



GPS Workshop: Consolidation and Current Roles

Moderator:
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GPS Workshop: Consolidation and Current Roles
Conducted by Software Industry SIG – Oral History Project

Abstract:

This final session discusses what has happened in the GPS industry since the 1990s. What were the primary business alliances? Which of the companies were sold and to whom and why? What were the changes in the markets and technologies? How did the companies adapt to these changes? What were some of the failures to adjust to the changing situations, particularly with the end of the Cold War? What do the participants see as the future opportunities and problems for these companies? How have these companies influenced the growth and significance of the Computer Services Industry?

Participants:

<u>Name</u>	<u>Affiliation</u>
Burton Grad	Moderator
Dan Bannister	DynCorp
Ed Bersoff	BTG
Walt Culver	CSC
Stan Gutkowski	Andersen Consulting/Accenture
Judy Huntzinger	BDM International
Jack London	CACI
Bob Plouffe	CSC
Wayne Shelton	PRC
John Toups	PRC
Dan Young	Federal Data Corporation
Tim Bergin	American University
Paul Ceruzzi	Smithsonian Air & Space Museum
David Grier	George Washington University
Jeffrey Yost	Charles Babbage Institute
Doug Jerger	Software Industry SIG, Computer History Museum
Luanne Johnson	Software Industry SIG, Computer History Museum

Contracting With Foreign Governments

Burt Grad: How many of the companies here worked for foreign governments?

Jack London: We've done work in Great Britain. In fact, we have a job with Scotland right now on the census. And we did the Irish census. We haven't been successful with the British census yet, but we've got that one in the to-do list. They're not huge contracts compared to US government work.

Grad: Fixed price, variable price?

London: Time and materials and fixed price components for certain pieces of it. Several million pounds.

Grad: That's not a big contract.

London: No, that's what I said.

Grad: What about the rest of you?

Walt Culver: CSC had a large number of foreign contracts. Some were in the defense systems sector. Some were in what you might call the commercial sector. Back in the 1970s and 1980s, they had a huge contract with the Kingdom of Saudi Arabia to put in a security system. Depending on how you look at it, it turned out okay, or not okay. I had a very large contract on the defense systems side with the German Navy for a planning control system which turned out very well. That was time and materials. The Saudi contract was fixed price, but the real problem with it is that they never paid. So you had to keep pursuing and pursuing and pursuing them. I don't know the details of that. I do know the details of the German contract. The Germans were fine. CSC has had a number of contracts with the British government which turned out fine. They are outsourcing their equivalent of the IRS, what they call Inland Revenue, which is a very big outsourcing contract.

Grad: Are they using packaged software in that at all, or is it all custom stuff?

Culver: Almost all package software, but integrated. [The contract is for] integration and outsourcing.

Grad: So where are you pulling the software from?

Culver: You name it.

Grad: Would Oracle be a source, for example?

Culver: A lot of it was from England, but it could be IBM of England, or it could be Oracle in England, or whatever. And some of it was developed [by us]. If it's T&M, some of it may turn out to be developed custom from scratch. But more and more, that stuff's off the shelf rather than custom developed.

Ed Bersoff: Our intelligence systems were in use by allied nations, typically the English speaking countries where we have a special intelligence related relationship. Australia was one of our bigger clients. Interesting, I don't know if anybody worked with Japan, but a mating dance with Japanese procurement or with the Japanese government could take a lifetime. So after a while, we figured out that it wasn't worth pursuing government work in Japan.

Dan Bannister: You're talking about any kind of a government contract?

Grad: For foreign governments.

Bannister: I mean not just systems integration.

Grad: No, anything.

Bannister: DynCorp had direct contracts with the governments of Saudi Arabia, Germany, England, and the Philippine government.

Paul Ceruzzi: South America?

Bannister: South America, now that's the State Department contract. He's referring to a contract DynCorp still has today, as a matter of fact. And why it's in the Department of State is beyond me. But anyway, Department of State has the responsibility for the drug eradication program down in South America. And when they started it, the reason why they picked DynCorp, and it was sole source I might add, is because they had to provide the aircraft and the pilots to fly the aircraft, to drop the chemicals on their poppy plants.

Grad: It's not napalm. It's something else.

Bannister: It kills the poppy seed and whatever else.

Grad: Wayne, your thoughts?

Wayne Shelton: At both PRC and Hughes [Aircraft Company], we had extensive contracts with foreign governments, on the civilian side with law enforcement, as well as air defense systems and military support. But we always believed that in dealing with the US government, they are very concerned what it's going to cost *you* because of the concern you're going to make too much money. The foreign governments seem to be much more concerned with what it's going to cost *them*. And so you had the potential to more efficiently manage the project and make more money. John can talk about the engineering contracts that they had and they had a lot of those.

John Toups: Yes. We worked in Saudi Arabia, Iran, Nigeria, almost every place over there. We were in Iran when the Shah got kicked out.

Grad: That was a pretty sad thing. One of my friends, Oscar Schachter, was with ACT [Advanced Computer Techniques]. They also had big contracts in Iran at that point. He said it was just a horror show.

Toups: We had a funny circumstance. We were designing two new naval ports, about a \$20, \$30 million job. We got a \$2 million advance payment. We had to put up a \$2 million letter of credit. When the Shah got kicked out, we were essentially done and we left. But at that time, we had a \$2 million receivable, so we could have lost \$2 million, if they didn't pay the receivable. And in fact, we could have lost more than that. They could have claimed that we didn't finish the job and called the letter of credit, so we'd be down \$4 million. The letter of credit had an expiration date, and about two weeks after the expiration date, Iran called it, and the bank says, "It's too late." So at that point, we're even. We had the \$2 million advance payment, we had the 2 million receivable not paid, so we're even. The question in my mind, and I don't know the answer, is why didn't they call the letter of credit earlier? Was it just because of the turmoil there, and the guy that was supposed to do it didn't get to it? Or did the guy like us and feel it would be unfair to call it? Or did one of our guys slip a little money to somebody?

Bannister: Don't ask, John. Count your blessings.

Toups: I taught a class at George Mason and I asked the class what they thought. They said, "Don't worry about it. You have to pay somebody a little money to get your \$2 million? Do it." Which of course is a violation of the Foreign Corrupt Practices Act.

Culver: Actually, no it's not. If some money's paid for something that's due you, that's not a violation of the Foreign Corrupt Practices Act.

Bannister: That's right.

Toups: Really?

Culver: That's right. It's under a paragraph heading called "greasing of palms." That's actually one of the headings of the Foreign Corrupt Practices Act. It's legal.

Bannister: You can pay a fee.

Culver: Yes. That's legal.

Grad: Dan, do you have any comments about foreign governments?

Dan Young: All of our foreign business was through the State Department and through military assistance programs. We would provide things to foreign governments, but they were paid for by the US government.

Bannister: Best way to go.

Grad: Cliff, did you have anything?

Cliff Kendall: I only had one foreign contract and that was in Argentina where we put in a system where they were running the lottery, the numbers if you will. We put in some towers. We won the contract competitively, although we did have friends down there. And the governor was behind us in the state. And then, unfortunately, he got defeated and we ended up in a suit in Argentina. We won the suit, got our money and it worked out very well. And then we sold the contract, the business down there completely. But it was a long, arduous task and I wouldn't recommend it.

Impact of the End of the Cold War

Grad: Can we switch to another subject? What effect did the end of the Cold War have on the size of the business or the kinds of contracts you got? Go ahead, Jack.

London: I had a call from the Navy which, because of the cutbacks, terminated a contract for the supply systems up in Mechanicsburg. We had to lay off 200 people on 3rd September, 1989. And the other thing of anecdotal interest was that I had a shareholder in New Jersey, who was a dentist and had a pretty good chunk of stock. Called me one afternoon and asked me if CACI was contemplating liquidation, because it seemed inappropriate for us to try to

continue to do business for the Department of Defense, since obviously they weren't going to need contractors anymore, because the world was changing and everything was going to be fine from now on. And he honest to God was serious. He thought maybe it was time to change our business for him.

Grad: Were there end of Cold War effects on any of the others of you?

Bersoff: Back in the middle 1980s, a fellow named Stan Collender, who's still around, who was with Price Waterhouse at the time, used to do analyses of what's going on in the federal government, how the money's being spent and so on. Those were the days when the defense budget was \$500, \$600 billion dollars a year. He would talk about the potential for small reductions. But if anybody in the room ever thought of the defense budget being cut in half, they might have jumped out of buildings and liquidated their companies. But, I tell you, the post-Cold War years were the best years we had.

Grad: Why?

Bersoff: Because the government shifted from spending huge amounts of money on large scale defense systems that were hardware focused, into preparedness and readiness and information systems. And that's where we were kind of all positioned. California got hurt by that migration, but the DC area benefitted. I think some of the companies around here thrived. All of our companies here thrived after the defense budget was cut in half.

Grad: Other comments?

Bannister: Same experience. Our sales grew every year after the Cold War ended.

Kendall: Our company grew. I didn't notice it but, of course, we did a lot of civilian business.

Impact of 9/11

Grad: Let me take the opposite side of the coin: the effect of 9/11.

Culver: That's a complex answer.

Grad: Complex question.

Bersoff: The question's easy.

Culver: To put it in context, I wasn't at Computer Sciences Corporation at that time. I was running SI International, and we were responsible for all the nation's space assets, insofar as telecommunications and ground transport and designing the satellite structures from a telecom point of view. I got a call from a three-star general, a week after 9/11 occurred, who was in Washington and was, essentially, deputy CIO of the air force. But with his other hat was responsible for all command, control, communications and reconnaissance for the US Air Force from that standpoint. He asked me to send him a letter, saying that we would support him in any way required on a moment's notice, on any requirement he threw us that was within the general scope of our capability. I wrote that letter and I sent it in, and our business grew wonderfully over the next three, four, five years.

Grad: Did that end up being sole source work?

Culver: Well, what happened was it was added to a contract we already had and that contract was supposed to come up for re-compete, I think in 2003. The re-compete was put off for two years, in the national interest.

Grad: So effectively, it became a sole source for that period of time.

Culver: Well, yes. And nobody in the industry that I know of tried to fight the extension of the contract for two years, because we were right in the middle of updating some assets which turned out to be very important in Afghanistan. So it was positive, but in an unusual way.

Grad: Jack?

London: I would say that the experience of CACI after 9/11 in many ways changed a big part of what the company does. We're still in information technology and computer systems, network services, but we do much more for the intelligence community. We have over 7,000 people with clearances. Half of those are special clearances. But more important than that even was the movement of a lot of our work closer to the battlefield. I don't consider the company to be a private military contractor, although we've been called that, but we definitely have followed the United States Armed Services forces into the field. Some of you are probably aware of the accusations and allegations about our interrogator intelligence support services at Abu Ghraib. But that just gives you some idea of moving closer to the battlefield that is a dramatic change in the type of company that we have become over that period of time, and moved a lot of the work into communications, special field systems, signals, processing.

Grad: It has significantly affected the nature of your work.

London: Dramatically. Not just a little bit, dramatically.

Culver: That's sort of what I was saying too, except I think you said it more succinctly.

Bersoff: I have two different stories. One is that we signed the agreement with Titan to sell our company in August of 2001, and ultimately did close in November. But at the same time, we had a contract with the Army to maintain and move around and manage their information systems in the Pentagon. They were in the process of moving from one side of the Pentagon to the other. We were doing installations in the new side, which is the side that got hit by the airplane, and we lost two employees during that period, and several others were hurt as well. The activity that started right thereafter, when our employees kind of rose to the occasion and did everything it took to get those systems back online, was just extraordinary. I managed to get into the Pentagon about two or three weeks later. There was a jumble of rubble and wires and all sorts of stuff. People were working there with masks and so on. But I think our community got renewed respect from the customers, from our colleagues, as we responded to what happened.

Grad: When was DynCorp bought by CSC? Was that before then?

Bannister: No, that was two years later.

Grad: So what happened to DynCorp?

Bannister: I can't think that there was a dramatic change in the direction of the company, or the content of this business, but it did impact us. DynCorp had the contract at the time to maintain the communication systems for the New York Stock Exchange. We got them up and running within two days. It was unbelievable.

Grad: Did you have a complete backup hard site on the thing?

Bannister: Yes. But they were rewired in their present location.

Grad: In two days?

Bannister: Yes, in two days they had communications going into that building.

Grad: That's incredible.

Bannister: I know. It's an unbelievable story. Got lots of applause for that, but I mention that only because it did what Ed just said. It changed some of our employees' attitude about

what they were doing. They realized that they were doing something that had more national importance than they may have thought otherwise.

Grad: Did you get more respect for what you did? Did it make a difference? Maybe people appreciated what you did more?

Bannister: Yes, probably.

Grad: Wayne, how about you or John?

Shelton: I was on the dole at that time. I was retired.

Toups: So was I.

Grad: Well then, you didn't get any direct benefit from it, did you? How about you, Dan? What were you doing?

Young: We had sold the company in 2000 to Northrop [Grumman], but I was on the board of a professional services company, NCI. One of the phenomena that occurred during the 1990s was the creation of government wide contracts, GWACS [Government Wide Acquisition Contracts]. GWACS enabled customers to place business quickly. When 9/11 came along, as had happened with the fall of the Berlin Wall, contracts from the civilian agencies just came rolling in through these government wide acquisition vehicles. You were involved almost immediately. I think it had a big impact on our industry.

Grad: Cliff, your thoughts on that.

Kendall: Well, we sold in 1999.

Grad: So you weren't directly involved at that point.

Kendall: No.

Ceruzzi: Can I back up a little bit on this? What about the presidency of Jimmy Carter. Was that a bad time for contracts, for your businesses one way or another?

Kendall: Hardly had any effect.

Bannister: I don't remember.

Ceruzzi: I remember he talked about zero-based budgeting and tried to cut back. I think he tried to cut back on contractors.

Culver: Yes, but what happened, is he tried to cut back on spending. And what happened in some cases, is that the agencies started efforts towards building new and more efficient systems. So in some respects, it actually helped our industry.

Bannister: It was good.

Impact of the Internet and World Wide Web

Grad: Next: the Internet and the World Wide Web. Have they had any effect on your businesses? Have they changed your models in any direct way?

(Multiple yes responses)

Culver: And what's interesting is, I wonder how many people around this table recognized that five years before it hit?

Grad: Did anybody recognize it in the early 1990s? How about 1995?

Ceruzzi: It was being built in northern Virginia.

Culver: Can I give you an anecdote that's a little off the track here, but is interesting? I started my own consulting firm in 1990, the one that Jack bought a few years later. In 1992, 1993, I was consulting to SAIC, Bob Beyster and John McCreary, the two founders of SAIC. They engaged me in a general consulting contract to advise them on acquisitions. They wanted to be able to compete with CSC and EDS. I said, "You've got to build up a network business." They said, "Okay, why don't you go out and vet some companies, bring them to us and we'll see if we can buy them?" One of the companies I found was a company called Network Solutions. And Network Solutions was in trouble. It was an 8A firm, had grown out of 8A and began collapsing before the community. I knew the president and one of the co-founders, a guy named McHenry. It was clear he was in trouble. He wanted to go public as the company was crashing, but that didn't work. So I brought him to SAIC. I still have the papers that I wrote up. I said, "It's a very interesting little company. They do about \$8, \$9, \$10 million worth of business, maybe a little more than that, and they're very well liked at the engineering level at DISA [Defense Information Systems Agency], so this is a way to get into telecommunications." I said, "Oh, by the way, they also happen to assign all the Internet addresses in the world, but I'm not sure that's very important." *(Laughter)* Well, SAIC bought them for \$5 million in 1993. Five years later, they sold them to VeriSign for \$17 billion.

Bersoff: And what do you think Emmit [McHenry] feels about that?

Bannister: I just saw him the other day.

Culver: I wouldn't bring it up.

Ceruzzi: Can you elaborate a little more, because I've heard a story, and tell me if it isn't true, that Network Solutions was spun off of something called GSI? In other words, they knew this was going to happen.

Culver: No. Nobody knew it was going to happen. I was working with the top executives at SAIC. They were really smart guys but they thought they were buying a little niche telecommunications firm that had a spot at DISA.

Ceruzzi: They didn't know they were going to be able to charge money for the dot com addresses.

Culver: Well, they did, but it was before the World Wide Web, remember, and that's what really blew the thing through the ceiling. They were running maybe \$400,000, \$500,000 a year in this business. It was no big deal.

Bersoff: If I can back that story up. About a year later, Emmit McHenry was in trouble with his bank in the first banking crisis of the 1990s, because his bank failed and he'd lost his line of credit. As a result, he'd lost confidence in his ability to run the business. When SAIC came along and offered him this paltry \$5 million, he gobbled it up, because he was worried about another banking crisis and he didn't have liquidity.

Culver: By the way, he got very little of that, because a lot of it went to pay off debt.

Bersoff: He had a lot of bank debt.

Grad: Let's keep going on this subject. The Internet and World Wide Web, do you see one as being the more significant change to your business? Was the Web the big difference, or was the Internet the big difference? Or was it the combination?

Culver: Probably the Web, that has more applications.

Grad: Any other thoughts here, comments? We've had this debate with some of the historians. If the Web hadn't been created in some fashion or way – it didn't have to be that

particular way -- would the Internet have made enough difference on its own? Or has the weight of the Web really carried the Internet to becoming a part of our lives.

Doug Jerger: I don't think you can actually segregate the two. I don't know how you can do that.

Ceruzzi: Well, there's this thing called software as a service, which is a more recent phenomenon, which sort of threatens a lot of the existing business models. Is that right?

Grad: I don't know whether it does or not.

Bersoff: The Internet, the Arpanet/Internet, started more as a communications device and I don't know which is the killer app. Is the Web the killer app or is email the killer app? I don't know.

Grad: Email was certainly the first one. It's certainly the one that got them in the door.

Bersoff: Right, because they didn't have the bandwidth to do the World Wide Web. The World Wide Web is a man/machine interface. You're waiting for a response. In an email environment, there's more time delay and you can live with that. So in a slower Internet, email was the killer app. Now that there's a faster net, who can say?

Jerger: I think it's evolution in the way you said it. They didn't have bandwidth.

Grad: I was trying to address it specifically as to whether that growth, that dynamic, has changed the nature of the GPS businesses.

Culver: Oh, absolutely.

Grad: In what way? That's what I was trying to get at.

Culver: Well, almost every application now that is part of the systems delivery has a Web component to it. Even if it's an intranet within an agency, within a building, it's built upon World Wide Web technology. Basically that whole thing, the user interface, the look and feel and everything else is associated that way.

Grad: Has that expanded the market? That's what I was trying to get at. Has it made a difference? Is there suddenly a 50 percent bigger market because of that for your kind of businesses?

Shelton: I don't think we've thought very much about the impact of nanotechnology, because I think nanotechnology is going to allow a much more pervasive use of much more diverse sensors, and those sensors can in fact, and will be, connected into the Internet. And our ability for man/machine interface and for general ability to use sensors and things that we don't even think about today, I think is going to have a very big impact on the technology we deal with.

Grad: The thing I want to close with is to see what you see on the horizon for the future. I was trying to close up with the Internet, World Wide Web.

Ceruzzi: I just want to mention that one company that hasn't been mentioned, which was very big, was Boeing Computer Services. They were really one of the biggest timesharing services in this region. Did any of you have any dealings with them?

Culver: Absolutely. But Boeing Computer Services in those days was in the muddle of InfoNet timesharing. They never really leveraged that in anything.

Ceruzzi: What about these other companies like MCI, or the Metropolitan Fiber Systems? Did anybody deal with them?

Grad: None of you went into that business. That was the other point I was thinking about. You didn't benefit directly from it, other than the fact it's incorporated in your work.

Bersoff: Remember that we don't develop technology, we exploit technology.

Grad: But you didn't buy companies with that technology.

Culver: No.

Bersoff: Why buy it? You just use it.

Culver: It's a commodity.

Bersoff: Yes. We all do Internet work. We all do Web work. When nanotechnology comes along, we'll do that too. We're opportunists in that sense.

Grad: And yet SAIC bought Network Solutions...

Culver: Because they thought it was a services supplier.

London: They stumbled into the addressing thing. It was an accident.

Culver: They sold it off in four years.

Ceruzzi: They sold it off just at the peak of the bubble.

Culver: Yes.

London: That's true.

Bersoff: No one said they were dumb.

Jerger: Robert Beyster was invited to the meeting. He's not traveling a lot lately, and in particular, he wasn't feeling well last week, so he wasn't able to come. But he did express his appreciation for the invitation.

Other Companies in the Industry

Grad: We'll do one more topic and then we'll have a closing on where you think things are going. Talk a little bit about the companies that aren't here that we tried to get. You know your competitors. You know the other people there. Some of you work with them. SAIC has certainly been one of the real big players. How are they different, how are they similar to what you all did? Who can speak about SAIC, any of you?

Culver: I consulted to them for six years.

Grad: Okay, then speak about it.

SIAC

Culver: SAIC started as, and they continue to be, although management tries to change it, really 1,000 pebbles in a bucket. They invest tremendous responsibility and authority and P&L responsibility down to very low levels, little groups of ten, 15, 20 people, each of which markets its own capability, sometimes in competition with some of the other pebbles. Beyster talked about changing it, and asked me to put together a business plan for him to change it in 1992 or 1993. Seventeen years later, it's still largely the same. And I told him, "Hey, if it works, why do you want to change it?"

Bersoff: I always call SAIC the Darth Vader of the industry. If you want to know how to lose an incumbency position in our business, which Walt said was hard to do, the answer is, compete with SAIC when they want to win your business. SAIC can beat you on your territory any time, any way.

Grad: How come?

Bersoff: Because they're SAIC and they can price it any way they want to price it.

Grad: Why do they have the flexibility that others wouldn't have?

Toups: Early on, I believe Beyster hired people who were smart. And say, "Look, you know something about this business sector. You go after it." And then he wouldn't worry about. He'd just give it to them. That was like creating mini companies within the company.

Bersoff: They were also mean and I don't say that with animosity. I love Bob Beyster. He's a great guy.

Culver: But it is a thousand different companies.

Grad: 3M had a lot of different ventures going on. Post-Its came out of one of their little ventures. Is that what you're talking about?

Culver: Yes.

Grad: That kind of a model?

Culver: And the problem is, at some point it becomes unmanageable. And when the new guy came in – the four star general, whatever his name is – three or four years ago, he decided he was going to pick up again what Bob Beyster tried to do over five or six years and failed. He's engaged in trying to convert the company into a more classic model.

Bersoff: You're talking about Ken Dahlberg. He came out of Hughes.

Culver: That's right, he came out of Hughes.

London: No, General Dynamics.

Bersoff: But he was Hughes first.

Culver: I'm sorry, it was Dahlberg. There was a four star general that was brought in, didn't last very long. He disappeared. He really failed at trying to do that.

Grad: Anything else? Go ahead, Jeff.

Jeff Yost: I'm curious. Obviously the government contracting computer services industry has grown immensely, and the percent that's going to this industry, rather than being done by the government has grown. But can you give some idea in different decades what percent the government is still doing internally, and where that changed in the 1960s, 1970s, 1980s?

Culver: Get a report from INPUT Corporation. They do a semiannual report, probably the best analysis of that I've seen.

IBM Federal Systems Corp.

Grad: Peter Cunningham has become a real specialist in this area. He did a lot of work for ADAPSO years back. IBM Federal Systems Corp. Anybody want to talk about them and what their role has been? They're obviously a heavy player in this area, right?

Bersoff: They were and they weren't and they were again. They sold it to some company years ago.

Culver: Lockheed Martin.

Bersoff: They sold to Lockheed Martin, and had to get out of the business for a while, then they came back.

Grad: They're back in though, aren't they?

Culver: Oh yes.

Grad: Are they back in through a separate division of Federal Systems or are they back in through their Global Services?

Kendall: I think they have a separate division, a government services division, completely separate now. I don't know what it's called.

Grad: Are they effective? Are they a significant competitor?

London: I don't see them very much.

Bersoff: I don't either.

Grad: So they were a very major player there for a lot of years, I assume, right?

Bersoff: Yes, they were.

Grad: Did you run into them? Were you competing against them?

Culver: The old FSD, yes.

Young: Fifteen years ago.

Culver: Fifteen, 20 years ago or more.

Young: Yes, not recently.

Culver: But the new FSD I think has a different kind of charter, but I don't know.

Grad: Was the old FSD a significant competitor?

Ceruzzi: Well, they made hardware too. They had this plant in Manassas that made hardened chips. In Gaithersburg they did intelligence work, so they did both. IBM was maybe an exception, because they were such a big company, that they could do both. The chip plant is still there. I don't know who owns it now.

Culver: It's Lockheed Martin. The business had to do with signal processing. And submarine warfare of various types, submarine detection, and those are all custom activities. They were not productized, to speak of. And that went to Lockheed Martin and Lockheed Martin operates that plant in Manassas.

Other Competitors

Grad: The other manufacturers, Unisys and others, were any of them significant competitors against you guys?

Ceruzzi: Unisys has a big presence in Tyson's Corner, don't they?

Culver: Much smaller than it used to be.

Bersoff: They at one time had a lot of presence, a big building.

Culver: They're sort of vanishing, in terms of the federal sector.

Shelton: They had acquired SDC.

Culver: It was Burroughs that acquired SDC. Then Univac and Burroughs merged, and there was the merger of two bad companies that resulted in a company which some people might say is a bad company.

Shelton: But SDC was a part of the legacy.

Culver: It vanished. They killed the culture, for some of the reasons you were talking about.

Grad: Cultural things seem to be so critical, don't they? The kind of internal model you create makes the company. What companies were significant competitors to you during these different periods of time? Name some that we haven't already mentioned.

Bersoff: Booz Allen. We've mentioned them, but they were certainly a player. And still are, especially after they moved down here.

Kendall: EDS.

Culver: EDS has pretty much vanished from sight.

Grad: Did Prodata Systems ever become a competitor in this field?

Culver: They still are.

Culver: CDC [Control Data Corporation] used to be a big player back in the 1970s, I think, maybe 1980s.

Grad: Was that because of the Service Bureau Corporation? SBC was never really in the federal business was it?

Culver: For a time CDC had some of the most powerful scientific computers available, and they leveraged that into working in intelligence agencies and NASA, some of the high processing stuff. And they had some interesting support contracts, but that withered in time.

Future of the Industry

Grad: What do you see as the future? Where do you see the industry going? Will it be more of the same? Wayne mentioned nanotechnology, but that is a tool. It doesn't change the nature of your business. Systems integration was a major shift. The forced use of small subcontractors and minority subcontractors was a major shift in the nature of your business. Do you see things like that on the horizon?

Bersoff: There are so many different rules of the game that have changed. I would have said three or four years ago that the cycle of startup companies growing to a certain point, because it's a very friendly environment to grow in with or without the small business benefit, then getting acquired by bigger companies who get acquired by bigger companies, was a renewable cycle. That was a kind of perpetual motion machine. But because in the change of rules for small business and minority businesses, the GWACS and these bundled contracts, the landscape's changed a lot. They talk about the mid tier companies in the \$50 to \$500 million range not being able to make it because their access to contracts has diminished over the last several years. I'm not sure there hasn't been a sea change in the landscape here of how companies develop and mature. So where the end game is, I'm not sure I can figure out. The companies that you see here built and grew up then got acquired. I don't see that happening to the same extent that it used to. Companies are getting acquired at smaller sizes.

Grad: Do you all agree with this or disagree?

London: Generally I think that's pretty much the way I see it also. The industry consolidated a lot. We were a consolidator, but the level of transactions in our sector, which is in government services and IT, is dramatically down, more along the lines that Ed was outlining.

Culver: It may be cyclical.

Kendall: The change that occurred is the government went from individual contractors, to these mega contracts, and that really caused a sea change in how everybody did business. I think the thing that you have to wonder about, is the government going to change the way it does its contracting again. I think that's up for grabs right now. They're talking about bringing more work back in and we don't think that's feasible. But the government can make sweeping changes to things and it does affect the businesses. It affects startups, and I think that's one of the reasons that it's harder for startups, particularly if you're not a minority or small business,

because you're disadvantaged in some way. There just are big changes that have taken place and the contracting has begun to change.

Shelton: I think as technology continues to develop and we see the enhanced application of new techniques and procedures, while we're going to see many more applications of technologies yet to come, that one of the issues that's going to be affected is the interface between people and machines and communications. And this may have some implications for the number of people that are going to be needed to perform some of the functions that the government now contracts.

Grad: So my bottom line question would be: as an investor, would you invest in the companies starting up in this area today?

Toups: If it's very good technology, good people.

Culver: Absolutely, yes. I do some ad hoc advising to the financial community on this industry, like Fidelity and some of the others. And they ask me that question all the time. "Have we built all the systems we need to build? After all, they've been building IT systems for 20 years. Maybe they're done." I say, "I don't think so." My advice to them is, whatever's going to happen in the economy, you know better than I, but I would suggest this industry tends to be far more recession resistant than other industries, because of the critical nature of a lot of the things that all of us do, and it's a great defensive bet for a while. And when the money starts coming back from Iraq, there's going to be huge pent up demand that's going to be released, to modernize and to redo those things that haven't been modernized, because the money's been put into bullets and guns.

Grad: Let's take that next step. This is my last question for the day. To what extent will the stimulus package give you new opportunities and new directions? I see IBM's advertising like crazy in that direction on the belief that there's all kinds of money floating around there.

London: I'm not counting on it. There may be some opportunities emerge out of it, but it's hard for us to see reliably what could come into our market space where we have an opportunity to perform or pursue the business. I can't see that linkage.

Bersoff: We have worked with HUD [Housing and Urban Development]. People that are disbursing money to individuals have renewed demand to disburse more money, and so we're seeing contract add-ons to that kind of work. But I think it's a temporary thing. It's a little bubble.

Grad: I would think the administrative work that's required to manage all these things that they're going to give out money for is major.

London: You'd certainly think so, wouldn't you?

Bersoff: And it's happening to some extent, but you don't build a future on that.

Grad: It's not a long term thing?

Culver: The thing that may affect us more than we can project is the amount of money that's going to go into renewable energy of various types. For example, in order to use renewable sources, if you use more than about 30 percent in your grid, you have to have a smart grid. That smart grid may be all kinds of opportunities for people around this table, but I think the customers will tell us in plenty of time to get ready for it. The question is, should we start doing something now? I would say no. Wait till the customers tell us.

Grad: This is what I hear pretty much consistently here, that essentially you keep a very close tab on the customers and what they want or what they need. And when they say something, you respond quickly and effectively, but you're not out there trying to create that business, you're responding to it. Is that a fair comment?

Culver: Absolutely.

Bersoff: Yes.

Kendall: I used to say that our firm tries to respond to their needs with the latest proven technology. No cutting edge or bleeding edge, but we would respond with the latest proven technology.

Grad: Makes a lot of sense. Gentlemen and ladies, I enjoyed this very much and I wanted to close with a few things. First of all, those of us involved in the Software Industry Special Interest Group thank all of you who spent the time, gave a day of your life to participate. And some of you even did some looking up of things in advance to try and least attune your minds a little bit to that. So we appreciate that. We thank you computer historians, who have been supporting us for these years, for taking your time to help stimulate the discussion and participate, and hopefully to use some of the materials that we've generated here and kicked off.