was the president of Coast to Coast here and he was changing jobs and I was talking about the deal and I asked him that type of question and he said, "I don't know." The next afternoon I got a call from him in his car and he says, AMy wife's driving me to the airport and that damn question kept me awake all night. I've been discussing it with my wife and she says, "'Geez, you damn fool, of course your mother was the stronger personality,'" but he didn't quite know. So I've had just an awful lot of fun with it.

O'NEILL: It sounds like a good thing to follow up on and see if you can't come up with, I don't know if it's scientific, but a more grounded basis.

RYDEN: So what do you feel now is your main purpose in these histories?

O'NEILL: Well, there's a couple of reasons why we're doing a set of interviews right now. One of them is connected to the -- it's been 50 years now -- year of the computer is sort of 1996 and there will be a lot of celebrations and part of that will be a celebration of computing in Minnesota. While they're working out exactly what form those things are going to take and what kinds of products will come out of it, we decided to go ahead with some oral histories because we know there are people who know a lot about it, just that it's not documented anywhere else. So these interviews will go into the collection of oral histories at the Babbage Institute for sort of immediate use in the next year, but also just for the general information. I think at some point the development of Control Data will make an interesting story

and people will want to know different perspectives and also get the story from the people who were involved in it in their own ways. So a short term project on Minnesota Computing is sort of the immediate reason. Well, thank you very much for this interview. I've enjoyed talking to you.

RYDEN: Well, my pleasure.

[END OF INTERVIEW]