



Memorex At 50

Interviewees:

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Donald Eldridge & Edward Seaman, Sam Geraci, Sam Spadafora,
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GEORGE BRAG INTERVIEW

Bragg: My name is George Bragg, and initially, I was vice president of corporate development at Memorex, in 1974; and continued in that role, but also got involved in a great number of joint ventures and acquisitions and other activities, where I had different titles.

Bragg: I think the most interesting experience was just getting into Memorex in the first place. A little history there might be of interest. Bob Wilson had been president of the Collins Radio Company, in Dallas. When Collins was acquired by North American Rockwell there was no suitable position in that organization for Bob. He wanted to run a company not a division of a public company. He was looking for something else.

I was working with Bob in Dallas at the time when Bank of America, the lead bank of Memorex, a company which was near bankruptcy at the time, asked him to take a look at the company. After a quick review Bob said that only way he would consider joining the company was if all of its debt could be restructured and recapitalized. I was assigned the task, while still an employee of Collins, to attempt to restructure all of Memorex's debt. I had the added challenge that only the lead banker was to know who it was I represented until a deal could be renegotiated. The lead banker assured the rest of the banks that they would welcome the new CEO, once they knew who he was.

So, for a period of months, with the help of Bank of America, I negotiated all of the debt and financial structure of the company. When it was done, all of the banks were given 24 hours to say they're in or out, once we had identified Bob Wilson as the person who would come and run the company. They quickly agreed, and the "negotiated deal" was presented to the board of Memorex, and the board accepted the terms. Bob came aboard, and I came with him.

The discussions started in late '73, and we actually made the announcement on the first of April, in 1974, which caused a lot of people to think it was an April Fools' joke. Once the Wall Street Journal and others realized it was a real deal we received very favorable reaction to the kind of structure that we had negotiated. It was very unique structure. It was the first time in the history of our industry that lending banks actually agreed to take equity for a significant part of their debt. In addition they granted significant concessions for the balance of the debt. I am pleased to say that after some seven years, all of that debt was repaid. The bankers all came out very well. [Considering they all initially thought they had a bankruptcy on their hands, that was quite a amazing achievement for everyone.]

Bragg: My analysis was really a financial analysis of what it would take to run Memorex within the financial restraints of what we were negotiating. Bob and I developed detailed long-range financial plans

for the company, which were accepted by our Board of Directors and the banks. I am very pleased to say that we hit all of our objectives, one of the few times when everything seemed to work pretty well, even though it was a very difficult time.

Bragg: As we started to execute the plans, Bob found the need to do some restructuring, as far as people were concerned. You always have those issues. You had some people who just were not receptive to a new set of leaders, and they needed to be replaced and allowed to go and do other things for themselves. But, by and large, we kept the vast majority of the people, and then brought in some new ones. An excellent team emerged after a very, very short period of time.

Bragg: One of the biggest surprises I had, which you [Tom Gardner], personally, got involved in, was our big lawsuit with IBM, and what that meant, in terms of the resources that were required to complete that effort. We came very close to actually negotiating something that would have been meaningful for the company, but ultimately it didn't work out. I had not anticipated how much time and effort it was going to take conclude the IBM lawsuit.

Bragg: I think the biggest disappointment was Memorex not surviving on its own; and, ultimately, being sold to Burroughs, and then, being broken up by Burroughs into various parts later on. One of the things that I did when I was at Memorex was to negotiate the acquisition of the Telex European operations for Memorex. Later, when Burroughs bought Memorex, Telex offered me the position as president of Telex. I went back to Tulsa as president of Telex, and after eight years of very successful growth, the company became involved in a hostile tender offer. By then, Memorex (mostly Memorex International) had been spun back out of Burroughs, and was looking to expand in the United States. We wound up selling the company to Memorex International.

Bragg: While at Memorex I also handled the negotiations on the deal with Fujitsu Tape Drives. I think it was a great surprise to both companies how successful it was. We were in the hundreds of millions of dollars in tape drives revenue. It was a great relationship, which allowed us to do a number of things with Fujitsu. We also had good relationships with other Japanese business and negotiated deals with them that worked out very well for the company. It was a very innovative approach to things

END OF GEORGE BRAGG INTERVIEW

GIORGIO RONCHI INTERVIEW

Ronchi: My name is Giorgio Ronchi. I am Italian, and I was the CEO of Memorex after the buyout in 1986 until the end of 1992. I started in Memorex in 1969 in charge of a very little Customer Engineering department in Italy. After that I became a marketing and service manager, and then I became Deputy General Manager and then finally Managing Director, with Mr. Wilson's blessing after spending nine weeks with him in Santa Clara-- because I was really too young, so he wanted to know me very well before he allowed me to become Managing Director of Memorex Italy. In 1980, after five years as a managing director, they gave me also the responsibility of France, Spain, Portugal, Switzerland and all Latin America, from the U.S. border and down to Argentina. In 1986 I led the buyout of Memorex from Burroughs, and it was a very incredible situation, very positive but also very difficult, because we only had \$3 million and the cost of the buyout was \$627 million. We did it with Drexel, Michael Milken, and many other people who helped us to achieve that result.

Ronchi: Then we bought Telex and we merged the two companies with no extra equity, so at the end of the day it was \$2 billion loan and \$3 million equity. Only in 1980's time frame could you do this but it was too high-level of debt, frankly. Then the business started going down in '89 and '90, '91 with \$222 million just in interest, that was really too much.

Gardner: Was the level forced on by the investment people?

Ronchi: The level was forced by the people who did help us [with the buyout] in New York, and also we had a chance to go public only a few months later at a share price of 180 times the purchase price, if you want, the equity price, but again it was stopped by the investment people, because they wanted [to set a share price] at more than 220 times the purchase price.] And it's very easy to say afterwards that it was a mistake, because we could have sliced completely or almost completely our initial debt with an IPO.

Gardner: What was it like in the 1970s working for a Silicon Valley company headed by Bob Wilson?

Ronchi: Working with Bob has been fantastic, just fantastic, he was very good. He taught me everything, and I spent nine weeks with him working almost every night here in Santa Clara before he decided to take the chance. He said, "You're very young, but I'll take the chance, you can become Managing Director of Italy." And we had dinner many times and he was teaching, testing, listening, talking, and it's been a fantastic training for me and also it's been a fantastic experience those five years under his leadership, and it's something I would never forget. I've learned a lot from his experience and his teaching.

Gardner: What was your biggest disappointment during your years with Memorex?

Ronchi: ...during the period I was CEO, because one was not going public immediately to decrease the debt. It was too much for us right at the beginning, and secondly was when we had to convert \$1 billion U.S. \$ junk bonds into equity, and doing that, we had shareholders that were not the same ones, sharing the same experience and same willingness to be part of Memorex. So, it was very difficult managing the board at that point. I mean the new board. I didn't have the same relationship I used to have with the previous board that time [at the buyout time]. I don't know if you saw it, but I had very prestigious people in the board, from the president of Citibank, the president of J.P. Morgan and four former U.S. secretaries from Howard Baker to Senator Brock to Al Casey who was the Postmaster General and also chairman of American Airlines. I had Richard Perle who was the head of Pentagon for eight years under Mr. Reagan's administration. He is still in a company of mine, [a sun and wind energy company] but together with me in the board, and we are still very good friends since the '80s. So that board was very supportive, We also had Robert Strauss, the former chairman of the Democratic Party; Senator William Brock, the chairman of the Republican Party. They were friends. Both of them have been trying to help us out, and they did. On the contrary with the new Board they really didn't have the same attitude toward the Company and they had become shareholders just by chance, and so they didn't have the same feeling the other board had.

Ronchi: Memorex Italy was bought by NCR, the National Cash Register Company. It was the only European company that was bought by NCR. The Far East was sold to Kanematsu who was already our fantastic partner there. Kanematsu bought Australia, Japan, Singapore, Taiwan and Hong Kong; all the Far East. The northern part of Europe did another buyout, former people led by Memorex's German company. Memorex U.S. was divided and broken down and sold to several companies.

Gardner: There are still Memorex-Telex people in Raleigh making telecommunication products. There are only 29 of them left.

Ronchi: Oh my goodness, we had more than 1,000 at one time.

Another company, a very good company, TCI, Telex Communication Inc., in Minneapolis. [I've been in their board, we did the spinoff from Memorex and became a very successful company. The equity was \$10,000 when we did the spinoff, and it was sold at more than \$300 million in equity. Thanks to a fantastic CEO, John Hale. He deserves all the credit. I was just on the board until they'd been purchased by a private equity fund in New York, they were very good, a fantastic deal. Unfortunately, Memorex had 50 percent equity, but Memorex sold it much before for a very low price, so they lost an opportunity, actually we lost. My heart is still in Memorex, even though Memorex is not there anymore – so we lost that \$200 million opportunity.

Gardner: What in your 24 year's experience with Memorex would u like to share?

Ronchi: That was, I think, the spirit, the attitude of the company was just, - yes, Larry Spitters and his team served well enough for the foundation of Memorex but then the big, big printing came from Bob Wilson and his saying, "You're a big part of it." And the attitude - indeed it was not by chance the first word in his motto, "attitude, cash and profit." He taught all of us how to run the piece of the company we are responsible for in the right way.

Ronchi: Why did I try to do the buyout with asking the permission to my boss and the boss of my boss? It was done openly and with their agreement. They thought I could not make it, and I thought it was easier than it actually turned out to be, but the reason was that I knew for sure that Memorex was going to just be merged into Unisys without its own identity, and, in fact, I was offered to run part of Unisys, southern Europe, with former Burroughs, former Univac and Memorex, so that was very clear. So after I got the permission to try this venture [the buyout], I called Michael Blumenthal that I knew very well for some reasons, and I told him that it was my intention to try to do that. And I got an incredible support from him from day one because I didn't know that at the same time Burroughs was preparing a hostile bid for Univac, so they needed our cash, but I didn't know that. I had made the same proposal one year before; but it had been turned down very severely, and then one year later I found an open door, so I was pushing an open door without knowing it, of course. That allowed us to do the buyout, and the same time it was necessary for us, because otherwise maybe Memorex was not going to be an independent company anymore.

Gardner: Do you think that if Burroughs had merged Memorex more closely into it would they have had as much success as they had in the communications area – it was huge wasn' it?

Ronchi: Yes, but, you see, we had some difficulties with Burroughs, because many times we were in were proposing IBM products in competition with Burroughs, and that's something they could not believe it or understand that. Why we were with IBM and competing with Burroughs? Only because we were in the IBM field, in the plug compatible field, and we didn't have any chance. For instance, one case out of all, we won a big bid with Swiss Air, \$20 million-plus and was just the beginning. We had to turn it to Burroughs at the end otherwise it was going to be a big conflict. Understandable. I am not criticizing anybody, but Burroughs tried to win the deal against IBM and we [Memorex] won, but at the end, to avoid an internal struggle we turn it to Burroughs and I had some problems to explain to Swiss Air why. Just to give you an idea, but we have several of these cases, where many times IBM was winning because the disk drives and the tapes and the robots, the cartridges and the terminals and so on were Memorex or Memorex Telex and at the end the bid was competitive from the customer point of view compared to the Burroughs one. That's why in my opinion we needed to defend Memorex. [When I decided to lead the buyout] I didn't want to become the president and CEO. In fact, I offered to my boss to himself become the president, CEO, and he said that he didn't believe we would be successful and turned down the offer,

but I didn't do it for that. I don't want to give you the idea that I did the buyout to become CEO.. sorry my idea was to "save" Memorex in my role, I was not looking for a different one.

Gardner: Making IBM more competitive is a good business?

Ronchi: Yes, my last contract, my last agreement was with IBM. I don't know if you know that.

Gardner: No, I didn't.

Ronchi: I came to the conclusion that the best solution for Memorex Telex was to be bought by IBM. So, that was the agreement we signed. It was not so clear at the beginning [of the planned cooperation], but that was the final intention and I've been working on it for one year and it was cancelled two months after I left - they paid a penalty. And that was the idea. I thought, given the situation, given the big debt, the big burden, it was a good idea..

Ronchi: [You know] IBM was our largest customer, our biggest customer. Thanks to Memorex, one single plant of ours was fully an IBM plant. The tape transports were coming out for AS/400 with IBM manuals, IBM packages, IBM labels and so on. IBM was the largest customer of Memorex Telex, and thanks to that, we gained an incredible reputation, and I was dealing with number two, John Thompson, who was the president of the AS/400 division worldwide.

Gardner: Was that mainly tape drives or were there communications devices also included?

Ronchi: For communication products we had some deals with them, but the idea of my last agreement with IBM was that we were buying some products from them and more importantly, we were selling many products to them; then we were representing them in a mainframe market too for certain markets, so we were given the possibility to sell the AS/400 as a beginning but the end objective was to be one single company. That was our intention. I still have the pen with "Memorex IBM," "Memorex Telex IBM, Lugano, September 1992." They were going to send people in our offices to better cooperate with us. That was the agreement. It was never announced because I was spending my last month. I resigned a few months before, so I was just waiting for my successor to come on board.

END OF GIORGIO RONCHI INTERVIEW

TETSUSHI YAMADA INTERVIEW

Yamada: My name is Tetsushi Yamada. I served as a country manager of Memorex Japan, from 1972 to 1997. I was working at the sales department over Kanematsu Electronics group.¹ I was involved in the selling activity of Memorex computer tape at the beginning. And I also involved in the sales of Memorex audio tape. I still remember that. At the beginning, it was not easy to sell Memorex products. Because Memorex was not very well acknowledged in Japan. But the quality of Memorex products, was so good and the customer had a very strong satisfaction for audio, as well as computer tape. In 1968 shortly after Kanematsu became an agent for Memorex, Memorex and Kanematsu agreed to form joint venture company Memorex Japan. And until I retired, I worked at Memorex Japan. Later Memorex became Memorex Telex Japan. I worked almost 30 years at Memorex Corporation. In Memorex Japan, I was the longest employee.

Gardner: So you were probably the longest employee of Memorex Corporation ever?

Yamada: Well, I am very proud of being a part of Memorex. Memorex had wonderful people. And I enjoyed working with Memorex so much. Many happy pleasures I had while I was working with Memorex. It remains forever, I think, in my memory and brightened my spirit. It's wonderful company. Wonderful friends. Wonderful people. Wonderful products we had. And while working at Memorex, of course, we established a good relationship with Japanese companies like Fujitsu, Hitachi and also NPL (Nippon Peripherals Limited) as well as Teijin Limited and many others including many wonderful customers. We also established a joint venture company with Copal called MCC Corp. to manufacture mini floppy disk.. We purchased disk drives from NPL and from Fujitsu, we purchased tape drives. It was wonderful memory for me.

Yamada: At the beginning when started negotiation Fujitsu never thought that Memorex could sell many tape drives. And they were not too much interested in doing business with Memorex. Because they thought the number we could sell might be very, very small. <laughs> So I had a hard time to persuade Fujitsu management. But after I'd started, since we sold so many, and our relationship was strengthened tremendously. And oh, it was also wonderful time. Yes. Fujitsu management and Fujitsu people were very nice people. And this Fujitsu relationship also led to establishing relationship with NPL. NPL was a J/V company with Fujitsu and Hitachi to develop disk drive in Japan. I heard the J/V establishment was recommended and was supported by the Japanese Government. We purchased large quantities of Winchester type disk drive manufactured by NPL. They were sold Memorex worldwide operations and obtained strong customer satisfaction.

¹ [Editor's note] Mr. Kohei (Mike) Mouri (later became Representative Vice President of Kanematsu) identified future possibility of Memorex, negotiated with Mr. Larry Spitters (Founder and CEO of Memorex) and obtained distributorship for Memorex products in Japan while he was working at Kanematsu Los Angeles Branch at around 1965.

Gardner: The Memorex 3640 the equivalent of the IBM 3340?

Yamada: It was a very beginning of disk drive manufacturing technology in Japan. Memorex supported the development of disk drive including hardware design, quality improvement as well as software, I think that Fujitsu and Hitachi learned many things from Memorex. Many Memorex engineers like you visited Japan and supported their activities. Yeah. <laughs>

Yamada: Gardner-san, I remember that we went to NPL and Fujitsu Nagano Plant together. People were looking forward to learn from you.

Gardner: Yes.

Yamada: <laughs> Wonderful time I had.

Yamada: Memorex, as you said, went through many histories and Memorex was one of the I think very early successful venture businesses in Santa Clara area. {Ed. note: Memorex was one of the computer industry start-up's in Silicon Valley} And I still remember the day when I visited Memorex, immediately after IPO. There was a card posting about the price of the Memorex. And I, as well as I remember correctly, —the price was about \$145 or something. I think. <laughs>

[Ed. note: The IPO price on March 4, 1965 was \$25 and it closed that day at \$32]

It's so many years ago that I was so impressed. A very dynamic atmosphere of the Memorex Corporation. Unfortunately however, Memorex went into a difficult stage. And Mr. Wilson came to turn around the company. He was very, very professional. I learned very important lesson from him, which I still utilize, which is a important thing for the company, is ACP, Attitude, Cash and Profit. And in addition to that, he taught me integrity is so important. Integrity. Without the integrity, it doesn't have much value. Even if you are success, if you achieve success. So I also, I think most important lessons in my life came from Mr. Wilson. Wonderful person. I admire him. And I'm so happy to be with him. <laughs>

[Yamada: One of the important achievement we did with Mr. Wilson was the establishment of Teijin Memorex Corp. in 1978 a Joint Venture company with Memorex Japan and Teijin Ltd. to manufacture mini-floppy disk in Japan. Teijin is the leading company in materials business including advanced fibers, plastics and health care. At that time Teijin was manufacturing base film for such products as computer, audio and floppy disk as one of their important businesses area. Memorex was a very important customer. Memorex transferred and supported technology in manufacturing floppy disk. The quality of the floppy disks using Teijin film coating and manufacturing technology was very highly valued. Memorex floppy disk was very well accepted in the world market.]

Yamada: Oh, one of the memorable occasions I had was IPO of Memorex Japan. It was 21 years ago. That means 1990. Joint venture business with Japanese and American company in the area of IT related business such as Memorex Japan in those days did not have much example of going public. But

Memorex Japan was very successful at that time and we were able to achieve IPO on February 1990. And it was very big news in Japan. And Memorex Japan, all the people in Memorex Japan, were so proud that we worked together with Memorex. I never forget the day at Tokyo Stock Exchange watching name of the Memorex Japan appear. <laughs>

Yamada: We had a wonderful time at the management meetings in Silverado every year. All the management from everywhere, every country, and management from headquarter. Mr. Wilson made a speech about strategy, about performance, about a outlook and important issues to do. All that, and after that we had a wonderful time playing golf together,]speaking our dreams and promoting mutual friendship as well as possible cooperation. We also had award recognition for good achiever and dinner party. Very pleasant and memorable occasion.

I should like to say at the end with great regret that we were left behind by the movement of network oriented business model and stayed on legacy system, Although Memorex's business domain "Storage, Communication and Management of Information" remains as important as ever and ever increasing

The rest is history.

I would like to express my very best wishes to the people related with Memorex Japan and Memorex worldwide for health , happiness and prosperity!!

Memorex was a wonderful company to spend my important time and life.] Oh, enjoyed it very much. Very much.

END OF TETSUSHI YAMADA INTERVIEW

RETO BRAUN INTERVIEW

Braun: My name is Reto Braun and I'm a Swiss citizen. I was fortunate enough to meet people from Memorex when I was at IBM. I was at IBM when the 1401 and the first 360s came up, and I met Jim Guzy and his people, and they hired me to run Switzerland. That's how it started in 1967. The next step after building up Switzerland and the operations there to sell the Memorex computer tapes, I was given responsibility for Austria and for Eastern Europe, and also particularly for television tapes, for the Middle East and Africa. So that meant a lot of traveling for me, but it was exciting. I was young, and it was great to introduce a fine product, a new product, to customers who were more used to buying from a monopoly like IBM, or Ampex as it was at that time.

So we built up a good reputation in these areas and I remember when Jim Guzy then told me about the disk drive that was coming out. I was all excited about it and I had the chance to introduce that in Europe, because Germany then was also part of my little empire. We enjoyed that very much. In Eastern Europe, and maybe that is an interesting little story, if I can call it a story, in Eastern Europe, particularly in Russia, they were very eager to get the technology of disk drives. And there were two - IBM and Memorex. IBM was very tight and Memorex of course, with the new technology, was much easier to copy, if you want. So they were after us to try to get this technology. I was approached many times in Moscow by high officials, if we could sell them something or give them something. And I think that is probably one of the biggest compliments to all of the engineers at Memorex in Santa Clara, because worldwide, this was a very, very strategic and wanted technology, to the point that when Watson from IBM was over in Moscow, I heard him say that. He said, "We're not going to sell you anything anymore." And that was a mistake, because selling things to them meant that they did not push their own development. In any case, they did buy from us the tapes and the disk packs and so on and so forth, and some of the disk drives. I had a very good friendship actually with the head of Technopromimport, which is a very high profile company, organization in Moscow, still is. But it was in the Soviet Union. He then asked me if we could meet in Vienna. I said, "Sure, let's meet in Vienna." He was a good customer. So we went out and had dinner and a few drinks, and maybe a few too many. But I remember then, he asked me late in the evening, at night. He said, "You know, we know exactly how much money you have, or how little, and we know your mortgage on the house, on the Lake of Zurich." I said, "Yes, it's very big." He said, "Well, you know, if we could make a little arrangement that you give us some information on these disk drives and on the technology, then tomorrow morning, your mortgage is paid." I looked him in the eye and I said, "Arthur, wrong address." He changed subject immediately. But that's to show how proud the engineers of Memorex can and should be, to put something like this into the world. And because they wanted to put it in the missile heads, to have the missiles measure the distance to the ground. It was after ten years that I met the good friend of mine in Washington and I told him this story. I said, "Look, this guy who was a high level KGB guy--" which he was, and everybody knew that, including myself-- he said, "I'll find out down in Langley," because I usually had to debrief with Langley, with CIA, of how much we sold to them or we gave them and what the contacts were. After about ten years, I found out that this very guy from Technopromimport, he was a double agent. So it was actually the CIA who was trying to find out if I would cooperate with them. It's maybe a side story, but I think it should make this company, Memorex, very proud of what they have developed and engineered and put into the world.

Braun: So to make a longer story shorter, I think this is what makes this country so wonderful. The ups and the downs, the tolerance of failure. I'm European but I have to admit, we don't have the Apples, we don't have the Memorexes, we don't have the Microsofts. We have nothing like this, because the tolerance to fail is much, much too low. And this is why when I see that Memorex now doesn't exist, it still exists. The technology, the people who came away with that technology, they built fantastic things in other areas. And that's why I'm pleased and very proud that I could be part of that organization.

Braun: When I was down in Saudi Arabia, selling the broadband television tapes, I was received by one of the princes from Saudi. I told him about this company, Memorex, and proudly showed him the brochures that I had with me, and thanking him for the business. He also saw our terminals. [Ed. note: i.e., Memorex 1377 Display Station] Our terminals, as I'm sure you know, they were the most good looking, the best looking terminals in the market at that time, really good looking. It's kind of like what the Apple designs are like nowadays. And I showed that to him and of course, he had desks that were ten times bigger than my desk. And he said, "Oh, that's really nice. I'd like to have one of these on my desk." "I can't sell you just one." So he ordered a whole bunch of these things for all of his offices. Fine, we sold them at a good price, of course, send them down there, and they were all on the desks there. About a year later, I was down there and I looked. I visited him. I said, "So how is it going?" "Oh, wonderful. Everything is fine." I looked at all these terminals in these offices, but none of them was attached, and I thought, "Do I care?"

END OF RETO BRAUN INTERVIEW

DONALD ELDRIDGE & EDWARD SEAMAN INTERVIEW

Eldridge: My name is Donald Eldridge; I was one of the founders of Memorex. And the first thing I did when we got the company started was to take a trip around the world. And that seemed like a strange thing to do. A lot of people wondered about it, but it was very important because I was sent to find out about manufacturing equipment that we might want to use to make the tape. And one place I went in Germany, I found that what we were thinking of using would absolutely not work. And so that saved us a great deal of time and effort. You know, I talked to the experts who made it, and they said, "No, this would never work for that." And I visited several other places in Europe for smaller things, and I don't remember exactly what, but just checking on technical issues. Then I went to Japan to visit Sony. I had a relationship with them for something I had done nice to them; so they were being nice to me. I went up to see their tape plant and noticed that their tape width that they were using for manufacturing the tape was twice as wide as what we were thinking of using. I asked them if they had any trouble using that width, and they said, "Oh, no. Not at all." So when I got back, shortly after that, I said, "Hey, okay, if we just double our tape width." So that had the effect, fortunately of doubling the production capacity of tape at almost no additional cost. So those were two early contributions that I made in getting the company going.

Seaman: My name is Ed Seaman. I was Memorex's first National Sales Manager. In 1961 I was the Federal Government Manager for the 3M Company in Washington, DC. 3M was the largest producer of magnetic tape in the world, and I was recruited by one of the founders of Memorex Corporation named Arnold Challman. Much to my surprise, I found out after being recruited, I was to be his successor. Rather

surprising and frankly, a very disappointing experience. However, we went to the marketplace in 1962 with something less than a perfect product, but nevertheless it was our mission, "Get that product on the market." At that time, there were approximately 14 companies manufacturing magnetic tape. We formed a marketing department, and a sales department. And by 1969 when I left, we were the second largest producer of magnetic tape in the world. We were the largest producer of instrumentation tape. We were the second largest producer of videotape. And we were the largest producer of computer tape.

We started out with a marketing department and a sales department of six. We ended up with a department of over 100. We were in severe competition with the 3M Company all through that period. It was a very, very rewarding experience, and I felt that I was part of one of the finest sales organizations one could possibly have. I was greatly supported by certain members of the Memorex organization. And Don Eldridge, of course, was a great supporter of ours. It was a very, very rewarding experience, and I might also add, a little bit about each product line.

In instrumentation tape, we were the largest manufacturer in the world, as I had mentioned. We were among the top 100 producers of product for NASA at the time, which was quite surprising. NASA was a very, very large customer of ours. We were also in severe competition with 3M for the OEM business, which we eventually dominated. We unseated 3M as the leader in the industry.

In the field of videotape, we had an excellent product. It was good for mastering, but it was very, very abrasive, and heads had to be replaced on a continuing basis. Eventually, we left the industry, and we left it all to 3M Company. And that's just a brief summary of my experiences at Memorex Corporation.

Seaman: The product that Memorex came out with originally was highly, highly abrasive. And it presented some major, major problems. In the area of computers, it wasn't that much of a problem, simply because our tapes were put into large libraries, and it decreased the head wear perhaps by ten percent, because so much-- it represented such a small part of the product. It remained very, very abrasive until calenders were installed, which lessened the abrasiveness, but it still remained abrasive. Those were some of the product problems that we had.

Seaman: Type 22 Computer Tape. That was the first product on the market. I think there was a Type 24 unless I'm mistaken. And then we went to MRX III. One of the reasons we introduced MRX III was there was a great price war going on. And what we tried to do was introduce it as a new product and publicly announced that it was a fixed price, hoping we would legally transmit to our competitors the fact that we wanted to end the damn price war. But the product itself was so much better, but not dramatically so.

Seaman: 22 was the first product. The first purchase order we received was from the Mirte Corporation.

Gardner: At \$31 a reel.

Seaman: <laughs> Price dropped significantly from there. It came to a point where other people-- we had seven different competitors in the computer world. But it was interesting that we were able to maintain the OEM business. And we were almost solely producers of the OEM market.

Eldridge: I was buying various types of web handling, and coating equipment. The coding equipment was to put the magnetic coating on the wide piece of tape we used during the manufacturing process. Which is later slit up into smaller widths.

Seaman: The early slitters which were more or less manufactured by Brumbaugh and company, left a shoulder on the side of the tape, and therefore the slitters had to be replaced by purchased slitters. [Ed. note: Robert Brumbaugh a Memorex employtee}

Seaman: I think one of the things that might be memorable was-- as I said earlier, we became the second largest producer in the world. But there was a tremendous amount of pressure put on the marketing department on a day-to-day basis. And one of the problems was two-thirds of our sales came in the last month of a quarter. So every day increased pressure was put on the marketing and the sales department to bring in the orders. And it was a very pressurized situation.

END OF DONALD ELDRIDGE & EDWARD SEAMAN INTERVIEW

SAM GERACI INTERVIEW

Geraci: I'm Sam Geraci, and I did photography at Memorex Corporation.

Geraci: I joined Memorex in 1971, and left Memorex in 1986, and participated in photography with the company and in sales events, and manufacturing of products, communications, the tape facilities, and all of the different divisions that Memorex had during my period of stay with the company.

Geraci: My most enjoyable experiences were with the sales events that took place on an annual basis. And those were the most memorable ones. What I was able to do was to participate at these sales events, and take pictures of the different activities that the sales force was participating with at the time, at the events. The events usually were for about three or four days. And, at the conclusion of the event, we would do a slide show of all of the activities that were taking place during the sales meeting. And those

were enjoyable for the sales force to reflect back on what they did, some of the activities that they participated in, and some of the fun times that they had. So, it was a very memorable experience, for me, as well as for the sales force.

Geraci: I can't recall anything that was not favorable; I mean, I enjoyed the people that worked at the corporation, and the sales people, and just about everybody. I was very fortunate, being in the profession that I was in, in that I got to meet a lot of people on different levels: management, as well as people working in production. So, it was a very enjoyable experience for me, being the photographer.

Geraci: Just participating in the sales events, and with the people that worked at the corporation: that was most enjoyable, and I would consider that being successful.

Geraci: Memorex was scaling down, and, of course, anybody that's what they considered a service function. And, so I was laid off. I was let go. But, otherwise, I would have tried to stay as long as possible. But, I have no regrets; Memorex was very, very good to me, and I had an enjoyable time and experience meeting a lot of great people.

Geraci: I can remember a couple of sales events that I was able to attend that stand out in my mind. One was to New Orleans at one time, that was with Sam Spadofora and Bob Berry that were running the program at that time. So, that was a very enjoyable moment for me. It was really exciting.

END OF SAM GERACI INTERVIEW

SAM SPADOFORA INTERVIEW

Spadofora: My name is Sam Spadofora, and I was with Memorex from 1980 to about 1986, and I held several positions. I was hired in to be Vice President of the mid-West region, and from there I came out to California to head up U. S. Sales. It was really a great experience. For one, it was a real career change for me, so I got a real opportunity in Silicon Valley to be with one of the premier companies at that time in Silicon Valley, and the experience was excellent. I was on the storage side of the business. We had tape and disk, and had a tremendous marketplace, and a great team, and it worked out very well.

Spadofora: I think my most enjoyable experience was, one, the people. The people were really great. I had guest services in my organization, as well as the sales organization. The relationship with customer

service and Bob Barry, who was a great guy, and I think some of those relationships still exist today, and here we are in 2011, and just the friendships I've taken along with me throughout those years, I would say that's the best experience.

Spadofora: Well, you know, I don't think there was really that many experiences that I wouldn't put in the enjoyable list. I would probably say the closest one was the launch of our thin film head disk storage product line, but for me that was a tremendous amount of experience, because everything doesn't go perfect, and you kind of really work to keep the customer base in place, and we fought our way through it. So as it turned out, from an educational standpoint, it was a great experience. We built a great organization throughout the United States. The management team was excellent; our relationship with the factory, our relationship with the delivery organization, our relationship with the support organization, so all of the other disciplines across the company, my entire team was able to build those kind of relationships, and if there was any hiccup or a problem, everybody would come to bat, get behind it, and move it forward. So I think that's probably one of the best accomplishments is the team in general, and the team across the company.

Spadofora: Well, there was a lot of changes in Memorex over the years, and the biggest one was the acquisition of Burroughs, and that went very well. I think that was a real benefit to both companies. And then the next one came was Unisys, who acquired the companies, which was out of Bluebell, Pennsylvania, and the company gave me a tremendous opportunity to move to Bluebell, but we had now been in California for several years. We moved here in '82. It was Silicon Valley, and I knew my career was best to stay here. The kids were engrained in the community, so my wife and I made the decision that we should stay in California and look for other opportunities. A great one came along, and I made that decision.

Spadofora: You know, there's a lot of stories. As a team, we used to have a great time, and we had our annual kickoff meetings. We would travel around the country, and as gruesome, and as challenging, as tiring they were, we made them fun. And the awards groups that we used to have, both in Phoenix, in New Orleans, in various other locations, we made them as fun as we could, and to a point where management could have just as a great time as, you know, a lot of the individual contributors out there. So I think that's the memorable experiences.

Spadofora: It was a great company. Again, I've taken a lot of friendships from Memorex throughout my career. Many of the team members have followed me to different companies, and I think we started a successful trend at Memorex and was able to continue that to other companies in Silicon Valley.

END OF SAM SPADOFORA INTERVIEW

VINCENT TARPEY INTERVIEW

Tarpey: I'm Vince Tarpey. I worked for the Computer Media Group as initially a Senior Sales Person, then a District Manager, then a Regional Manager, and then out here in California I was Director of OEM Sales, and my tenure was from early 1970 until about April or May of 2004. And my exposure was being a sales person initially, and then managing sales of some of the products featured here, the computer tape, disk packs, floppy disks sold to, at that time, Fortune 500 type clients. We only, later on, developed distributor methods to do that. So that was my experience, and in doing so I got moved four times by the company. I got moved to Philadelphia, got moved to Detroit, back to Philadelphia and then out to California in 1982 to do the OEM sales directorship, but also be second in command of the Computer Media Sales Organization which was about 60 some odd sales people. And all of that, as others have said was, "Well I wouldn't be here if I didn't have more to say positive than I would say negative." It was a great experience. I met many friends, some of whom are here tonight that I'm delighted to still be associated with. The products were fun to sell. I can give you one story if you want to hear it at this point. Computer Media decided to sell computer ribbons. These are the big printers that would do the old green and white stripped paper. I think they're called 1403 printers. And one of my customers at that time was Whitman's Chocolate in Philadelphia, and they were happy with using Memorex computer media meaning tape and disk packs, so they were not opposed to considering another new product. And I brought them a sample ribbon, we went into their computer room, the boss told his associate to open up the computer case, install this ribbon, and as we're standing their looking at it he tells the guy at the console to command a sample print line. <Makes noise to mimic the printing> goes like that. To which he looks down and the ink had come out of the printing ribbon all across the front of his shirt, his tie. And he looked at me stunned and angry and said, "What are going to do about this?" And I could only think of one thing. I said, "I'll get you a new ribbon," and he started to laugh and he let me off the hook. But I never sold any more of those ribbons. I had great fear of selling them. So that was one of the amusing experiences.

I think one thing I'm most proud of was I was moved back to Philadelphia from Detroit to take over a failing region that had become quite demoralized. And one year later, a full year later, I had the region of the year, salesman of the year, rookie of the year, and at that time there were three product divisions and I won one of the three product division awards. So to me that proved as many have said the team is critical. Anyway, so it wasn't me doing that work, but the fact that we could pull together and achieve that success is something I'll always have a positive feeling about.

My reason for leaving was the grass is always greener on someone else's septic tank. I was invited to join Epson, and at that time anything Japanese was becoming very interesting to most people. They were going to dominate everything. And I was offered the chance to become Director of Sales for their

OEM products including disk drives. And so it was a corollary and mirror image of what I was doing on the media side. Now I'd not only be selling what the floppy disk went in, I'd be selling the drive it went in. So I enjoyed that experience, actually, but it required me to move to Southern California, which ultimately I did like. But it was for that reason I left.

So I had just about 14 years with the company, and generally would say any of those years of experience generally had far more positive things happen during them than not. There was always office politics and you had to deal with that either on a remote basis or at headquarters, but that's life, so. When the company decided to merge the media and equipment parts of the business, and for nine months I was managed by the equipment side of the business, frankly, I didn't like it. It's only a personal observation. And eventually it was recognized on a national basis it wasn't working either, and so they separated them back again. But I tolerated it and lived through it, so to me that would have been the most not desirable experience. Getting the Region of the Year Award after taking over a failing demoralized region that was out of nine regions was like seventh or something the prior year, so. And I think part of that was we had great products. We had great advertising for them, great sales promotions and incentive programs. But part of it was you just have to have good chemistry with your team and they have to believe that you want them to succeed, and you're going to help them. But I used to tell people when I hired sales people that aren't new to the business I assume they know how to sell, so all I'm asking them to do is to go out and sell, and I'll support you. And there's always going to be something in your life that's unfair or utterly unfair. I can't do anything about those things that are utterly unfair. Those things that are unfair I will try and change. And so that's the way I felt if people measured me that way or I could measure others that ways. I'll do what I can to help you, but there's always going to be someone who has a slightly better territory than you, and that's just the way it is. You're going to have live with it or quit. Having some regrets of leaving Memorex, there are far most positives, again, for that experience. It was an exposure of traveling extensively in Japan. Epson was a major company at that time, and they the second largest maker of three and a half inch floppy disk drives right on Sony's heels. And it gave me an exposure to the equipment side of the business, printers. Epson was one of the biggest makers of printers in those days. Those were dot matrix wire printers then. So I wouldn't have had that experience within Memorex, so I gained all of that. I was telling someone here a great story about one of our national sales meetings. Some of the sales award winners were given personalized 11 by 17 portraits of them with their faces superimposed on super heroes like Superman flying through the air, but the sales guy's face was nicely meshed into this painting, I guess. And the night this happened several guys tried to climb up the outside balconies on the hotel to get to some of the women sales peoples' rooms, and of course the hotel management was very unhappy with us, but I think these guys thought they were Superman and Batman, tried to climb up the balconies. Could have killed themselves, but anyway that was a funny experience.

END OF VINCENT TARPEY INTERVIEW

SERGIO MAZZA INTERVIEW

Mazza: My name is Sergio Mazza, and I actually had an amazing career at Memorex, and I did many things. I actually started at Memorex before I even finished college. I was an intern in the Italian operation working for Giorgio Ronchi who later became my boss. And I worked for him one summer, enjoyed it, and he liked the work I did for him so much that he arranged for Memorex to offer me a job straight out of college. I interviewed here at the headquarters at Santa Clara, and I met Tom Stevens, and they wanted to put me in the Management-Training Program. Tom said, "Ah, forget all that. The real action is happening in the International Division. Go work in the International Headquarters in London." I didn't know any better, so I said, "Okay. Will they have a job for me?" He said, "Don't worry. I'll take care of it." So that's how I started Memorex, working in the International Headquarters.

I started there as a Financial Analyst. And one of the most vivid stories I have of working there was begging for a Tandy TRS-80, a Trash-80 Microcomputer, because I used to do spreadsheets when spreadsheets were done with a five-millimeter lead pencil on paper. It would drive me crazy because my boss kept wanting things flipped this way and that way, and it was just an absurd waste of time. I read about this thing called VisiCalc that came out on a TRS-80. So I said, "I've got to get me one of these electronic spreadsheets. That's the way to do my job." And it took a lot of convincing to help them understand why I would want a computer. Remember, this is a computer company, but all we did was sell large peripherals to IBM Mainframe customers. Nobody thought that microcomputers were actually useful. So that's probably the most vivid story I have of my first job in Memorex in the International Headquarters.

Then Giorgio Ronchi became Vice President of the Southern Europe Latin America area, and he asked me to go be his finance coordinator. That was basically to help him keep track of the results in his area, because he really needed someone that could rack and stack the numbers for him and understand what was going on, and I did that. And soon afterwards Mexico had a tremendous devaluation, and they had some really serious financial problems. So Giorgio asked me to go to Mexico and help the Country Manager. Well, the Country Manager, with all the difficulties that the company was having, had a nervous breakdown. He was from Puerto Rico so he quit and went back to Puerto Rico. And they asked me, "Well, would you like the job?" I was the whole of 23 years old, so I became the General Manger of the Mexican operations at 23. And two years later we did so well in Mexico despite the devaluations and all the problems that I became country manager of the year.

About a year and a half after that I was promoted to the General Manager of all of Latin America for Memorex; working out of Boca Raton, Florida. Then Burroughs had bought us. And a lot of us were very unhappy with Burroughs. I was especially unhappy with Burroughs because I actually worked in a Burroughs facility in Florida, their Latin American Headquarters. And they were less than charitable relative to what they thought of Memorex and what we did. So a group of us led by Giorgio got together

and said, "You know, we really need to find a way to buy Memorex back from Burroughs." And we went and looked for financing in Europe, but we just couldn't find anyone that was willing to help us swing the deal. As it happened, I had some friends in New York that I called and I said, "Look, this is what we're trying to do. Can you think of someone that might be willing to finance this?" And a friend of mine, his name was Mark Collins, got me in touch with-- what was Bernman's first name; can't remember his first name right now, who worked for Eli Jacobs. And we presented the deal to Eli and said, "This is what we want to do." And Eli said, "You know, I think we can work with Drexel Burnham Lambert and actually get this thing financed if we can get Burroughs to do certain things." And with Eli's help, and Drexel Burnham Lambert a group of us were able to buy Memorex back from Burroughs. And that was an extraordinary experience. There are so many little funny stories about the whole process of actually putting the financing together, putting the deals together, putting the numbers together, flying all over the country to convince bond buyers to buy these bonds. It was just an extraordinary experience. In any case, we did it. We bought it, and much to the amazement of many people at Burroughs who thought that it could not be done, including the people I worked with in the Boca office from Burroughs, but we did it. And we closed December 23rd, 1986.

One of the stories I remember is that part of the plan upon the purchase of Memorex we had to lay off about 150 people. It was very sad. It had to be done, and it's something I had to do because I was going to be the President of the U.S. operation. And I looked at everybody and I said, "I am not laying off 150 people two days before Christmas. I don't care. I'm not doing it, okay? So we need to come to an agreement that it's not going to happen two days before Christmas." It happened, but it happened after the first of the year the following year.

We had really an amazing time. We actually did very well that first year, so well, in fact, that Drexel backed us in buying Telex. So that's how we formed Memorex Telex and that as an amazing experience. So we put these two companies together. I think the unfortunate thing is that three things happened that really lead to the demise of Memorex Telex.

One was we paid too much for Telex, and I think that was largely driven by Drexel.

Two is we bought it at a time when the whole IBM market was tanking, and I don't know, people really need to remember that even IBM went through some very, very bad years, so for us to have gone through equally bad years should have been no surprise. But the fact that we had paid too much for Telex, therefore had too much debt, and had the downturn in our market.

And then I don't think we managed the politics very well of merging the two companies; that prevented us from cutting our expenses enough fast enough to really survive the downturn.

That's what really lead to eventually the demise of Memorex Telex.

But it was a fantastic ride, a fantastic experience certainly for me personally, but I think for many of us. It was an exciting company that did a lot of good things for a lot of customers, and provided a lot of opportunities for a lot of people. My Memorex experience spanned 11 years. I was in the International Division most of those. I was a Financial Analyst in the International Headquarters. I was the Finance Coordinator for Southern Europe and Latin America. Then I was the General Manger for Mexico, the General Manger for all of Latin America, and then we did the buyout I became President of the U.S. Operations. And then when we bought Telex and reorganized the senior management I became President of Magnetic Media Worldwide, and I ended my career there. My most enjoyable experience certainly was the buyout of Memorex from Burroughs. It was still one of the most exciting times of my life, certainly the most exciting time in my career. It was an amazing thing to do really as employees to become owners of the business, and to really take charge of our destiny in that way was a very, very exciting thing.

The least enjoyable part was leaving Memorex, because I saw the writing on the wall. I saw that the company was headed towards certainly a reorganization, if not bankruptcy, and shortly after I left it did file for Bankruptcy Chapter 11 Reorganization, and then a few years after that had to go into Chapter 7. That was very sad. And I think the two things I most regret, other than not really following through on the promise of the merger of Memorex and Telex, was missing two really key opportunities. Memorex should have been what today is EMC Corporation. We could have bought EMC for not many millions of dollars when they were very small, and we should have. And I remember explicitly those conversations at senior management. And that was then I felt was the wrong decision, and clearly history has shown it was the wrong decision. And the other opportunity we missed is we should have been Compaq. If you remember Compaq, we should have filled that role. So those two, well, Compaq has become part of HP and has been absorbed by HP, but really those two marketplace niches that were filled by EMC and Compaq, now HP, really should have been filled by Memorex. That really should have been the destiny of Memorex, and could have been the destiny of Memorex.

Clearly my biggest success at Memorex was being part of the management team that bought Memorex back from Burroughs. It was an amazingly exciting experience. It was something that we pulled off that people said could not be done, and just simply being able to do something that everyone said couldn't be done is a thrill. It was a unique experience that I think very few people get to have. What caused me to leave Memorex was seeing the writing on the wall that the company was not doing well, was headed for bankruptcy, and I did not want to be associated with a very large bankruptcy, so I resigned. I told Giorgio that I would do whatever I could to help, and I did. I ended up spending six months helping them sort through the difficulties in Lugano at the tail end, but at the end there was nothing I could do, and I'm really sorry that things ended up the way they did.

Probably the best anecdote about Memorex is how I met my wife. We've been married 21 years now. And I won't mention names so as not to embarrass anyone, but there was a manger who I felt was not doing a good job of hiring, so I told his boss about this. And I said, "Look, next time he goes through a

hiring cycle I want to watch it and I want us to discuss it to prove my point. I want to see every resume that comes across." So looking at the resumes one clearly stood out. So I asked this manager's boss, "Which resume clearly stands out?" And he pointed at the same one. And I asked him then, "Well, did the person match the resume, or was the resume simply over blown?" He said, "No, no, no. She absolutely matched the resume. She was clearly the most competent person applying for the job." I said, "Well, why didn't the manager offer her the job?" "Because he was convinced that she'd get bored at the job in six months and leave and he'd have to retrain her." And I said, "That is a crock of, you know what, okay? You always hire the best person, and if the job needs to grow so that that person can grow with it, okay, so much the better, but always hire the best people." I said, "Well, if she's that good have her come in again. Maybe we have another job for her somewhere else in the company." She came in and we chatted for 20 minutes, and after the 20 minutes I said to myself, "Never mind a job, how do I get a date with this woman?" And after two days of struggling with the ethics of calling her for a date after an interview like this I finally said, "Well, ethics aside, if I never call her I will never get a date. The worst thing that could happen is she'll just blow me off." So I called her. She was furious, but she did not blow me off, and we were married about a year later, and we've been married 21 years now. That's probably really the very best thing that came out of my experience at Memorex.

END OF SERGIO MAZZA INTERVIEW

JESSES STAMNES INTERVIEW

Stamnes: My name is Jesse Stamnes. I'm here for an interview at the Memorex 50-year traditional gathering, so in the next 50 years we'll have the centennial. I don't know. I joined Memorex in, I think, 1971. I graduated from Berkley with a bachelor's and a master's. It was my first job. I ended up working for Memorex for 20 years. I actually have a plaque to that effect. I started out as an Engineer, ended up as a Director of Engineering. During that time I worked on storage control units.

I started out in the storage control units figuring out what IBM does, and evolved it into what they could do. So I produced quite a few products for Memorex. And started out, out of school, with a logic analyzer trying to see how a storage control unit worked. That was a unit that was attached off the IBM Mainframe. We were able to observe its behavior. In learning that behavior we found all the various nuances of how those things actually work; they were very complicated, and it was lots of fun. We started out working very long hard hours. It was like a startup at that time. That was back in the early '70s. So you would work hard, maybe drink a little bit more after work, and then go back and work some more. It was a lot of fun. That's kind of what we did. How that evolved into different units, there's many different units in the evolution because I personally was a techie for like nine years until I got involved with one project, and I said I guess I have to bite the bullet and become a manager because if you're not a

manager you don't really affect decisions, technical decisions. You can kind of implement things, but you can't really affect direction.

The first product I was manager on was the 3683. The 3683, when it was created was an accumulation of all the previous technical problems that were not going to be repeated. A first one was the concept of a wired motherboard. Wired motherboards, up until that point in time, were an edict of the layout engineers. The layout engineers had a hard time laying out boards, so they laid out a board and when they got to the motherboard all you did was you put wires together and you put this bird's nest together. Well I said, "Too bad." I made a hard mounted motherboard. I made a transfer bus and a control bus, and you followed a protocol to that bus, and every router and cad designer had to follow the rules to that motherboard because it was the problem in the 3770 which was the cache controller. There was so much energy on the motherboard that this large impulse of power was running down this board talking into these wires, and these wires would get an error. And you get an error you're not allowed any errors in electronics. You get one error it fails. It's no good, and that's why we couldn't keep the machine up. So I said, "I'm going to be a manager," so that was the first thing I did. The second thing is I was not going to use classical control mechanisms where you take and/or gates put together controllers. Technology had moved forward enough to where you could put in intelligent microprocessors, which were off the shelf available commercial chips. You could put in DMA controllers off of the shelf. You could put in all these things off the shelf and put together a head of string controller. That's how the 3683 evolved. Since I was the manager I had to take over all the personal problems, but I also got to define the structure, and so it got that structure. We could program that, actually, in Assembler and Pascal, so it was a higher-level language. You had additional tools. In general it was an Assembler, but we could also use the higher-level languages, and it would interpret them into our assembled code for other like fancy functions. At that time they were developing the 3380 look-alike IBM drive. Their total focus was on the drive. They had so many issues with the drive that the head of string controller was just kind of something that was coming along, and I was filling it in, and making my milestones, and delivering product, and they also liked what was being delivered. At that point, that was also the first time when we incorporated additional intelligence of actually handling channel communications. So the channel communications, instead of being done by the storage director, were done by the head of string, so all the channel communication was actually done in the head of string, because it had immediate availability to all the poll data. The first 3673 and the 3653 had what they called an IDI [Intelligent Dual Interface] Interface. I think I have one or two patents on that one.² But what that is, is that's an intelligent communication between two controllers that give associated connection. When we went to the 3683 we actually went to a mail system. In that mail system we actually communicated channel connectivity data, and we actually built a fault tolerant channel connected system totally unique to Memorex.

Gardner: This was done at the 3653?

Stamnes: 3683. The 3673 and the 3653 had an IDI, which I invented.

Gardner: That was unique to Memorex.

Stamnes: That was unique and we have patents on that. We got patents on that one. And what that was, but that was like a, I have connection you wait and figure out the controls. When we went to the 3683 we actually went into what we call a mailbox connection system, and actually messages were transmitted between the two controllers, and you had to finish communicating all the mail information. And that mail information was channel connectivity including XA because XA was the big feature. That means you created what they call these groups of connections, so you could send data to groups, and that was all communicated through the, I think it was called Dynamic Path Architecture interface, or DPA Interface. IBM had it at the storage director level, and they had an IDI kind of connection between the storage directors, and then they did it that way.

Gardner: Tell me about the direct attachment of the controller to an IBM channel.

Stamnes: It was kind of a failure and available window.

The [Memorex] 3888 was going to be the head of the subsystem, and it was going to have multiple storage directors inside that 3888. Problem is the 3888 had lots of problems, lots of problems. Had lots of problems. They were trying to VLSI it, and they were kind of just copying, replicating what IBM was doing, which is a very serious thing. If you ever try to do it it's virtually impossible because you can't account for everything. The best thing to do is to do it yourself, and know everything, and then you know where you screwed up and you fix it. So the 3888 was having lots of problems. A window opened up.

I created a feature for the 3683 which was called an RPS Buffer. This RPS Buffer was like a mini-cache. It was the beginning of the cache unit. It would actually record and cache data at a very small scale, but it was like a header cache. The next logical step was I proposed, and it was accepted. I think it was Luke Little who was in charge at that time. I said, "Luke, I can just attach directly into the channel, okay?" And he said, "Okay," so I did. Now, what the name of that controller is I think that was the 3686 Direct Attach String Controller, sold by Memorex. At that time Memorex was also part of Unisys. That same controller I tried to make the universal controller for Burroughs and Unisys. I had inherited all the controllers. I was the director of all controller engineering for Burroughs and Sperry. It was called Unisys. And I was trying to get it as the ultimate controller for all three divisions. I was almost there, but then they decided to split Unisys up. And so Unisys got split up into what they called Mission Viejo and Roseville, which was the Sperry Burroughs. And I took this controller and made a direct attach.

The direct attach ended up attaching for Memorex to the IBM channel and it also ended up having a cache unit inside it talking directly to the channel. It was, I think, the last configuration had a large cache with four controllers in it with I don't know how much cache it had. It was 16 channels, four channels on each.

Gardner: Shared?

Stamnes: Yes, one shared cache, and that cache was the architecture of that RPS Buffer, which was a dual ported and it became a quad-porting buffer. You get the cost of this 3888 out of the equation, and it can handle lots of things, and Memorex wasn't selling huge configurations. Memorex was selling anything they can to mom and pop, and so they loved it because they wanted to get rid of cost and problems because they were having lots of problems with that box too. And so it became the standard controller. I think the greatest part of Memorex was just the process of being there for 20 years I went through so many evolutions as a corporation, but I'm a techie. Even after I became a manager my style was techie. I would lead by example. I would be in everybody's face. I didn't need a meeting. I knew what was going on. I knew what the problems were, and that was just my style, and I was able to do that. I did it for 20 years. I managed for 11 years, and produced quite a few products. That, I think, was kind of my process. I enjoyed it. It was fun.

END OF JESSE STAMNES INTERVIEW
