Oral History of Arch McGill

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Arch McGill

Conducted by Burton Grad and Luanne Johnson

Abstract: Arch McGill describes his attempts in the late 1960s to get IBM to understand the importance of software as a business opportunity and the road blocks he encountered because of the hardware orientation of top management. He describes IBM's industry-oriented marketing structure in the 1960s and presents his view that the lost of that organizational structure resulted in the company losing contact with its customers resulting in stagnation in the 1970s. He talks about the negative impact of unbundling on IBM's system engineering operation and the belief within IBM that a new industry was being created as a result of IBM's unbundling decision.

[Editor's Note: This interview was conducted in Mr. McGill's home in Bernardsville, NJ. A glossary of IBM acronyms is included at the end of this transcript.]

IBM's View of Software in the 1960s and 1970s

Arch McGill: Part of IBM's problems over the past ten years can be related directly to the decisions that were made about software around the time I left and afterwards. And I always thought [John] Opel particularly, and probably [Frank] Cary, were primarily responsible.

Burton Grad: I'll tell you the blame for a lot of those things at that time was because of the attitude of the product divisions, particularly SDD in Poughkeepsie.

McGill: They had different visions?

Grad: They did not have the same vision that you were seeing.

McGill: Exactly. They saw the world as a hardware world. And I just thought that it was suicide to be hardware-focused. I thought hardware was how you made your basic income.

But I always thought that it was the software that sold the hardware and would increasingly do so through time. And they never had that vision.

Grad: We were talking to Hugh Williams yesterday. He was involved in this, just sort of peripherally. His view was that the hardware focus blinded the product divisions from seeing how the world would change, and I think my experience is the same. It was in 1978 when I got this clearer picture. I was involved in ADAPSO and I could see what was happening in the real world. The people in the product divisions didn't see the real world.

McGill: That's why their growth stopped.

Grad: Williams said it was 1979 or 1980 before they really believed there was going to be a software and services business.

McGill: It's an interesting question as to what the cause/effect relationship here was. But I think that there was a lack of vision in IBM about information.

Luanne Johnson: Not just software but information?

McGill: Right, about information in its broadest context. I always thought that PARS, ALIS and PALIS, and the retail system never really got off the ground for a good reason since you couldn't make the price/performance visible in the eyes of the buyer. But I always thought that those were precursors of the future, that that's where the real opportunities would lie. I developed kind of a vision when I was working with American Airlines, as I think about it now, that information systems could be made into a strategic weapon. And that strategic weapon was essentially software based.

Johnson: Did you see that recent Business Week article where they had the computer as a tape?

McGill: Yes, three or four weeks ago. Well, I developed that concept as a result of “wrestling” around at American Airlines and the whole PARS thing.

Grad: Did you work with the airlines industry?

McGill: No. If you recall, I was in retail. I came to IBM headquarters in the distribution industry. Part of that was printing and publishing, part of it was retail and part of it was

wholesale. That was a fortunate combination of circumstances. Publishing was important because we did that by typesetting. And at that time people were talking about if we are doing typesetting and we're creating this perforated tape, why can't we save that tape and it would become a resource? I mean, people were already starting to think that way. Then I got involved in PARS because PARS was in trouble.

Grad: Were you in DPD and industry management at the time? And when did you get this insight?

McGill: About 1966.

Grad: That's ten years after you joined IBM.

McGill: Right.

Grad: Was Vin Learson a mentor of yours?

McGill: No, not really.

Grad: The view within the organization was that he was your “rabbi.”

McGill: Well, in a sense he was. But no. The only way I knew Learson was through the retail industry.

Grad: Oh, I see. So there was no long-term relationship.

McGill: No, what happened was that when I got to White Plains, I was looking at the distribution industry and where we were going, and I started looking at retail applications, and what was going on in ASDD under George Basile. And Learson was a special rep in retail at one time and George Basile had sold Learson on doing the ASDD work. And so when I started looking at this and started to understand it and started asking questions about it, I said it will never live as long as it’s in ASDD.

As long as it's in ASDD, it will just be a research development project so we've got to get it out of there, really test it and find out if it would do it in the marketplace. ASDD didn't want to give it up. They said it wasn't ready yet. So then we went to Learson and said what we thought should happen. I guess George Basile arranged for us to go to Learson. Oh, I know. Learson

had to referee. Because ASDD reported to Learson not to Cary. So that was my first encounter with Learson.

Grad: My memory is that there were two studies that you had initiated prior to 1969 which had looked at the opportunity for being in the software business.

McGill: Right.

Grad: My understanding was that at least one of those was under Learson, at least he was the one you were writing to with the report. I didn't know if that was so or not. But that was at least the impression that I had.

McGill: Let me tell you what I think happened. There was a lot of pressure on overall budgets. And one of the areas of very heavy pressure on budgets was in software. I kept saying that they really didn't understand the issues of software as long as they were looking at it as a cost. It really had to be looked at as a revenue generation opportunity. If you wanted to look at the issues of software and their relative contribution, you had to go into specific sales situations and understand them in depth. Then you could get an insight as to what the relevant contribution was with the software versus the hardware. I can remember some of that stuff obliquely.

Grad: What you said now rings true. I remember that as being a trigger. I was borrowing people from Europe. I was borrowing people from customers. I had no budget.

McGill: Exactly.

Grad: The only way I could get anything done was by borrowing people. I had several times as many people working for me as I had on my payroll.

McGill: Yes. And all of the groups did the same sort of thing. We were begging and borrowing and people were willing to give them to us. Regional managers gave us tons of people because they knew how critical it was. But we had a person responsible for the DP Division at the time who had no vision of the opportunity. Remember Buck Rogers?

He had no vision whatsoever of what happened in the sales situation, none. I mean, he had no concept of how you closed, how you sold, why customers made buying decisions. So that led us into saying, okay, if you don't believe that, let us charge for it. And we'll put it on a P&L basis. And so that's what those studies were about. That was the sequence. Pressure on the

budget, beg, borrow and stealing people which was really bad. I mean, we were taking people from Science Centers. We had people from offices in Detroit, in Chicago.

Grad: Anyplace.

McGill: We had them stashed away all over hell's half acre. We were making wrong decisions in order to get around the budgetary problem.

Grad: You see a lot things going on to get around these budgetary restrictions.

McGill: Exactly, exactly. You've got it.

Grad: Some of these other things you had to be a whore to get what you wanted. You had to play the customer the way you wanted in order to have them give you the people.

McGill: Yes.

Grad: You weren't getting any work done. You had no generalized backing.

McGill: And nobody could understand it. We used to make presentations, but didn't get any buy in.

Grad: But you got applications programs started that way.

McGill: No, I can't take credit for that.

Grad: Wasn't it part of your industry marketing responsibility?

McGill: It was. But ALIS and PALIS were started just about the time the System/360 was announced.

Grad: [Willie] Stockton's the name I remember on that.

McGill: Yes, he was the visionary. He was the person who saw that opportunity. Now, I helped him a lot from funds.

Grad: The database and data communications programs had started elsewhere.

McGill: Yes, I can't take any credit.

Grad: CICS started in the public utilities community.

McGill: I can tell you how ALIS and PALIS did start though. When the S/360 was being announced, actually before it was announced, there was a big thrust to determine what software products would we need to support the system. I, and I don't know who else – Willie Stockton, a couple of other people, were on the task force to look at that. ALIS and PALIS were among those things that we said, that's what we've got to do. And I was involved as a member of the task force.

Johnson: One of the things that really intrigues me in talking to Burt is that he's told me that the decision to unbundle was strictly a defensive decision on IBM's part.

McGill: It was a legal decision.

Market Reaction to the Unbundling Announcement

Johnson: I went back and researched the trade and business press from that period of time and there was just incredible outrage in the press after the announcement came out saying IBM had just used that as an excuse to take a very offensive position to go out and capture new markets that they could control. Did you anticipate and see that coming? What was your view of the way they were doing the unbundling? Did you see that there was going to be this completely different perception outside of IBM? Or were you as surprised as everybody else seemed to be by this negative reaction against it?

McGill: Well, first of all it was a fundamental change. The software had been given away. The pieces of software that we were very strong proponents of charging for were application programs. As I recall the press at that time, I don't think there was a hue and cry over application programs. It was over operating systems. It was over OS and DOS components, et al.

Johnson: Those weren't unbundled at that time.

McGill: They weren’t?

Grad: No, they were all freebies. The only thing that was strange was that the data base and data communications programs like CICS and IMS were unbundled. ASP did not go that way. ASP was still given free. The press took a different flavor. There were two things that they said. One, was the accusation or the statement that the unbundling wasn't done for legal reasons [but rather for business reasons]. And what the press said didn't make any sense. I mean, it was strictly IBM's response to the legal risk. And the other comment was that the three percent reduction in hardware prices was far too little. And therefore, it was obviously a way for IBM to get more money without raising prices.

Johnson: There had been a lot of anticipation and a lot of people were speculating in the press that the actual cost of the software and services was somewhere between 10% and 15%. So then they announced a 3% price cut. One commentator, for instance, said all they've done is take back the 3% hike in prices they did a few months ago. There was real indignation.

McGill: I'd have to say that I didn't reflect on that heavily at the time. So was I surprised? Probably, but anything that's a fundamental departure where you're now charging for something you were giving away, the marketplace has to be convinced, has to see the fruits of that. So it's not surprising that something that you were getting free yesterday and you're paying for today, people are screaming about. So I guess I wouldn't be surprised. But I frankly didn't focus on it.

Johnson: Okay. You left IBM right after the unbundling?

Grad: You were still there in DPD for a six month period after unbundling?

McGill: Yes.

Grad: Although I had other assignments and reported differently, I always felt like I sort of had a foot in the software business door for you.

McGill: Exactly.

Application Software as a Business Proposition

Grad: And you wanted a business proposition for the application software business?

McGill: Correct.

Grad: When I came back over [from the Unbundling Task Force] one of the questions you had down was what you're trying to do, what your problems were in trying to get software going as a business proposition, what changes it meant to you and your operation.

McGill: All we really were doing at the time was just setting up. We had pretty good control of the cost. We knew what our costs were. We didn't have a pricing strategy yet. We had to work out a pricing strategy. Pricing was an issue because forecasting was less than a precise art in software. So I would say that those were the principal things we were learning how to do at the time. First of all we set up a shop for pricing.

Grad: Harry Sigele was your cost guy.

McGill: Yes.

Grad: They made us go to somebody else for pricing?

McGill: We did our own pricing, but then it went up to Group for approval at the time. But, no, there was nothing traumatic about it.

Grad: So it really wasn't a significant change in the strategy of business or how you operated.

McGill: Not fundamentally, because we already had a fairly disciplined process. Remember that we had put in place and tried to forecast, set ship and delivery schedules, calculate revenue drag, and determine actual units delivered.

Grad: You had done the revenue drag before unbundling?

McGill: Absolutely.

Grad: So, you did product analysis and looked at how much hardware the software was going to sell to try and make the case for your budgets. That was how you justified the budgets.

McGill: We did a lot of work in that, a huge amount of work in that. And we had a pretty disciplined process.

Grad: I'd forgotten that. So you were actually doing almost everything else that you needed to do with to determine the pricing even before the unbundling?

McGill: And even there the pricing would be a fallout from the other work.

Grad: You manipulated the price?

McGill: No, I'm saying it would just be a fallout of that process.

Grad: Were you using this analysis to help decide which things to build? The argument was that the software should be built that would sell the most hardware, while a lot of us were saying that if the software products didn't make money, we were not going to be in the software business in the future.

McGill: We were in the early stages of that.

Grad: That continued for some numbers of years.

McGill: Well, [Ted] Papes was a hardware freak. He was another one of those hardware freaks who was focused only on the hardware issues.

Johnson: Did you think that going through the process of unbundling, even though it was done as a legal reaction, would have an effect sooner on the way upper management was looking at this? It apparently took a long time after that before they began to see software as a business opportunity. Did you think that just the process of doing that would have an effect sooner?

McGill: Yes. But again, you know, you don't recall exactly and you don't know all your reasons. But at the time, people like Papes, Opel and Cary were really, I guess, the three most powerful people as far as I was concerned, and they were all hardware people. They were hardware-focused. They had no sense of software. They had no understanding of it. They had no feel for it. I always felt they didn't understand the customer's buying decisions.

Grad: Yet they all came out of a marketing background; all came out of a sales background.

McGill: But never from a software standpoint. They were never involved in industry activities.

Grad: Although they all had industry experience.

McGill: Spike Beitzel had a feel for the software.

Grad: My relations with a number of these people were very different from your relationships.

McGill: But Spike was much more of a politician, trying to find a path to the future.

Grad: He was out of the division at that point, wasn't he?

McGill: Yes, he was up working for Frank Cary. Buck Rogers didn't understand anything.

Grad: Well, Buck left DPD, but that was afterwards. Buck was still there in 1969. The recession was just starting when we unbundled.

McGill: Yes.

IBM's Remote Processing Services Operation

Grad: Back in 1967, 1968 you set up the remote processing services operation?

McGill: Right.

Grad: Could you describe what you had in mind, what you were trying to do? Do you recall?

McGill: Sure. This was a Learson idea as I recall. He was sold on the opportunity. I'm not sure if he was sold by [Ed] Donegan or by whom, but he was sold that an opportunity existed in data text as I recall – I forget what it was. And my position was that the only way that that could succeed was to be put under a profit and loss center, put under the microscope of a P&L. So I said the only way it can be properly managed is if it's put on a P&L basis so we can

really scrutinize it. So that's what we were trying to do. It was almost an afterthought as to who should manage it. It was given to me and that was an interesting learning process.

Grad: Was it primarily data available to people for data resources? Or was it time-sharing?

McGill: It was a time-sharing system.

Grad: One of the people I've talked to saw that as being primarily a Dun & Bradstreet-type service.

McGill: That was the other service. There were two elements.

Grad: So there are really two different sides to that.

McGill: Yes, it was time-sharing for Data Text and the D&B was actually a product, an information product.

Grad: I remember there being a whole issue in relation to the 1956 consent decree prohibition on IBM being in the service bureau business.

McGill: That's correct. I don't recall the details. But that was a serious question. There was a lot of discussion on that.

Grad: I had interpreted this as something that you had an idea of how to get around the consent decree with certain defenses like this was online processing. Therefore, you could do things that were not restricted under the consent decree. And therefore, they put Donegan into this role. You recall it very differently. I'm sure you recall it accurately. But that's the interpretation I placed upon what you had done.

McGill: I don't recall that, Burt. But, you know, a lot of stuff like that you don't recall. You don't remember. You just remember what was done. There was some serious discussion when we were talking about making it a P&L center. I think one of the arguments we were making is that having it be an independent P&L center would give us better insulation from the accusation of cross subsidy in case it became a consent decree issue.

Grad: You were in charge of that prior to unbundling?

Attempt to Get Industry Units on a P&L Basis

McGill: I was all along a very strong believer in putting an industry manager under P&L. See, I wanted the industry management to be on a P&L basis. So that in software, he would be measured on the basis of how much money did he bring in, how much hardware he brought in. That would be an in quote P&L, not a real P&L.

Grad: You had something like that going with George Beam during the 1967, 1968 period.

McGill: Yes, I did.

Grad: I recall that was when I was working for George, I think. You were trying to measure the performance of the development of the software trying to get justification rationale. I'd forgotten that until you just mentioned that.

McGill: I was trying to say that – this is way back now – that people didn't want to work for huge corporations. They wanted to work for smaller groups, but be a part of the big corporation.

Johnson: Well, the world's catching up with you now, isn't it?

McGill: Yes. We used to say it all the time. We used to say the ideal grouping is something like a subindustry. So we even broke things down within the industries or the subindustries, so that people would feel closer to the actual results. And I said the ultimate of that was a P&L, was a multiplicity of P&Ls. So I was always quite consistent. If you want to understand a lot of things I did, I was very P&L oriented because I felt that that made people feel a bigger part of what they were doing. I also felt that the IBM people were not good business people in some things because they didn't have the financial discipline. You know, IBM always kept their financial discipline in a deep dark back room where you entered through a one-way door and you could only see out. You couldn't see in and I thought that was very bad. Really the world was going into more and more markets. At the time markets were expanding. Well, that suggested more P&L centers.

Grad: That's interesting. In a sense, of course, the unbundling feeds directly into that kind of reasoning.

McGill: Right. Well, so is charging for software.

Negative Impact of Unbundling on System Engineering

Grad: I tend to focus on charging for software as the major thing that was done at the time. But, of course, it was only a part of the overall decision to separately price services. We tried to arrange to see Dave Kearns and talked to him about it. Dave said he'd made a decision when he left IBM not to talk about IBM. Even though I said we're off the record. But he didn't feel comfortable about discussing this. It's a shame. Because, in my memory, Dave got hurt by the unbundling process. The systems engineers reacted to it very, very negatively.

McGill: Yes, it was.

Grad: I don't know if you recall that or not.

McGill: I do. It was very negative

Grad: I recall the studies that he had done which said that less than five percent of the SE effort in the field was devoted to programming work. Of course, the reality...

McGill: Was 50%.

Grad: At least. And whether he was actually surprised by that or not I don't really know. But the actions IBM took were based on that 5% assumption not a 50% assumption. Then there was the hue and cry which was just unreal.

McGill: Yes.

Grad: Remember, that argument was used to get free SE transition support. But for software it really was a whole new world I had this whole new thing to run. It was a business proposition. From the field marketing standpoint, there wasn't that dramatic a change.

McGill: It really wasn't. The structure was a bit different. But, no, it wasn't.

Grad: It wasn't too different than we operated fundamentally before.

McGill: No.

Grad: I was trying to remember where the software development worked after the unbundling. I'm trying to remember whether the directors reported directly to you at that point.

IBM's Industry Sector Organization

McGill: Yes, they did. I think so. Oh, wait a minute. No, I can tell you, Burt. When I started as VP, the industries did report to me. When we started talking about getting ready for unbundling, that's when we created the directors of development. They were done by industry sector as I recall.

Grad: There were five sectors. I had the FICUT industries [Finance, Insurance, Communications, Utilities, Transportation].

McGill: Right.

Grad: And John Porter had Science and Engineering.

McGill: Right.

Grad: Bill Reuther had manufacturing and so forth. But I don't remember us reporting to you directly. I thought we reported through the industry sector vice president. That's what I was trying to recall.

McGill: I can't remember.

Impact of Unbundling on the Software Industry

Grad: Let's project ahead to the 1970s after unbundling. You were still in the industry, working at AT&T. We believed – at least looking back – that unbundling created a framework for independent computer software and services firms. There had been many service bureau companies and a few good professional services firms like CAI and CUC in the 1960s, but virtually no software products firms. One of the arguments about unbundling was did it really open the doors for computer software and services? Did you see that at the time?

McGill: Well, it was part of the reason for doing that. Yes, we did see it at the time. If you recall, part of the legal concern was the ADAPSO issue, right?

Grad: Was ADAPSO strong at that point? There was specifically a suit by Marty Goetz. It was from ADR regarding Autoflow.

McGill: But ADAPSO was a major consideration at the time.

Grad: I don't remember. See, that's one I don't remember. I wasn't active in ADAPSO until a couple of years afterward.

McGill: It was definitely a consideration. There was an industry that was selling software, competing against someone who was giving it away. So it was definitely an issue.

Grad: That may have been SIA [Software Industry Association]. That was maybe the group that was most vocal. At that point ADAPSO didn't have any software companies.

McGill: Which later joined ADAPSO.

McGill: But definitely that was a consideration. I don't remember how serious.

Grad: The analogy I was trying to draw is that we didn't really think much about the third party impact upon ourselves. One of the things we did discuss was how much of the software will come from third parties? And can you get those companies to support IBM hardware? Do we have to write all the applications or will they do it? Do you recall that area at all or that discussion?

McGill: No, but I do recall thinking that we were creating an industry, that this would create an industry. Because what we thought we were doing was legitimizing software as a product for sale. I don't remember how deep it was, but, yes, we thought we were creating an industry.

Grad: Yet they really didn't back you and then your successors in treating it really as a separate business.

McGill: They never understood it.

Grad: It frustrated the hell out of me working to justify software product development.

McGill: They never understood it. There was a serious lack of understanding of software as a business, as a driver. It's only recently that people really understand it. Now you hear people talk about it all the time. Minicomputers are nothing unless they've got an application in software to meet markets with. But that was clear as hell to us back 20 years ago.

Grad: I'm not sure how many others understood that back in the late 1960s.

McGill: No, but what I'm saying is that there was a group of us who understood that. Willie Stockton did. That's for damn sure. I know John Hinchcliff did.

Grad: In manufacturing.

McGill: In manufacturing. He couldn't open up those new markets without the software.

Grad: IBM has been very unsuccessful in that business area.

McGill: Sure. They lost the industry focus. All the good people said, to hell with this. They're not serious. Go to the hardware side. They altered the course, in my opinion, of where the good people went.

Grad: So if you were on the software product and service side you weren't going anywhere.

McGill: Exactly.

Grad: That's an interesting thought. Because you wonder why IBM was so very unsuccessful in the industry applications area. I guess it is whether you really see that there is a manufacturing area. And that took a long, long time to come about.

IBM 's Loss of Industry Focus

McGill: Well, somewhere along the line there was a fundamental decision that not only was hardware the issue but that industries were not the issue. And when you do that you don't see markets. You see segments of hardware. You don't see markets this way. And I always felt, and it would be interesting to know if they even believed that such things as industries existed, that they might have said, well, maybe. But it wasn't a you bet your life. And that's how people buy.

Grad: I now remember who I worked for. I worked for Lee Noel, the VP of the FICUT industries.

McGill: Oh, sure. And he had all of FICUT including the industry marketing groups as well as development.

Grad: Did he report to you?

McGill: No, Lee Noel did not. Because remember we split off.

Grad: He was located in a remote area of New Jersey.

McGill: Down near Princeton.

Grad: Dayton, New Jersey which they called Princeton because it was fancier name.

McGill: That's what happened.

Grad: Wasn't the same model used for manufacturing?

McGill: Yes, they had somebody head of that.

Grad: They had a head of each of the major groups of industries.

McGill: That was it. That was it.

Grad: That was probably the high point of the industry focus.

McGill: Oh, no question. They set all the regions by this. That was when they all the field branches were going to report in by industry.

McGill: Right.

Grad: That was going to be that whole thrust that was going to take place then.

McGill: That would have worked, by the way. That would have worked, but they put the wrong guy in charge in some of some of the industries.

Grad: Who?

McGill: Lee Noel for example.

Grad: Too soft?

McGill: Too soft.

Grad: He's one of the sweetest men I've ever worked for.

McGill: Yeah, but not a fighter though.

Grad: One of the most caring men.

McGill: Not a fighter.

Grad: He ended up getting pissed on in every job he went to.

McGill: Yes.

Grad: It's a shame. His heart is great. You'd love having him as a friend. He wasn't tough enough.

McGill: Just didn't have the ability to do the fighting that had to be done to make it work.

Johnson: Do you think that if there'd been a fighter in there that IBM would be more of a competitor in the software industry today? I mean, it's a pretty big competitor as it is.

Grad: On the systems side more than the applications side.

McGill: Yes.

Grad: And certainly mainframe. Micro is a different picture.

McGill: Yes. Well, it would have been interesting, I think, to see what would have happened if they'd really gotten serious about industries and setting them up as profit centers, what would have happened.

Grad: What would have happened if you had stayed, Arch?

McGill: I don't know.

Grad: Maybe it was a mistake for IBM to lose you. I assume the offer from AT&T was too attractive to you to turn down?

McGill: What pushed me over the line was that I turned down one or two jobs in World Trade. Then they wanted me to go on group staff. I didn't want either one. I didn't want to travel six months of the year like I would have to in World Trade. And I didn't want to go up to group staff and be so far away from customers. So I asked myself. What job would you take? I said, well, I'll take chairman of the board, president. They weren't about to offer me that.

Grad: I thought Buck's job [President of the Data Processing Division] was the one that you would have liked to have had.

McGill: Yes, I certainly would have taken that job. But nobody was offering it to me.

Grad: And you weren't around when Kearns left and went to Xerox. I think it was in 1970.

McGill: But anyway, Buck Rogers wasn't going to get promoted I thought. So that job wasn't going to open up for me. They'd have had to root him out.

Grad: Recession took care of that. The losses that year were very significant in 1970 and 1971.

Johnson: I think your comments about the constant attempt to convince IBM that software was a business are interesting. There's an interesting corollary with the software products division in ADAPSO which has as one of their strategic agenda items to convince IBM how essential they are to IBM as a company, because they are selling IBM hardware.

IBM's Stagnation in the 1970s

McGill: I'm a total, absolute IBM believer, you have to understand. I think IBM is the greatest company in the world. And I think without exception they are. But every company in this world has blind spots. And it gets a flow of success. The flow of success went towards hardware in IBM. And that is what, in my opinion, accounts for what I call the Stagnant Seventies in IBM. I think that they got mesmerized by hardware, by mainframes, and missed some of the fundamental opportunities that existed during that period. I think they totally missed the telecommunications thing.

Grad: Name the list. They missed the minis. They missed the telecommunications.

McGill: They missed the micros.

Grad: Where they came back incredibly.

McGill: But every corporation has its blind spots. And IBM really had its. In retrospect I think the fundamental problem was that they realized that they were losing control. I don't think they wanted to. I think that the people at the top decided they had to keep this thing under this big massive control system that Ted Papes and all those cats created which I thought was not sustainable. And they thought that that had to be their method of managing. You know, they had this fabulous five year strategic plan which laid everything out in neat rows and pews. And they could tell you to the nth degree that in 1978 the problem was going to be beating the customers off. So therefore the issue had to be hardware and optimizing the hardware equation. Just absolute bullshit stuff. But it was the greatest planning system the world had ever created. There was only one problem. Any resemblance to that and what happened is purely coincidental. So that's where it went wrong.

Grad: They were even more unaware of where were all the innovations were coming from after OS and DOS. They all came out of DPD.

McGill: Every one of them. And every one of them came out of the small centers of competence, science centers, industry centers.

Grad: Key branches.

McGill: Key branches.

Grad: Every case.

McGill: Everything.

Grad: The work on CICS, the IMS work, the VM work all came out of those kinds of centers.

McGill: That's why when I read Tom Peters for the first time, *In Search of Excellence*, I knew he was right. Because based on absolutely everything that I had experienced, it was right. All the innovation comes out of small groups that are focused and dedicated and close to the customer. That's it, period. Everything else is BS.

McGill: By the way, that's the common problem with many companies.

Grad: They get locked into an old model and don't adapt to changing markets.

McGill: They're so far away from the customer they don't know who the customer is.

Grad: We saw that because the product divisions in effect became an enemy. Because they had their five year plan all set. But they weren't being responsive to what was happening. And it was changing radically.

McGill: Exactly.

Grad: TSS was their latest big effort and that was a total failure; it never did work

McGill: And we kept telling them that it was a dead duck. And we kept telling them and we kept telling them and we kept telling them.

Grad: And finally VM bailed them out of that impossible situation.

McGill: Yes. Had it not been for Norm Rasmussen that whole time-sharing product would have been a suicide trip.

Grad: We'd have been out of that time-sharing business.

McGill: And now that operating system is key to IBM.

Grad: Yes, VM.

McGill: It is. Without it they wouldn't have a single large customer.

Grad: During the 1970s I had VM for a while. We were beating on the product division for 5 years to take it over, to use it as their fundamental time-sharing strategy. And they kept trying to tie other things into the operating system, but nothing ever worked sufficiently. But VM did work and the product division finally adopted it. Yet it took so long.

McGill: That's what it's all about. What functional entities do is get a momentum of their own, a thrust of their own, and they get going in a direction. And whether it's right or wrong, it doesn't make any difference. It gets a life unto its own. I mean, it's an organism that is beating, has its own pulse, and has no relevancy to the customer's beat or the market beat. And that's what happens. All large corporations go through that. Every one of them.

Johnson: And it only happens in a large corporation.

McGill: Right.

Johnson: In small companies, in the software industry, as I am, I don't have that luxury.

Grad: But each individual company tends to do the same thing to itself. You get a certain director who says this is the way I make money and you become frozen into that model and can’t adapt to changes.

McGill: If you change any part of the recipe, he's a son of a gun. Why? Because they know it works. And they'll work it right into the grave.

Grad: You tried to introduce this industry marketing structure, as best as I can see from the outside, in AT&T, you worked pretty hard at that.

McGill: Right.

Grad: I don't see much signs of it now.

McGill: They dissolved it.

Grad: Is that right?

McGill: Almost.

Grad: It's really a very market directed vehicle.

McGill: Yes. It's unfortunate. I see that AT&T is now run by people who are not market oriented

Grad: I think they have systems oriented people running the operations as best I can tell from the outside.

Johnson: I think that wraps up the interview. Thanks so much for your time, Arch. It's been very worthwhile to capture this insight into IBM's operations in the 1960s.

Glossary of IBM Acronyms

ALIS - Annuity and Life Insurance System

ASDD - Advanced System Development Division

ASP – Automated Spooling Priority

CICS - Customer Information Control System (a teleprocessing monitor)

DOS - Disk Operating System

DPD - Data Processing Division

IMS - Information Management System (an hierarchical database management system)

OS - Operating System

PALIS - Property and Liability Insurance System

PARS - Programmed Airline Reservation System

SDD - System Development Division

TSS - Time Sharing System

VM - Virtual Machine (an operating system that can run multiple operating systems simultaneously)