Oral History of Walter Bauer

Interviewed by:
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WALTER BAUER

Conducted by Luanne Johnson

Abstract: In this interview, Walter Bauer, one of the founders of Informatics, talks about the challenges faced by Informatics made as they began to market Mark IV, one of the earliest successful software products. He talks about the competitive environment for software products in the late 1960s and early 1970s including lack of customer acceptance of off-the-shelf software, the impact of IBM's unbundling decision, and the impact of the financial community's negative view of the software industry in the late 1960s.

Interviewer's Note: The recording of the first part of this interview was lost due to a tape recorder malfunction. The interview picks up at the point that Dr. Bauer is responding to a question about coverage in the financial press in the late 1960s indicating that the financial community had concerns about the viability of software companies because of the difficulties of protecting their intellectual property given the ease of making and distributing unauthorized copies of the software. At the conclusion of the questions posed by the interviewer, Dr. Bauer graciously offered to recap the points made in the first part of the interview to replace the portion lost as a result of the tape malfunction.

Financial Community's Skepticism in the 1960s

Walter Bauer: The financial analysts missed the point that unauthorized usage of the software piracy wasn't a major concern because the large companies that used our product would make an investment of ten, twenty, thirty people who were involved in a project. If they gave the software to another company, it would be clear to a large number of people. You couldn't use it clandestinely or surreptitiously. It would be known to a lot of people. So we just found that with the large mainframe customers there was almost no piracy, no unauthorized use. Our contracts with our customers specified that this was proprietary software and their employees recognized that.

Luanne Johnson: Does this go back to the beginning of Informatics?

Bauer: Oh, sure. Back in the 1960s. Our customers signed a contract that said that they recognized that we owned the product and that they would not give it to anyone else. So the financial community missed that point. There was absolutely no problem at all in that regard.

Johnson: Do you think that around that time in the late 1960s, early 1970s, there was more of a problem in terms of the financial community's acceptance of the industry than there was in terms of competition from IBM? Was that was really more of a factor?

Bauer: Yes, as a matter of fact, I think even the customer, the marketplace, was accepting the idea. Nobody said, "Oh, I'll get it free from IBM". What they did say was, "If I need it, I'll build it myself if IBM doesn't have it." That was the competition.

Johnson: Well, somebody was using those IBM products because they had a lot of them out there.

Bauer: Oh, sure. They were using them to very good advantage and very much appreciated.

Availability of Qualified Staff

Johnson: What about the problem of finding qualified people, technicians and managers. What impact did that have on the industry that kept it from growing faster or starting out faster, particularly in the early 1970s, when it went into such a slump?

Bauer: I never felt that that was a big factor. Certainly if we'd had better people, better technicians and better marketing people, we would have grown faster. Maybe you could argue that all the industry would have developed faster. But I think that that was the third or fourth factor. A bigger factor was that people still were uncomfortable about buying software or paying separately for software. Before and after unbundling. People still had the feeling that software ought to be free with the machine.

Johnson: Or that there was no way that somebody else's idea of how it should work would fit their needs. In some ways, maybe the lack of qualified people really helped the industry because the customers couldn't do it all themselves. They were forced to go outside to buy products because they didn't have the resources in-house to do it.

Bauer: I feel that all through the 1960s the software industry was held back by very, very poor management capability. Here were people that were computer programmers who had no knowledge of how to run a business whatsoever. Engineers also probably were that way back in the 1920s and 1930s when the real technical revolution started to take place.

Competitive Environment in the 1960s

Johnson: Do you think that the problems at the end of the 1960s with massive write-offs was because they just were not financially-oriented people, not business-oriented people?

Bauer: There was a euphoria. There was a tremendous euphoria of success. You couldn't lose. All you needed was a group of highly technical people who could create a software product and that was it. And to some degree there was some truth to that. Because you didn't have to be good sales people. You didn't have to worry about the competition. For years I used the aphorism that we were like little boys on the beach each with our sand piles. There was plenty of sand to put in our buckets. We didn't have to edge out the other little boy to get all the sand we needed. We were limited by the size of our pail and our little shovels but not by the amount of the beach that was there or the fact that there was another little boy there with his pail.

Johnson: The market was just bigger than the combined efforts of all the vendors.

Bauer: Yes. You had to have something that the people really wanted or could use, but once you had that... But now the situation's completely changed.

Johnson: Sure. Now it's more a matter of dividing up the pie.

Bauer: Yes, you have to be a very tough competitor and a very smart competitor.

Early Software Products Companies

Johnson: Let's just step back a little bit. Because there's one other question that I had here that got lost as we started to move up into what happened in the 1970s. Who else do you remember that was out there in the mid-1960s? Of course, ADR was out there with Autoflow. And there was a reference in the history of Informatics [*Fulfilling the Computer's Promise: The History of Informatics 1962-1982;* Richard L. Forman; Informatics; 1985] to CEIR which had a linear programming package way back in the 1950s. But apparently it wasn't really a commercial product.

Bauer: I think they might have used it to make a sale to a few oil companies.

Johnson: Can you remember anybody else that was out there with products at that point?

Bauer: Well, IBM in the late 1960s had a package that was competing with Mark IV.

Johnson: 1964 is when you made the commitment that you were going to go with AIS [Advanced Information Systems] and with Mark III and then to Mark IV. Autoflow came out in 1965. In 1967 the first ICP directory was published. So we're beginning to see some activity by 1966. But what about before 1966? I haven't been able to run down anything.

Bauer: I think there was absolutely nothing. CEIR started at about the same time as Autoflow.

Johnson: I went through Larry Welke's ICP directories. In the very first directory in 1967, a lot of the vendors were banks offering software to other banks. Computer Sciences had products of some kind. And there were a lot of freebies from universities and so on.

Bauer: I recall, by the way, that Computer Usage Company was one of those companies that absolutely claimed that there was no such thing as a software product well into the 1960s. I think maybe into the 1970s. Computer Sciences was another company which started in the software business and essentially they said there is no such thing as a software industry out there. In the 1960s they had a couple of products. They played with the idea, gave it up and never went back into it. I don't think they have sold a software product for 15 years.

Johnson: They've figured that it was not a business for them to be in. I think they'd probably have to admit now that there is a business.

Bauer: Oh, sure.

Johnson: Okay. I think that really kind of covers the questions I have.

Bauer: If you want some help on that tape that got tangled up during the first part of the interview, we can just go quickly over some of the earlier things. I'll just recap what was said.

Informatics' Initial View of Proprietary Programs

Johnson: That's a good idea. One of the things that we started off with was the question about proprietary programs, whether you saw them as an off-the-shelf product initially or as a tool for developing custom programs.

Bauer: Initially, there was a little haziness there. But intrinsically we felt that software, that the proprietary product, was important as an economic entity. And probably the earliest thoughts were that it would be a vehicle to build custom programs. 1964 was when we first thought of it as a proprietary product with Mark III. By the way, there's an interesting little piece of history. I don't know if it's in the Informatics history book or not. Mark III was bought from Howard Hughes.

Johnson: That's in the book. And that he paid Informatics, to take it off his hands because of the outstanding contractual commitments.

Bauer: Well, Frank Wagner took a little bit of a license there. Actually we were paid, but we assumed some customer obligations. So the customer obligations approximately matched what we were paid. And there was a royalty arrangement.

Johnson: Oh, there was?

Bauer: I think there was a six percent royalty arrangement.

Johnson: Oh, okay. So you actually paid royalties back to him.

Bauer: Well, no, because we never sold Mark III. I don't think it was ever sold by us. We completed the projects that were using Mark III. By the way, Mark III was originally designed for land use records. Cities were required to have records on every piece of land usage. What kind of house was there? What kind of sewer? How far was it from the school? Tax structure, etc., etc. And you could sort through it and make the changes and so forth.

Johnson: So it was targeted towards a vertical market.

Bauer: Yes, but in all fairness it was very clear that Mark IV could be used in many, many other applications. And the GIRLS [Generalized Information Retrieval and Listing System] product, which was the forerunner of Mark III, was a general file maintenance program.

Johnson: Okay, so it sort of went from general to specific.

Bauer: Yes, it just happened that there was a good group of users of that particular product and they happened to be cities that used it for land use records. What else did we talk about?

Informatics' Sales Model Based on IBM

Johnson: Let's see. The fact that you modeled the sales approach after IBM.

Bauer: IBM, right. Chapter and verse. We saw that there was not much difference between hardware sales and software sales. Something that I think is pretty important is that we, the industry, greatly underestimated some of the costs.

Johnson: That's an important point. And we talked about your pricing and discussed the range from $15,000 to $50,000 and kind of put it down the middle.

Bauer: It was probably arbitrary and was probably underpriced. There was no price elasticity. That is, we could have sold just as many of them probably if we had doubled the price.

Johnson: And you gave away maintenance.

Bauer: Originally.

Johnson: And that warranty was such that you really, in essence, took care of any problem. You guaranteed that it would run as described. And then if any problems came in, you just took care of them. That's become an interesting issue. I noticed even in the 12 years that I was in the business that the quality of bug reporting deteriorated so badly as we got more and more to the point where we were dealing directly with end users as opposed to having the data processing staff interfacing between the end users and us. It became much more difficult to try to live up to those kinds of guarantees. Initially we got really good quality reports on what the bugs were because the DP staff verified the problem. Then it began to get vaguer and vaguer and there was less understanding of what was a bug and what was a user problem.

You also said that you had very clearly from the very beginning dealt with this as a product. You were selling the same version to everybody and that you would not customize it.

Bauer: Oh, yes. That was a very, very important issue in my mind. We were high on the principle that it had to be truly an off-the-shelf product and that we weren't going to modify it and we were going to have only one version.

Pricing Policies

Johnson: And then also you discussed the fact that you set up an engineering and testing and quality assurance process, again dealing with this as a product. You mentioned the pricing policy where you had site pricing rather than CPU pricing with volume discounts under certain circumstances and that you worked from a pricing schedule and very rarely did special deals.

Bauer: Right from the start.

Johnson: You mentioned the problem of the competition for good salesmen which became very heated in the late 1960s. And you also brought up the fact that IBM was charging for products at that point.

Bauer: Yes, that's a very distinct recollection I have that there were a few products that IBM was charging for before they announced unbundling. The unbundling was not a totally new idea for IBM. Or I should say the idea of charging for software was not new. The idea of unbundling all of their software or major portions of it was a new concept. But they were on the road to charging for some products.

By the way, one of the first computer manufacturers to charge separately for software was Scientific Data System.

Johnson: Right. I ran across that in my research. I found that it was Max Palevsky who implemented that concept.

Bauer: Max Palevsky and Dan McGurk. I think Dan McGurk takes credit for that first step.

Johnson: In one of the articles that I ran across they claimed that they found it very easy to justify because they sold it on the basis that each customer paid only for what they needed.

You commented that you felt that the way that the unbundling helped the industry was that it was an endorsement of the fact that software was a separate entity and that there was a value attached to it. And that probably was more significant than the fact that IBM stopped, quote, competing.

Bauer: That's right. Because most of the software products before and after that were things that IBM probably wasn't doing directly anyway for good reason.

Why put out a software product that IBM was giving away free? People looked for niches where IBM wasn't giving it away free. So it didn't suddenly greatly accelerate things. Because IBM didn't make sudden changes either. It was a very subtle and important endorsement.

Software Industry in Disrepute with the Financial Community

Johnson: And then you talked about the difficulties at the end of the 1960s where the software industry fell into disrepute with the financial community because of the excessive write-offs that were taken for R&D capitalization and the impact that had and what a negative image that created.

Bauer: And the fact that even up through 1970 the financial community did not recognize a software product as an entity.

Johnson: You know, it took years and years and years for the industry to recover from that. It took a decade before they were willing to address software products as a viable industry.

Problems with Customer Acceptance

We talked about customer acceptance, the difficulty of getting customers to really understand and believe that a program that was written someplace else was going to do a job for them.

Bauer: That was a hard concept for people to get through their heads. Some of the more enlightened ones saw that very early. And I think there was an inordinate amount of concern about protecting their jobs. If you're a programmer, you have a lot of pride. You could do it as well as anybody else did. And you'd be sacrificing yourself, almost prostituting the whole thing, if you agreed to a package coming in that somebody else had done. Many people were actually worried about their careers and their jobs over a long period of time.

Johnson: I think those kind of things are usually almost subconscious when they do occur. I think that's a factor, but I think that there's an awful lot of rationalization that goes on. And, of course, in all honesty a lot of things that people were selling as software products weren't really software products. They were something that had been written for somebody else. And it didn't really fit the next guy very well. There was an awful lot of that. A lot of customers had been burned.

Bauer: I think in about 1968 I predicted that by 1975 there would be $100 million of software products sold annually. And that IBM would have maybe one-third of that business or 40% of

that business as compared to the 60% that they had in the hardware. They would be a big factor but there would be plenty of marketplace left, that IBM could not and would not cover all the bases on their software products.

Johnson: And how did your prediction come out?

Bauer: I think it was not bad. There was a little bit of a lull because the software industry didn't move quite as fast as I expected. I think it might have been just a little short. But it was pretty close. Then, of course, caught up later.

Johnson: So it was only your timing factor that was off.

Bauer: Yes, that's right.

Funding Development through Customer Sponsorship

Oh, by the way, Mark IV had another illustrious point in its history. And that is that it was developed through customer sponsorship.

Johnson: Yes, I noticed that in the history book and I thought that was fascinating.

Bauer: Five hundred thousand dollars. In those days to get five companies to each put up $100,000 was an amazing thing.

Johnson: Very creative. I was really impressed by that idea. I think that that has tended to be one of the major sources of investment funds for R&D in the industry, particularly with the smaller companies. The software products I sold were all done on a joint venture basis with a customer with some rebate back to them for a period of time. But we never could have done it otherwise. Because there is no way a small company could go out and get any money.

Bauer: We did something else pretty smart there. We did not guarantee them any more than a repayment of their $100,000. They weren't in business with us. They didn't get royalties.

Johnson: The other thing that I noticed which I thought was interesting, too, was that you told them that you had final control over what the product would do. Which is one of the things that I did also. Some of my competitors were relying on the customer to define how the final product would function and I thought that was a mistake.

Somehow you made decisions at that point which then became a standard way of doing things throughout the industry whether you did it by brilliance or good luck or whatever combination. A lot of the things that we take for granted about how to run a software company are based on business decisions that you made at Informatics.

Bauer: It was hard to do in those days. It was hard to take that tough business stance.

Johnson: Yes, I'll bet. Particularly when nobody quite believes that there is such a thing as a software company.

Bauer: Well, on the issue of the companies' sponsorship, we simply couldn't afford a $500,000 development. And so we said if it's going to be done, let's try to get the money from our customers. And it was the right idea at the right time. People desperately needed that type of a system.

Johnson: So it was a good deal for them too.

Early Software Products Were Developed by Custom Programming Services Companies

Bauer: What other products or companies have you identified that started back in the 1960s?

Johnson: Well, ADR with Autoflow. Like Informatics, they were a professional services company that moved into the software products business. I've been trying to identify the first company that was formed specifically to market a software product. That's one of the reasons I went through the ICP directories.

Bauer: Well, the first one for applications products would be either the one up in Boston or MSA.

Johnson: MSA was a custom programming firm up until 1971, 1972. Atlantic Software, Dick Thatcher's company, is one of the first ones that shows up in the directories, in 1968. But I don't know if they also did consulting or custom programming.

Bauer: Let's see if I can help you on that. Pansophic was pretty early.

Johnson: Yes, they were. But when they begin to show up in the ICP directories doesn't necessarily mean when that's when they started in business. I think Pansophic first shows up in

the ICP directories in 1971. But they could well have been in business for a couple of years at that time. I'm trying to figure out which one was the first one that was specifically formed to sell software products without starting out in custom programming services or consulting.

Bauer: It would have to be somebody that was started in about 1968, 1969, 1970, right in that timeframe. Anybody before that started with custom programming services, I think.

Johnson: As a matter of fact, ADR's mix of revenues remained oriented towards the services long after Informatics did.

Bauer: Oh, yes.

Johnson: Of course, Autoflow was a much smaller and less expensive product. So the mix of revenues was effected by that too. I don't know what the unit sales were.

I think that wraps this up. Thanks so much for taking the time to talk to me. I really appreciate it. It's been fascinating.

