Interview of James (Jim) Jordan

Interviewed by:
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James Pelkey: You were one of the founders of Ungermann-Bass, although your name isn't on the company, but before that you had been at Four-Phase, where you had some knowledge about what was happening in the marketplace and what the marketplace needed. Can you comment on that?

Jim Jordan: I think the initial interest on my part probably started in the middle to late part of the '70s; I'd say '76 on through '79, and during that three or four years at Four-Phase, the company was doing very well. It was competing -- one of its major competitors was a company called Datapoint. We traditionally would beat them every time we got into a sales situation with them. The only time we ever had trouble with them was in distributed processing applications, which was -- Four-Phase was the company that coined that term, by the way; 'distributed processing', the term, was founded at Four-Phase. Honest to God. It then grew out of that and became this generic 'Kleenex' thing, but it really started there -- but Datapoint, in those days, called it 'disbursed processing' I think. The only time that we ever lost to Datapoint in those applications was when Datapoint was selling a product that they called ARC. It wasn't called ARCnet then, it was called ARC at that point; Attached Resource Computing, I think. It was connected by a real slow -- at that time, nobody used the term 'LAN' -- but it was basically connected by a real slow-speed LAN. They had these little, dedicated boxes on it that did specific applications. It got to be very cost effective, a very good solution to a lot of applications, especially in a user department; you know, accounting, or marketing, or in manufacturing. Looking at departmental computing, it was a very good application, and Datapoint, looking back on it, especially now in 1988, was way the hell ahead of anybody else. The only time they were competitive with us, and we didn't beat them badly in a sales situation, was when they were bidding that product and somebody really appreciated the potential. I spent a lot of time in product planning meetings at Four-Phase and said: "Look, this is a problem. We need to be looking at it. This is the way of the future," but I just couldn't convince the senior management, specifically the president there, that that was the way it was going to go. In fact, his belief was just the opposite. He said: "If you put a lot of those in, what happens is that IBM is going to come out and replace ten of your little machines with one big one, and you're going to get thrown out." That was what he thought was going to happen, and we all know in reality, it went just the opposite way.

Pelkey: Had you bought Four Pi at this point?

Jordan: No, no, Two Pi. Two Pi was purchased after I left. It was purchased -- I think that purchase was in '81, I think, and then -- either in late '80 or early '81, and then I think the company, Four-Phase, was sold to Motorola in early '82, I think.

Pelkey: Early '82 they sold to Motorola?

Jordan: I think. Early '82. Two Pi was -- I left Four-Phase in January of '80. The Two Pi purchase was, I think, late in that year -- mid to late '80 -- and then maybe in '81 or '82 it was sold to Motorola. I don't know. So I really believed the whole concept of, really, LANs, and what's called today workgroup computing -- it wasn't called that then; it sounds like a 3Com term, but -- really made sense at that point. I got in touch -- interesting story: there's not much business associated with this, but I used to have a secretary who was a sergeant, one of those gatekeepers. She was a very good secretary, but just tough on anybody trying to get through the gate, because it was a big company, had a lot of headhunters and a lot of field problems and all that kind of stuff, and she screened stuff pretty well. There was this recruiter that was trying to get a hold of me for months and months, and he never had been able to get through. She actually went to the john one day, and my call came directly in to me and I answered it, and it was -- do you know Rick Pearce?

Pelkey: Yeah.

Jordan: It was Pearce. I didn't know the guy from Adam, and he said -- the only reason I talked to him is the way he started the conversation. He said: "You know, this is the last goddamned time I was even going to try to get a hold of you," and I was just so taken back by the way he started it, I said to myself: "This guy's ok. I'll talk to him." So we ended up talking, and I didn't know Ungermann at the time, and he told me about Ralph and Charlie and said they were starting this company, and about the concept. The

concept I really liked, because I believed in it and I had been trying to get Four-Phase to try to look at something like that, so I ended up talking to Ralph.

Pelkey: What time frame was this?

Jordan: I think the first time I met Ungermann was in -- probably like September of '79, something like that. September, October, maybe, of '79 -- and they had started the company. He and Charlie had actually started the company in August of '79, and they had a small group of engineers. I think they had about 12, 13 guys, because when I started, I was the 15th employee. They started in August of '79 -- no funding, no business plan, just kind of funded a little bit themselves. I started to talking to Ralph in October, and I went to work there in January, and we finished part of the business plan, the marketing part, that wasn't done, and we completed that, started to go out to try to raise money, and we closed the first round of financing in the end of February. About 60 days after I went there, we closed the first round.

Pelkey: So as soon as you resigned from Four-Phase, you went immediately --

Jordan: Yeah, next day, basically. So you can say: "Is that a founder or not a founder?" I don't know. I think it was probably a founder. There wasn't any money. The business plan wasn't finished, but they had started the company in August, and had been working on a product, and actually done quite a bit of engineering work.

Pelkey: They didn't have a working product at this point?

Jordan: Oh, no.

Pelkey: Now the engineering guy --

Jordan: Bass.

Pelkey: No, Donovan?

Jordan: Davidson.

Pelkey: Davidson. Was he there at that point?

Jordan: Yeah. John Davidson was there and Joe Kennedy was there. They were really kind of the two key technical guys. Davidson was a software guy, more the software guy. Kennedy is really a software guy, but a lot more hardware capability too; kind of both, but his background is really software, but he's a pretty good hardware guy. There was another guy there that was really a good hardware designer, Alan Goodrich. He's long gone, but he designed the internal bus in the first NIU at Ungermann-Bass. He was the guy that designed the bus architecture in the old 940 at Berkeley, the SDS 940. The guy's a high-speed bus kind of guy -- real good hardware guy.

Pelkey: Although you competed with ARC, Datapoint had their own computers as well, selling this ARCnet system?

Jordan: Right. They were selling them as a way to attach and share resources, more than -- they weren't selling the communication capability per se. They were saying: "Rather than buy a big machine, buy a couple of little ones and dedicate them."

Pelkey: Now that's a different pitch than looking at what you're going to take on now, which is selling the cabling system.

Jordan: Right.

Pelkey: How did you see that you could build a business?

Jordan: Well, it's really the same thing, though, isn't it? Datapoint still wasn't that successful with it, because to solve your problem you had to buy Datapoint equipment, but I thought the underlying communication and sharing of resources was the right idea. So you say: "What gear are they buying?" Well, they're buying DEC, they're buying Data General, they're buying IBM. Why not give them this kind of capability for multiple vendors' equipment. It just makes a lot of sense.

Pelkey: Even though the concept of shared databases between these multiple vendors themselves was just a glimmer in someone's eye - - simply the fact that you could connect them together would create an opportunity to do these sorts of things?

Jordan: The basis to start to doing it, yeah.

Pelkey: Was that a big decision to join them?

Jordan: Yeah. It was a huge decision, and it was really one that I really struggled with for a long time, because I -- well I had 700 people working for me, and a big salary, and a good job. I had been there for almost ten years, so when I quit, I went to a company that had 14 engineers that I didn't know and what I thought was a good idea, but no funding, and there wasn't one marketing guy there but me. Everybody else was a technical -- Ralph is really a technical guy. I took a more than 50% cut in salary. It was a BIG goddamned decision.

Pelkey: What finally caused you to do it?

Jordan: I was bored to death. I thought it was a good idea. I liked the idea. I had looked at a lot of start-ups, actually, over those last two years, '78, '79, at Four-Phase. There wasn't anything. I had a lot of job offers, and there wasn't anything that I really got interested in. This one I liked. I liked the concept. I thought it had a lot of merit, and I could see -- I just believed in it.

Pelkey: Did Ralph, Charlie and you spend a lot of time together before you decided to join?

Jordan: I spent a lot of time with Ralph, I did, and almost none with Charlie, but quite a bit of time with Ralph, and I liked Ralph. We got along pretty well. That was part of it too, obviously.

Pelkey: What was the competitive environment like at this point in time? Sytek had started. 3Com had started in the spring/summer of '79. Were you aware of these other start-ups? There was Nestar and Corvus --

Jordan: I'm not sure when Nestar started. I think that was later, don't you think? Nestar, Corvus, I think they were both later. This was January of '80, now. You've got to remember that the Blue Book and stuff was in, I think, February of '80. The term LAN was not used. It was not a generic term like it is today. In fact, I can remember, one of the first things I was trying to do was put together some marketing documentation for the product, and I had notes written down like: "High-speed communication resource sharing system," all kinds of big, long mouthfuls, trying to describe this thing, because 'LAN' was used internally with the guys, like at 3Com and Ungermann-Bass and Xerox PARC and stuff. Those guys used 'LAN,' but it was such a generic term that everybody was afraid you couldn't go talk about it, because nobody would know what -- it was too esoteric, and nobody would know what you meant, so you had to have a descriptive phrase. I was working on all of this stuff. Then, the Blue Book came out, and Ethernet, and people started talking about LANs, and they started understanding what 'LAN' meant, and today a glass teletype is a LAN. It's got a LAN interface, or something. It's a LAN workstation.

Pelkey: But you're recollection is, at that period of time, it was 'local area networking' internally?

Jordan: Yeah, sure, it was 'LAN.' People used 'LAN,' but a very small group, though.

Pelkey: So you come aboard, and there's no marketing plan, and you're starting to say: "How do we position this product so we can go off and sell it?"

Jordan: Yeah, and it was kind of a joint strategy. I think the real strategist behind that, though, you honestly have to give Ralph, at that point, a lot of credit. He was really the strategist on it. He had a very clear vision that the way to present the type of product that -- you've got to remember this is pre-PC, too. PC wasn't a big deal in the market. There wasn't any such animal, almost, so the marketplace was really viewed as all this large installed base by multiple vendors, so you've got all this DEC gear, IBM gear, Data General gear and HP gear, so where's the market? Well, the market is trying to get some communication capability between this heterogeneous installed base, so that's why, if you go back in the early days, and look at all the Ungermann-Bass stuff, it talks about 'vendor independent networking.' That was an Ungermann coined term, really, way back early on.

Pelkey: And was it terminal access or connecting different hosts up?

Jordan: The first product was totally a terminal switch, totally a terminal switch.

Pelkey: So you could sit there with a terminal and talk to them.

Jordan: Yeah, it was straight async only, and it was basically for ASCII terminals and DEC gear, and RS-232 kinds of interfaces. That was the only interface at the start.

Pelkey: Was it one kind of terminal, like a VT-100 or whatever it was at that point in time?

Jordan: Yeah.

Pelkey: So you could talk to multiple DEC machines?

Jordan: Yeah, and that's really all it did was terminal switching.

Pelkey: When did you ship that product?

Jordan: July of '80 -- exactly 12 months after the original start date of development.

Pelkey: What kind of technology were you using at that point in time?

Jordan: It was Z-80 based.

Pelkey: What kind of protocol, was it an Ethernet?

Jordan: It was -- it was baseband, Ethernet, 10 megabit technology. The protocols were close to XNS, but not true XNS.

Pelkey: Do you recall where the XNS technology came from?

Jordan: Sure, it came out of Xerox.

Pelkey: They weren't licensing at this point in time, were they?

Jordan: Yeah. I think so, sure. Yeah, I think -- the issue wasn't a licensing or a monetary issue. The issue was -- I think Ungermann-Bass probably shipped the first gear. It was before Xerox shipped anything. Metcalfe was spending most of his time, then, on standards issues. If you remember, the name from the company from that, they weren't even building hardware. He was doing a lot of talking standards and stuff, and I think the first product he ever came out with was the transceiver. He sold transceivers. He didn't even -- in '80, I don't think he did anything but transceivers until late in the year.

Pelkey: That's right.

Jordan: So Ungermann-Bass was the first company to really ship anything, ok?

Pelkey: I think that's what most people think.

Jordan: And it was 10 megabit baseband, just Ethernet, but it wasn't really 802.3 exactly, but it was very close, and the protocols were very close to XNS because they knew a lot of people at PARC, and stuff, but it wasn't exactly XNS. In fact, that was a big pain in the ass at Ungermann-Bass, because it was about two and a half years later before they ever converted to be totally XNS compatible. It started to get to be a problem, then it wasn't.

Pelkey: What was it like, at first, selling these things? You were responsible for the sales organization, weren't you?

Jordan: The big problem was -- well, I guess it was like any new technology. It was totally a technology pitch, because you couldn't really provide an application solution, so you'd tell them how great the technology was. "This thing runs at ten megabits," and "Wow, gee whiz." I remember the first sales call. There had been a lot of guys coming in, making sales, giving presentations on products, but I was getting up to speed on it, so I usually had one of the engineers or somebody in the room with me, so I figured I had this stuff down cold after a couple of months. I had one of the engineers -- I don't know who, if it was Kennedy or somebody else -- I said: "Ah, I don't need you. I'll handle this guy." So the guy is in there, and I get up and start talking on the board. This is some engineer. Honest to God. I had to stand for this -- built one of these sons-of-bitches himself. Absolutely built one, and he starts getting right down into the electrical -- and I'm going: "God DAMN!"

Pelkey: What am I doing?

Jordan: Exactly, and I get Kennedy in, and after the guy leaves, I said: "Oh I had a lot of buyer's remorse. Let me tell you." I used to go home and say: "God!" I was the only guy who knew how to spell synchronous in the company. Every guy over there was asynchronous, and I had never -- you know, I had worked for IBM and Four-Phase, and it was a totally synchronous business. You talk to IBM, they can't spell async. I had always been at IBM or Four-Phase, and these guys didn't know what SDLC was, they didn't know SNA, synchronous protocols. It was totally async.

Pelkey: Old fashion, stick in the mud --

Jordan: It was Z-80 microprocessors. What the hell is a 360?

Pelkey: That must have been interesting, to try to go sell these techies --

Jordan: It was just a bitch of a transition for me. It was awful.

Pelkey: What kind of salespeople did you hire? Engineers?

Jordan: Honest to God, they were technical sales, the first ones. One of the first salesmen I hired was a really technically oriented computer support person out of Four-Phase. In fact, you met her. Remember that girl I gave a hug to, that night Leo and I gave a hug, that's her. She ran software filled support for me at Four-Phase, and she's a very technical software person. She handles the Pac Bell account for Ungermann-Bass today, still, which is their biggest account. So we hired some of those kind.

Pelkey: During this period of time, product marketing, did that fall to you?

Jordan: Yes.

Pelkey: You must have been spending time trying to figure out what to build next. Let's build what I can sell, as opposed to what engineers are going to -- you must have wanted to think about how to build something for business people.

Jordan: That was an awful problem in that company for me, because my background is so different than everybody else there. They were all techie and all async, and mine was non-technical and synchronous. It was a real problem, because I had a lot of trouble understanding them. We're in there talking 'wait states' and everything, and I just wasn't getting anywhere with that. Then I'd start talking about the IBM market, and they'd look at me like I was crazy. "What's that?"

Pelkey: That must have been a real cultural --

Jordan: It was. It was really awful. It was real hard for the first year -- first six months were just painful.

Pelkey: It must have been hard for them as well.

Jordan: Yeah, but it actually ended up working pretty well. Product marketing -- the first guy I really got was Russo. Got him out of HP, and we had kind of a bridge -- Russo was my bridge between me and -- he understood what I was talking about and he understood the techies better than I did, so it started working out pretty well.

Pelkey: When did you get Russo?

Jordan: I don't know, after a year or so -- a year and a half.

Pelkey: When did you first crack your first commercial account?

Jordan: First account at Ungermann-Bass, really, was a Xerox OEM deal. We did an OEM deal with Xerox and provided them terminal servers, and they turned out to be an account for years. I think Xerox was a customer of Ungermann-Bass for four or five years -- four years anyway. It was the biggest customer for the first year and a half or so, by far. They invented it and they were buying it from us. That's right, absolutely right.

Pelkey: That's a kick. When you were going off and talking to customers at this point in time, certainly somewhat it was a technical sale, but why were they wiling to listen to the technical sale portion of it? What were you competing with?

Jordan: I think you were getting -- the first customers you were getting were typical of almost any new technology. The ones you were getting were the universities, the guys that always try the first new thing in technology. You were getting the universities; you were getting the techie companies. I think the first or second customer of Ungermann-Bass, other than Xerox, the first commercial customer was Comsat. They had a division, a group out here in Palo Alto that I think has since disbanded, but it was guys who were going into CAD/CAM applications and all that, and they wanted to hook up a couple of different mainframes -- I mean minis -- and a couple of kinds of terminals, and then they wanted to integrate them like a VAR and sell them as a system to these guys, that they could do CAD and all that stuff on. They really liked the technology. There were those kind of things; universities, and in any kind of commercial account, it was always the engineering department that bought them. It was never -- that was the other thing in the early days of LAN that was really interesting -- you didn't sell anything to the blue side of the shop -- nothing. It all went in the engineering side. It was always going into DEC gear, always on DEC equipment. That was one of the reasons that I think it didn't take off, the market didn't take off, sooner than it could have, because IBM still has -- probably less now than then -- but still has the major influence in the big accounts, and for it to really take off, you've got to wire the building. IBM, in the early '80s, was resisting the shit out of that, because they didn't have anything to sell into that, so they were telling the MIS guy: "You're going to lose your control," and all this kind of stuff, and "let engineers wire the building and control the technology," which, if you're IBM, it makes sense. You don't want to let that happen, and they didn't have the product. They kind of got caught with their shorts down when that came out, so they

just did everything they could to slow roll it 'til they had a product, and they did a pretty good job. Do you remember when they pre-announced their LAN product? They pre-announced that thing way, way out. That was just to get everybody not to buy anything.

Pelkey: Yes. That was a real --

Jordan: That was a major -- you should almost have taken them to court over that, because it was a major marketing move on their part. They pre-announced Token Ring I don't know how far.

Pelkey: When did you find yourself starting to compete with other LAN companies?

Jordan: The first competitor Ungermann-Bass had, really, was Sytek. Sytek was a broadband based company that was -- what did they run at? A couple of hundred megabits or something? I don't remember the exact speed. I think it was 100, 200 megabits. I'm sorry, kilobits -- 100 or 200 kilobits, broadband, but it was real cheap. Cheap little box. It had, I think, two ports on it. A little two-port 100 kilobit broadband system. Pretty non-user friendly. It didn't do much for you. Sold it through guys who installed broadband cables -- cable installers. A lot of those guys kind of distributed it for them. Pretty unsophisticated marketing, but cheap, and it turns out that, the one thing I think that Sytek did right was that they had a cheap, two port box, and when you started looking, in the early days, at the way you wanted to wire the buildings up, a two-port box made a lot of sense.

Pelkey: Because?

Jordan: If you look at offices, you don't want to string all the wire from the terminals to the terminal switch to the backbone cable. That's the reason that, I think, now that the big thing everybody is selling now is twisted pair. I was talking to a guy at Ungermann-Bass the other day, and he said: "I don't know, more than half their sales are going twisted pair now," and that's the reason for it, the wiring problems. That was the reason that Sytek was fairly effective, because you had these two-port boxes, and you just tapped it in on the tap cable into the broadband system backbone. If you think about this, the minimum size that you could get, in the early days from Ungermann-Bass, was like eight ports, and you could get four layers of that. It was a huge box. The first box was really big; it had eight ports, and it had a board that supported eight RS-232 ports, and then you could put another board in that was eight, and another one and another one, so you could have four of them; so up to 32 ports on this thing. It was a big, expensive box. It had a high-speed -- it had an 8-megabit high-speed internal bus that connected these boards together, and the thing was a mechanical goddamned nightmare. It was awful to build and put together and maintain and stuff. It was a really bad design, mechanically. So to have this thing cost-justifiable, you had to have at least eight users locally that you didn't have to run to much wires together. Well, that's a bit of a problem. It's easier to get two guys to agree.

Pelkey: Plus you had to distribute these bigger boxes around.

Jordan: This thing was this tall -- that high, about that wide, about that deep.

Pelkey: And you didn't just drop this on people's desks.

Jordan: No, it was huge.

Pelkey: Sytek kind of came in with an effective product, in terms of the distribution scheme, and low cost, and easy entry --

Jordan: Yeah, you could buy a --

Pelkey: The channels of distribution weren't --

Jordan: Were pretty bad, really. You could get a minimum starter system, if you want to look at it that way, from Sytek for maybe 25 grand, or something, and the cheapest you could get any starter system from Ungermann-Bass was double that -- $56,000 or something.

Pelkey: When did you first come out with your bus boards?

Jordan: What do you mean, bus boards?

Pelkey: Hooking up a computer, as opposed to terminals to multiple computers. At the very beginning with DEC, you had to have a Unibus with cable on it, right?

Jordan: No, in the very beginning, the only interface to DEC was just RS-232, so you --

Pelkey: You put an RS-232 box and a cable and an RS-232 box at the other end?

Jordan: Well, yeah. We used to laugh. It was really bad. We used to call it a “milking box”. [Drawing a diagram] You had the cable, and you had this NIU -- NIU stands for Network Interface Unit, right? And on this thing you had the RS-232 ports, and here you got a VAX and then -- what's the board, a V-11, something like that? And this thing has the RS-232 ports, and you just connect them. Then down here you've got another one and these are terminals. That's it, so you had multiple access, so you can make connections -- virtual circuit connections -- to any port on any number of VAXes you want, because each one has a unique address, and it's a just a big terminal switch is all it really is.

Pelkey: Could you have more than one session open on a terminal at that point in time?

Jordan: No. This could have one open session to one computer at a time. In the first version, the software didn't support multiple sessions. Subsequent versions did. You could have a connection here, and a connection here, put it on hold, in effect, but at first you couldn't.

Pelkey: So the business, at first, was more of a technical sale, and while there was competition, the competition was really educating the marketplace as to what this was, and at this point in time, it was still pretty expensive. You had to be a real pioneer to - -

Jordan: Well, there was a real push for $500 a port. That was sort of a magic number at that point in time. I think initial pricing on this was -- our initial pricing was something like $650, $700 or something, maybe $750 per port, when you configured a complete system, because you had to add IU's plus you had to have the basic monitoring stations that you loaded the software with and managed the network with and that. It turned out that there were two things here: one that really slowed it down was just the cost of the RS-232 port; you looked at the terminals and glass teletypes, they were down around 11, 1,200 dollars or something like that, and you go in there and say: "Well, it costs you $700 to hook this thing up," and the guy just didn't react real well with it. It seemed to be kind of a psychological number at around $500 a port.

Pelkey: That was kind of the port cost on a PBX roughly, around that point in time.

Jordan: Yeah, but the big -- you asked a while ago who the competition was. There were big switches at that time that were competition, just the big data PBX switches, and those guys, in large configurations, were $200, $300 a port, maybe $200 a port.

Pelkey: Did you ever compete against Micom and Gandalf?

Jordan: Yeah. On a straight price, in the early days especially, on a straight price basis, you couldn't compete with them. They were half the per port cost.

Pelkey: Although in that business, that was a rapidly growing business at that point in time, the data PBX business.

Jordan: Yeah, the LAN companies lost business to those guys for a while, actually, until -- because you couldn't really do much more for the user than a data PBX guy did. You really weren't doing any more for them. You could tell him that you could, and you had a growth path and they didn't, and all that kind of stuff, but you couldn't do that much more for him right now. There wasn't anybody sitting there with Unibus boards . . .

Tape Side Ends

Pelkey: . . . pretty technical sale, although that process of what eventually happened forced Micom to buy Interlan, because the data PBX business started to really get impacted by it.

Jordan: Yeah but whatchyacallit has been trying to sell Interlan from the second day he started it.

Pelkey: Severino?

Jordan: Yeah. He did. He came to -- we turned it down twice at Ungermann-Bass.

Pelkey: Did you really?

Jordan: Yeah.

Pelkey: Before he got funding?

Jordan: Yeah, he came -- no, after -- very early on. I don't know the dates, but very early on in Interlan's history, they were totally a board company. They didn't have any terminal servers. They just sold boards. Their distribution was totally through -- their sales were totally through distribution and OEMs, and it was all boards, and Severino was trying to sell the company -- Jesus, literally -- from when he started it.

Pelkey: Why, do you think?

Jordan: I don't think he thought it would ever be very big. I don't know, I don't know Severino that well. I was at a couple of meetings when he talked to us about buying it. We turned it down real early on. A year later he came back, and we turned it down again. The reason that we turned it down at Ungermann-Bass was that: one, I had a lot of problems with the stability of the revenue, because it was similar to some of the first products that 3Com had, like a Multibus Ethernet board. Well, shit, everybody in the world you sell it to is going to design you out as soon as the chip sets are available.

Pelkey: Right.

Jordan: Why buy that board? Any junior engineer could build that board, and that was 90% of Interlan's business. It was all through distribution and OEMs, and it was those kind of boards, and I just said: "Jesus, you don't want to pay money on a multiple of revenues on this guy, because it just isn't going to be there."

Pelkey: Was there much interaction between yourselves and 3Com during these days?

Jordan: Yeah, a little, between Metcalfe, and then a little bit with Krause when he first started working there. They really weren't very competitive. The companies weren't competing at all, because as I say, early on, Metcalfe was really very vocal in the standards and education aspect of it, and the technology, and then he started building the transceivers. We didn't buy transceivers from him. We bought them from Tat Lam, who is a guy over in the East Bay who is also the guy that was selling to Xerox at the time. Plus with Metcalfe's transceiver, you had to cut the cable to use it, and nobody liked that.

Pelkey: Tat Lam's you didn't. He was oriental, right?

Jordan: Yeah, Tat Lam is a Chinese guy, and everything over there was hand wired, all the coils and everything.

Pelkey: The transceiver was a hairy part of the business at that point in time.

Jordan: And his didn't fail. They were rocks. You opened them up and they scared you to death. They looked like spaghetti, and they were all hand wired, and they absolutely worked.

Pelkey: But that was a hairy part, even of getting Ethernet spec'd out through the 802. The transceiver was the difficult portion.

Jordan: Yeah, right.

Pelkey: Ralph, during this period of time, was out proselytizing. He was preaching the gospel -- a real high exposure type of person, as I recall.

Jordan: Yeah, he spent a lot of time out hyping the company and the technology in the financial community, which was good.

Pelkey: I remember seeing him at the Alex Brown conference like in '81, talking about the glorious –

Jordan: Vendor independent networking. Still does. Just kind of rambling here, I'll tell you an interesting thing. We had a -- nobody else will listen to this, right? We had a -- I don't remember exactly when this was -- about when 3Com started to get into the PC thing, the PC started to be a big deal and started to get very evident to everybody that if you're going to be in networking, you really had to get into PC networking as part of what you're doing, at least. Maybe that's the main strategy, maybe not, but it certainly had to encompass that. I was going crazy, because we were starting to get hurt in the sales area, in the field sales area, because we really didn't have any network installations for PCs, and it was becoming obvious that they were becoming ubiquitous. 3Com was getting into that business. It wasn't to compete with 3Com, we just needed to have the solution and the whole bag, and Charlie -- three guys really ran the company: Charlie, Ralph and I. I wanted to get into it, and I wanted to get into it very badly, and also with a solution similar to the kind of solution that 3Com had, which was as low a cost network interface card for the PC as you could design; no real intelligence on it, a pretty straight-forward solution, and keep the price down as much as you can. That was what I wanted to do. Charlie wanted to do it on an absolute Rolls-Royce. He also thought we should get into the PC networking business, but he said you shouldn't do it that way. You should do it -- you ought to build this 186 based board with a whole bunch of memory, and you should off-load all the networking overhead onto this board; take it off the PC, put it on the board, run all your own protocols on it for it, and you do all this function, the cost isn't really a major issue. Typical goddamned engineer approach to the problem, right? Nice technical approach, but --

Pelkey: You don't sell it that way.

Jordan: And Ralph didn't want to get into the business at all. Ralph thought that Ungermann-Bass should not be in the PC networking business at all, because -- and I can remember this to this day -- three of us went and rented a hotel room and spent all day in it arguing about this and trying to work out internal company issues, but this was the main topic. Ralph didn't want to be in it, didn't want to do it, because he said that was getting into the host software business -- I guess DOS -- and that was a whole other level of support, which I guess there's a little bit of truth in that, but Jesus. So he didn't want to do it, period. So he wouldn't do it, and this went on for a better part of a year, when we should have been getting into that business, and we didn't. And then, after about a year of this, I'm saying: "This is goddamned insane," because 3Com is starting to sell a lot of this stuff. Even if we don't want to compete with them, that's fine, but we need this as a solution to overall networking. How can you be a general purpose networking company if you don't have a PC solution? So Ralph went to Europe, and Charlie and I got us in the business while he was gone. We did, absolutely did. We started designing one of these things, and made a commitment, had a big contract. He came back and he couldn't do much about it.

We did, we really did. This is an interesting story. The contract was with TI, and they had, I think, signed a letter of intent with 3Com, and they came out, and we gave them a technical pitch and said: "We're going to get into the business. Here's why our solution is better than 3Com's, because we're going to put some memory in and blah, blah, blah . . . " and that was when TI was really getting into the PC business, so they called up 3Com and cancelled it and signed a deal with us. We took it away from 3Com. So we had an OEM deal with TI, we had agreed to build this product and everything else, and Ralph comes back from Europe and went crazy. It's the best thing that ever happened to the goddamned company. It got us into the business, and then it ended up -- TI eventually went back to 3Com.

Pelkey: Yeah, they did.

Jordan: But Metcalfe went nuts for a while.

Pelkey: Your channels of distribution were really direct at this point, right?

Jordan: 100% direct. It was end-user sales, big companies. We didn't do any distribution.

Pelkey: You brought that. Well, you had to, you had to go the direct sale in the beginning because --

Jordan: You've got to remember the product line, now. It wasn't anything like PC networking. It was big boxes; minimum configuration was 50, $60,000, and it connected up VAXes and terminals, and you don't put that through distribution. That was very new technology.

Pelkey: Whereas 3Com, when the got the PC --

Jordan: But this was a couple of years later.

Pelkey: But they didn't do much. They almost went out of business during that period of time.

Jordan: Came VERY close to going out of business.

Pelkey: They had some dark moments.

Jordan: Very, and we were doing pretty well.

Pelkey: Right, and you were doing fine.

Jordan: We were growing. We were doing real well, and 3Com I think was -- I don't know, Bob can tell you, but I'm sure they were real close, I think, but I think this whole PC thing was almost by accident. I'm sure nobody is going to say it’s an accident now, but it was -- there were some straws going on.

Pelkey: My guess is -- Bob's view is that he always thought it was computer-to-computer. He always looked down on the terminal multiplexer portion of it as being wrong. That wasn't what LANs are about, because he came from the Xerox, networking Altos together.

Jordan: That was all computer-to-computer.

Pelkey: All computer-to-computer, so for him, the PC-to-PC was a natural thing, and the big decision for them was whether or not to support Apple to PC nets, and they decided not to, and everybody else did, and they got beaten up on that for a while. When the IBM won, they won.

Jordan: I see. Ok.

Pelkey: What won them was Dave Norman and Businessland, and they rode the retail express.

Jordan: Right. Dave Norman was on Ungermann-Bass's board.

Pelkey: At that time?

Jordan: Yeah.

Pelkey: But you didn't have a PC solution for him?

Jordan: No, we didn't have any products at that time.

Pelkey: Because that's what -- anyway, it was a mental set of computer-to-computer.

Jordan: That makes a lot of sense. There was a time in there when I was totally convinced that 3Com wouldn't be around in another couple of months. It was pretty well -- their business --

Pelkey: There was no business.

Jordan: Yeah, right. I just figured that was the end of that.

Pelkey: Whereas Corvus and Nestar and those guys, they chased this whole idea of trying to connect Apples to IBMs, and what happened was they never really focused enough, and they gave up. They said you couldn't sell through retailers, through the dealers, because it was too complicated.

Jordan: Yeah, exactly, and they went on this low-speed, very inexpensive solution to --

Pelkey: Whereas Metcalfe went out personally, and everybody wanted to talk to Metcalfe -- the founder, the genius behind Ethernet. So he used his time by spending a lot of time in the field, because he was running sales.

Jordan: Metcalfe got a lot of grief, I think, early on with the PC solution too, when he finally did it, because everybody said -- you did have the Nestars and the Corvuses -- and everybody said: "You know, I got PCs, and the Ethernet solution is real expensive for that," which it was, and "it's never going to fly, it's too expensive. You can buy something for a third the price from Corvus," and that was another factor, right.

Pelkey: Now, when did the issue of Token Bus come about?

Jordan: That was quite a while later. Broadband got to be an issue before Token Bus. Ungermann-Bass was a baseband company, and then, I told you that Sytek was really kind of the pain in the ass as a competitor early on, so broadband -- there are some advantages. It's interesting; networking is like religion. It's probably not so bad now, but it might still be, I don't know. It's been a couple of years for me since I've been in it, but if a guy was an 802.3 guy, or an 802.5, or an 802.4, they're all bigots about their own one. It's Token Bus, Token Ring, or CSMA/CD. It's baseband, Ethernet, or whatever they're into, and that's it. There's advantages and disadvantages to all of them. It isn't just that one of them -- none of them are cure-alls -- and the big thing, I think, if you look at some of the bigger installations, they really do tie the technologies together. They have a broadband backbone, and then maybe baseband spurs coming off of it, so there's places to use each technology. Ungermann-Bass was getting beat up not having broadband technology in places where people wanted it. You do have the multi-channel capability and all that, and you can run other stuff on there: video and security systems on your cable network. Sytek was the biggest competitor, so we decided to develop a broadband capability.

Pelkey: Do you remember when this was?

Jordan: It was when I took over engineering, I know that. It was when we started -- the way we decided to develop this was we decided to set up a second engineering operation. All the engineering was in Santa Clara, and we said: "We need broadband guys and there aren't any out here, so we'll do it in Boston." So we hired a couple of guys out of MITRE and started an engineering operation in Boston, and

started to develop broadband back there. When the hell was it? Probably '82, maybe, when I started working on it.

Pelkey: Who'd you hire out of MITRE?

Jordan: Yeah, Greg Hopkins and another guy named Norm Meisner. They kind of came as a 'Mutt and Jeff' team.

Pelkey: He was a presenter at the 1979 LAN conference.

Jordan: Shortly after that, we hired another guy that was a good guy -- gosh, out of MITRE -- really good guy too.

Pelkey: Was Charlie running the rest of engineering and you were running this portion?

Jordan: I was just running that portion, yeah.

Pelkey: How did you -- did it come to the point where you weren't sure whether you were going to stick it out because you were talking about 'wait states' and all of a sudden --

Jordan: This was a long time later, you've got to understand. I had a tough first six months. After the first year, everything was ok. I got up to speed on this stuff, right?

Pelkey: How did you come to be responsible for a portion of engineering?

Jordan: I don't know.

Pelkey: Were you pushing for the broadband where they said: "If you want it so bad, you do it."

Jordan: No.

Pelkey: Was it just to give you more responsibility, in terms of --

Pelkey: Ralph eventually took all of engineering away from Charlie and gave it to me, and I wasn't pushing for it. I didn't really want it.

Pelkey: One of the issues at Ungermann-Bass, at least to an outsider, was the issue of internal management, and Ralph's role and how many people were going to be at the top of the hill -- when he wants not only the top of the hill, but he wants all the land for miles around it. So the issue of succession, the issue of management development, the issue of building an organization at Ungermann-Bass, was that voiced at some level? Particularly for yourself, having come out of a very successful large organization, having seen that building a big organization takes some planning. Was that all implicit, as opposed to explicit?

Jordan: Yeah, I --

Pelkey: -- prefer not to say. So anyway, you got to be responsible for some of engineering.

Jordan: Well, it just started out. We started this broadband engineering operation in -- actually, the first office was in Burlington, just outside of Boston -- and I don't -- I just started. It worked for me. I don't remember why. Looking back on it, it's probably a great way to start a rift. Obviously I was pushing for broadband, but I don't remember why it happened. I should remember that, but I don't.

Pelkey: Now what year did you go public?

Jordan: '83.

Pelkey: So this was before you went public?

Jordan: Yeah.

Pelkey: You had gone through another round of financing at this point?

Jordan: A couple. Did very well. The valuation was like five X, the last one -- twice we did that, kicked it up. We really did well on that, actually. For the reasonable amount of money we raised, not nearly the bullshit you would expect.

Pelkey: Who was on the board at this point?

Jordan: The first three investors were Bessemer, Oak and Adler -- they were the first three; half a million bucks apiece, so a million and a half was the first round. Brownstein was on the board for Bessemer, Jim Schwartz was on the board from Adler -- he was still with Adler then, and Stewart Greenfield was on there. Then the outside guy, later on -- I don't remember exactly when he came on the board, but -- it was really kind of through Brownstein, was Norman.

Pelkey: And the insiders?

Jordan: Ralph and Charlie, initially.

Pelkey: Did you go on the board?

Jordan: Yeah.

Pelkey: When?

Jordan: Charlie went off and I went on after '84, probably, something like that. I don't remember the exact date.

Pelkey: So you introduced the broadband product?

Jordan: Yeah. It was a 5 megabit version. It was --

Pelkey: But you needed a 10 megabit.

Jordan: It was a lot of trouble getting a broadband modem to run that fast, so we started out with a product -- actually, we OEMed -- we started up the design of a 5 megabit broadband modem that would run in a 6 megahertz channel on broadband, and we OEMed the 5 megabit broadband modem from 3M. I don't know how many we bought; not very many, because we had a simultaneous development going. We bought a few of those and got a few installations, and then ours worked, and we just transitioned over to our own product, and sometime after that -- I don't know whether it was six months after that -- we did a 10 megabit version. Let me think about that, because I'm probably giving you some bad information. It was five megabits for a while, and I don't think Ungermann-Bass went to 10 megabits until -- I don't think they went to 10 megabits until they really did Token Bus at 10 megabits.

Pelkey: You won. You beat out Concord Five with your -- with General Motors.

Jordan: Yeah, but that's a different modem. Token Bus modem is a little bit different modem too. Then, at that point, the big competition was at Sytek. Sytek had shot themselves in the foot about three times --

Pelkey: Because of --

Jordan: They could never come out with another product. They had the first two-port box, they were fairly successful with it, they could never get a second generation product out, and they kept promising it and committing, and then defaulted on their commitments, and just really doing real badly. Then, they got this deal with IBM for the PC card, the broadband PC card, and just really got in trouble over that. At the time, we were doing a development program, an R&D contract with IBM, and we knew what was going on. We were working on Token Ring with IBM. Sytek had this broadband OEM deal, and it was all with the PC guys in Florida. They were selling cards for $210, broadband PC cards for $210 to IBM, and they were building them --

Pelkey: For $250.

Jordan: Well, honest to God, they were building them in Juarez, or something. Their cost here was way over $210. I think it was less than $300, but it was way over $210. It was $280 or something. I don't know what it was, but it was more than $210. They were going to cut the cost enough so that it would make money by building them in Mexico, and they could never get the Mexico plant going, and they basically just lost their ass on the deal. IBM never sold any -- you remember that whole fiasco? And if you ever saw the product, you would understand why. This thing was a broadband modem on a PC card that had -- I might be wrong on this, but I think -- it was eight hand adjustments; pots, ok, that you had to turn. Number one, can you see really installing this thing with the dummies in the field, and number two, can you see building and testing this in Juarez, or wherever it was in Mexico? Jesus. You needed a good technician with scope to set the goddamned thing to start with and test it. I looked at it, and said: "I'm not worried about this. These guys have just shot themselves again," and they did. I think the whole deal was Pliner. Pliner wanted to -- Pliner didn't care if he made any money. Pliner just wanted to go public.

Pelkey: You think he got close?

Jordan: H&Q almost got them out.

Pelkey: Although, my understanding is that Ralph and Pliner and Metcalfe almost put a company together in June of '79, and couldn't come to terms, and then the three of them started their separate companies.

Jordan: That's very possible. I don't know.

Pelkey: When and how did you get involved with IBM for Token Ring?

Jordan: I don't know the dates, now, very well.

Pelkey: Did they come to you?

Jordan: (Affirmative). They did, and we did a development contract. A company did a development contract with them.

Pelkey: This must have been '81, '82?

Jordan: No, it was later than that. I don't know the dates, I really don't, but we did a -- I'd have to go back and figure this out.

Pelkey: The IBM -- it would be an interesting date, to know that. I've been trying to research and talk to a lot of people about how IBM got and developed their Token Ring technology.

Jordan: I can give you a lot of background without the dates, the specific dates. I can give you the general ones, and I can find out the dates. I just can't remember off the top of my head, but we bought -- we being Ungermann-Bass -- bought a company called -- what was it called? It was kind of a funny

name, kind of hokey deal. It was an Adler investment. Schwartz was on the board. Schwartz said: "We've got to bail these guys out," kind of shit.

Pelkey: It was a broadband company, right?

Jordan: It was a broadband company [Amdex]. They had one interesting aspect to them. One is they had some broadband manufacturing capability. They really did understand how to build broadband modems and that.

Pelkey: Now you bought this after you had done your broadband development?

Jordan: Yes.

Pelkey: And before you had your IBM contract?

Jordan: Yes. They had three groups to that company. What the hell was the name of it?

Pelkey: It wasn't AppliTek?

Jordan: No, AppliTek was later. Well, Ivan Socher was the guy who was running the place. He was a guy I had run into a long time before when he was at Computer Automation and I was at Four-Phase, but anyway, this was a broadband networking company who had never gotten the product to work, never sold any, and had absolutely died. That was their main product line. Second group in the company was an engineering group in Ft. Lauderdale who was all ex-IBM guys who were doing Token Ring. They had a lot of Token Ring expertise, and they had a lot of channel expertise; how to really interface to black box multiplexers and that. The real reason, the real motivating reason, for us to buy the company was to get the engineering talent in Florida, because we knew they were Token Ring guys, and we knew they understood channel interface technology, which is fairly unique. There's not a lot of people in that. That was the main reason we bought them. That was also the company that they guys that came out of left because it was doing so poorly and everything, number one. Number two, I don't think they could stand Ivan, and they left, and that was where the guys came from that started AST. What the hell is the name of the company?

Pelkey: How about that.

Jordan: Some Chinese guys that worked there, moved out to California, started -- they already were in California, I think. They had a division out there, and they just went across the street, and they started AST. That was before we ever bought them, but -- what the hell is the name of the company.

Pelkey: Did you buy another company?

Jordan: Yeah, that one was really where the split started with Ralph and I, because we really disagreed on that.

Pelkey: Not buying that company?

Jordan: On buying the other one. Not this one in Long Island, the other one. The other one was called Paramin. It was a software company. P A R A M I N. Paramin Associates, it was called. They did host-to-host kind of software. I was really underwhelmed. I had, by then, a pretty good-sized organization and everything. I had some of my technical guys talk to theirs and tell me what they thought. They were supposed to know SNA stuff, and all my guys came back and said: "These guys don't know what the hell they're doing. They're really bad. Don't get within the same block of them." Ralph liked them, and Ralph ended up buying the company. We had major disagreements over it, and he bought them. I don't know, I would think three or four million bucks of losses later they still own them. It was sick -- a really bad deal.

Pelkey: So you were developing broadband, and you bought this other company on Long Island. Where did you start to get to deal with Token Ring? You were doing a development contract with IBM, which came after the acquisition of this talent in Florida?

Jordan: We bought that company, we had the Token Ring kind of knowledge and talent in Florida, and they had -- some of the guys in Florida had good contacts at IBM. They still had a close relationship. They were all ex-IBM guys. They all came out of IBM, and IBM was looking for some development expertise for some products in Token Ring, and they were way behind. They were trying to really accelerate the development effort to get Token Ring into the marketplace.

Pelkey: Do you recall whether or not they had announced it yet?

Jordan: Oh, they hadn't, no. They had talked about it --

Pelkey: -- but they hadn't had this pre-announcement that we talked about earlier? To the best of your knowledge, they had not pre-announced it when they came to you?

Jordan: Everybody knew they were doing it, but I don't think. Yeah, their pre-announcement started real early, talking about the Zurich people and "Token Ring is better than contention-based systems, and blah, blah, blah." They started the whole press release -- the underlying – yeah, I don't know exactly where that fell into that sequence of events, but -- oh, I think a lot of the connection started there, and the knowledge of the people at IBM, and it was really all interfaced with the guys in Raleigh. So it was for a couple of products on the Token Ring.

Pelkey: Did you negotiate that contract?

Jordan: No. In fact, the first version of it was negotiated with Charlie. Charlie was running engineering and negotiated it, and it was just a straight R&D contract -- so much per man.

Pelkey: Now at this point in time, you've got broadband, you've got Ethernet, now you're doing Token Ring --

Jordan: One of the financial -- one of the knocks against the company in the financial community was that Ungermann-Bass did too many different things, too many different technologies -- a very common one. You hear it a lot in the financial arena. They say: "You guys are biting off too much. You've got too many different technologies and that going on here," and the standard answer to that was: "Look, they're all basic networking, very similar. They're just a little bit different architectures, and protocols are all the same, blah, blah, blah," which is bullshit. They really are different technologies and we were biting off too much. That was a valid criticism, actually, especially looking back on it.

Pelkey: At the time –

Jordan: I didn't know it was as valid as it was at the time, myself. Ralph wouldn't accept it at all.

Pelkey: How much was because of this 'vendor independent' thing -- you had to be independent to the computers, but now you also had to be neutral relative to the technology? If the customer wanted to buy Token, if he wanted to buy broadband --

Jordan: That was the pitch.

Pelkey: We just want to be able to provide all the networking needs for the customer, and we're not going to try to force him into our straightjacket.

Jordan: That was exactly the pitch. We're not talking about Bridge here at all, but Bridge had started then, and we really -- it was a major, major sales advantage against Bridge. We really beat up Bridge in

that situation, especially when the guy wanted mixed media networks. Nobody else really could do it but us.

Pelkey: You were it.

Jordan: It was a big advantage. A guy would put in a broadband backbone and baseband spurs off of it, and it was a nice system. You had -- you want to call them Mac-Layer Bridges, or Mac routers on their, between the broadband and baseband, so you didn't clog up your five megabits. The only stuff that went on there was stuff that was addressed to go across the network. It was a nice system. Then you still had your broadband cable; you could run your security over it or whatever you wanted to, and you ran this along …

Tape Side Ends

Jordan: … so you have an engineering operation running here at 10 megabits, with all the very high-volume traffic, and it's all contained on that segment of the network, and then only -- it's a standard architecture everybody uses today, only packets that are supposed to go somewhere else get out on the slower speed five megabit backbone. So, it was a good system, and we beat the hell out of Bridge with that. Bridge ended up trying to get into that.

Pelkey: Now, how much of this view of the world was because you had a direct sales organization and because you were selling to the big accounts; handling all the account's needs, selling more and more to the same account, versus -- did that look to you to be a real profitable way to build and grow a business?

Jordan: Well, how much of that perceived requirement was coming back from the sales force and the customer contact?

Pelkey: Yeah.

Jordan: I think most of it was coming from corporate out. I think the strategy was coming from corporate.

Pelkey: 'Corporate' meaning Ungermann-Bass corporate?

Jordan: Yeah, Ungermann-Bass corporate saying --

Pelkey: The mental set at the top, then.

Jordan: Yeah, it was coming out saying: "This is the right strategy," more than having the sales guys saying: "We've got to have a broadband combination network." It was coming, which is kind of the wrong direction. It is. I think it was, actually.

Pelkey: But it really did distinguish you, in terms of differentiated strategy. You had 3Com playing with this PC stuff, and you had Bridge that was doing terminal multiplexers up front, but then trying to do more -- they'd run into you and you'd beat them back -- and Sytek had fallen on its sword, and Excelan hadn't really started and was doing OEM stuff, and Interlan was doing its OEM and --

Jordan: I think Ungermann-Bass really blew it. It could have been a lot bigger deal, a lot bigger deal. They were really well positioned, a lot better positioned than almost anybody else.

Pelkey: Why?

Jordan: They blew it two ways, really -- very badly in two things: they really blew the PC networking part, because it is BIG business, big business. They eventually got into it. I'll bet you that -- I don't know the numbers today, but I'll bet you that -- 25% of the sales at Ungermann-Bass are PC cards, today, and I'll bet you that the other product, I'll bet you that 30 to 40% of their sales are this IBM --

Pelkey: -- Channel connector.

Jordan: No, it's not a channel connector, it's an IBM 3270 coax connect NIU. That product, and the PC cards are more than 50%. They're probably 60% of their sales, ok.

Pelkey: The first mistake was the PC networking --

Jordan: Not getting into that. Second one was I think really bad management of the company at the top; just really loss of internal controls and goals, cash management, profit management, just got too involved in buying Paramins and things like that. They really didn't manage the business. If you go back and get the annual reports of this thing, it's just criminal.

Pelkey: Did the --

Jordan: Margins were in the 70% in this industry. There was no reason not to make money.

Pelkey: What did you guys -- you must have discussed that?

Jordan: Yeah.

Pelkey: It was just because of a case of a very strong person who just stonewalled it or --

Jordan: Yeah, I don't know. This tape's really -- you will listen to this. Anybody else?

Pelkey: This tape is just -- nobody hears this unless you want to.

Tape is interrupted, then resumed.

Pelkey: We had just commented that at one time, both Steve Schlumberger and Tony Russo reported to you, who then went with NET, as VP of Sales and VP of Marketing, early in their history. One of the interesting things is how people move around and take skill sets, but they came from a direct sale environment and solving customers' problems, and this attitude about organizations. If you look at NET --

Jordan: Very similar.

Pelkey: Yes. Russo was a very good hire, and/or those two hires had a big impact on NET being successful.

Jordan: Right. It was interesting, too, when Schlumberger went there, they went there simultaneously, almost, and actually through different routes, and I don't know which was which, but one of the board members of NET knew Steve or something, or knew of Steve or something, and he got in there that way. A headhunter recruited Russo, so they were very independent, but they both went there very close to each other. Another guy that was hired not too long after that, maybe a year after they went there, is Tisdale. Tisdale worked for us at U-B too.

Pelkey: Another place you got a lot of technology was from Judith Estrin.

Jordan: Yeah.

Pelkey: She came to you and worked at Ungermann for a little bit before going off to Bridge.

Jordan: Yeah. She did -- I didn't know Judy. Obviously, Ralph knew her from Zilog. Judy actually worked for me at Ungermann-Bass, and she worked in a marketing capacity, like a product marketing job, and it was a pretty short period of time. Ralph wanted to hire her. I didn't know her, and I said: "She

seems smart. Fine." She wanted to work in marketing instead of engineering. She didn't want to work in engineering, and she was there maybe six months, something like that.

Pelkey: When did INI come about? Why INI?

Jordan: INI was very interesting. That was -- we had a technical group, actually, a couple of really good engineers that had a lot of knowledge about 802.4, number one. We had broadband expertise in the company, we had a group of engineers that understood Token Bus, and we had -- there was a lot of press, a lot of projections that the MAP marketplace was going to be big.

Pelkey: Do you recall what time frame this is?

Jordan: That one I do. In fact, I can show you something.

Pelkey: 1984? October 10th, 1984. Was that the day you launched?

Jordan: That was the day the paper got signed and we cashed his check, and we got that pen on that date, we signed all the papers.

Pelkey: How did that all get started?

Jordan: Well, we -- we being, let's say Ralph and I -- thought the market was a large one, was going to be large. I think everybody did at the time. This was in early '84. We decided we wanted to get into it. Concord was the only player in it at the time. Felt pretty strongly that their strategy wasn't that good, because it was very box oriented, and we thought it was a board business; board products are what you needed in that business, and Concord was what they called TIMs or something, their boxes. They were like the old NIUs at Ungermann-Bass, and that was not what you needed in that. They were only 5 megabits, they weren't 10, and we thought it was a big market. The problem was this R&D problem; we wanted to get into it, but here was a whole other development effort, a whole other level of technology, a whole other level of expense. We couldn't support it with the operating thing we had, and so we said: "How can we do this?" Well, "we could do an R&D partnership." That was one way we could do it. "We could do -- how about a joint venture company?" We both really favored the joint venture company for a couple of reasons. One, we could put the technology in, they would put in the money, but the thing that really made it appealing was if we could do it with the right partner, the thought was that it would lend a lot of credibility to it. If you go to General Motors and say: "We're Ungermann- Bass. We're doing $100 million in sales. You ought to put your whole Saturn Plan on our neat technology." Not too persuasive of an argument, but if you go there and you say: "We've got this company and GE owns half of it, and GE is standing behind it, you ought to put your Saturn Plan on this technology," a lot better argument. So, we put the whole proposal together, went to the board -- I remember this very well. Ralph and I went to the board, and we said: "We got to propose to General Electric" -- we had a list of three or four companies, GE was the first one on the list -- and we said: "We're going to propose to them that we start this company. We want $6 million from them, we're giving them 40% of the company, we'll take 60 -- keep 60 at Ungermann- Bass. We'll put in the technology, we'll manage it, we'll come out with MAP products," and the board said: "Great," but they kind of laughed and said: "Good luck. I'm sure GE's going to give you $ 6 million for 40% of this make-believe company," right? We went to GE in June of '84, signed the papers in October -- cashed the check. That's true. Did the whole deal in like three or four months -- about four months. That's true. It was great, and the main guy -- the internal champion there -- Ralph and I did the whole deal, really. The internal champion at GE was Gerson, and shortly after that Gerson left GE and ended up going to Ungermann-Bass's board later on. We did the first chip set; we did an 802.4 chip set. It was a huge, massive, dual-gate array, and we had to split it into two chips, because it wouldn't go on one. We did it with chip designers down in -- they were working on Token Ring earlier -- you know, the guys down in Florida. Toshiba did fabrication of the stuff. Had, really, the first silicon for it. Did a couple of board-level products, set it up, got it running, and really kind of ran over Concord in the process.

Pelkey: The General Motors contract, when did you get involved in competing for that?

Jordan: God, that was probably early '85, wasn't it? I don't know.

Pelkey: Because that was a big event --

Jordan: Oh I can remember -- see, once we got this thing set up and running, I wasn't too directly involved, because it was really run as an independent subsidiary. It really was. It had a different company name --

Pelkey: Was Joe Schoendorf running sales then --

Jordan: We hired Schoendorf -- Schoendorf wasn't running sales, Schoendorf was the president of INI. He was hired to be the president.

Pelkey: Where did he come from?

Jordan: Eighteen years at HP. He was the second candidate for that job. We offered the job to the guy before him, and the guy turned the job down. Schoendorf was the backup for it. The guy who turned the job down initially was Owen Brown. Owen Brown, I think, would have been a much better guy for it, and I went to his house on Sunday and couldn't convince him to take it. Told him he was just crazy, because it was a big market, and it was being funded by --

Pelkey: Where was Brown at that point?

Jordan: He was out of a job, and he was looking to -- he was either going to go to work for us at INI or he was going to -- he took the alternative, which was crazy. He went to Parallel Computers in Santa Cruz.

Pelkey: Was he at Televideo before?

Jordan: No, he was -- Owen Brown early on started out at DEC. After DEC he was president of Sun for a while, and then he was at Convergent. He had just left Convergent, and he was trying to decide to either go with us, take the job at INI, and he went to Parallel Computers. That lasted about six months, and I think he's at Xerox now. He's a good guy. Anyway, he turned the job down, so the back-up guy -- actually, the next guy we tried to hire was Win Rollins. He's the director of all the networking for HP, and he's a really strong guy. We couldn't convince Win to leave, so Schoendorf was really the third guy.

Pelkey: Do you recall when you won the GM contract? Was it a big event to yourselves?

Jordan: Oh, yeah. I don't remember the date, but it was a big deal, sure. I remember the INI business plans, too. Most of it was built around GM, and the first full year of sales, INI's business plan in revenues -- and I was on the board of INI -- was $20 million, and I think they did eight.

Pelkey: That's still quite a lot.

Jordan: Yeah, but they had an expense running rate for 20, so it wasn't working real well. They didn't cut back their expenses, equal with revenue. Yeah they did all right. They did a hell of a lot better than Concord, but they spent a lot of money.

Pelkey: So during this period of time, Ungermann-Bass was still one of the leading LAN companies. It built itself up. Arguably, it was in too many different kinds of technology and so on, but it had -- for many years it was the largest LAN company.

Jordan: It was always the largest, except 3Com passed them, in terms of revenue.

Pelkey: And you were very effective. A lot of people took off other parts. Bridge did their things, and when Micom bought Interlan, was there any reaction? Do you recall any internal reaction?

Jordan: Yeah. It was not much reaction at all. I didn't see that as a threat.

Pelkey: But you were competing -- had you matured beyond competing with data PBX's at this point?

Jordan: Yeah, data PBX's were a major problem, I think, for the first couple of years at Ungermann-Bass, for the networking companies, in terms of competition. The later years -- I'd say '83 on -- 84 on -- they weren't. We didn't really run into them that much.

Pelkey: Why do you think? Because your costs had come down?

Jordan: Well, the costs had come down. The functionality had grown, along with the capability -- the underlying technology and capability started to grow -- and people really started to accept LANs more all the time, going with LANs and not data PBX's. That's probably indicative of Micom buying Interlan. Interlan was kind of a -- they weren't much of a competitor to us. We didn't really see them that much; a little bit on the East Coast, lost one big account to them -- I forget, though, who it was, Combustion Engineering or somebody like that on the East Coast, and that was the only time we ever lost, really, any perceivable end-user business. The competitor to Ungermann-Bass, really, was Bridge, and kind of all along, it was always kind of a pain in the ass, Bridge.

Pelkey: Bridge because -- they competed because they tried to go more direct, and that --

Jordan: Bridge had a very similar product line, really.

Pelkey: But they didn't have any broadband.

Jordan: No, but I think broadband was maybe 20% of the business.

Pelkey: They didn't have synchronous -- they didn't have the IBM 3270 connector.

Jordan: Neither did Ungermann-Bass until very late.

Pelkey: So it was really the terminal multiplexer with host cards, and that was Bridge's business as well.

Jordan: That was the bulk of Ungermann-Bass's business. Then, the big advantage Ungermann-Bass had over Bridge was they had a PC product line, which Bridge didn't have and never did have, and then they had broadband, later on, but you still had a big chunk of the basic business was in direct competition with Bridge. It was 10 megabit Ethernet terminal switching business.

Pelkey: It's really strange that -- I never think of Ungermann-Bass being an Ethernet company.

Jordan: God, that's all it was.

Pelkey: I know, but I don't think that opinion's shared -- I mean, I don't think I'm alone in that opinion, that Ungermann-Bass was something very different than Ethernet.

Jordan: Well, that's good --

Pelkey: -- I mean Ethernet was part of it, but it was never perceived as an Ethernet company.

Jordan: Well, that's good press for Ungermann-Bass.

Pelkey: You positioned yourself where you wanted to be. Now, during this period of time, you said that XNS was your early protocol.

Jordan: Well, it was a proprietary Ungermann-Bass protocol for the first couple of years, and then there was a conversion to XNS.

Pelkey: But it wasn't really a standard XNS -- or your proprietary was kind of a version of XNS, it was an XNS type -- and then you converted to XNS. When did TCP become an issue for you?

Jordan: TCP started to be an issue in '84. It started to get to be pervasive, that you needed to have it, and I think it was -- I don't think Ungermann-Bass really had much in TCP until about '86, probably, before they really got any TCP products out, if then -- '86, '87 before they got much out in the marketplace.

Pelkey: Do you think you lost much in '85, '86, not having it?

Jordan: A little bit to Bridge, because they had TCP sooner.

Pelkey: Did OSI ever become an issue during those days?

Jordan: It did with INI, because the MAP stuff is all OSI, so that's when it started to be, and I think the opinion -- and you've got to remember, I've been gone a couple of years -- but the opinion two years ago was that eventually it will probably all go to OSI, and that TCP eventually would fade out, and certainly XNS would fade out, and you'd really have OSI protocols. That's really what you'd end up doing. Those are major conversions -- major goddamned problems for LAN companies; big software efforts to do that.

Pelkey: You also were the most aggressive in getting overseas? You created Ungermann-Bass Japan?

Jordan: Yep. Ungermann-Bass Japan. We had distributors in all the countries in Europe, pretty much. We had Ungermann-Bass SA in Switzerland, so we had a subsidiary in Switzerland, we had a subsidiary in England, we had a subsidiary in Japan.

Pelkey: It was an American business. There wasn't much in the way of local competitors in these other countries, right?

Jordan: We were the dominant players in Europe and absolutely the dominant guys in Japan. Still are. Ungermann-Bass is the dominant -- shit, nobody buys 3Com over there. They do a lot of business there.

Pelkey: Having gotten there first and established yourself and so on?

Jordan: A lot of work -- it's an image building thing. It really holds you in good stead for a long time in Japan, once you get there.

Pelkey: It must be kind of ironic now, that having started off competing against Datapoint at Four-Phase, where they had their multiple boxes connected by cable, and all of sudden now Tandem buys Ungermann-Bass to connect boxes for their computers. It's back where it was. Bigger boxes and faster cables, but it's back to a vendor being able to supply it all.

Jordan: I think that's a very -- I don't know what you think about it, Jim, but I think that's a really smart -- I don't know about the price, or the financial, if they paid too much or anything else, but strategic-wise, if they can absorb it and manage it, it probably makes an awful lot of sense for Tandem. Their main competitor has got to be DEC, and DEC's more of a networking company than anybody else around right now. DEC's the biggest competitor Ungermann-Bass has.

Pelkey: DEC's the biggest competitor these days that everybody has. That's because of networking and because of common operating system.

Jordan: If you ask the guys at U-B today who their competitors are, they're not going to tell you Bridge or any of that stuff, they're going to tell you it's DEC and IBM.

Pelkey: I would think that too, certainly because you have positioned yourself that way, whereas 3Com wouldn't say that because they didn't position themselves that way. That whole marketplace -- the issue of this consolidation, why do you think it is that none of the traditional datacom players -- the modems and the multiplexers -- Concord was the lone exception? Milgo had its Planet for a little while, that Cambridge Ring thing that they brought over here.

Jordan: That sure went away, didn't it?

Pelkey: It sure did, and then Micom buying Interlan. For the most part, the guys who were in the statistical multiplexers and the modems and the data PBX's, they were the data communications business, but they didn't participate in the LAN phenomena. Do you have any thought on why?

Jordan: Well, I think there is one really basic reason why that happened. Those guys are really telephony people. LAN people are computer people, and that's the basic difference, and boy, they talk two different languages, and the technologies are different, and that's the difference. I really believe it's that simple.

Pelkey: But they're starting to come more and more --

Jordan: They're coming together, but they still haven't come together.

Pelkey: Is that why the LAN guys missed T-1?

Jordan: Yeah, exactly. There isn't anybody at Ungermann-Bass that can spell 'modems.' There isn't. They don't understand.

Pelkey: Of all you, of anyone --

Jordan: Telephone modems.

Pelkey: But you had to have analog technology for your broadband stuff.

Jordan: We had broadband guys, and that's certainly analog technology. We already talked about that, but I mean let's talk about telephone kind of things. To really understand the telephony business -- you talk to anybody at Ungermann-Bass and ask them what the basic technology is in a PBX, and there's nobody that can really tell you there. They're just not -- that's not their background at all. The same as if you talk to these guys back here, in the back room here, and ask them about LANs and higher-level protocols, and there are very few guys back there that understand that.

Pelkey: Some of that is positioning, i.e. LAN people, that's a skill set that you have to know, but it's also this issue about positioning and knowing what you want to be when you grow up. 3Com focused on a certain area and positioned itself, just like Ungermann-Bass positioned itself, and people now are starting to conceptualize this as data communications businesses all being telephony and the LAN and the T-1, and the guys now that are doing gateways. They have T-1, they have Ethernet coming together, and have to deal with putting these things together. Now you're starting to see companies that are emerging where the culture is a little bit of both. The issue of focus, in terms of building companies, is somewhat the same, is it not? In terms of being focused enough to be successful and accomplish what you want, but if you get too focused then things pass you by. You miss opportunities. Maybe the PC at Ungermann-Bass, being focused on a certain way of looking at the world, and all of a sudden this thing comes along and has to get so big before you respond to it that you miss the wave. Any comments on that issue, about focus versus broad --

Jordan: Don't you see that in all companies of all sizes, really, when you think about it?

Pelkey: How do companies grow out of focus? Focus is necessary to get going, but how do you rejuvenate, reinvigorate a company to re-conceptualize itself so it can, in fact, become a bigger company, as opposed to successfully building a small company, but it can't get to be a big company because it kind of gets locked into its view of the world.

Jordan: That's a tough problem. If you go back and look at the way the PC business started within IBM. Remember that? That was a maverick, kind of a skunk-works thing within IBM. They said: "Look, this appears to be something that's going to be big. Why don't you guys go off and try it? We'll let you have X amount of money, and you're kind of on your own." They were kind of bastard kids within the corporation, and they didn't have to fit the mold of the rest of the company and play by the rules. Then, all of a sudden, the thing grew up, and now, it got sucked back into IBM, it's got to play by all the rules and all that kind of thing.

Pelkey: It's getting fucked up.

Jordan: Yeah, it's getting fucked up. I guess that analogy says to me that maybe one of the only ways you really can do it is through a business group, or a skunk-works, or a tiger team, or something that just -- somebody's got to recognize an opportunity, or be willing to make some expense to at least evaluate and exploit an opportunity, to see whether it's worthwhile.

Pelkey: Since you've been through it, what about the process of venture capital in this capacity, of venture capital going off and raiding management talents and growing rapidly, they're successful, ie Steve and Tony have an option to go to some other company, and therefore management keeps getting siphoned off from companies, and you can't build a management structure in many of these cases to build bigger companies. Is that a hindrance?

Jordan: I think it's healthy, overall. I really do. I think any time you're one of the senior managers and it happens to you you're a little bit put out by that, but on the other hand, all you've got to do is look back on your own diary and say: "Jesus, I did the same thing." Russo, Schlumberger and I are very good friends today, and I hope they make a lot of money. You have to be honest with yourself. I think that, overall, the effect is a positive one, because that's the way the new technology, the new ideas get exploited. That's the way the new products develop out of areas where this company, as you say, that's really focused, it wouldn't happen. So I think it's positive.

Pelkey: I don't have any other questions. Thank you very much for your time.

END OF THE INTERVIEW

