An Interview with

ROBERT E. WEISSMAN

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Conducted by Paul Ceruzzi

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Robert E. Weissman Interview

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Abstract

Robert Weissman attended the University of Connecticut and received his Bachelor's degree from Babson College. After various positions unrelated to the computer business, he was appointed CEO of National CSS during the 1970s when the company founders brought him in as a professional business manager. He describes how National CSS was founded and evolved from a general-purpose timesharing company using VP/CSS to a specialty processing services firm using RAMIS and Nomad to produce and run departmental applications. After selling National CSS to Dun & Bradstreet (D&B), he remained with D&B and later, as its CEO, redirected its strategy to being database focused rather than data processing oriented. He was Chairman of ADAPSO and describes its structure and values. This oral history was sponsored by the Software History Center in conjunction with the Center's ADAPSO reunion (3 May 2002).

Preface

As part of its preservation activities, the Software History Center (SHC) worked with Dr. David Allison of the Smithsonian Institution's National Museum of American History and Dr. Jeffrey Yost of the Charles Babbage Institute to plan and conduct a number of oral history interviews of early software company founders and other key industry contributors. On May 3, 2002, in conjunction with SHC's ADAPSO Reunion meeting held in Washington, DC, SHC arranged for 15 individual interviews by historians well qualified by their knowledge and interest in computing history.

The following people were interviewed together with the name of their interviewer:

Bruce Coleman, interviewed by William Aspray
Richard Crandall, interviewed by Paul Ceruzzi
Gary Durbin, interviewed by Philip Frana
Martin Goetz, interviewed by Jeffrey R. Yost
Bernard Goldstein, interviewed by David Allison
John Keane, interviewed by Martin Campbell-Kelly
Ernest E. Keet, interviewed by Philip Frana
Frank Lautenberg, interviewed by Paul Ceruzzi
John Maguire, interviewed by William Aspray
Joseph Piscopo, interviewed by Thomas Haigh
Lawrence Schoenberg, interviewed by Martin Campbell-Kelly
Charles Wang, interviewed by David Allison
Robert E. Weissman, interviewed by Paul Ceruzzi
Lawrence Welke, interviewed by Thomas Haigh.
Sam Wyly, interviewed by David Allison

Each interview was tape recorded, transcribed and edited by SHC, the interviewer and the interviewee to ensure clarity and readability without changing style or flow. The original tapes along with the edited transcripts were donated to CBI, which placed the edited transcripts on the CBI website.

ADAPSO History Program
Robert E. Weissman Interview

Paul Ceruzzi: It's May 3rd, 2002. We are at the Monarch Hotel in Washington, DC. My name is Paul Ceruzzi and I'm interviewing Robert E. Weissman as part of the Software History Center's oral history project. So we can just start with the very basic questions about where you were born and raised and your early education and then maybe how you got involved in the computer software and services business.

BACKGROUND

Robert Weissman: Okay, I'll try to do that in as summary a form as possible. I was born and brought up in New Haven, Connecticut. Born in May of 1940. And went to grammar school and part of my high school, and finished high school at Worcester Academy in Worcester, Massachusetts. I went to the University of Connecticut where I studied electrical engineering for about a year until I ran out of money and withdrew. I worked for about a year plus in the nuclear fuel research labs of Olin Chemical in New Haven. Then I went into the broadcasting business as an engineer. Became a chief engineer of a chain of radio stations out in Indiana. I accumulated enough money so that I could go back to school. I went back to Babson College outside of Boston where I got a bachelors degree in business administration in 1964. My career was kind of eclectic after that. I went to work first for a company called Lestoil, which was in the soap business, as assistant to the president. They moved me over to become, at a relatively early age, president of a division that manufactured metalworking equipment. After a couple of years of that I moved to the corporate offices as director of corporate development. I left them in 1970 to become CEO of a small public company called Spencer Kennedy Laboratories that manufactured cable television equipment and electronic instrumentation components.

Ceruzzi: Where was that?

Weissman: Just outside of Boston in Winchester. I sold that business to Scientific Atlanta in 1973 and unless we want to spend time talking about how it happened, got introduced to National CSS which was looking for a director of corporate development.

Ceruzzi: Before we do that, you started out as an electrical engineering major so you obviously kept that interest.

Weissman: Exactly, yes. But I was primarily self-taught if you will. I've always been interested in electronics and it continues. My only active patent is one that was issued about ten years ago in the field of digital communications. But I had had no experience in the computer business or computer software. I had been introduced to computers relatively early on while I was at Babson. I was married and had a couple of kids so I was kind of a strange beast for an undergraduate and so the dean of the graduate school made me his research assistant while I was an undergraduate; I wanted to do a multiple correlation analysis of indicators that might show a correlation to stock market movements and of course the early calculations were done on a Friden or a Marchant; those were your two choices. But obviously to do a multiple correlation analysis with up to 13 variables was beyond the Friden's capability. The only machine with any power that was available was a 7090 over at MIT. It was only available from two to four in the

morning, but it was available. So I learned FORTRAN and I punched my card deck and off we would go. But after that I had relatively little to do with computers or computing except in a commercial sense until I joined National CSS. I joined National CSS as director of corporate development because my alternative was to become director of finance for Gulf & Western International located in Hong Kong and my wife didn't want to go to Hong Kong.

NATIONAL CSS

Ceruzzi: So when you were recruited by National CSS what were they looking for?

Weissman: They were looking for a corporate development guy. They were looking for someone who could help them do acquisitions and figure out where they were going to go in the future. I operated in that role for about a year before becoming president and CEO and that was basically because the company was going through its normal evolution – it was still growing but that growth had pretty well stopped and they didn't have a lot of direction. The founders who were still managing the business were basically technologists who had never developed a business plan per se.

Ceruzzi: Do you remember their names?

Weissman: Sure. The founders and key people were Robert Bernard and Dick Orenstein who came out of Project Mac, Dick Baylis who was the project manager for IBM on CP67/CMS and Hal Feinlieb who I think came out of Lincoln Labs and had done some work on CP67. Those were the key guys.

Ceruzzi: So they were technical people with the theoretical understanding of timesharing.

Weissman: They understood timesharing, they understood CP67, they recognized that the 67 as a machine had some interesting properties, relocatable memory being an important part of that. One of the questions that you had written to me was did they have a business plan and the answer is no. I talked to them back then and in preparation for this I talked to them more recently. I asked what was in their heads and they all responded in the same way, saying, "We saw an opportunity to replace the high fixed costs of computing with high variable costs. We thought that that would be attractive. We thought that we could do something with CP67 and so we decided we would just go off and do that. Our pricing decisions were based on what price we thought Jack Arnow over at IDC was going to charge as he went off and created that timesharing business also based on CP67."

One of the stories that I heard when I first joined National CSS was how in the first month where they had fully loaded a 360/67, their total revenues were $65,000. They were renting from IBM, on a monthly plan, and the monthly rent on a 67 was $64,000, so they knew they had a problem. They changed their pricing. They changed the dispatching algorithm and improved the overhead of what became VP/CSS, their version of CP67, until they had a viable model, but it was still technology driven rather than market driven.

Ceruzzi: How is this related to the commercial timesharing of VM/CMS from IBM?

Weissman: As I understand the history, the corporate bureaucracy at IBM in the 1960s did not much believe in timesharing and they resisted it. They had the CP67 project back in 1967, and they finally just said, okay we're going to make this public domain and it's going to be a type 3 product. This meant that for at least a couple of years, until Burt Grad picked up some support for it, it was a totally unsupported product within the IBM environment. GE created the 650 machine which had the potential for virtual memory and IBM created the TSS project which at its peak had a couple of thousand people involved in it and they finally gave up on TSS. So here you had a situation where the 67 was a competitive response to the GE 650. IBM was actually moving to MVS at that point. They were spending money on TSS but not getting much value. There never really were a lot of people involved in the CP67 project. It was kind of an orphan. And so the only timesharing that was being done was really being done on the fringes, if you will, of the industry.

Ceruzzi: It was very much an academic interest especially at MIT.

Weissman: Yes, it was very much an academic interest. And in fact therein lies the distinction I think between National CSS and IDC. For instance, because Jack Arnow came out of Lincoln Labs and started IDC, he took CP67 but built an application set around it focused on the financial services industry, on Wall Street. And that's all he went after.

National CSS started out saying we have computer power which we can provide to someone at a low fixed cost and so their early market was more the developer and scientific market and the reason it became the developer market was not because timesharing was being embraced by DP managers, because they were not naturally inclined that way, but because early on National CSS developed a product called CDeBug which was an interactive COBOL debugger. It would allow a programmer to step through a program one command at a time. Also, another product soon after was a FORTRAN debugger. And those products created ooh's and aah's among developers because the throughput that they could get on program development was in the order of five to ten times better because, until that time, all program development and debugging was done in a batch mode.

Ceruzzi: Yes, you waited for the print out that told you that you made an error.

Weissman: That's right and you might have to queue up for a day to get a run. So that became enormously powerful and then of course the National CSS technical people developed a relocatable addressing scheme so that they could make use of the multi-processor capability of the 67. That added more power to the situation because even though IBM had tied together a few 7094's in the early 1960s, there wasn't an awful lot being done there. The market for National CSS during the period from 1969 when we first started offering it up through the early 1970s timeframe was more developer and scientific oriented.

Ceruzzi: Which was a real market.

Weissman: Oh yes. It would turn out to be a bigger market for us than IDC found going after financial applications. And what happened in the 1973 timeframe is that the marketplace moved. Interactive debugging tools were becoming more generally available from IBM and others. The price of computer power was not quite moving down Moore's Law curve, but it was still improving, the price performance ratio was still improving. And in the very early 1970s

National CSS pursued a strategy of licensing whatever products they thought they might be able to sell, and reselling them. ISPICE was an example which was an electrical engineer's product for doing circuit design.

Ceruzzi: That's right, I have heard of it.

RAMIS

Weissman: Products like that, stat packages, those kinds of things. As part of this process, National CSS licensed from Mathematica a product called Ramis. And Ramis was a 4GL precursor, if not quite a full 4GL.

Ceruzzi: And what year was this?

Weissman: Back in 1970 or 1971. The thought was that developers and data processing people would use this to build small databases and manage them.

Ceruzzi: So, what would be your definition of 4GL? A fourth-generation language?

Weissman: What these products did was to allow the creation of data sets organized in a schema which was logical and processible. As important as full-fledged 4GL's became, I think that the defining difference was the power of the non-procedural inquiry languages that were built for them. They did not have the power of a full DBMS in terms of the database structure and database management, but they were never designed for that. They were designed for the middle market and that design goal was met. This change in the market created a situation which I saw repeated in the growth of the PC business in the early 1980s and that was the ability of end users to take control of their data management needs. In that time frame, the early 1970s, our sales people would consistently report calling on end users who would go to their DP managers and say, here's what I want, and the DP manager would say, "Well, you know that's going to be 38 man-months and I'll put it in the budget for next year and then in 18 months maybe you can have it." And they saw the freedom that they could get by using a low-fixed cost service where they could expense the cost and didn't have to go through a capital appropriations process and did not have to go through the DP bureaucracy to get their project endorsed and funded and staffed. And so as that happened to the nature of the end user, the customers for National CSS began to change.

Ceruzzi: And they would have a terminal installed at their premises?

Weissman: Sure. It was a classic timesharing architecture so all they required was a terminal, a dumb terminal.

Ceruzzi: A 3270?

Weissman: Or 3270-like, a VT100 kind of device. The power was all at the mainframe because that's where the economics demanded it would be. Customers would pay for CPU usage, separately for connect time and separately for storage. Also separately for IOs, all of this was laid out, but they now had the ability to build a database and have it up and running a lot more quickly. The first customers were people who were technically sophisticated enough to be

able to do that but pretty rapidly it expanded beyond that and that is what created for National CSS a robust consulting practice. It was a response to customer demand from the end user who said look, I don't want to learn this language. I have this database, I want to get these kinds of reports, build it for me. And so we developed a staff of people who could develop the schema and also write pre-canned routines for pulling reports. And if the customer wanted to learn how to use the non-procedural language to make calls on the database they could, but often customers would just call up and say, I want to look at the data this way – do it. And so the business changed a lot.

Ceruzzi: Although it was still mainframe oriented?

Weissman: Absolutely mainframe-oriented and there really was no other alternative for it. We sold licenses for Nomad which was the product that we built to follow on to Ramis but generally that was sold only after we had made significant inroads to a customer selling it on a variable price timesharing basis where somebody said, "Hey, you know the economics are such that we'll go back to National CSS, get a license and install this thing."

Ceruzzi: So, how many of these customers would have a mainframe of their own?

Weissman: Almost always. One of the things that is interesting about the timesharing business because it was conventional wisdom that we would later prove with analysis. The thought was that timesharing was an entry point for non-computer using companies or small computer usage companies to get into it and that from small customers, large customers would grow. That turned out not to be the case. Finally, in the late 1970s, I had an analysis done of every customer's usage patterns from day one, which you could do because at the timesharing company you keep all the data – the records were all there. So I sent some folks off and said, analyze it. And the answer was, from small customers, small customers grow. From big customers bigger customers grow. And so if you went and you called on Western Electric you could grow from $100,000 a month to $2 million a month. But in almost no cases would you grow from $1,000 a month to $50,000 a month, or a million dollars a month or something like that. And so the customer base followed the Pareto's Law like most. And it was the big guys who were the big revenue producers.

FINANCING NATIONAL CSS

Ceruzzi: Can I just back up a little? Where did the people who founded National CSS get the money for that?

Weissman: They went to Wall Street and the late 1960s was a period of venture investing.

Ceruzzi: The go-go years.

Weissman: The go-go years of the 1960s. They just made it through the window. I was told that in 1968 there were a couple hundred timesharing companies that were around and then by January of 1970 there were only about eleven. Pretty brutal market mechanism going. The window closed for financing. National CSS went public in 1969 and missed getting caught in the closing window by about 30 days.

Ceruzzi: Timing can be very important sometimes.

Weissman: Sure, absolutely, but it was Wall Street money.

Ceruzzi: So they did go public and then did the stock run up and then sink or what?

Weissman: Well the stock kind of went up; I think they went public for a couple of bucks a share, went up to a high of about eleven or twelve and then sank back down to about three. And at the time I became CEO the stock was about $2.50 a share.

Ceruzzi: So what it sounds like is that the flexibility in changing the business of the company saved it from the fate of all the other timesharing businesses.

Weissman: Yes.

Ceruzzi: And the acquisition of Ramis?

Weissman: We didn't acquire Ramis. We licensed Ramis. We licensed it in 1970 and Nomad the follow-on product was developed by National CSS as a defensive move against what might happen on the renegotiation of that license which was going to come up. That license expired in 1974 – it was a three-year license or something like that. In fact National CSS's worst fears were realized when Mathematica came back and said, "We want to double our share of revenues."

Ceruzzi: Yes, because they saw the golden egg being laid.

NOMAD

Weissman: And fortunately we had started the Nomad project and had it well along and we said we better finish this thing up and get it going, which we did.

Ceruzzi: Was that hard to do – to finish it?

Weissman: No, because we had assembled a team of very capable people. We were smart enough to keep the team small. There were less than 10 people on the team. We isolated them and they went off and did it. And it was classic. We put a bunch of super programmers together, which meant we had to send in folks to tidy up after them and write documentation but we had a very robust product going out the door and so Nomad became our flagship product. National CSS went through a crisis of evolution as I became CEO. I had a very unhappy group of people working there because a lot of them could see the changes going on and were saying, this is the end of the world – this is awful. This is not what we are all about. And a lot of them left, which in the long run was probably best for them and for the company because it became a substantially different company with a different orientation as it went forward.

Ceruzzi: It became one that sold a product or licensed a product, a software product, rather than provide a service.

Weissman: Well, what happened is instead of just selling timesharing we began to sell a value-added service that incorporated timesharing into it because now the components were software, computer processing power and communications that came with it and, as a side benefit, consulting and support services which were not part of the original equation.

Ceruzzi: So it was financially successful?

BEING ACQUIRED BY D&B

Weissman: It was very successful financially. The company's revenues began to rebound relatively quickly, within a year. The stock continued to grow in value. By 1979 it had done well enough that for that year we were projecting revenues of $110 million. In 1973 I think we had done $6.5 million. Then in 1979 Dun & Bradstreet came in and made us an offer to acquire the company at $48 a share which we took.

Ceruzzi: And what were they looking for?

Weissman: What had happened is that they of course had these very large database-oriented businesses, their credit business being the primary one. They were not very advanced from a computer point of view. Most of the files of the companies that they had credit information on were kept in folios on a shelf. If customers wanted a report they would mimeograph it. And they recognized that they needed to move out of that world. They hired a fellow from GE who had run GE's timesharing business, a fellow named George Feeney, as a single individual to lead that activity. George said, "You need to buy a timesharing company to get that technology." The first company that they went after was Tymshare and they were unable to reach a deal with Tymshare on price and also, I think but don't know this, Tom O'Rourke just didn't want to sell his business.

Ceruzzi: It was eventually acquired by McDonnell Douglas.

Weissman: Yes, but that was at a point when they didn't have a lot of alternatives. So D&B came after us next. I knew they were going to come after us because I knew of the negotiations with Tymshare which had gone on until the end of 1978. At that time I asked my general counsel to start keeping a file on Dun & Bradstreet and, sure enough, in the spring of 1979 they called on me and ended up acquiring the business.

Ceruzzi: You eventually became the head of Dun & Bradstreet.

Weissman: Yes.

Ceruzzi: But that wasn't part of the deal.

Weissman: Absolutely not. In fact I could have guaranteed you that I would not be employed there a couple of years out. When we did the deal I told them that I did not want a contract. I told them that I would give them an orderly transition not because I had any legal obligation to do so but just because that is the way I would do it. I thought that that would take from twelve to eighteen months after which all bets were off. I had a number of people including Kenny Langone, who at the time was founding Home Depot and a couple of other

things, called me up and said, "Tell me what you want to do and where you want to live and what industry, you know, let's talk." So I had other alternatives and I figured I would be gone, but I never went. I never went because of that fork in the road that we all reach. Lee Keet – who you may be interviewing or somebody else may be interviewing – is an example of someone who faced the same decision and went in a different direction. Lee's business had been acquired by National CSS about a week before Dun & Bradstreet acquired us and Lee continued to work for D&B for about a year and a half. One day he came in and said, "You know, I'm going to go off and do what I did before because that is what I really want to do." And there were a lot of folks who made that decision, which essentially says, I know how to do that, I enjoy doing it, I'm going to go back and do it again. I think I stayed with D&B for the obverse of that. I knew I could do what I had done. This was a totally different environment and a different kind of company. I didn't know whether I could master it. And so it was intriguing.

Ceruzzi: Why did you want to sell National CSS in 1979?

Weissman: National CSS was in an industry that was being increasingly recognized on Wall Street and so the valuation of the industry had increased. Within that peer group National CSS had moved from the bottom of the pack pretty much to the top of the pack in terms of relative valuations and so I looked at it and said, as a practical matter, when we get to that kind of price everything has to go right for us for the next seven or eight years to get equal on a current value basis. And that's a risky bet for the shareholders, so it was made as a conservative decision. I did not foresee the speed with which the PC industry would change the equation and truncate the future for the timesharing industry so I can't claim I saw that coming.

Ceruzzi: Well, very few people did.

Weissman: Although I was very worried about it and in fact went on the board of one of the first PC retailers just to learn about what was going on. But it just too many things would have to go right for too long and so we made the decision to sell the business. And it turned out to be a very good decision for our shareholders to have done that.

Ceruzzi: At some point I read where you talk about developing a philosophy about how data or information is really the key to the future as opposed to process or programming languages or whatever. Was that happening at this time with Dun & Bradstreet?

DUN & BRADSTREET

Weissman: That was a message I brought to Dun & Bradstreet. Part of my job within Dun & Bradstreet was to proselytize because Dun & Bradstreet was a dominant market player with managers who had worked for them for 30 years and had worked with a "successful" model. So most of them saw no reason to change the model and none of them had any desire to deal with the uncertainties of a changed model. But I came along and said, "I've got a kind of a Copernican view here; the world does not revolve around the processing." At that time in the 1970s most organizations were organized around the processing. I said that the unique resources of Dun & Bradstreet were its data sets, processing is just going to follow a cost experience curve; we've already seen that and we can forecast that to continue. The data is not going to follow the same slope and so at the center of the universe we're going to put the data. It was a view that I

had developed in large part because of Nomad and the experiences that National CSS had had in the marketplace. And that was the view I brought to Dun & Bradstreet.

Ceruzzi: When you think of the name Dun & Bradstreet, you think of data, because that's what they were.

Weissman: That's exactly right. The problem that Dun & Bradstreet had, one of the difficulties, was that they did not think in terms of the data. They thought in terms of the products that had been developed and were derived from the data. And what they were saying is, you know, the customer wants a credit report and a credit report is something which is mimeographed and sent to him. And the thousand credit reporters out there liked to write out their reports long hand and send them in and they would take editorial pride in their individual unique style and that's part of the product value. It turned to warfare to change that orientation.

Ceruzzi: But you won.

Weissman: Yes, yes.

Ceruzzi: And how did you manage, who did you have to convince?

Weissman: What happened was that the man who was CEO of Dun & Bradstreet at the time we were acquired was Harrington Drake, known as Duke Drake. He had been with the RH Donnelly Company when it was acquired in the 1960s by Dun & Bradstreet and become CEO in about 1974. And Duke was a very perceptive guy and he saw the need to change. He wasn't sure how to do that – he didn't know how – but he knew he couldn't do it himself. So he listened to George Feeney and he believed what George was telling him and so he knew what he had to do. It was just about the time, I think it was 1980, we were holding a World Computing Services Congress which was an ADAPSO-sponsored affair and which brought in people from 34 countries or something like that, a thousand people up in San Francisco. And I chaired that Congress for ADAPSO. Duke Drake came out to San Francisco and had dinner with me the night before it started and he said, "I want you to stay with Dun & Bradstreet and lead this and I'd like to make you an executive vice president and I'd like to give you responsibility for all of the processing and databases of the credit business as one of your duties so that you can make it happen in that part of the business." And that was an intriguing opportunity. So I had his endorsement, which was a pretty powerful part of the puzzle.

Ceruzzi: One of the things we want to talk about is Dun & Bradstreet but I think for chronological purposes somewhere in the middle of this you became active in ADAPSO.

Weissman: Yes.

ADAPSO

Ceruzzi: So let's talk about ADAPSO.

Weissman: Well as I say, I was responsible for corporate development when I first joined National CSS in 1973. The most significant piece of that was acquisitions. ADAPSO was the

logical place to troll the potential acquirees who were more likely to be at ADAPSO than any place else in nature if you will.

Ceruzzi: Was this something under the table or unspoken or was it something that everybody knew?

Weissman: Well it was unspoken but it was also well known. I mean there were big fish and small fish at ADAPSO. A lot of small people came because of the potential of being acquired. This was not an industry in which unfriendlies were done. Any deals that were done were done between consenting adults.

Ceruzzi: Not like some of the things you read in the papers.

Weissman: Exactly. So I became involved in ADAPSO in the first instance in order to get to know the players. And also as a way of accelerating my education about the industry because until ADAPSO my only window was through the eyes of National CSS employees which was both attenuated and distorted.

ACQUISITIONS

Ceruzzi: It's interesting that I've done a couple of interviews and there's this notion that acquisitions were a part of the day-to-day life of these companies – either acquiring or being acquired. Some of my earlier research was about the Digital Equipment Corporation where they said, we'll never acquire anybody, we just grow everything internally, and I wonder why, is there any reason for this mindset of acquisition?

Weissman: I think that there really is and there is a logic to it. It seems to me there is a repeating Darwinian process in the formation of industries which is certainly not unique to the computer services industry. It is driven sometimes by the issues of critical mass and economies of scope and scale; sometimes by the need to capture relevant technologies; sometimes by the need to grow to a size where you become less likely to be eaten yourself, so it's a survival device. Sometimes to either satisfy Wall Street in the short term or to satisfy senior management's delusions of grandeur. I mean all of the above are reasons why deals get done.

Ceruzzi: But there wasn't the sense that you read nowadays about these marriages that are doomed because the cultures are just never going to get along and they're like AT&T and NCR for example.

Weissman: Well I think that all of the cultural difficulties are there but when you have small organizations coming together it is easier to transcend the interpersonal barriers because you can actually put everybody in touch with everybody. You know when you bring Compaq and HP together that is never going to happen. So if you bring companies with strong cultures together you're always going to have difficulty, but if you can make it more human it is somehow more manageable. Also, usually, the connection is tighter in terms of strategy and overlap than you often see in large companies and so I think most researchers would confirm that acquisitions are a losers game.

Ceruzzi: Well that's what they say nowadays.

Weissman: And it has been forever. I don't think just recently, I think forever.

Ceruzzi: But this was a culture you thrived in and at the time you must have believed in it.

Weissman: Yes, and here was my way of trying to reduce the house odds if you will. I know that I might never be able to overcome the house odds but I could reduce them. And that was to apply several tests on a rigorous basis. You need to understand that back in the 1960s I had worked for a conglomerate as their director of corporate development. I left on the occasion of them acquiring a company where we sat in a room and someone said, "Well, we got to tell Wall Street how this fits." And somebody else said, "Let's say it fits in the consumer products business." Then everybody said, "Yes, that's the only place." Well, this company had one consumer product, Sunday school books, and the company that they were acquiring had just one product, condoms, and in my mind I couldn't adapt to this.

So I created some tests which I tried to apply rigorously. Test one: do these two businesses have the same competitors? It's a good test of whether they are in the same business. Second test, and it's really kind of a confirming test on the first: does it have the same customers in a buying context? By that I mean Wal-Mart buys trucks, Wal-Mart buys Xerox machines. Two companies have the same customer, Wal-Mart – but are they in the same business? No, it has to be the same buyer in a buying context. The third test is, if you look at the value added cost structure of the two businesses, can you see the potential for realizing significant overlap on more that 50% of the value added cost? If it passes all three tests then maybe it's in the same business and you have a chance from a business point of view of getting some leverage. If it's not, it's a conglomerate merger and you should only do that if you think that your market is going to die or tail off or have other problems, and you have this bundle of assets and want to redirect it. Which is much more difficult and much riskier.

Ceruzzi: While that is going on though you still have this other phenomenon as at National CSS of changing your model because you realize that the classic timesharing model wasn't working right.

Weissman: Yes, I did very few acquisition deals for National CSS because it was growing organically. Full management attention and capital were feeding something with a much higher rate of return and a much better risk profile.

ADAPSO AGAIN

Ceruzzi: Let's go back to ADAPSO. You were not only in ADAPSO but you became an officer.

Weissman: Yes I did. I became president either in 1979 or 1980, somewhere along in there. I actually became chairman because that was about the point where we made the full time executive the president of ADAPSO, and that was just a natural evolution of involvement in ADAPSO activities and interests and you know, it kind of happened.

Ceruzzi: Was that a rewarding activity for you?

Weissman: Well yes, participating in the industry was rewarding, no question about it, because there was very positive feedback both from a personal level but also from a corporate level. I can remember around that time that EDS had never joined ADAPSO and I was given the job of trying to get EDS to come on board.

Ceruzzi: It was still run by Ross Perot.

Weissman: It was pre-GM days and it was being run by Ross and by Mort Meyerson. I think Mort was president at that point and I remember calling Mort up and saying, "Mort you ought to join." And he said, "Why?" And I said, "It is in your self interest to do so." He said, "You have my attention. Why?" And I said, "That is the place from which your future acquisitions are going to be found. That is the place where your future enemies are going to be spawned. That is the place where you are most likely to find, in a concentrated form, talent that might be interesting to you to acquire."

Ceruzzi: Managerial talent?

Weissman: Managerial talent. And that is where you will get your early warning system going about issues that are developing at the federal and state level that may have an impact on your business in the future. And they joined. And I think that is a pretty good set of reasons for anybody at that point.

Ceruzzi: So you enjoyed recruiting or growing ADAPSO?

Weissman: Yes, because it was in my selfish self-interest to do that. As we got more people, particularly among the larger companies, we became a more powerful institution. We had a bigger voice and a stronger public policy influence.

Ceruzzi: So what were some of the big issues, the challenges or threats that you as head of ADAPSO were fighting?

Weissman: We had to deal with the fact that IBM, a member, was also a powerful competitor.

Ceruzzi: As a supplier of services?

Weissman: As a supplier of services and of software. Of course, in the earlier part of the 1970s IBM was the 800-pound gorilla in software because of the bundling policies that they had. The phone companies – when the Bell System began to sell UNIX in the 1970s, that was scary.

Ceruzzi: They licensed it right?

Weissman: Yes, they licensed it, but they put together a team to go out and license UNIX and we were very concerned about the AT&T camel's head in the software tent.

Ceruzzi: This is before divestiture?

Weissman: Yes. Divestiture didn't occur until the early 1980s. We were concerned at these competitive trends. We were concerned about the competitive threat in the late 1970s of the accounting firms moving into professional services. I get a sense of déjà vu these days.

Ceruzzi: Andersen Consulting?

Weissman: John Imlay and I called on Andersen Consulting in 1979. I think we talked to Jim Edwards and tried to persuade him that they should not go into this business because there was a natural conflict. And they said, "We can make a lot of money, bottom line." And they did. But we were concerned about that.

Ceruzzi: And these fights – were they carried out in the Congress or in the FTC or some federal agency?

Weissman: Well, they generally were not carried on with the government as a major player in it. We were very worried about state taxation of services – you know the states are always looking for new sources of income and we had a number of battles with states where they were imposing taxes or trying to impose taxes retroactively on services. There was a bifurcation within ADAPSO. You had lots of small companies. By small companies, I'm talking about the folks who because of their revenues paid the minimum dues - $600 a year or whatever it was. They came because they had a lifestyle business and so going off to the ADAPSO convention in Hawaii or Florida or something was part of the lifestyle of being in the business; they came for the educational programs, because these were typically small businessmen who felt they had a need for education in one or more areas; they came for the fraternity of it and the hope that perhaps they would be acquired. And then you had the big companies. They were the biggest payers who, by definition, were the processing companies. And who were concerned about making sure that there was access to cheap communications and computers and that no other 800 pound gorillas would come in to compete with these alpha males in this business. And so you had a couple of agendas going. There were always tensions. The SIA, the Software Industry Association, talked on a couple of occasions in the 1970s about breaking out of ADAPSO because the agendas were different.

Ceruzzi: They sold software products.

Weissman: They sold software products. So for instance back in the 1973-1974 timeframe guys like John Imlay and Larry Welke were saying, "We want ADAPSO to give us a $100,000 so that we can go off and do advertising to convince the world that there is a software industry, someplace that they can go besides IBM to get software." And since most of that $100,000 was going to come from the big service companies they were saying, "Why the hell do we want to pay that?" Well, part of the process in ADAPSO was to bridge those differences and negotiate a settlement that was satisfactory to everybody.

Ceruzzi: Was it natural that they would be in one organization?

Weissman: Not totally natural, but there was enough community of interest to keep it going and perhaps it was driven in part by the fact of personal relationships that had grown when everybody was small, and people stayed on because they were there.

Ceruzzi: Before the bifurcations occurred.

Weissman: Exactly. Exactly.

Ceruzzi: Did you have to manage these two groups as head of ADAPSO?

Weissman: Well that was part of it. Trade associations by their nature have a governmental structure which is very different from the typical corporate structure. Typical corporate structure today is still built on a hierarchical structure that goes all the way back to the Roman Legions, a command and control structure. The structure within a trade association is much more like you will find in a college or in a political setting. You don't have hire and fire power. You don't have ultimate veto power. You operate by managing counterbalancing opposing forces. You recognize that you are never going to get 100% but if you can move 20% of the folks in the middle one way or the other you can get some things to happen. And if you do it in the right way you can get in the back room and cut a deal and move an agenda forward. That was ADAPSO. I've never operated at that level in another trade association, but I suspect that that is the nature of associations.

Ceruzzi: Probably because they met with their competitors.

Weissman: Exactly, exactly.

Ceruzzi: And I guess this came up last night as a question that you were not allowed to get in a room together and say lets collectively raise our prices because that is illegal.

Weissman: Obviously.

Ceruzzi: As much as people might have wanted to. Okay, so you were happy doing that while you still were at National CSS. And then were you also at ADAPSO when you went over to Dun & Bradstreet?

Weissman: I became the chairman of ADAPSO just about the time that Dun & Bradstreet came in and acquired the business. I think I was an employee at Dun & Bradstreet when I was the chairman and so I completed that activity, but my activity level dropped off very rapidly thereafter because as I got involved in D&B activities the interest area of ADAPSO became kind of a vestigial interest of D&B because National CSS was a very small piece of D&B.

PERSONAL COMPUTERS

Ceruzzi: Okay, where did the advent of the personal computer and Microsoft and all that come into this equation?

Weissman: What happened was that the first personal computers started to be offered in the mid-1970s as kits and I was then a subscriber to Popular Electronics.

Ceruzzi: So you remember that?

Weissman: Oh yes. I remember the event and I remember buying a machine and putting it together and playing with it. You know you had a series of binary switches and lights and you couldn't do much with the thing, but it was kind of interesting. When the Apple came along, the Apple I, that got my interest. VisiCalc had not come along yet, but this represented a different kind of beast and I was aware of the cost experience curve of semiconductors and so I began to worry a lot. And one of the things that drove my concern was that as I looked at the timesharing business, one analogy which may have been an improper one to use stuck in my mind: the way that the utility value of decision-making has a changing slope at certain price points. Here's what I used to say to the timesharing people who would quote me Grosch's law. You can do several mathematical calculations – addition, subtraction, multiplication and division. And you can do them on your VT100 and in effect it's not going to cost you a buck a year to do it. Now I'm going to give you an alternative. It's called the pocket calculator. It's going to cost you $40 bucks. Now why would you want a pocket calculator instead of a VT100 when there is a 40 to 1 price differential? The answer at that point is it doesn't make any difference. What you have is portability and control and all the other things that are now more important. So that was my analogy back then and that's what worried me about PCs. It was that control issue because we had seen with Nomad that control was a key issue. There was a fellow who just recently retired from his consulting practice, named Sy Merrin, who started one of the first computer stores in Westport, Connecticut back in the late 1970s.

Ceruzzi: Do you remember the name?

Weissman: ComputerWorks. And I just walked into the store and developed a relationship with him because I lived in Westport and I wanted to understand the phenomena. And he asked me to sit on his board and I did that just to try to understand it. And so I knew that they were coming but I didn't know when. Remember the Apple I was a pre-VisiCalc hobbyist machine. But then VisiCalc came along and I must admit at the time saying at a Computer Works board meeting, I don't understand why Apple doesn't buy VisiCalc. It must be because Apple thinks that people buy VisiCalc to run on their Apples. But people buy Apples to run VisiCalc. And I could see what was going to happen. And so it was a concern but it wasn't the thing that kept me up at night.

Ceruzzi: Well, when you compare that to Dun & Bradstreet which is sitting on massive amounts of data which PCs would never be able to handle until much much later. Even today they're not data processors, they send that out to a server or something.

Weissman: Yes, right.

Ceruzzi: And the other thing is, at National CSS, communications was very important and the early PCs couldn't talk to anybody.

CHANGING D&B

Weissman: Well, one of the reasons that the National CSS acquisition made sense to D&B, particularly as we began to develop the capability to deliver electronic forms of data, was that at the time it was the only alternative for offering electronic delivery remotely. You had the private networks and there were damn few of the private networks and National CSS had one of the largest packet switch networks in the world which we had developed back in the early 1970s

about the time I joined National CSS. The public packet networks were coming into their own at that point but if you think about it, those public networks were selling 1200 baud connect speed. And their revenues were averaging four bucks an hour. D&B in selling electronic services and electronic data delivery was getting an average of $95 an hour. The service level and queuing for the two business models are totally different, you know. If your Sprint usage opportunity cost is $2 and somebody gets a busy signal you've lost $2. Well our opportunity cost was $95 and so you wanted to have control of your communications. That was one of the unique capabilities that helped D&B grow and maintain its profitability. Today, those D&B businesses that were and are database-oriented are profitable businesses largely because the data is the non-commodity value added component. We've all seen how markets commoditize and how once that happens price becomes a major component of the competitive decision. D&B's databases have never been commoditized. IMS's databases have never been commoditized. And so they support much higher profitability levels.

Ceruzzi: Did you feel that you successfully transformed D&B in this direction?

Weissman: No. No, I wish I could claim it but I cannot because I don't think the job is done yet. It is trench warfare.

Ceruzzi: But would you say that people accept this view, that this is the direction that people have?

Weissman: I think they are still going through that process. The chairman, the CEO of D&B, who is a fellow I've never met by the name of Allan Lauren, has been there for a couple of years now. He is a man who ran the processing for American Express and was the president of Apple during the "bad" years, but he is a technology guy. And I think that the board of D&B recognizes this. I think that the senior management of D&B recognizes it because I presume that Mr. Lauren has brought in people who do understand. But I suspect if you go down into the bowels of the organization you will find managers who don't get it yet.

Ceruzzi: Is it because it is such an old company and has these ties to Ivy League college clubs?

Weissman: I once had a discussion on this topic with Lou Gerstner. Lou is a very strong-willed individual, a very smart guy, and we were talking about what he had done in IBM. And the discussion was going swimmingly until I said to him, "You know, Lou, your job at IBM was easier than my job at D&B." This was a point of view that he was not ready to accept at first blush. So I said, "The reason for that is that you had a burning platform and you could go around and say to everybody, 'the fact that we lost $5 or $6 billion last year suggests that maybe we have a problem.'" When I took over responsibilities for D&B its revenues were growing at 10% a year, its pre-tax margins were 25%. Its return on investment was 45%. No burning platform there, hard to get folks attention. And in an organization that needs to change because the environment around them is changing, you'll find a community of people who just don't recognize the environment of change, people who may confront it from time to time but try like the devil to ignore it. That turns out to be a lot of people, a significant percentage of people. They are not the real problem, because you have a shot of getting them to understand or, if they can't understand, you can ultimately identify them and replace them. The most difficult are the people who recognize it but know that it is not in their self-interest for it to be recognized

because that might bring about a loss of control, of power, of job security. Because they may say, "The world has moved from propeller aircraft to jets and I don't know anything about jets and so I'm going to get fired. And so the best thing for me to do is to deny it or to give it 'vicious compliance' and just kind of go down in the trenches and try to change as little as possible while I tell the folks up at the palace, "Yes we hear you and boy we're right behind you." That is the hard part and you don't root that out easily.

Ceruzzi: It sounds like you drifted away from ADAPSO and at the same time ADAPSO changed its name and kind of became a less significant player in the current situation of IT or computers.

Weissman: I know a lot less about the history of ADAPSO since the early 1980s but I can recall an ADAPSO board meeting at which a representative of ADAPSO who we had sent to talk to these new little software players in the PC business, came back to report on the possibility of that group joining ADAPSO. At that time the ADAPSO board comprised people with an average age of around forty. Imagine their consternation when it was reported that the major question that the PC people asked of themselves was whether they could relate to a group that old. Which was a sobering thought for the folks around that table. But the center of the universe changed. For the processing companies like Tymshare, National CSS and Comshare, the salad days were behind them, and the mainframe software companies were either adapting or being acquired by Charles Wang.

Ceruzzi: Computer Associates.

Weissman: Yes. The little batch service bureaus were going out of business and so it was a different world.

Ceruzzi: Well I think I've covered all my questions. You feel like there's anything you want to add?

Weissman: I don't think we've missed any big chunks. I can't think of a topic area that we really haven't covered Paul.

Ceruzzi: Okay, well, thank you very much.

Weissman: Thank you.