



Oral History of Tom O'Rourke

Interviewed by:
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Tom O'Rourke

Conducted by The Software History Center

Abstract: *Thomas J. (Tom) O'Rourke reviews his personal life and his career at General Electric prior to starting Tymshare, one of the earliest time-sharing companies, in 1965. He covers the development of an operating system to support their time-sharing services, establishing an initial market with engineering firms, and shifting to the financial services market during the recession in the early 1970's. He describes the growth of the proprietary network Tymnet as a significant business within Tymshare and the role of ADAPSO (Association of Data Processing Service Organizations) in providing time-sharing firms with a lobbying presence to resist government regulation. The interview concludes with the events leading up to the acquisition of Tymshare by McDonnell Douglas Automation in 1984.*

Personal Background

Luanne Johnson: Let's start with your background. Where you came from, what your family was like, and so on.

Tom O'Rourke: Okay. I was born in Montana. My dad was a cowboy in Northern Idaho. I grew up in a little logging town, and, I mean, logging, that was it. It was back in the mountains, with big old logging trucks on the roads. It was a town of about two thousand people. I've been back since – it's still two thousand people, they still have logging trucks. About the time I hit high school, we moved to Coeur d'Alene, which was really kind of the de facto capital of Northern Idaho.

Idaho is really two states. The mountains in the south. And everybody else up north. In the north were the potato farmers, up north were the mines, and the logging industry which for years was the main industry of the whole state. So I can remember as a kid, if you were going to succeed, you had to move to Washington or Montana. There was nothing in Idaho but a bunch of hills.

And then the war came along. I had a year of college and then the war came along, so I enlisted in the Air Force for four years. And I never really went back. Marge and I got married. We went to Seattle and the University of Washington, and I got a degree in electrical engineering.

Johnson: Was she from Idaho, too?

O'Rourke: Wisconsin.

Johnson: Wisconsin. You met her when you were in the service?

Career with General Electric

O'Rourke: Yeah. I was based in Madison for awhile.

Our daughter was born two months before my graduation from college. Marge had to work two jobs and we just squeaked through college financially. I hired on with General Electric and we went back to Schenectady, then went to Pittsburgh, Mass, then transferred to Dallas, Texas, then to Los Angeles, then to Phoenix, and then up here. Thirteen years.

Johnson: That's the way companies used to do it in those days, they moved you all around.

O'Rourke: Well, if you're moving up, you had to do it. In fact, our kids were all born in different states.

You know, Jack Welch gets a lot of credit for remaking General Electric. Hell, General Electric had set the tone long before Welch got there. IBM picked up the concept and other corporations picked it up so they had that rule even then: If you're not number one, two or three in your business, you got out of the business.

Johnson: So Welch didn't introduced that to GE?

O'Rourke: In fact I was a victim of that. I was under a fast track program in an advanced management school, six weeks to earn my Harvard Business School degree. In Dallas, you had the opportunity to go with different divisions. When I got done with my training, there was kind of a recession in the area and the industry was down, so I picked the first thing that came along which was the welding department. Can you imagine? Metallurgy and all that stuff. I was a hot shot engineer in electronics.

Johnson: I'm sure it made sense at the time.

O'Rourke: So it turns out General Electric was not at the top of the welding business, so they decided to get out of the business. I got a nice little note. I was a manager the for Western United States, based in LA. They gave us three months to find a job, either within General Electric or outside.

So, fortunately, I dropped into Phoenix. This was back in the late '50s and Phoenix was just beginning to start up a computer department. So I went back to my Air Force radar days and went back to my electronics stuff and convinced them that they really needed a guy like me with an electronics background to handle their district program. So, I became the district manager in Los Angeles for the computer department. A one-man show.

General Electric got into computers because they got a contract from Bank of America to build a banking accounting system.

Johnson: Wasn't that called ERMA?

O'Rourke: ERMA. And SRI had the R&D contract with B of A. It was actually really forward looking for those days. B of A had 35 million bucks to build this thing and all the other big banks were scrambling, too. RCA was doing something, IBM was doing something. IBM kept insisting on punch cards. If it isn't punch cards, it can't be a system. Univac was in there, too, doing something.

Anyway the ERMA system took off, then GE got the contract to build the hardware and that's what they were building when I signed on to work with them. I spent a couple of years in LA working on the B of A installation, then moved to Phoenix as a sales manager. Then they transferred me to San Francisco as regional manager for all the West Coast, for all the computer products.

Johnson: So, with your degree in electrical engineering, you did all right as a sales manager?

O'Rourke: Yeah, they probably said, this guy will talk and talk and talk until he has you a sale.

Johnson: Obviously, you did okay. So that's what got you to San Francisco.

Leaving General Electric

O'Rourke: And then the big old how important are you in the industry question hit the computer department. The way everybody looked at it was that the real competition was IBM. In General Electric they didn't look at it that way at all. They were saying how successful are we versus RCA and Univac and all the other guys out there. How does our technology compare? So somewhere back in New York, somebody made the decision that maybe we ought to ease ourselves out of that business.

Johnson: This was that same philosophy. If you're not number one or number two in the market then you should get out of it.

O'Rourke: There was also another factor. IBM was one of General Electric's largest customers for industrial gears and things like that. And there were all these rumors around the computer department that the GE CEO and Watson of IBM cut a deal that GE wouldn't compete with IBM.

Around that time they did a reshuffling of all the management and we ended up with a guy whose background had been selling electric wiring supplies to contractors. He and I just didn't mix at all. The West Coast was the only profitable region but he thought I ought to be more an IBM-type of guy, so he fired me.

And the department general manager said, "Well, just face facts, O'Rourke. He's the son-in-law of one of the top vice presidents in the company and I'm not going to face him down. However I will make another opportunity available to you."

Well, the "opportunity" was a move from the West Coast to Washington DC to run the GE military electronics group. So here's a wife who has six kids, has spent years moving from one place to another, taking the kids out of school, getting them into school, selling houses, buying houses. Our daughter had had a tough time adjusting and Marge just felt that enough was enough.

We had kind of wanted to start our own business all along. I had been through that management training course, so I really had a good background in accounting and just plain old management techniques. So I put together a business plan and started walking around San Francisco with it.

Starting Tymshare

Johnson: So you're looking for funding in other words? Where did you go? Did you go to venture capitalists? Were there such things? Did you go to the banks?

O'Rourke: Art Rock was the big name on the West Coast as far as investment guys were concerned but I ended up at the Bank of America. A guy named George Quist worked for them then, who later became the founder of Hambrecht and Quist.

What really intrigued me, when I was working at GE in Phoenix, was that Dartmouth University came through pitching this idea of time-sharing -- remote access to a computer. Their project was to study it and see if it was viable and they were asking for free computers and for funding for their big computer lab. I recommended very strongly for it, because I thought it was a very viable concept. And the company did go along with it and gave them the computers and funded part of their computer lab.

I thought it was really interesting and when I came up here as Regional Manager, I accessed the time-sharing computers for my own personal use. We could dial into the Dartmouth phone system back in Hanover and access their computers.

Johnson: And this was while you were still with GE.

O'Rourke: So I thought this could really be a business. In those days, the computer companies weren't focused on services like they are now. It was all hardware. So I went into the time-sharing business.

Johnson: Did you call it Tymshare from the beginning?

O'Rourke: It was called O'Rourke Enterprises. It was a partnership. One of the guys that was on my staff was a real good programmer and he also was intrigued with time-sharing, so he and I put together a partnership deal.

Johnson: When was this? What year?

O'Rourke: 1965, in the summer. I resigned and cashed in my pension. I'd been there seventeen years and it was about fifteen thousand dollars total. After seventeen years, that was my total net worth. Wow.

Quist arranged the financing and the bank took 50% of the company and put in half a million bucks.

Johnson: It was B of A that did this?

SDS Computer and the Time-Sharing Operating System

O'Rourke: Plus my fifteen thousand and my partner's ten thousand. And that was the start of it.

After I left General Electric, they started to get into the time-sharing business. I had ordered a computer from them to be delivered in the fall of '65 and they called me from Phoenix and said, "We'd like to talk to you." I went down and the General Manager and I met. He said, "We're not going to accept your order." And I said, "You already have. I've already given you a down payment." They said, "We'll give you your money back. You're trying to be a competitor. We'll give you back your order. How about if you come back here and run this thing for us?"

And I said, "What the hell do I do about the Bank of America? What about the half dozen people I've hired?" So I left Phoenix and went to Los Angeles where SDS, Scientific Data Systems,

was building a time-sharing machine for UC Berkeley. So my technical guy went and looked at that computer and said that it was really a little more advanced than the GE machine and should work for us.

So I went to Art Rock who was a big investor in SDS. Rock wouldn't put any money into my stock but he got Max Palevsky to lease me an SDS machine on very generous credit.

And then Rick Crandall came into the act.

Johnson: He did? How did Rick Crandall get involved in Tymshare?

O'Rourke: Well, Bob Guise who was running Comshare in Ann Arbor decided he was going to get an SDS machine. SDS decided they were going to sell time-sharing machines. They were kind of an entrepreneurial company, anyway, so it was a roll of the dice. But they were pretty small when it came to computers.

And so Guise and I had a deal whereby he would lend me some programmers. And we would work with SDS and UC Berkeley to develop a time-sharing system and share access to the code. So Rick Crandall and his wife showed up and worked on the project.

Johnson: That's interesting. Well, I knew that he said something at one point about having written the code for the original time-sharing system, but I didn't realize that he had worked with Tymshare on it.

O'Rourke: By then, my partner and I and a couple of other people, had sat around a bar by our new office and started coming up with names because I really had a thing against using people's names in the company name. It had to sound more business-like than John Cullinane Software Company, or something like that. Anyway, I screwed around and came up with the word Tymshare. And it fit.

So I was hitting the bricks and trying to sell contracts in our time-sharing service. My machine from SDS wasn't going to show up until August of '66. We incorporated in January of '66. And Rick Crandall and Ann Hardy and Norm Hardy, about eight or ten programmers wrote the whole operating system on the basis of the work at Berkeley.

Johnson: So were they using the machine at Berkeley?

O'Rourke: They were using the machine at Berkeley. We were also buying time from Dartmouth. All my sales demonstrations were done by dialing into Dartmouth.

Initial Market: Engineering Firms

Johnson: Who were you targeting as your customers? Who were you going after?

O'Rourke: Engineering. You know, if you think about it, the engineering programs are FORTRAN-like, focused on calculations and the logic is clearly defined. We looked at accounting and accounting was a big amorphous thing. So we focused on engineering and, of course, the engineers were getting really tired of going to IBM. You had to send a deck of cards in and wait around until you got the results. So this was for them a godsend. We were located in an area that was big in aerospace, so I had a real viable market here. GE's first computer installation after Phoenix was in Berkeley. They opened a center head-to-head with me.

Johnson: Oh, they did. They knew what they were talking about when they said that you were going to be a competitor.

O'Rourke: In those days, the customer paid for the phone call into the computer. Because of the different area codes, it cost six dollars an hour to use the phone line from Berkeley down to here. Well if you look across the bay there's not an awful lot of engineering/scientific shops. At least there weren't then. But I was right in the middle of them. So I went around signing these guys up.

And then my machine came in. And we didn't charge them. Gave them free time and said, "Okay guys, it's not costing you any money because it's a free phone call. Here's your chance to debug your own programs." The programs we had were the standard cost analysis, iterative analysis, structural analysis. Things like that. So we went along like that. Rick and his wife went back home to Ann Arbor probably in August or September.

IBM decided to get in the business. They opened up a shop in San Jose. Well, it cost eight bucks an hour to call to San Jose. So I still had an advantage. Then General Electric got really aggressive. They picked up the phone charge to their shop.

Some of my customers, like HP and Lockheed, had big operations in Southern California. The fact that General Electric was going to pay for their incoming calls forced me to open a computer center in Southern California. Which meant I had to lease high-capacity lines from the phone company to transmit the data. So we began talking about how to increase the capacity of those lines and being real smart about sending data over the phone lines.

We hired about two or three guys out of Livermore Labs who were doing things like that, specializing in data compression, and eventually we came up with the concept of putting digital technology on top of the analog phone network. You can't really compress analog but you can digital which means you can really jam phone calls on the line, up to sixteen users on the same

line. So that meant using computers to digitize the stuff coming in and, as soon as I got the analog stuff, digitize it coming out.

Johnson: Were you developing the nodes that did the conversion?

O'Rourke: We had to because they didn't exist. ARPA had the ARPANET which connected all those university research labs together to work on ARPA contracts. ARPA was a research arm for the Army and they had contracts with Stanford and Berkeley and UCLA, places like that. They wanted to tie these guys together to move data back and forth and ARPANET was free for those guys and they were using the concept of packets to transfer the data. So we adopted the idea of packets.

Tymnet

Johnson: So is that where Tymnet came from?

O'Rourke: Tymnet became a division of Tymshare. It was never a separate company. For awhile, the FCC wanted us to make it a separate company because it was a communications company.

Johnson: Was this the first commercial application of that packet technology, of putting a digital network on top of an analog network?

O'Rourke: That was the first commercial application, yes, as far as I know. And we were charging for it by this time.

Around 1970 we were approached by the National Institute of Health which had a large database of poison antidotes. They had created the database and it was free to anybody to use but they had the problem of providing access to it. They came to us and they wanted to use the Tymnet network.

By that time we had developed a charging mechanism based on the amount of data transferred and the time you were connecting to the service. Just like when you used time on a big mainframe, you were charged for computer time and data storage.

Competition and the Shifting to the Financial Services Market

Johnson: So when did you get involved with ADAPSO? You were chairman in the early '70s.

O'Rourke: It must have been in the very early '70s because, let's see, we went public as a company in the fall of 1970. We were on the NASDAQ and we went on the New York Stock Exchange in '74.

We were using IBM equipment by then and had a battle with IBM because we really needed to know how the internal parts worked in their operating system. And it was a real mess. Fortunately a couple of my real tough programmer types had come out of IBM and they were able to decipher the interface specs. We had about a hundred thousand lines of code that were our own that interfaced what we were doing and what the network was doing, that the IBM stuff couldn't handle.

So we were actually interfacing with the hardware of the system. Normally on an IBM system, their operating system used 65% of their CPU. We had knocked that down to 45%. So what we ended up doing was buying IBM mainframes, but we were only buying the first bank of memory and their CPU. We put our own peripherals on because they were less expensive than IBM.

Johnson: Who were your competitors at this time? Was Comshare one of them?

O'Rourke: Yeah, we were going head-to-head with Comshare. We were competing head-to-head with time-sharing companies all over the place.

Johnson: International Timesharing – were they one of the ones?

O'Rourke: Yeah, they were a small one.

Johnson: But there were a bunch of them.

O'Rourke: Yeah, there were a whole bunch of them. Then we started buying some of them because... well, let's go back now in history. About in 1970-71, the aerospace industry on the West Coast went very, very bad. So our engineering customer base started to shrink and we decided we'd better take another look at data processing. It didn't make sense to have a payroll and data processing systems kind of business moving up and down the network because it gobbled up bandwidth. But there is a product in-between called analytical, modeling kinds of software that really appealed to the business planning people, appealed to the budgeting people. We were kind of in the data center area but only with the more sophisticated financial software, the analytical stuff.

Johnson: Was this analytical software that you provided and they logged on and got charged for the time?

O'Rourke: Yeah, for awhile. Eventually we began to run across guys who had put together packages of these things. They'd do very sophisticated business analysis. Basically, economic research groups. So we scrambled around to get arrangements with them to use their software and pay them a royalty. We were a real good delivery mechanism for them because their packages were more than \$300,000 - \$400,000 a shot and a lot of auditor-type operations just didn't want to buy it. So we jumped on that bandwagon and that kind of edged us over into the software business.

Johnson: How did that change your market and who you were selling to? Who were you going after at that point?

O'Rourke: Some of the larger corporations in the United States. I can remember Northrup Industries out of Chicago. The guy who was running it was just gobbling up companies but to do that he really needed to do modeling to analyze how they would fit. We had a very powerful tool so for a time the revenue from them was running \$100,000 a month, analyzing business opportunities. Many of the large corporations wanted to do that kind of analysis on a time-sharing basis because it was a dynamic basis. We provided tools so they could do that. So we were marketing this service primarily to the Fortune 500.

Johnson: And by this time you had a national presence.

O'Rourke: We were on the New York Stock Exchange, we were credible. And then we acquired 17 or 18 companies along the way. We tried to find those shops that really had the most sophisticated time-sharing, not just the payroll guys. ADP was never a target for us.

Johnson: But you and ADP really were in very different markets. You were probably in the same Fortune 500 companies but entirely different departments within them.

Growth by Acquisition Strategy

O'Rourke: And that's how we ended up buying Bernie Goldstein's company.

Johnson: United Data Centers?

O'Rourke: United Data Centers, that was it. We took Bernie on board as our guy to find new businesses, to go around and look for companies to buy.

Then we decided on a planning session to do a one-year budget plan and a five-year long-range plan. This would be off-site, forget about the business, no phone calls, just think about what the world is going to look like and how can we position ourselves to lead it. And, eventually, the guys began to realize, hey, if you're going to be this big five years down the road

and you start working back from there, there are milestones that you have to achieve to get there. And you have to apply resources to those milestones.

So it became more and more clear that the opportunity was on the communications side. The guys who hadn't wanted to pay \$400,000 for a package were now beginning to buy those packages and we needed to change horses again and move into being more of a communications company.

Pressure from the FCC and Role of ADAPSO

Johnson: You touched on the fact that the FCC wanted you to spin off Tymnet. Now what happened?

O'Rourke: Not spin it off, but make it a wholly-owned separate company.

Johnson: So what kind of problems were you having with the FCC that you're moving towards the data communications marketplace?

O'Rourke: Well, the problems were really more related to the relationships with the phone companies, the kind of reporting system we had to do vis-a-vis the phone companies. Because they were utilities and we didn't want to be a utility. So one of the reasons we hooked up with ADAPSO was because we wanted a Washington presence and we wanted to use that as a springboard for pushing our ideas with the data center guys.

There were enough forward-looking guys in the data center group to see that this was going to be important to them down the road. About four or five of us had a big meeting in San Francisco with Jerry Dreyer to talk about what we should do.

Johnson: What kinds of things were you asking for? What did you want them to do?

O'Rourke: Just provide a communication base. A way of talking to our "competitors." With no real intention of becoming an integral part of the data center group because they were talking about different issues. But as it shaped up it really turned out that the bigger companies and the real smart guys like Frank Lautenberg came over into our camp because they could see that they would have the same issues. And data center group was either going to have to do something in that area or they were just going to get squeezed out.

And I met with Jerry and a bunch of guys who were really entrepreneurs but more nationally-oriented or even globally-oriented than the small mom-and-pop shops and we tried to change the rules so that we could operate within ADAPSO. I suspect we all had problems with the data center people saying what the hell is time-sharing. We were taking over committees, taking over

the chairmanships, and all that. But I reckon there is a lot of stuff going on behind the scenes we never saw.

Johnson: It established a tension that I think probably exists to this day. During the years that I was there, the kind of stuff that you guys needed to have done required heavy-duty lobbying and was very expensive. And the small companies wanted to network with each other and have programs on how to run a business effectively. So there was a difference in priorities. Yet it was really helpful, for lobbying purposes, to say that the association represented six hundred companies as opposed to saying that it represented six. So both groups needed each other and I think the original differences between the time-sharing companies and the small data centers set up a tension, but a structure for managing that tension and keeping the group together, that persists to this day.

Was Tymshare still active in ADAPSO in the '80s after the breakup of AT&T?

O'Rourke: We were still very active and, in fact, we began to bump up against the computer hardware companies. For example, some of the companies were providing special services to data centers and the manufacturers were having to extend with a whole bunch of different technologies that provided interfaces between different kinds of terminals. We were quite adept at that and that's what we did. We had this node thing out there, I guess there were about five thousand of them, collecting data locally and shipping it back via T1 and T3 lines. It had a scrambler and an unscrambler so the code was encrypted. We offered very high security.

The FCC wanted us to open it up but our position was we didn't have to because it was a private network.

A big customer was the Army Corps of Engineers based in St. Louis. For them we had data nodes in Riyadh, Saudi Arabia, someplace in South Korea, Singapore somewhere. The Army Corps of Engineers paid for that. They would send data in from all over the world to their big computers in St. Louis. They wouldn't have used our network without all that security. Up to three years ago, they were still using our system.

Johnson: They were using your network but they weren't using the Tymshare computers?

O'Rourke: Yeah. And so was NIH.

Johnson: So how did that break out in terms of the percentage of your customers that were using your network only? Were there just a couple of big ones or were there a lot of people using the network only and not using Tymshare's computers?

O'Rourke: Well, I guess in those days we were doing about \$200-\$250 million and it was about half and half network versus time-sharing. And trying to move more of it to communications. People missed that point completely. They felt that we were riding a dead horse with time-sharing. We were frantically trying to change horses but not doing it abruptly because these guys were cash cows. We had to grow rapidly; we had to have nodes in Europe and Japan. We opened branch offices in Germany and England and France.

Johnson: Were you still manufacturing the nodes at that point?

Acquisition by McDonnell Douglas Automation

O'Rourke: Yeah, we were, but we were trying to get out of the manufacturing business and we were pretty close. And then, a company that was very well-known at the time, made an offer to buy Tymshare out. The reason that this company came after us is that they were in the business of providing terminals. And one of the big banks in New York, Citibank, had terminals that couldn't talk to one another. They didn't know how to make them talk to one another. So we came in and provided an in-house network for the bank for all these terminals to make them talk to one another, and this company wanted our capability to do that.

Johnson: So what happened?

O'Rourke: Well, we had to go through the whole routine. We had to hire a big law firm to fight the take-over. And as part of it we had to put together a fact sheet because we were looking for a white knight. We thought it was going to be Lockheed because they were in the database business and they used our network all the time.

It eventually came down to the company that was most interested was McAuto. And they really weren't interested in a time-sharing business, they wanted all that network stuff, all the patents we had and all the software that we had.

Johnson: So Tymshare ended up with McAuto? What year was that?

O'Rourke: 1984 or '85. And what they did when they came in is that they merged the time-sharing into the data centers and they sold Tymnet to British Telecom, and British Telecom sold it to MCI. And MCI still has that Army contract.

Johnson: Has there ever been any kind of corporate history done on Tymshare?

O'Rourke: I don't think so. I'm trying to think. Our technical development people put together a kind of a slide show on the history of communications, data communications and it was really quite well done.

Johnson: Do you still have that?

O'Rourke: I don't, and I don't know where I can get it.

Johnson: Tom, thanks so much for spending the time with me. Tymshare was really a pivotal company and I really think it's important to try to capture its history so that story doesn't get lost.