Oral History of Ed Segal

Interviewed by:
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Craig Addison: Hi, I'm Craig Addison from SEMI and we are doing another SEMI oral history and this time our guest is Ed Segal. Thanks very much, Ed, for joining us.

Ed Segal: My pleasure.

Addison: To begin with could you talk about your education? Did you train as an engineer or did you want to become an engineer, what sort of education you had?

Segal: I got my Bachelor's Degree in Metallurgical Engineering from Rensselaer Polytechnic Institute back when metallurgists' primary occupations were in things like steel, copper and aluminum and the semiconductor industry was hardly in existence, and I graduated from there in 1961 and actually pursued quite a few courses in my MBA program at Syracuse University in the evening program there.

Addison: When you graduated, did you know what you wanted to do?

Segal: I think I had an idea I wanted to go into selling technical products but I wasn't sure. I knew that I didn't want to practice as an engineer or a scientist and I didn't think that was my particular skill set. But I really enjoyed…would have enjoyed getting into marketing and selling and actually started right off after I was in the Army to work on my MBA in night school in marketing.

Addison: Did your family influence you at all – your father for example? Were there any family pressure or influence to do something in particular?

Segal: No, I don't think so. I graduated from college in 1961. And the space program was very big in the late '50s. And I think that influenced a lot of people to go to get engineering educations. NASA was getting a big budget then and the whole space program really invested a lot in R&D. And a lot of the earlier work I think that was done in the semiconductor industry was funded by the government and by NASA. And a great deal of people were looking at technical educations then.

Addison: Can you talk about your first job -- your first paying job; what that was?

Segal: Yes. Actually it wasn't in this industry. I worked for Carrier Air Conditioning which was in Syracuse, New York. And I was working in purchasing at Carrier where I thought I would learn a little bit about selling. And I did because I was actually as a very young buyer learning a lot about buying technical products. I stayed there for about four years. And after I left Carrier I started in this [the semiconductor] business.

Addison: So what company did you work for in the semiconductor industry? The first company?

Segal: The first company I worked for was Materials Research Corporation -- better known as MRC. And MRC was started by Shelly Weinig who also served as a board member at SEMI for several years. And when I went to work for MRC in 1967…[it] was a $1.5 million revenue company. $1.5 million in revenues. And my job was to sell at least $200,000 worth of product a year for MRC. And MRC was a company that most of its customer distribution was a third R&D, a third university and a third industrial. And we sold a

lot of products to government laboratories and universities. And products that are used in vapor deposition and for making thin films, high purity materials, vacuum components and zone refining and crystal growing equipment, X-ray diffraction equipment and RF sputtering equipment.

Addison: Did MRC have the backing of another company or it literally was started from the ground up?

Segal: Well it actually was started from the ground up. Dr. Weinig was a Professor of Metallurgical Engineering at Columbia University. And he started it earlier along with another person who was gone when I arrived at MRC…when I joined MRC it was in 1967 and actually the company started I think in the early '60s. MRC was my first sales job. I can still remember my first interview because I walked in there and I said, "I want to go into selling." And they said, "You have no experience in selling." I said, "I know that but I think I can succeed in selling." And they offered me a job and I was thankful for it. And I worked for MRC for about seven years.

Addison: Do you have any recollections of some of the early customer visits at MRC?

Segal: I worked on the east coast and my first job was in Washington DC where I covered the southeastern United States, which was not a great territory because it had mainly government labs in the Washington area. Then if you went into the southeast you had mostly universities but also Harris Semiconductor was in Melbourne, Florida. And they were a big customer at the time. Shortly thereafter I moved up to cover New York State and my job was to cover New York State where IBM was a very big customer in Fishkill and Yorktown Heights. And GE in Syracuse and Schenectady were important customers at that time. And I went on to become eastern regional sales manager and after that national sales manager.

Addison: Looking back in your career, what did you learn from that period at MRC?

Segal: Well I think I learned a lot. Keep in mind before that I never sold anything. Certainly that was an early stage in the equipment business. And many, many companies were started based on technology…on finding new technologies and discovering them and… I think that MRC was known for its excellence in high purity materials. The company went public in 1970, when it was incidentally a $6 million revenue company…based on its leadership and what was known then as sputtering and now is known more popularly as PVD. But I certainly learned a lot about selling and selling to customers and being sure to consistently show up whether business was good or bad and to see customers constantly and introduce new products. That was really a forte that you had to have in this business.

Addison: You were mostly selling to the east coast. Was that right?

Segal: At first it was the east coast for about two or three years. But I was national sales manager when I left MRC. So it was in the United States.

Addison: Did you have much to do with some of the companies that were starting up on the west coast; like in '68 there was Intel and AMD a bit later and so forth -- any of those startups -- did you call on those guys?

Segal: Well we had sales people on the west coast that reported to me and I used to see those customers occasionally. But I did see the customers on the east coast as a salesman more frequently early on. Intel had a competitor actually that was a startup that didn't make it in the east coast called Cogar. And Cogar was only a couple of miles down the road from IBM in East Fishkill. And I spent a number of years calling on them. And that was certainly in '71 or '72 that they had started up. But not as much time on the west coast. But I did move to the west coast in '76 and then spent more time with startups out here.

Addison: From your experience in selling to the west and east coast companies, what were the big cultural differences of the semiconductor device companies on both sides of the continent?

Segal: Well that's a very good question. Of course the east coast companies were a lot more structured. When you think about the east coast and the semiconductor business you talk about IBM, GE, RCA, Sylvania. These companies were larger , more diversified companies. And semiconductors were a part of their business. Semiconductors was not the focus of their business and their business processes were ill equipped to respond to move as quickly as the demands of a very fast paced industry. And I think that when you move out of that arena and you talk about companies like TI and Motorola and National and Intel and more recently companies like LSI Logic and Cypress and the newer companies, they were purely in the semiconductor business. And of course they were more fluid and more reactive and they didn't have the structure that the east coast companies had.

Addison: Ed, what about when you left MRC, what was the story behind that?

Segal: Oh, MRC had a pretty big turnover of people. And that was, I think, one of its issues as a company. And I decided that I wanted to maybe work for a west coast company and I actually went to work for Kasper Instruments selling mask aligners on the east coast. Today people use wafer steppers to make semiconductors. And at the time they were making what was called contact mask aligners. You actually would take the mask and the mask would come in contact with the wafer. As the line widths got smaller you couldn't do that anymore. You had to have something that had less contamination because the wafer couldn't touch a mask.

Addison: Was that kind of the beginnings of the lithography industry?

Segal: Yes. Actually K&S was in the mask aligner business before they went into the bonder business. And Kasper attempted to build a stepper later on in a company called Optimetrix which was a spin off from Kasper.

Addison: Do you know who were the people behind Kasper were? Was that a startup or a conglomerate?

Segal: Actually Kasper was a west coast startup and it was started by George Kasper…I believe that he was in the late '60s. And he left Kasper before I got there because I arrived in '73. And actually the president of Kasper when I joined was Bob Johnson who was very active early on in SEMI's history as a founder of SEMI and also president as well as a board member at SEMI. The other management people were Jack Lane, head of operations, Steve Colen, sales and Karl Johansmeier, R&D and engineering.

Addison: How long did you stay at Kasper?

Segal: I was at Kasper for two years. I moved to the west coast with Kasper in ’76. And within a year after I moved to the west coast I joined Cobilt who was a competitor of Kasper’s. At that time Roger Emerick was national sales manager at Cobilt. He had approached me several times when I was on the east coast to join them and I turned them down. And when I moved out here Kasper was integrated into Cutler Hammer which later became part of Eaton. Eaton Semiconductor had bought several companies and Kasper was one of them. And II Industries was one of the companies they bought. And I decided to go to work at Cobilt about two years later…or about six months after I moved to the west coast.

Addison: The merger, was that the reason that you left?

Segal: Well, yes. I think there was a lot of discontent…the company wasn’t sure where it was going. And on the other hand Cobilt was part of Computervision and they had some pretty dynamic people over there and I decided to move over there.

Addison: But you said that Cobilt had approached you before…

Segal: Oh, a couple of times before that. Actually Ken Levy was president of Cobilt in 1975 when I was working for Kasper. And some of the other people in sales management as well as Ken had asked me to join Cobilt and I turned them down. Ken left shortly before I arrived at Cobilt to start KLA.

Addison: You mentioned that Eaton bought Kasper.

Segal: Yes.

Addison: That was kind of the period where conglomerates were starting to appear in the industry.

Segal: Oh, yes. You saw conglomerates. Schlumberger had bought Fairchild. Eaton had bought a number of equipment companies like II Industries and Kasper. And it’s amazing how that never worked out because several large companies thought they would get in this business but I don’t think they had the stomach for it because it was too cyclical for them. And you even see some evidence of that today. We’re still in a very cyclical business. And the equipment business will always be cyclical.

Addison: And the reason these conglomerates wanted to get in was because it was a hot growth industry?

Segal: Very hot growth. Those were times when certainly the average growth was always 15 percent to 20 percent. You’d never know what it would be in one year but it was always an average of 15 percent to 20 percent over a period of time. And it was very high growth.

Addison: So let’s talk about Cobilt now. What was your role when you first joined the company?

Segal: When I joined Cobilt I was hired as national sales manager. And actually I was recruited by Roger Emerick who later had left to join Optical Specialties and after that to become president of Lam Research.

But I was national sales manager and I got to spend certainly a lot of time on the road in the United States selling there. And that was in 1976. And by 1978 I had been promoted to vice president of sales and I took responsibility for Europe as well. And a year later actually took responsibility as vice president of marketing and sales and I had the globe then. And that's where I first started to get experience…more experience certainly with Europe and Japan.

Addison: Talking about the globe, can you tell me something about trying to sell into Japan and Europe, some of the experiences there?

Segal: Oh yes. Well first I had responsibility in Europe. Europe has changed in the sense that there are three dominant players in it today with ST and Infineon and Philips. There were probably more companies in Europe and there were more U.S. companies that had subsidiaries in Europe, like Motorola in Scotland and TI in France. But Europe was never a dominant player in the semiconductor business but always a very steady player and an important player in the business because of the strength of the European players in the telecommunications market. So I got some experience. And certainly in those years it looked like Scotland was going to become very important. And certainly it had its ups and downs through the years in the business because National was in Scotland and Motorola was in Scotland and NEC and DEC went to Scotland. And there were a lot of customers in Scotland. And since then that's changed quite a bit. So I got a taste of traveling and selling in Europe and that was very good experience.

But certainly when I became responsible for Japan I think I learned a lot more. Japan, in the late '70s and early '80s was really intent on becoming an important part of the semiconductor industry and they were very aggressive and very, very competent. And when I first went to Japan actually in 1977, frankly I was shocked because I didn't know anything about Japanese culture or Japanese people at all. And my first experience fortunately was with Tokyo Electron Labs who was Cobilt's trading partner in Japan.

I think that it was something new for an American to learn about how to deal with a culture that was pretty strange to us. I remember the first lectures I got from people that tell about the fact that Japan was a closed society for many years and the United States has been a very open society for many, many years. That's all they ever saw or knew was Japanese people.

And secondly it's a very disciplined society as opposed to…when you think of Silicon Valley you don't think of high discipline. So they had their strengths and it was interesting to observe what they were. Tokyo Electron Labs was a trading company for many, many years in Japan. First time I'm at Tokyo Electron Labs their revenues were $75 million and they had about 250 or 300 employees in the late '70s. But I did learn. One thing that was always pretty important in Japan was that you better learn pretty quickly how to say, "I'm sorry" because it's very important in Japanese culture to apologize when you weren't exactly perfect. And a lot of American companies and any company that was making semiconductor equipment was not making the highest reliability machines there were. They tried to invent them quickly and get them shipped quickly and they paid the price for it by doing that. And so we would go into customers and I learned that "gomennasai" means, "I'm sorry." And I said it many times. So it was interesting to learn Japanese culture. And actually that formed a lot of what I did later in my career.

Addison: Did you get a feeling that the Japanese wanted to absorb the technology from the U.S.? Were they behind in semiconductor manufacturing equipment and did they want to absorb all the intellectual property or the technology?

Segal: Well, I think most of the Japanese even today will tell you…maybe because of the discipline in Japan [they] were never as strong as the United States in innovation. And yet they always thought that we were pretty good at innovating but not good at being able to manufacture. And I think the United States certainly showed a lot because of the basic comeback it made after the '80's when the Japanese were such a fierce competitor and everybody thought Japan was going to take over the world. The Japanese were very intent on learning what they could about manufacturing semiconductors. And if you look at the [U.S.] memory business in the '80's, they over took it. NEC ,Hitachi , Toshiba and Fujitsu. And those were years when our U.S. companies were Mostek, a name from the past in this business, who was a leader in the memory business early on. TI was very big in the memory business. And Intel's original game plan was to be strong in memories.

Addison: Can we talk about the competition to Cobilt for example? Was that mostly domestic, U.S. companies? Or you had Japanese or European competitors?

Segal: Well I think Cobilt was a prime example of what went on in the equipment business in the early years. Companies were based on inventions. And it was almost like they made an invention and that was their company. Cobilt was a prominent market leader in the contact mask aligner business but also was in the coater developer business, in lithography as well as wire bonder business and the prober business. And the moral of the story is it was in too many businesses. But that was the story of a lot of the companies in our industry that didn't make it. So we competed very effectively in mask aligners but when the mask aligner went to the next stage from a contact mask aligner to what was called a projection aligner or projecting the image of the mask on the wafer, Perkin-Elmer just absolutely came in and took that market over and sold machines and had one of the most prominent products in the history of our business in the mid '70's to mid '80's. That was the one-to-one projection aligner.

Cobilt attempted to build one and it was really a very big failure. And the company eventually was sold to Applied Materials in 1981. And when you reach an inflection point in the product and that product changes over to the next model that was a critical stage for a lot of companies. And a lot of companies didn't make it then because of that. And Cobilt was a prime example of it.

Addison: You mentioned that Ken Levy had left by the time you joined there.

Segal: Yes.

Addison: Was that the beginning of the downfall of Cobilt or it was still going in the upward direction?

Segal: No. I think Ken left in '75 and Cobilt was still moving along pretty well actually into '76 and '77.

Addison: And when did you say you left Cobilt?

Segal: I left Cobilt in 1982.

Addison: Was that when it was basically broken up and sold?

Segal: When Cobilt was sold to Applied Materials I decided to go out and start a sales rep business and leave the company. I left about six or eight weeks after the acquisition was completed.

Addison: Before we go onto your own business, just more about Cobilt. Can you talk about the lead up to the sale?

Segal: Yes. Well first off I was not involved in any way at all. The president of Cobilt at the time was Sam Harrell who had worked at KLA most recently. Previous to the sale to Applied Materials, about a year before that, Philips had developed a step and repeat…a wafer stepper They wanted to buy Cobilt and use that as a marketing tool really to be able to sell their wafer stepper. So Philips announced that they were going to acquire Cobilt. I'm not sure if they announced it. No. It went to the board to vote on it and the board turned it down. And this was a year before Applied Materials bought the company. So I think the employees knew that this was going on. I think it was announced and that's what happened. And then it was turned down and it fell apart.

Addison: So when you say the board rejected the offer do you mean the board of Philips or the board of Cobilt?

Segal: The board of Philips.

Addison: OK. So after that happened morale started to deteriorate or people started looking for other jobs?

Segal: Oh, I think morale was pretty low then. And what's really interesting is that was the forerunner of what is today ASML because later on they did actually spin off a separate company…ASM was a partner with Philips in the early stages of ASML. And that machine was the machine that Cobilt was supposed to be combined with.

Addison: Do you know enough about who bought what part of Cobilt? Because as well as Applied I believe Tokyo Electron bought the coater developer product line?

Segal: Yes. In the late '70s when I was national sales manager at Cobilt the management decided to sell off some product lines because the company was attempting to do too many things. And Tokyo Electron basically bought the automatic wafer prober product line. And that was the forerunner of what is today the prober business that Tokyo Electron has. They also bought the autofab system which was the coater developer product line that Cobilt built. They paid for all that and they bought it with a license fee and the down payment. And that was really part of what is the product lines for Tokyo Electron today. The other ones they bought…they bought diffusion furnace lines from Thermco and they bought other product lines from U.S. manufacturers as well.

Addison: Was that really the transition of TEL from a distributor to a manufacturer?

Segal: That was the start of the transition of TEL from being a distributor to going into the manufacturing business.

Addison: So what was left for Applied to buy?

Segal: Applied had publicly stated at that time and later that they bought Cobilt in order to quickly expand their manufacturing capability in the plasma etcher business which they were just entering at that time. They had developed the 8100 hexode etcher and at that time I recall they were just starting to ship product.

Addison: Now let's talk about you leaving Cobilt and doing your own thing.

Segal: Yes I think that after the experience at Cobilt…it was a very difficult experience with the projection aligner and the acquisition. And I decided that I wanted to go off and do something I wanted to try all my life and it was a good time to be able to do it. I was still young enough to do it and I thought it would be exciting to start a sales rep business. But I wanted to start a business to specialize in distributing Japanese products in the United States. So I started Transpacific Technology. And when I started Transpacific what really happened was a lot of American companies came to me and said, "You know? You don't really have to sell Japanese products." So it was interesting the number of companies that we got into. And we got into predominantly American companies. And most of those companies are either public or have been sold today. And many of them were very successful companies. One of the first companies that we represented at Transpacific was Rudolph Research which is now known as Rudolph Technology. And I'm proud to say that we represented them from 1982 until the late '90s. It was a long period of time to be a sales rep for a company.

We represented Fusion Systems and that was their early entree into the semiconductor business and [we] sold for them in the western United States, and they were eventually sold to Eaton. We represented On Trak Systems who made a cleaner for cleaning wafers after CMP and sold for them eventually in the western United States as well as in Europe. Of course On Trak was sold to Lam Research. We represented Opal. Opal made a line width measurement system for for use on wafers. And Opal was sold to Applied Materials.

Addison: Did a lot of consolidation happen during your period as a rep? Did you see a lot of your principles merge or be bought or whatever?

Segal: Yes. So what I did was…actually there was one other important one. That was PRI. It was sold to Brooks eventually. I met PRI Automation and Mort Weisler when the company had six employees and it was just building a robot to start in 1983. And of course they built a very good business after that. But I think that we could see this consolidation coming. And that's the reason that Transpacific Technology evolved the way it did. Because in 1989 I got a call from a friend of mine who worked for Mitsui who was the trading partner in Japan of Toshiba. And they asked me to become the distributor for Tokuda who made a plasma etcher. And basically I did a leveraged buyout where Tokuda, which was part of Toshiba, they let me borrow some cash to buy out the existing distributor who at the time was Tylan Corporation…or Tylan General, who was a manufacturer of mass flow meters. So I bought that out and became a distributor of that product in the United States and Europe. And finally achieved my Japanese

product distribution business. So the west coast business I had started was now operating in the United States and Europe and actually we had about 30 people.

Addison: As a distributor, the story goes once the sales get to a certain level the principal goes direct. Is that something that happened a lot to you?

Segal: Sure. That's a great question. I think that it shows the evolution of the business I've been in. I went from local sales rep to national sales rep to global distributor, and today Metron is in the manufacturing business. We manufacture legacy systems that are used throughout the world. And we also sell spare parts and we do parts cleaning and sell materials that are used to make semiconductors as well as to repair machines and build machines. So I think what is known as the equipment distribution business and the sales rep business has declined as the industry has consolidated. And we always knew it would decline. And that's why all the acquisitions that we made at Metron in the last five or six years have been outside of being in equipment distribution. They've been in building legacy products and then parts cleaning which really I think is a service operation, and in materials distribution.

Addison: Can you talk about some of those acquisitions, the companies that you bought and what products?

Segal: Well maybe I should back up a little bit and tell you how I got to Metron.

Addison: Yes. Of course.

Segal: When I had Transpacific Technology by 1994 I'd just about paid back all the loans I got from Toshiba, who financed this business to go into, to be the distributor for Tokuda. And Joel Elftman who was then the chairman of FSI and founder of FSI and Jim Dauwalter who at the time was vice president of sales for Fluoroware came to me. FSI and Fluoroware were the majority shareholders in Metron. And they had a Metron in Europe and a Metron in Asia. And they asked me if I wanted to be involved with a company that would be a global company, to take it public and merge together Transpacific Technology with Metron in Asia and Metron in Europe. So I said to Joel and Jim without a doubt that I was looking to do exactly something like that. And that's what we did do. We merged those companies together in '95 to form a global company. Because I think you could see that this business of equipment distribution was going to start to decline and we had to be global to serve our customers all over the world. And we wanted to get into other businesses that would be supportive of operating the wafer fabs.

So we merged the companies together in '95. In 1998 the capital markets were not favorable to doing a public offering because of the Asian financial crisis in '98. And we had to get a financial system together to run a public company which had to be vastly better than that of a private company. So in '98 we bought a company in Texas who was a distributor of…as a matter of fact they were Fluoroware's distributor of plastic, molded valves and fittings. We bought Kyser Company who had been established in Texas but had operations in the western United States in the northwest and southwest. And they distributed products for Pall Filter and for Fluoroware which eventually became Entegris. When Empak was merged with Fluoroware they changed the name of the company to Entegris.

So we bought that company. Then we had a public offering in November of ’99 of Metron. And in 2000 we followed that up by buying Shield Care. Shield Care had been started by a former service engineer of Varian who was rebuilding Varian PVD equipment. He was [also] in the parts cleaning business because in PVD equipment the shields that are used in connection with the high purity cathodes, have to be cleaned periodically . So he had developed a business to clean those parts. And the wafer fabs all over the world were doing that internally. So since 2000…most of those companies are outsourcing that. So what we did with that is we built a facility in Singapore. And we built a facility in Israel. We built a facility in Holland. So we’re in the parts cleaning business in all those areas.

Then we followed that later on by buying legacy product lines…Mattson was producing three RTP product lines and they wanted to sell the AG product line which they had bought. And we bought that from them, I believe it was in 2002…to be in the business of supporting all those customers, providing service and spare parts for them. And we followed that in 2003 by buying from Tokyo Electron Labs, strangely enough the original company product line that I had started with…the MRC Eclipse PVD system.

We also had bought in 2000 a clean room products distribution company in Singapore and Malaysia. This is important because clean room products are distributed by a large number of distributors throughout the world but no globally strong supplier. So we had clean room sales in Europe. We got them in Asia then and we followed that about two years ago by buying Prudential Clean Room Supplies clean room selling business in the United States so we had a global platform to sell clean room products as well. So all those businesses were bought to move away from equipment distribution and into supporting the fab.

Addison: Ed, when you bought these companies, the legacy product lines, how does that actually work? Do you buy a factory or you buy the specifications?

Segal: We buy the the specifications, the inventory and more importantly we have to buy the engineering talent and the service staff. And you would normally buy it with either a fixed price or a price plus a royalty of some kind. A license fee plus a royalty.

Addison: Before you talked about Metron Asia and Metron Europe. They were in the distribution business prior to the merger with your company?

Segal: Oh yes. At that time, Metron was well established in Europe. Udo Jaensch had started the German company and Chris Levet Prinsep the U.K. company. They had established and built Metron in Europe to be the dominant distributor of semiconductor equipment and materials in that region. The Asian company was started in the late eighties and it was still very young but growing quickly. Their big business actually was their own companies that owned them -- FSI and Entegris. It’s one of the longest partnerships in the history of the industry that these companies basically started in 1975 with Metron. And we still sell for Entegris all over the world today.

Addison: So this strategy to get into the manufacturing and the parts and the legacy systems happened after the merger.

Segal: Yes.

Addison: Well maybe we'll talk about SEMI now, your involvement with SEMI. Can you tell me when you were elected to the board of SEMI and the story behind that?

Segal: I was elected to the board on SEMI about eight years ago, in 1996. At the time Bill Reed was president of SEMI. And Bill had asked me if I'd be interested in serving on the board. And actually several of my contemporaries that I competed with and worked with in this business were already on the board; Ed Braun [of Veeco] , Art Zafiropoulo [of Ultratech], Roger Emerick [Lam] and Akira Inoue [TEL]were on the board. And I knew them pretty well. David Wang from Applied Materials was on the board. So I knew a number of people who were already on the board. And I was interested in serving on the board. I'd been active in SEMI for a number of years.

Addison: Well let's back up a bit. When did you first become engaged with SEMI?

Segal: When I moved to California I got involved with SEMI around 1978. I was here for about two years. And my first involvement with SEMI was on the West Coast programs committee that actually worked on the dinner that was held at SEMICON West annually. You know, I can still recall the meeting we had when we decided to have a SEMI Award. There was a SEMI Award for outstanding contributions to the industry for several years. And on the committee at the time was Irwin Federman who was the former president of Monolithic Memories which was sold and merged into Advanced Micro Devices. And actually it's interesting to note that it was Irwin's idea to have a SEMI Award. And we thought of it and we said, "Well the Emmys and the awards that are given out in Hollywood…let's just have a "SEMMY" Award. And we decided in our committee then to have that. I think Bob Lorenzini was on that committee at that time and he is the founder of Siltec.

Addison: Do you know the exact circumstances of this idea of the award coming up? Was it at a meeting?

Segal: It was at a meeting. We were sitting in a meeting about what we could do that would be exciting at that dinner that we have at SEMICON West and what would be important to the members…maybe we should recognize people for their achievements in the business. And that's how it came up in that context.

Addison: Your involvement with the programs committee, what other things did you do during that period?

Segal: Well, I worked on the programs committee for a couple of years. But I think it was a few years later that I got a call one day from Bill Reed and he said, "You know? We're taking a look at trying to do something about the trade friction with Japan and we're forming a committee and we'd like you to be on it" because I had formed Transpacific Technology and I'd spent a lot of time in Japan. So I went to this meeting at the Marriott Hotel. And in the meeting it was like a Cobilt reunion because it was Cobilt or it was TEL. And this was Ken Levy's idea…it was early in '85 I think…the organizing committee for the First International Trade Partner's Conference. And Ken was the driver for it and the first chairman to have this. And on the committee was Roger Emerick who was formerly at Cobilt and then at Lam Research, and Sam Kano who was at TEL at one time but at that time was at Lam Research. And Sam Harrell who at the time was president of Micronix but also was at Cobilt at one time. And I think the only [non] Cobilt person was Bob Chamberlain who was at Applied at one time and also at Novellus at one time. But it was that organizing committee that started the International Trade Partners Conference. And I think that the International Trade Partner's Conference had a lot to do with the fact that SEMI's a global organization.

Because in the mid ‘80s when we had all this friction going on with Japan, there was a very good chance of the whole thing imploding and this becoming a U.S. organization and having a separate Japanese organization.

Addison: So ITPC really kind of stopped that from happening, do you think?

Segal: It was very interesting how it happened. In the original ITPC conferences we would make a point, for example, of having a white and a colored napkin at all the social affairs. And if you were an American or a Japanese you were asked to sit at either the white or the colored [napkin] to meet people. And people didn’t know each other very well at all. And within two or three years Ken Levy used to say that you could walk down the aisle at SEMICON Japan and you could never get past one aisle without meeting somebody that you knew there. And all of a sudden we started to talk and spend time together and…these people were very, very tough competitors…[but] in many ways they were partners too because each of us had to sell in each others’ countries. And the early conferences were about how the U.S. sells in Japan. And it’s funny how it migrated because it’s migrated today to a global conference…but [back then] it migrated to the Japanese companies all of a sudden became concerned about how they’re selling in the United States too. And then it became “how do you sell in China and Taiwan and Europe and the rest of the world?” So I think those conferences were very good because it gave a chance for people to do things that they can’t do at trade shows.

Addison: Have you been a regular attendee of the ITPC over the last 20 years?

Segal: Well. I would say over 20 years I did skip a few years. It was when it became really big. There were 300 or 400 people there. You know, in the early years of ITPC you had 75 to 100 people there. And you really got to know pretty much everybody that went to the conference when you had 75 to 100 people there. It’s changed to where it got much bigger and I skipped it for a couple of years. I would say out of 20 years I was probably there 16 or 17 years because I’ve gone back the last two years.

Addison: Now moving back to your serving as a director of SEMI. In the period that you’ve been on the SEMI board what are kind of the key issues, challenges, opportunities that you’ve witnessed or can talk about?

Segal: We’ve seen a big shift in how trade shows play a role in our industry. If you look back in the early years of our industry, trade shows were immensely important because you had a lot of small companies that had to get to a customer. And one way to do it effectively was to go to a trade show. And you would meet many, many customers and you would have your machines in your booth. That shifted to…machines are too big and too expensive to put in the booths now and I’m not sure it’s useful to have them there. And the larger companies in the industry are shifting their marketing strategy to where the shows are not the vehicle they need to be able to access their customers. So that problem has evolved over the last several years and I think that in dealing with it SEMI has to deliver more value to its member companies.

The smaller companies appreciate going to the shows and they can’t get to those customers the way they can. The larger companies need different things in the shows and I think somebody’s recognized this and is starting to attack. The focus has to be on maximizing the customer’s use of trade shows. That will go a

long way toward making the value of shows better for all of our member companies.That is the major issue because it affects SEMI's revenues. SEMI's revenue distribution is very heavily weighted towards what it gets from trade shows. On the other hand the standards program is very important and many of the companies that have participated in SEMI will tell you it's very important.

Addison: Let's talk about standards. SEMI is well-known for its standards operations and the work it does there. So what kind of involvement have you had or what sort of achievements do you think SEMI has done in that area?

Segal: Well I personally have not been heavily involved with the standards program but I do know that the major issue with standards programs is to try to spend your efforts, time and money on standards that are going to be used, because we can write standards on literally thousands of things if we wanted to. We really have to focus on the ones that are important for our members and important for our customers. That's the big issue. And the other one is, if they are important for them, they deliver value to them. And that's important to deliver value for them because the revenue stream at SEMI is going to have to shift to where the trade shows will not provide the amount of revenue, or I should say the percentage of revenue, that they do in the business now. So information products, programs, other methods of revenues are going to have to be developed.

Addison: So looking outside of SEMI at the industry that it serves, how would you characterize the decade of the '90s, the equipment and materials industry? What kind of major shifts happened during that decade that you witnessed?

Segal: Well, I think consolidation and globalization; they've been evolutionary. I'm not sure that it's just in the '90s that they occurred. Certainly globalization. The United States owned the semiconductor industry 30 years ago and today it is truly global. Japan came in first and then Europe was always there but never a really big but a very steady contributor in the semiconductor industry and an important one too with important customers in it. But then you saw Korea and Taiwan become important. And now there's a major threat from China. But you know, all these countries consume semiconductors. They're going to get in the semiconductor business. So we have to be a global business.

But the other thing that's happened is the consolidation; especially in the equipment business. But you know, I think that people say that we're not going to have all these small companies in the equipment business. There's still room for companies that can develop technology. But they're going to play a different role. It [used to be] develop the technology, develop a good business and take your company public. I think that's changed a lot. I think the idea of taking smaller companies public is going to be very limited because they're going to have to have very, very powerful businesses because the cost of being public today is just too enormous with the advent of Sarbanes-Oxley.

Addison: Well talking about consolidation and bringing things up to the current time… Applied Materials has bought or is in the process of buying Metron. Can you talk about how that came about, if it's public information?

Segal: I'd rather be a little bit careful about that because everything about it is printed in our proxy and I think it's best if I not comment on that until it's finished.

Addison: So it's still not finished.

Segal: We have our annual shareholders meeting tomorrow as a matter of fact to vote on whether we do it or not. And we have in the proxy that we would be closing the transaction by next Tuesday. But how it came about is described in the proxy. And I'd rather not take the risk of saying anything that isn't in there right now.

Addison: Well, if it's in the proxy can you, for the purpose of this record, talk about how it came about?

Segal: Yes, I think I can say that it's in the proxy that Joe Bronson, who was the former chief financial officer at Applied Materials, had a serious interest in this and talked to us very often about it. Applied has stated publicly that they want to increase their service revenues…I should say service revenues and materials and spare parts. If you look at all the companies in the sector that do what Metron does you don't find a lot of big companies. As a matter fact, you know that SEMI has 2,000 members that have under $25 million in revenues out of its 2,200 members. Many of those 2,000 members are competing in areas that Metron is in. So that is a very unconsolidated, fertile field. And that's what I think Applied looked upon Metron as one of the larger ones in it that was global and saw that it was attractive because we sell materials and services which basically Applied only sells for their own equipment.

END OF INTERVIEW

