Transcript of a Video History Interview with Mr. Thomas M. Nies
Founder and Chief Executive Officer, Cincom Systems, Inc.
and the longest-serving CEO in the Computer Industry

Interviewed by David K. Allison
Division of Computers, Information & Society
National Museum of American History, Smithsonian Institution

Location: Cincom Systems, Inc. headquarters, Cincinnati, Ohio

1995

Upbringing

MR. ALLISON: Let's go back and talk some about your upbringing and education. You mentioned that you were raised in Cincinnati, but tell me what it was like to grow up here, and what led you into the software industry.

MR. NIES: I was born in Cincinnati and raised here in the 40's and 50's. It was a wonderful place and time to grow up. Cincinnati has always been a conservative city, and I was formally educated in the conservative traditions. But the conservative traditions also realize that it's important to have good doses of the hard sciences, so in high school I was trained side by side in theology along with chemistry, physics, and six years of mathematics. I was involved in the Classics; therefore, I studied four years of Latin, a couple of years of French, ancient Greek history and things of that nature, and carried that on into college. Since I had already been formally trained in a lot of the foundational topics such as ethics and logic, in college I concentrated more on the things I thought would broaden my education in preparation for going into business. So I received an undergraduate degree in marketing and a graduate degree in finance. I felt that this would prepare me with some formal training to start in business.

I enjoyed all the things that any young kid does -- playing baseball and football, and other sports. But, I eventually fell in love with golf and quickly forgot about serious involvement with other sports. In those days, the economy was such that a student could work part-time and to a considerable degree, help to put yourself through school. So I caddied and took part-time jobs to help pay for my education. These were all parts of a really good foundation for going into the business economy later on.

Value of Broad Education

MR. ALLISON: Let me ask about some of the variety of your background. You mentioned that you studied a lot of things other than science and engineering. Do you find that some of those other topics have been important to you in your business career, in addition to the things that you learned in economics, science, and mathematics?

MR. NIES: I think they are of immense importance to me, because quite frankly a business doesn't run around technology. A business runs around people and relationships, around what moves people, and what unites teams and people together. These things have very little to do with technology, geometry, physics, chemistry or any of the so-called "hard sciences". They have to do with how people think, what they believe in, how they behave, how they relate to one another, what their ideals and goals are, and their character courage and commitment to one another and to their organization and their commitment to producing high achievement and surpassing results. This really should be the primary emphasis of management - and not just senior management, but management of a team, management of a department, management of a group, management of a relationship of people who are serving and supporting a customer base and each other. And so the formalized training that I had in these so-called "soft sciences" or the Classics probably may have done more to prepare me for business leadership than all of the hard sciences which I've had added together.

MR. ALLISON: So you must be concerned that these kinds of educational values are not necessarily pushed by departments of education any more.

MR. NIES: Yes, it seems to be a great misdirection of the American educational system that downgraded the areas of philosophy, theology, logic, ethics, and especially morality. These studies help to better form people and to prepare them to properly lead, guide, and shape organizations. Today, education emphasizes not so much education, but training. We train accountants, chemists, and physicists, but we don't really fully and formally *educate* people for proper roles of leadership in society except in a very few elitist and some religious, or private schools. These schools still see the importance of this type of education. I think America is suffering from an emphasis on training instead of true education. I hope it's only a matter of time until we move back to broadening and deepening the educational experience and perspective of people -- especially the ones we expect may become leaders.

Higher Education

MR. ALLISON: Now, you did your college and graduate work also here in this area?

MR. NIES: Yes. I have both undergraduate and graduate degrees from the University of Cincinnati.

MR. ALLISON: Did you ever consider taking off at that phase of your life, or did you want to stay in this area? Was it economics that kept you here, or your desire as well?

MR. NIES: It was purely economics that kept me here. Quite frankly, I probably would have liked to have gone to Xavier, which was a local Catholic university, because I already liked theology and philosophy, and the Jesuit university was very, very well known for that. But the tuition and other expenses were prohibitive, and the University of Cincinnati was a Cincinnati supported college at the time which had especially low tuition for Cincinnatians. They also had a cooperative educational program where I could study for eight weeks, and then work for eight weeks. So the University of Cincinnati was perfect for me from an economic standpoint. But, as grateful and respectful as I am of UC, I would have preferred to have focused more on the courses I fell in love with in high school in my college curriculum.

MR. ALLISON: What did you think you were going to do when you were in college? Did you have a specific goal?

MR. NIES: I wanted to go into business. And, I wanted to eventually become a manager, hopefully to become an executive if possible. But, in those days there was only a relatively small computer industry, and high tech was seldom talked about. Insofar as the company that I wanted to work for, it was probably Procter & Gamble (P&G), because they were the biggest, most prestigious local Cincinnati firm. During the days I was in college, I had seldom traveled out of the city. Those times were very different from these times. There were few jets, and television wasn't really coming into the scene the way it is today. Our orientation to the world at large was the movies, and basically that was it.

Choosing a Career

MR. ALLISON: So as you came out of school, what happened to you? How did your career begin to unfold?

MR. NIES: There were several happy coincidences that occurred. How I entered the computer business was really a serendipitous event. I interviewed with P&G and was fortunate enough to receive a job offer. I was so enthusiastic about my job offer that I was telling my fellow classmates about it, not realizing that some of them had not yet received offers. I realize now that I certainly was not befriending them in any way by telling them about my good fortune and one of them finally said, "Well, why don't you see if you can get a job with IBM?"

And I said, "IBM? Who's IBM?" I'd never even heard of IBM until then! In reflection, I realize now that my colleagues may have not been particularly saddened in seeing me possibly snubbed by IBM. But I interviewed there, and as fortune would have it, IBM offered me a job. At this point, I went to visit with a couple of ladies who had helped to raise me as a young boy. I wanted to let them know that I had this job offer from IBM who I now realized was a prestigious company, as well as one from Procter & Gamble, who everyone in Cincinnati knew was also very prestigious. I asked them what I should do. They listened carefully, and then said, "Well, Tom, Procter & Gamble is a wonderful company and I'm sure you could do well there, but computers are the future." And so following their advice, I went to work for IBM. And that's how I entered into the computer industry.

MR. ALLISON: Would you have been doing pretty much the same thing for either company? Were you going to be in the sales and marketing, or were they vastly different forks in terms of where they were pointing?

MR. NIES: In both I would have been in the area of sales and marketing, but of course with Procter & Gamble I would have been selling consumer products, whereas with IBM I was selling technology to commercial organizations. So with IBM, it was more personal selling and specific account development, whereas with Procter & Gamble it was mass merchandising and mass marketing. Interestingly enough, these two industries have now come together. The computer industry has since become a mass merchandising industry, and many of us who grew up with personal selling find it difficult to change our mindset to one more appropriate for mass merchandising. Microsoft, for example, recently hired Robert Herbold, a senior executive who may have little if any former background in computers or software, from Procter & Gamble, as their chief operating officer. Wanting to stress mass merchandising a decade ago, Apple Computer did the same thing when they brought John Sculley in from Pepsi Cola. So the IT industry is a mass merchandising industry now, perhaps more than we realize. I suspect that we will see many more senior executives, brought into top spots throughout our industry from mass merchandising firms. The industries that were once thought to be so radically different then have become very similar today.

Working for IBM

MR. ALLISON: What was it like to go to work at IBM in those times?

MR. NIES: It was fantastic, absolutely fantastic. Some of the happiest times in my life were those first few years with IBM. It was a whole new world for me. When I was in high school, I was part of a selected group of students drawn from all the schools in the Greater Cincinnati Archdiocese and Latin School. They had what they felt were the "best and he brightest," and we were formally trained that way. I found this stimulated the best in us boys.

The selectivity of the way IBM recruited was such that even if you were at the top of your class in college, you might rank only average in IBM formal training programs. Because the quality of the competition and the insights and the knowledge of so many peers was so great this was all very stimulating. IBM was on a huge roll then. They were growing rapidly and had the "pick of the litter," if you will, in college graduates. So I worked with a lot of very gifted, bright, intelligent, dedicated people. And in those days, we were still oriented around the foundational ideas from Tom Watson, Sr., that the customer is king, and our job was to service that customer. IBM's slogan was -- IBM Means Service -- and everything was focused on this. It was a tremendous introduction to excellence in business.

I came into IBM at the time that was transcending two eras. I had one foot in the "old IBM" era - the one built under Tom Watson, Sr., who had been there as a patriarch for so many years, and one foot in the "new IBM" era under his son, Tom Watson, Jr., who was rapidly transforming the company. It was a unique opportunity, and it was a wonderful experience and opportunity to learn about corporate culture formation and transformation.

MR. ALLISON: What were you in particular doing? Were you here in Cincinnati selling? Did you move around the country? What was your work?

MR. NIES: IBM had a carefully formalized training program. They then believed that one had to be rooted in the technology first. So for the first 18 to 24 months sales trainees worked and trained as a so-called systems engineer or a technician. Sales trainees did the same type work and went through the same formal classes and training as did technicians in order to form firm roots in the technology. Then the company would move those who were going into marketing and sales into a specialized training program. And thereafter IBM would put you into various industry specific training programs.

After serving the first 18 to 24 months in various technical roles, I moved into the insurance industry and was formally trained in insurance in Hartford, Connecticut. There I was taught the end-user's perspective, what their applications were, and how we could profitably apply computers to that particular field. The thinking at IBM in those days was that once you learned the customer's requirements, you could help users to deploy computers, which the customer then knew little about, to solve those requirements and to produce profits for the customer and for IBM. It was solution-oriented thinking using high technology. Later, it became more focused on the functionality of high technology, but in those days it was really oriented around solutions. I enjoyed working in the insurance industry, but later I felt that it might be advantageous to broaden myself and to perhaps become a better IBM person if I also could learn something about the manufacturing industries. So after serving a few years in insurance, I asked to get into manufacturing. Eventually I became a large account manager for ARMCO Steel (now AK Steel), which is still one of the biggest manufacturing firms in the Cincinnati area. That was my role and my function while I was with IBM.

MR. ALLISON: Some people said IBM meant "I've been moved." Did you end up being moved around the company, or around the country?

MR. NIES: One of the reasons I left IBM was because I didn't want to get into that particular pattern. IBM felt that it was difficult to promote people in place. In other words, IBM felt that one couldn't easily become a manager of the same people who you had formerly been peers. So they would take someone from Cincinnati and move him to Cleveland and promote him, and bring a person from Cleveland into a management role in Cincinnati. They were probably correct in that, but it is difficult for young people to grow and develop that way and still be able to provide stability for a family. IBM was in a vibrant, rapidly, dynamically growing time, so it was true that, at that time, perhaps IBM did mean "I've been moved." And if you wanted your career to move ahead fast, the idea was to put those moves as close together as you could in order to get promoted. It usually meant a geographic move as well. If you were in a job for more than 24 months you might have felt you languishing on the slow track. Just about everybody wanted to be promoted in 18 months – or less.

So thinking that through, I felt that if I stayed with IBM it would mean relocating, not only myself but our family, quite often. I had gone through five different grade schools when I was a boy and while in retrospect I believe that was good for me, I wanted our kids to have roots, a family, and a more permanent neighborhood, schooling and friends. Suzanne and I had three children already, and our oldest was just getting ready to go into the first grade. Although I thought I had a very good career ahead of me with IBM, I wondered and worried what too frequent relocation would do to our family. My decision to leave IBM was in part because I did not want to get on the treadmill of relocating our family too often.

IBM Values

MR. ALLISON: Before we talk about all the factors that led to your leaving the company, tell me a little bit about the values you learned at IBM. You talked about two sets of values, the old IBM and the new IBM. As you look back, what do you see that you learned to take, and learned not to take from that experience as you went on?

MR. NIES: Let me speak first about the old IBM - that's not to say that the new IBM is radically different, but just let me begin there. The old IBM was heavily oriented around the importance of the individual -- that the individual made a big difference. The company wanted to stimulate individual excellence and to move the people along to be as good as they could, as individual producers, as rapidly as they could. They were also heavily oriented around the idea of developing, servicing and supporting the customer. Remember, IBM was still trying to gain market share in those days, and so the emphasis on selling and managing sales cycles, was very strong. The importance of people and especially sales people was promoted heavily by Tom Watson, Sr. He created a society of like-minded souls who believed along similar lines. And he believed very much in a homogenous world. I appreciated a lot of the advantages of those ideas. The idea of individual excellence and individual brilliance was already formed strongly in my mind, and IBM reinforced these beliefs quite a lot.

Later, as IBM moved into the world of selling and delivering much more comprehensive systems individual effort no longer was seen as able to satisfy all of the requirements. So we moved away from individual achievement to teamwork, team emphasis, and team effort. We'd have technicians and salesmen and managers and others perhaps from White Plains and Poughkeepsie and Endicott, all focusing together on a larger problem or sales cycle. Together the "team" of IBM, would organize and use this team capability to overwhelm the competitor who was still usually operating on a very limited resource - who had maybe only one or two persons on the account. We might have eight, ten, or twelve people teamed together to satisfy those same requirements. And so I saw then not only the superiority of the teamwork that was involved in competition and satisfying customer requirements, but also the need to organize ones own thinking more around what it is that the other person wants and needs. How do we each help to achieve a team goal, where every individual might have different skills, perspectives and opinions but also feels that he's making a major contribution and is an important part of that team? This was one of the major differences that I saw in the old and the new IBM.

But I perceived with the new IBM that, along with the growth and wealth that developed, IBM also was evolving into a heavily politicized environment. This environment may well have been there all long, but I didn't see it in the early sixties. So it seemed to me that the growth of IBM also brought with it a potential political quagmire -- one which I now believe harmed IBM in later years, but even at the time I didn't care for. I wanted to do the job and to focus on the customer the way I'd been trained -- to solve problems, and not get involved in the political machinations that were, in my mind, very harmful and unpleasant. So this was a part of the liability I saw that came with the growth of IBM from an internal perspective. It became not so much what one was able to do, but rather who you knew, and how ones manager viewed you, and who one was connected with and how cleverly one played the game. And that, I felt, was a liability for IBM and painful for me. I did not like this changing environment within IBM.

Those were basically the major differences between the "old" and the "new," and I think they just came naturally with the dynamics of growth. There most likely wasn't much anyone could do about it. It was probably managed as well as it could have been within IBM.

Changing Focus from Hardware to Software

MR. ALLISON: So as you looked around in this late sixties period, there were a number of factors that began to make you think that maybe you would consider something else. You mentioned the moving aspect. You talked about some of the ways the company was developing. Were there other things that began to impinge on your thoughts about what your future was going to be?

MR. NIES: Oh, quite dramatically so. The moving actually was an ancillary issue -- the big factor was that I, like all other IBM people of those times, was in love with the hardware. We could quote the feeds and the speeds and the prices and everything else of this equipment. It was the world of big iron. That's what we knew. That's what we loved. We were devoted to it, passionately so. It was a world of fabulous lights on the processing consoles -- the kind of things we used to see in the old movies -- reels of tape spinning and rooms filled with computers and air conditioning units and raised floors. It was quite a splendid and very impressive environment that we all loved.

While I was account manager for ARMCO Steel, we installed one of the very first online system IBM 360's ever. But, in those days there was no software of any type for this environment. So, it fell to us on our team to provide the software for it. I became the project manager for a set of software development efforts, which included people from New York and other places, to implement the software that was necessary for this computer to do its work. The computer was sitting there doing nothing until we finally got that software system working and operational -- at that point in time the software gave life to the whole thing. And I saw from working with it intensively, month after month after month, sleeping in the data centers often around the clock, 24-hours-a-day, that it was the *software* that actually made all the difference.

This was a tremendous conversion for me, from being an advocate of hardware, and a great believer in hardware, to seeing that without the software, the computer couldn't even generate heat. The software seemed to me to be everything. At that time, I began to promote to IBM, from my vantage point, that software was the future. Not unlike those ladies who told me some years earlier that computers were the future, I was urging IBM to see that software would be the future. It's the software that gives life to the computer.

But, IBM's point of view in those days was that the problems were in the software; the money was in the hardware. We wanted to push as much of the problem of building, developing, and maintaining software off onto the user as we could. We promoted to them that they should develop self-sufficiency, develop their skills, and learn more about software. In part they wanted to help themselves, but it was also true in part that IBM didn't want to have to do all that work for them.

Remember, in the old era, customers paid only for the hardware, and the personal service and the software was bundled, or included in that price. As we moved from the old days of punch card accounting systems and wired panels to computers and stored programs, software rapidly became a very big requirement to get those computers to work. IBM in effect was throwing in all that software and service, and so there were lots of problems for IBM. It was natural that they saw a huge drain of resources by software away from the hardware revenues and profitability. And so their mindset in those days was, the money is in the iron, the problem's in the software. And the more I talked about software's opportunity areas, the more they said this was completely wrong -- software IBM believed was a big problem – not opportunity.

But I had been trained by IBM to see that opportunity is in solving problems. And moreover I had now fallen out of love with hardware and in love with software. But the more I talked with IBM, the more they seemed to be absolutely adamant against my newly formed views. Therefore, I felt that, even though there was no software industry at the time, I would probably have to leave IBM and attempt to find a software company to work for. Eventually, I grudgingly and sadly came to that final conclusion. I left what might have been a very good and wonderful career for me, had I not possessed that chance event of being in charge of that software development effort. The primary reason I left IBM was because I had seen the potential of software, and had fallen in love with it.

MR. ALLISON: How did this look from a business perspective to IBM?

MR. NIES: Of course, I wasn't privy to the machinations of the upper reaches of IBM thinking, but in retrospect I can imagine what they must have thought. Here I am, talking about the importance of software and the great possibilities it had, when concurrently, IBM had the great difficulties with delivering the necessary operating system and the experienced tremendous cost overruns of that project. The serious difficulties of getting the prerequisite software properly delivered prevented IBM from delivering, installing and picking up rental revenue on tens of millions of dollars worth of equipment. So I can see why IBM Management would see software as a huge liability, and a terrible problem.

Software drains were actually depleting the huge economic resources of IBM and were possibly bringing them to the point of illiquidity. Certainly in the field they were diverting technical resources of every type imaginable, to help in the software development efforts, which were floundering. And so it was easy to see that IBM would have a very jaundiced view of the potential of software -- especially when their operating system was delivered as a bundled part of the equipment, and there was no revenue being generated from it -- yet there was a huge amount of cost. And that operating system, as important as it was to keep many jobs running concurrently in the computer, and managing all those powerful computer resources, was just a small part of the overall software requirement that had to eventually be developed and delivered. So I could see where my views would not be too popular within IBM at the time.

Entering the Software Business

MR. ALLISON: And you mentioned you were thinking about maybe going to work for a software firm, but it's not like there was a software industry out there to work for, or a lot of choices. What in particular did you really think you were going to do as you thought about going some place else?

MR. NIES: We use the term "software firm" today, but in those days it would really have been a professional services organization because packaged software certainly was not yet an industry. There were a few software firms around at that time, but there weren't very many. In fact, there were so few of them that as I began looking around, I found none in Cincinnati. So we founded Cincom.

My objective was never to be a so-called entrepreneur. I did so almost by default, as the only way to have a job in the software industry wile staying located in Cincinnati. When we started our firm we had no software products, no customers, and no real idea of packaged products as an industry possibility because there was no historical precedent for this. So we began by offering a personal service - "body shop" programming -- whatever we could do to help our clients implement the computers they were installing.

An Unlikely Entrepreneur

MR. ALLISON: Well, I want to stop you there because the way you've described your background and career, you don't sound like the kind of person who says, "Let's go form a company." Describe the environment when you left this major, stable company to go out on your own with something that wasn't being done elsewhere. That's a big decision for a man with children and a stable background.

MR. NIES: Yes, it was an interesting situation. When I joined IBM, we didn't have two nickels to rub together. Remember, I'd gone through many years of college, married, and we had our first child by that time. We were absolutely "broke". But, "broke" is a temporary situation, whereas poor is usually permanent. After a number of years with IBM, we had now earned enough money to buy a house, to have a nice car, to have money in the bank, and to be able to take a little risk. I discussed our now changed situation with my wife, "Look, just a few years ago we were absolutely dead broke. Now we've got a home and everything else, yet we could lose it all and be broke again. But that would only be temporary. Now that I have this background, this knowledge, this education, I could go to work for another computer company, or perhaps even IBM would hire me back." So I could always start all over again if it didn't work out the way we hoped it might. My wife Suzanne said that she would support me whatever choice I believed best. Without her support I'm not sure what choice I might have made – but I am absolutely certain that without Suzanne's support we would never have succeeded as we did.

I had only one career, and I had to do something with that career that I loved doing. If I was doing something I no longer believed in, I didn't think I could ever do a very good job at it. And I believed, truly believed, in software. The risk and the unfortunate circumstance of leaving all my friends, my colleagues, the social environment, everything that was IBM was a very difficult choice for me. Very difficult. Starting up literally all by myself was not something I looked forward to, but I really did believe that software would be a major industry in the future. So we began. Life after all is a series of conflicts and choices. My choice then was to overcome the conflicts involved in leaving IBM in order to choose the new field of software as my future career choice.

MR. ALLISON: When you say we, who are you speaking of? You didn't go off totally on your own, did you? What was the early formation of the company?

MR. NIES: I did literally decide to go off on my own. But I told a few friends that I was leaving IBM. And when I told them, they said, "Oh, we'd like to join you." So a couple of other friends also then chose to leave IBM. We started the company and decided we had to have officers to identify who was going to do what job. They said, "Well, you're the president, and we're the technical people." And that was basically how we got started. I had the title of president, but I was primarily the salesman. We sold technical support to customers. At first, there was just myself and two others, and within a few weeks time I had sold 100 percent of our "inventory" on services projects. So they were working on contracts, and all of a sudden I had nothing to do. So I thought, "Well, this is not a very good business model." The solution was to hire more technicians in order to have more resources to sell. So I was then recruiting technicians and selling them into the various accounts to help implement all these new computers that were deficient in software.

As it turned out, our clients were primarily having problems with data management, and we found we were solving the same problems over and over and over again. We became very good at data

management. We understood what the problems were. So I called together our people one day and said, "You know, instead of solving these problems over and over again for different customers in different ways at a very high cost per customer, is it possible that we could somehow develop some programs that I could sell? They thought about it for a while and said, "Well, it's not what we do, but maybe we can."

So we all wound up working days for the clients we had on contract, which paid the bills, and at night we had a research and development effort going on. We were developing computer programs till 2:00 or 3:00 in the morning, and we'd be back on the job by 7:30 or 8:00 working with our clients. Basically that's what we did. Our nightly R&D team was the same team of people who were working with clients during the day. We self-funded our R&D in that way. We didn't have an "angel" working for us who funded the development of the data management projects. We built the systems working in the evening until we had some rudimentary products that we began introducing into the marketplace in 1969.

Building the new Company--and Industry

MR. ALLISON: Let me see if I understand correctly. Initially, you started off almost as a services company, solving computer problems but in a service type of mode, and then you began slowly to develop your own commercial software products. That's a choice of sorts, because it's quite easy to stay in the services market without developing your own product.

MR. NIES: It was a choice we made primarily because I was looking to make more of a contribution. Hiring people and putting them on contract was almost a part-time job for me, and I wanted to be more meaningfully and gainfully contributing to the firm. I thought if I had a package, a product of some type, I could continue to sell that product even though I didn't have technical resources -- when all of our technical inventory was consumed working on projects for clients, I could be selling product. So it wasn't a choice of either/or, it was a decision to do both. Our technicians were going to continue to do implementations for customers, but I would sell products to supplement our revenue sources and also to deliver a lower cost, more efficient packaged solution to the customer.

We did make a choice not so long thereafter, though. What happened was that since the package sold for one-tenth the cost of most of the service contracts, it was readily chosen by the customer time after time. So we were able to sell a lot more packages than implementation contracts. Once that began to happen, we said, look, let's get out of the technical implementation business and put those resources more and more into enhancing, expanding, and helping sell the products we build. So we very rapidly moved away from being a services company into being a products company through a process of discovery.

We discovered an industry. There were no other companies doing this at that time. We literally helped to create the entire database industry through this process of seeing what the customer problems were and responding to how we could help solve them. You have to remember, this was in the late sixties. IBM wasn't selling software. There were no other companies. It was an interesting situation, but that's how we wound up in the software products business.

MR. ALLISON: Can you be a little bit more specific about who your early customers were?

MR. NIES: At first our customers were within thirty or forty miles of Cincinnati and were smaller or more moderate sized companies. However, one of our earliest clients, Hillenbrand Industries (near Indianapolis), is a very large company now. Then in the late '60's we branched out from Cincinnati. We went to Indianapolis, where we won the opportunity to serve Eli Lilly, which was a very large company. Later, three or four of us were competing against a team of about 40 people from IBM for an opportunity with Chevrolet, which was a truly gigantic company which chose Cincom. Then, we won

the opportunity to serve DuPont very soon thereafter and we began to get some of the more prestigious companies based on the success of the companies we were serving. Today, we have hundreds of clients who have been with us for well over 20 years.

At that time, there was a growing awareness that data management was the necessary foundation that would support and serve a broad array of applications. Soon database and database management became an area that large and small companies alike required. We continued to expand our products, working with leading companies, leading edge thinkers, adding new features and new functions that were important needs, and in the process of solving these problems at the same time we enhanced our offering. In this way, we broadened our base and our technologies.

We decided that we would initially strive to serve the Fortune 1000 companies, because they had operations all over the world and also were the avant garde users. We believed that if we could serve them well at a specific location, we could probably serve their needs around the world. In this way, we felt we would be able to expand into a global company by well satisfying the requirements of these large-scale firms. So we continued to focus toward the large international firms, and moved on to places like Minneapolis, where we won the opportunity to serve 3M. 3M decided to disseminate our products throughout all of Europe and this gave us the capability of setting up operations in Europe in early 1972. I kept a book of Fortune 500 companies and underlined in red the ones that were customers. At one time we had probably 50 or 60 percent of the Fortune 500 companies underlined, and we still weren't more than three or four years old. That's how we developed our international business model. The idea of Penetration and Radiation has been a key strategy for Cincom from our earliest days, and this strategy has served Cincom and our clients very well.

MR. ALLISON: Tell me a little bit more about just the nature of your product. I think this is the TOTAL product. What did you call it?

MR. NIES: We called it TOTAL because we wanted this DBMS to do the total job for the customer. Our commitment was to do the total job, and we would continue to enhance, expand, and add feature and functionality so that no matter what the customer's data management problems were, TOTAL would beautifully solve them. Our focus was upon users' problems and not our products. The better we became at problem resolution, the more useful we became to our customers, and the greater became the values we provided. This is still a central strategy for Cincom today, that is, to focus on the client's problems and not our products. TOTAL was our first system and it became, during the seventies, the best-selling database management system in the marketplace. TOTAL became a very, very successfully implemented product. We're still known today as the providers of TOTAL.

However, we next began to see that database management was only one of many problems that needed to be solved. Database Management is like the engine of an automobile. It is only one of the requirements, and we had to have a multiplicity of technologies to really be able to solve the total problem for the customer. So we branched into other closely related technology areas as well.

But, since a "product line" is not the same thing as a "line of products," we took a very disciplined approach to adding these new products. Each new system had to provide leverage to others, and increase the scope and value of the problem resolutions and value improvements we were delivering.

Evolution of Database Management

MR. ALLISON: Let's finish this story before we talk about some of those as well. So it was basically doing business management, billing that kind of thing. What was the early functionality, and how did you choose to go out?

MR. NIES: Database management was a concept that Cincom primarily championed in the early days, although there were others who also were emphasizing the importance of database management. For example, CODASYL had a study team with major users and a couple of hardware vendors and others working on what they called the *CODASYL Database Task Group Report*, which was defining what the requirements were for database management. General Electric had brought into the market a product called IDS. IBM was working on a system they called IMS. But essentially the great transformation was this: historically, organizations had built applications one application at a time, such as accounts payable, purchasing, inventory control, payroll, billing, and accounts receivable as independent applications. Each application defined as part of its requirements a set of data files. In those application-specific data files would be certain information which that particular application maintained. As more and more applications became operational, each application managed its own set of data files. Each set of applications not only did application logic but maintained data files. Data redundancy, where application A had one way to describe the customer, application B had a different way; application C had one set of inventory balances, application D had a different set, became an enormous problem. We called this problem the "my file" syndrome.

This proliferation of data into every independent application being managed in its own right was built on a file-by-file basis. Application and data design and development were being done pragmatically for a particular application. Because of the then very high comparative cost of hardware and the relatively slow speeds, the application design was usually focused on processing performance issues. The objective was to be able to run most efficiently for that specific application, and to satisfy only that application's requirements. But the proliferation of this data redundancy brought chaos into the companies. Data no longer meant anything because five different data files would provide five different status situations for the same type of data. All would argue that their data were correct, but the data itself was quite inconsistent. This difficulty Cincom was determined to successfully solve.

Today, quality improvement experts everywhere say that good data speaks for itself, the data the customer had at that time was bad, very bad. So we concluded that users must separate data management out of every application. In that way, the data management could be performed as a separate activity which is the science of "database management." So we changed from application managed data files to databases managed by our DBMS. The idea was to have a common database, where the inventory record would appear once, and every application would use that specific and unique inventory record. If application A would update the balances, that balance would be current for application B when it wanted to draw on inventory. This really was a quantum leap forward in the thinking process. It was a far superior way to organize and control an entire database than was possible with than the old application-by-application specific management of data files. So, database management became a tremendous area of interest as organizations began to see the significance, importance and very great value of the problem solutions we were providing.

In addition to that, the most complicated and difficult types of programming were not the application procedural logic but actually managing and maintaining with integrity the data for the application. Every application had from 40 to perhaps 80 percent of its programming logic built around data management. Once we segregated out the programming logic from the application of the database, and we provided a program that performed that complex function, we were eliminating almost all of that programming logic for each and every application. So in one stroke the customer could install a database management system from Cincom which would do the work of many, many programmers in a far superior way. The application implementation and maintenance cost savings were immense; so, too, were the quality and processing cost and performance improvements. If ever there was a “Win-Win-Win” situation, this was it.

It was somewhat like the differences between jet engine versus propeller powered aircraft. We provided a wholly new and quite different type of power which offered enormous advantages in almost every way imaginable. We were also able to do for customers things they could not realistically do themselves. Database management quickly became one of the foundation principles of modern

software design. In order to bring integrity into the information in the company users had to go with the common database concept. Cincom pioneered these concepts.

Those were the ideas we were selling over 25 years ago. Interestingly, as the industry is now moving more and more to client server and workstations, organizations are quite often proliferating database management systems with potential data redundancy and inconsistency throughout their organizations. As firms choose certain types of database management systems and implement on them on diverse workstations and Unix boxes, it seems to me that, in too many situations, we may be regressing back to what we realized then to be the "my file" syndrome in 1970 where the database records now residing on “my workstation” may be different from the same records on another workstation. When data are not always properly relating one to the other, as good design would require, we might be moving back to possible massive data contamination and destruction of the integrity of data all over again.

So, what may now happening is that some the organizations moving to distributed client/server implementations might be now once again making the very same mistakes as the users did in the 1960's -- the exact same set of mistakes. Not everywhere, but in too many places we're seeing a proliferation of very bad data implementation processes and practices which almost surely will come back to possibly haunt and hurt users in the future. One way to solve the data integrity problem may be to move to distributed data, where users might have multiple recordings of data on these different boxes but with a centralized "traffic cop," where any time data is updated in one place it's updated everywhere. In this way we retain consistency of data. Otherwise we might be regressing back to bad data and bad information. It's an interesting problem. It may become a great opportunity area to correct a lot of the problems that could be being made in client/server and distributed database implementation systems today. It may well be that in not too many years we will see users then converting away from the client/server models back to the more centralized control and management of databases which was the hallmark of the very important advances then made in the ‘70’s and ‘80’s.

In the '60s and early '70s the primary architectural problem that we attempted to solve was to bring integrity to the data. At the same time, we sought to radically reduce the cost of implementation and the maintenance of applications. This may once again become a major new opportunity for a whole new era of database management providers, once some of the possible faults of currently fashionable client/server approaches are better realized by users and providers alike.

Managing Limitations to Product Development

MR. ALLISON: The point you've just been making leads into the question of what's technically possible, not only what's architecturally sound. As I heard you talking about your goals for the 1960's, it came to my mind that many of the things that you were discussing were not easy to accomplish technically, because of the batch process oriented mode, rather than the capability for transaction mode, the capability of the stations logging in, how much you could distribute, the use of the information. So how difficult was it? What were the challenges from the technology that was available to implement the kind of architectural ideas that you were promoting?

MR. NIES: Well, it is an interesting problem that you bring up there, because the knowledge of what can be done and what the problems are, many times is developed around the technology that's available -- you develop your thinking processes around what's technically possible. However, the technology changes so rapidly that during the implementation process whole new orders of thinking could be possible. But of course, you can't continuously throw out mid-development cycle and start over again. So even as we're implementing today, we're implementing along lines which we can show are no longer technologically appropriate.

But what's happened is that there has been a development of the mindset that "this is what's correct." This mindset is a function of a laborious process of learning through experience and training and

understandings and so on. And one develops a comfort zone and a power base around an ideology or an approach which, once it's fully learned, is already obsolete and is really no longer the best thing to be done. Then what sets in is resistance to change because so much is already invested. People have strengths in certain areas, the company has money invested, and the companies who are actually promoting those technologies are making huge amounts of money -- they certainly don't want to say, well, wait a minute, what we're promoting today is really not the best. If that's what the customers seem to want to buy, or can be easily induced to want to buy, so be it.

The issue of acceleration of the hardware and software technology to what's possible versus what customers know and understand, is such that the great bulk of customers quite often are implementing along the wrong lines. This is a serious problem, because the biggest voices in the marketplace are not from the leading-edge companies with new ideas, but from the big entrenched vendors who are promulgating ideas of the past. And this goes on year after year, decade after decade, and it just transfers to a different set of vendors who are promoting the old ideas. It's a difficult problem.

Cincom certainly has the some of the same issues. We have people who have spent many years developing skills and expertise in certain areas. It takes a continuous process of internal education and training by those who are the leading lights, the leading luminaries within our company, to continually keep us apprised of where the future is and help us all get there. And yet it's a double bind, because often to customers, the future is yet *in* the future, so there are only a few today willing to buy what will be the future. It's a complex matrix that one has to continuously sort through.

Linking CINCOM Software to Available Hardware

MR. ALLISON: We're going to talk some about the hardware side of your business, the hardware that you implemented on in the early years of the seventies. Tell me how that worked for you as you began to develop your product, TOTAL. How did that marry with the hardware that was available?

MR. NIES: Well, first of all the software business is a function of making very, very large commitments to building a software product and then charging each individual customer a very, very tiny share of that cost. So you have to find ways to spread that development cost across the large universal users. If you can do that, then you can make money in the software business. If you can't find very many users, you're going to lose on that particular effort. So since most of the users in those days were IBM, especially the larger scale users, we built for IBM. That was what we knew. That was our background. That's where the money was. And so we built, developed, and supported IBM in their various operating system environments.

Now, within IBM, there was a radical difference between their MVS or large scale operating system, and their DOS or VSE small scale operating system. So much so that there was no compatibility between the two, or at the very best, there was limited compatibility between the two. It was a major conversion to grow from one to the other. Since we had customers who were using both the VSE or the DOS system, and the MVS system, we wanted to minimize the conversion effort. We implemented the database approach, which as I said, implemented 70 to 80 percent of the application programming logic in such a way that it insulated the user from VSE or MVS. In this way, they could migrate much more easily from a smaller scale environment to a large scale, or they could decentralize work from the larger to the smaller scale with minimal amount of conversion.

Expanding beyond the IBM Market

Now, having perfected and developed our architecture around those lines, one of our customers came to us and said, look, if you can help us insulate ourselves from VSE and MVS, why can't you do the same thing for our hardware vendor? And we said, what do you mean? We couldn't believe people wanted to buy anything but IBM. I mean, we'd grown up there, we'd been trained in IBM, we thought anything but

IBM was second rate material. Why would anyone want to do this? But the customer said, look, the economics is this: for us to buy Honeywell or Univac, they have to price their equipment at a much lower price, and we can save 20 to 30 percent on hardware processing costs. Hardware processing costs in those days were still very expensive. So the customer asked us if we would work with Honeywell so that both Honeywell and Cincom could jointly commit to delivering the total database system which they were using in their environment quite happily on IBM. Could we also build that for Honeywell?

And so because the customer demanded this of Honeywell as a requirement for them to buy Honeywell and throw out IBM -- Honeywell did work closely with us. Otherwise, in those days, I have no doubt that Honeywell would have turned up its nose at working so closely with a little software company -- because again, software was not what it is today. So we then began a development effort with Honeywell to build and develop and market TOTAL on Honeywell. Now we could make applications almost as compatible across Honeywell VSE and MVS as they were among IBM. The customer was able to move his application portfolio with the only concern being the differences in the operating system and a few other things, versus the tremendous differences in data management.

So by separating the data management programming out of the application, we now saw that we gave the customer not only much better integrity of data and much lower cost of implementation, but also much greater flexibility in how he could deploy these applications across a broader universe of computers. Once we were working with Honeywell, we realized that whereas in the IBM community where we had to sell *against* IBM -- our systems versus what they wanted the customer to do; with Honeywell, we could work *with* them because they would promote our software into their Honeywell community. In this way, our selling costs were greatly reduced. And if they were willing to promote us, we would happily build this technology for them, because we couldn't afford to do it for one customer or two or five. We had to get a pretty good size customer base to justify the whole logic. Honeywell, who did not have a database technology that was really widely accepted in the marketplace at the time, saw this as in its interest as well, because they couldn't go forward if they didn't have this capability. After all, who would build database systems for Honeywell, which only had maybe two or three percent of the market?

Making software independent from hardware

MR. ALLISON: Can you give me a time frame that this happened?

MR. NIES: This happened in 1971, '72. So almost 25 years ago, we began to promulgate the idea of a data and application transparency across processing platforms. And we really made that very, very, very transparent. Our technologies had almost the exact same feature and functionality across these diverse processing platforms. It was only a simple logical step from Honeywell then to go up the road to Dayton and talk to NCR about how they could expand their potential if they had better database technology, to Univac, and Varian, and Digital, and many others who we began working with Cincom through the seventies to further promulgate our technology and to help these partners and allies better serve their customers, and to improve their competitive positions as well. Eventually, we were supporting about 20 different processing platforms with almost identically the same database technology. TOTAL ran in all those environments for almost 15 years before companies like Oracle even began to promote the idea of database transparency across processing platforms.

Difficulties in Migrating the Products

MR. ALLISON: You talk about this as if the strategy was clear and then it followed, but this must have been an enormously difficult thing to actually accomplish. What were some of the issues that you faced as you began to move from an IBM framework into a multi-hardware platform?

MR. NIES: Yes on both questions. This was a strategy and it was also an enormously difficult problem from an implementation standpoint. Because all of these companies had different Assembly languages and different Operating Systems, we had to interface with a wide diversity of complex technology and yet make user access very simple. Simplicity of customer use has always been almost as sacred to Cincom as it has been central to our strategy. Our objective is to provide users whatever they want, whenever they want it, rather everything they may ever want, even when they don't – and to make these accesses as simple and user friendly as possible. Later we did the same thing with our MANTIS 4GL application development systems, which also cut user software development time, cost and maintenance by orders of magnitude. A 10:1 ratio of improvement over COBOL was a minimum expected user gain. Applications built in TOTAL and MANTIS were also 100% portable across operating systems and computers with absolutely no conversion whatsoever.

But the complexity of solving user needs was ours. That problem of making the very complex, very simple to use and enjoy, was all focused on Cincom and borne by us. So, whilst we had to spend a goodly deal of time, money, and effort in building simplicity from complexity, we actually were only transferring technologies when we provided similar capabilities to non-IBM users. In that process, we weren't creating new systems. We were in effect using a technology that was already perfected and existed on non-IBM environments. We only had to cope with the differences in the programming languages and the processing platforms, and that reduced the overall difficulty by probably 70 to 80 percent. So it was only about a 20 to 30 percent degree of difficulty to implement a transition of technology from one environment to another, versus completely creating it. This differential provided us a great deal of leverage in R&D costs associated with the transference of already proven technology to different environments. And, to whatever degree we could help our partners take over ever greater portions of the sales responsibilities, we gained still further leverage.

Secondly, because the application interface to the database approach was identical from a customer's standpoint, there was virtually no additional user cost associated with the database transparency we provided. But, all of the R&D cost and difficulty was ours, and this was difficult -- there's no question about that. But, the hardware vendors themselves saw it was to their advantage to work with us, so they sent technicians to help us. Together we jointly shared the cost, the difficulty, the effort, and the complexity of building truly superior DBMS technology to satisfy their user requirements.

MR. ALLISON: Was this something that was difficult to sell internally, since it meant new work, new systems, new developments, for your team, or did your people share your vision?

MR. NIES: At first it was difficult to sell internally because we believed in the IBM environment. That was our background and our experience. Many times we didn't even have an NCR or Honeywell box that we needed for testing and support. So yes, it was difficult to sell internally at first, but only at first.

The way we were able to implement such portability eventually also became a strategic and tactical approach for Cincom. We developed a group called our Ventures Group, which was targeted around new ventures in environments other than IBM. These people were focused around the non-IBM world, and that universe became every bit as important to them as the IBM world was to the rest of the company. In this process we began to see in those non-IBM computers many features, functions, and capabilities which were actually better and more "cool" than the IBM offerings.

This was a real eye-opener for us. To see other vendors who we had originally thought provided second class offerings actually being real first class technology providers was very much appreciated by our people who were dedicated to serve these non-IBM computer providers. And that's one of the ways we got the zeal and the ardor for it internally. We needed zealots to deliver a first rate product, as well as the technical training, knowledge and know-how of those environments. And we got it by dedicating resources to it, concentrating them and focusing them in these non-IBM environments.

There were a lot of pluses to this. But, there was also a huge minus. This minus was that IBM seemed to think that Cincom was trying to convince customers to convert or migrate away from IBM. This is something we were never trying to do. But, if these perceptions were so then, however incorrect they may have been, they now seemed to set IBM seriously and intractably against Cincom as a potential enemy. We were actually trying to help IBM customers to more successfully use, and increase their consumption of, IBM hardware. But, IBM may have seen Cincom as a threat to their account control or some intruders into their space of account affection and relationship management. This tremendously increased the competition against Cincom from IBM when we were still a very tiny company and they were a mega-giant. So that negative perception may well have hurt us much more than the non-IBM affiliations helped us. In spite of every effort on our part, Cincom has never been able to ally with IBM in any pursuit whatsoever. But however disadvantageous this IBM opposition has been for us, we also had to offset the benefits that the profit generation from non-IBM markets provided to us. By the end of the 1970's we were earning more profits in non-IBM markets than we were realizing from our IBM community of users. And this, even though over 90% of our revenues came from IBM-based sources.

Choosing how to expand the Product Line

MR. ALLISON: How did you make a decision as to what other vendor you would develop for? You mentioned Honeywell, of course. How did you decide? Was that your customer's decision? What was the rationale?

MR. NIES: I wish we could say there was a scientific rationale that we went through and it was a studied management decision, but basically it revolved around four or five factors. One consideration was the size of the potential market. Secondly, did the customers really have application requirements for our offerings? Thirdly, would that hardware vendor get behind us and promote us and work with us, or are they going to be apathetic or antagonistic toward us? Fourthly, what was the magnitude of the conversion effort, and could it be readily supported over time, and could we deliver a quality value solution or not? Finally, could we provide both substantial value enhancement and also significant risk aversion or reduction? These factors pretty much determined which computer and operating system environments we would support.

Issues in Managing CINCOM's Growth

MR. ALLISON: Now, you were managing several kinds of growth in this period. You were managing not only growth to other systems, but you were managing growth overseas, you were managing a transition of technology -- of your software, I should say, as the hardware technology began to change and develop. You had existing products, and you also mentioned that you were, in addition to database management, beginning to go to other sectors. As you look at these variety of options from your perspective, what were the highest priorities, and why did you prioritize things the way you did?

MR. NIES: You're right, David. We were somewhat like the carnival entertainer who would get quite a few china plates spinning all at one time on different sticks and then must run back and forth trying to keep any one of them all from crashing to the floor. We were quite active on a lot of fronts that were sometimes conflicting for us and that were all very resource consumptive. But, we had to try to prevent failures, or opportunity losses anywhere. We were as busy as that carnival entertainer.

One of our highest priorities was becoming an international, worldwide marketing and distribution service and a customer support organization. We wanted, early on, to be more than a localized American provider. Secondly, we wanted to make sure we continued to dance with the partner we came with. So, database management was a central focus for us. But it was also important that the customer requirements for additional technology areas that worked on an integrated basis with database management also were satisfied, because database alone, in time, became only part of the total solution we sought to provide.

It was a very active forum of continuously trying to optimally balance many varying priorities. It seemed that we could do that best if we could get all of those priorities into one mind so that our leader might continuously think through, and organize as best we could, all of our conflicting forces, priorities and opportunities. In those days Cincom revolved very heavily around me. I was active in our international affairs, our sales group, our marketing group, our R&D group - not unlike the way Microsoft seemed to revolve around Bill Gates very heavily in its early days. Almost all of our thinking processes were constantly being fed to me and I was trying to continuously prioritize and allocate resources. These diverse demands required such thorough thought and penetrating insights that it was then probably beyond our capabilities to delegate and distribute our strategic thinking.

And all of this demanded that we also keep a very close eye on the bottom line and our cash flow. In the 1970's there were few outside sources of capital willing to invest substantial amounts of money into our efforts to develop new opportunities. Bankers were so negative to software companies that it seemed to us that lenders, back then, may have thought that the software industry meant ladies undergarments. So, we had to bootstrap our way forward, making profits and reinvesting those profits as we progressed forward. Of course, the faster we grew, the greater the pressures for profits, and the greater the stresses on cash flow became. Even today, banks are reluctant to loan significant amounts of lightly collateralized funds to software companies. But, in those early years almost none would invest in or lend to a fledgling software firm on terms that were acceptable.

So, it was a complex problem of priority setting and fast action that probably could only have been done through a non-delegating, entrepreneurial style that focused heavily around the president of the organization. It was a very good experience for me though, because it required me to be intimately involved in knowing the technology, and to learn about marketing, sales, distribution, services and support, because all of these were fundamental to our business. It was also important to know about international growth development in marketing opportunities. And I was also managing the bottom line and becoming pretty proficient in finance and financial affairs. But while I was trying to be a "jack of all trades" I could not become a master of one.

Still, it was an education and training process that was a tremendously stimulating one for me. I benefited quite a lot from it, and I believe Cincom also benefited, because we were able to grow at very high rates, compounded year after year after year, all through the seventies, with no cash to work with. And besides growth in our primary product pursuits, we introduced three or four major technologies. And at that time we were maybe the only software firm in the entire industry promoting all of those specific technologies and ideas. The industry itself later followed suit with many of the same things that we had introduced. For instance, we promulgated and promoted the idea of international expansion years before software companies ever thought about international opportunities. During Cincom's first 15 years, the software industry was one of the fasted growing industries in the world. But while the software industry grew about 25-fold during this time, Cincom grew almost 500-fold. Still, all of this was a lot more difficult than we then realized. But at the same time these challenges were very energizing and quite exhilarating for all of us.

And, I was greatly aided in these pursuits because so many truly fine Cincomers were constantly advising me as our president, who was expected to be so intimately involved in all of these affairs concurrently. I was greatly helped by many to see the importance of so many of the complex forces at work and how they interrelated. That's not to say that as we grew in size to today's company that we could, or should, still operate that way. To try to do so could be as constrictive and difficult as it might be harmful for us. But in those days, with the number of things that we were trying to do and the scant economic resources we had to work with, I think that was about the only way we could have operated. Most of the other companies that were growing rapidly at the time operated in similar ways.

Building a Business in Cincinnati

MR. ALLISON: Let me change the subject here a little bit and ask about Cincinnati as the hub of your business. You said earlier why it got started here. As you began to grow and develop, did you find that it was a good location? Did it have limitations? What were the strengths and weaknesses of being in this location rather than on the West Coast or something like that?

MR. NIES: First, let me focus on the strengths, because there were so many advantages. First of all, even in those days, with air travel being what it was before Cincinnati became a Delta hub, we were still only one hour by air to Detroit, to St. Louis, to Pittsburgh, to Cleveland, and one and one-half hours to Atlanta. We could easily drive to Lexington, Louisville, Columbus and Indianapolis. Within this so-called "rust belt" was a heavy concentration of clients. We were no more than an hour-and-a-half away from maybe 70 or 80 percent of the manufacturing and all the support resources needed by America's manufacturing industry.

In retrospect, we probably couldn't have picked a better city to be in than Cincinnati from a logistics and a marketing opportunity standpoint. Pittsburgh has large numbers of Fortune's top 100 companies. So does Cleveland. So does Chicago. Cincinnati has a number of them, as well. We were very close to the right markets, and we could quickly and conveniently fly to New York, to Boston, to Philadelphia and Washington, DC when we wanted. But we concentrated and developed initially in the Midwest. Cincom's culture, even today, is still influenced by "Heartland American" ideas and ideals.

Also there weren't many alternative software employers nearby. Cincinnati was not known then, nor now, as being a software center. So, local people who wanted to come into the software industry flocked to Cincom. This became their home, where they professionally dedicated and committed themselves. We were able to get the best and the brightest. And, we could afford to invest heavily in our people because they were with us for the long haul. Since every company begins with its people, this was a major advantage for Cincom. We were also able to more easily recruit top graduates from the many nearby college campuses. They were here in their native environment and near their home. So the ability to secure, retain, develop and build a workforce was strong here in Cincinnati. And, the cost of living was tremendously favorable compared with places like New York or Los Angeles.

But the disadvantage we had, and it was a tremendous disadvantage, was that early on the marketing and the promotion of the software industry began to centralize around Boston, with *ComputerWorld* and some of the other consulting and industry advisory groups located there. They then seemed, at least to us, to promote heavily the Northeastern based software firms. So, from a marketing and merchandising, and a public relations standpoint, we may have suffered. Later, when many software companies were springing up in Silicon Valley, the same sort of a thing happened with the media, the consultancy groups, and the focus of attention heavily concentrating on promoting and covering firms located in that area. These firms benefited heavily from such marketing and merchandising of their identity by the media and investment community.

Marketing and merchandising, public relations, and advertising and promotion, which are absolutely essential, were fields that Cincom was not so much involved with or exposed to, and therefore we never benefited to the same degree as did many of our competitors. That has been and continues to this day to be a liability for us. So from that standpoint we'd probably be much better situated out in the midst of the other software companies in California, or up in Boston. But on almost every other scale, Cincinnati is a better location for us. In my opinion, and I think in the opinion of many who work in Cincom, for us Cincinnati is the right city to be in.

CINCOM People

MR. ALLISON: You talked some about your workforce -- the dedication, the interest, the kind of people who came into the company. Talk a little bit more about the people who helped you in the early days to develop the company, take it in different directions. Who were they? What kind of people?

MR. NIES: We had a composite. Since we worked heavily in the IBM environment, it shouldn't be surprising that many of the early people who joined us came from IBM. They saw what we were doing, believed in what we were doing, and wanted to join us. At one time, perhaps 50 percent of our workforce in the early years was directly from IBM. Later, some people from our customer base also wanted to join us. But I felt that we couldn't draw exclusively on IBM people or our customers as the main means to build and develop our company. I felt that we had to follow the same kind of concept that IBM followed, and that was heavily recruiting the best and the brightest from college campuses. So by 1972 or 1973, we were already going directly onto the college campuses and recruiting the best we could find and bringing them into Cincom.

But, one of the problems in those days was that there wasn't yet a robust computer sciences curriculum, or even an emphasis in computer sciences in most universities. So, we might recruit a mathematics major or an economics major or a music major, and we would then enroll them into an intensive and extensive "boot camp" like training programs all summer long. We would inculcate in them not only the ideas of computing and software, but also the ideals that Cincom stood for. The idea was that we would be doing for them what IBM did for me -- which is make a large scale investment in them which extended over 18 to 24 months, and help these people to well develop in the computer field. We hoped that many of those people would believe in our company over a long period of time so that as they grew out of their twenties we would have an active, energetic, well-trained group of people who had ten or twelve years' experience with Cincom while still in their early thirties. We rapidly went to an environment from exclusively hiring experienced, trained, seasoned vets to also investing heavily in very good, young people for the future. We had a formal education training program that was really terrific. It was probably the best training program then developed in the software industry, and today may still be among the best that has been provided in our field.

We also returned to the professional services business, partly because those young people were not yet skillful enough with what they had learned to be either developers of software, or sellers or supporters of software products. So we had placed them on services contract under the guidance, and with the support, of some seasoned, experienced people. In this way, they would fortify and, through work experience, learn and understand more fully what they had learned in the classrooms. But, we went back into the professional services business not as a money-making opportunity -- in fact, we were losing money on services -- but as part of the education and learning program to help these people get quickly established into Cincom and into the computer software field. Our customers loved this program because we provided extremely bright, very energetic resources to them at truly bargain prices.

That's basically how we evolved throughout the seventies in America. In our international business, we did not build on the same model. Internationally, we didn't have the concentration of resources in any one country as we did in the United States. So we couldn't afford to have these major learning programs. Internationally, we continued to hire only the best and the brightest from the professional fields. Even today our international group is based more on seasoned veterans – well trained, highly skilled people who have already established themselves. We are continuing to grow our organization using experienced people.

Importance of Staff Retention

For us, retention of staff is fundamental. We believe that we must not only attract good people, but also help them to grow and then we must provide the opportunities needed to retain them over time. Therefore, these three ideas all work together -- attracting good people, intensively helping them to grow to ever greater levels of competency, and then having a work environment and a satisfaction experience that is so stimulating that this is the only place they want to work. It's a major part, even today, of our corporate strategy -- making sure we can attract, expand and keep top notch people.

CINCOM's Response to Growth of the Software Industry

MR. ALLISON: We talked about the establishment of Cincom in the world of large mainframe computers, the growth in that world as it began to evolve, the other computer manufacturers you developed software for. But as you moved into the seventies the computer industry was going through a fundamental change, moving from a world of large mainframes, to even the families of systems that IBM have, to a world in which the whole idea of minicomputers and distributive systems came up. How did this change of environment look from your perspective as a software company?

MR. NIES: This was an interesting area because these were several very major shifts. There were quantum shifts not only in the processing costs but also in the kind of software, the approach, the nature of the buyers and almost everything else. I mentioned earlier that one of the things that we had done was to begin working with a variety of different non-IBM vendors, and this helped us to stay very close to what it was that was being provided and how the economics were changing. Remember that we also had this special group of people who lived directly in these non-IBM environments and became very closely involved with them. As they began to promote to us the advances and the price performance and opportunities in their offerings, we began to see quite clearly that newer non-mainframe computers might soon be able to do almost everything that the mainframe could do, but at a significantly lower cost. Such computers were also more deployable throughout the organization, with a lower cost of support and other important advantages as well.

We wanted to do what we could to serve these markets, but it was a matter of economics. Eventually, the dominance of the IBM influence in the account would also have to give way to economic considerations, and politics would follow economics in the user community just like it does in elections. Cincom was originally a mainframe player. That wasn't the only marketplace -- but in the early years Cincom was one of the very few software firms which was seriously supporting environments other than the IBM. Almost everybody else in those early days was focused on IBM only.

Importance of Digital Equipment Corporation to CINCOM

We saw early on that the advantages in some of these other environments compared to the IBM environment were immense. But, some firms seemed to us to be better positioned than others. So, we began to promote the environments we thought had the best chance. And one of those we thought had the best chance to grow and develop was the new type environment being promoted by Digital. So we got solidly behind Digital. Cincom put a lot of energy into the Digital workplace. We moved our entire system software line there, and we began supporting Digital as another major adventure within Cincom. We eventually moved not only our system software products but our manufacturing suite of application products over to run on the Digital line of computers -- and the customer preference for these compared to IBM really shocked us.

MR. ALLISON: What kind of time frame was this that you're talking about?

MR. NIES: We began to support Digital in the late seventies and were well down the road with Digital in the early eighties. In the early eighties -- '82, '83, -- we were selling and installing four out of every

five of our manufacturing systems on IBM, and only one out of five would be Digital. We offered the same features and functionality. Almost everything we offered was exactly the same. We tried to promote to the customer their free choice of Digital or IBM. It was completely their decision. The boxes were different but the applications were identical. We tried to work closely with both vendors, and we tried to be completely neutral.

But by the late eighties, Digital choices had become four out of five. So, Digital had moved from being one out of five for our manufacturing systems to four out of five in only five to six years. When we saw this happening, we knew that a radical shift in the marketplace was taking place. Digital computers were no longer computers for only the technicians. Increasingly more Digital was being used in a major commercial processing arena. And we believed that if this could happen with pseudo mainframes, it would also happen in workstations and PC's. We believed early on that the economics and the preference for decentralized deployment and the cost efficiency and flexibility of processing that distributed provided could very soon prevail over centralized mainframe processing paradigms. So we did everything we could to become a universal player who supported the entire processing paradigm being chosen by major customers. This would be mainframes, midframes, and workstations -- all with exactly the same type of software so that a user could deploy and implement and integrate all of these diverse processing platforms without concern for which computer types or providers they chose.

Software begins to Overshadow Hardware

In effect, what we were saying to users was that in the past you would choose software based on whether or not it ran on your hardware, but now, you can choose from a variety of hardware alternatives which run on your choice of software platform. And we began to show users that the software platform would be where they would make the large scale investments, and these would endure over time. The hardware investment might become obsolete every 18 months. So, users shouldn't make decisions that revolve around hardware. The software transcends an eight to twelve-year usage cycle. So we began to urge the users to choose their software first then add the hardware as appropriate. Software, we believed, would become not only more important than hardware, but also would become a larger marketplace as well. In fact, in the year 1990, the investments in software in America surpassed those made that year in hardware. And the differential between investments in software has been significantly increasing ever since. Software investments today greatly surpass investments in hardware. I believe that this spread will continue to widen in the years ahead.

But all of this was radically different from what was being promoted at the time. Our message of transparency, portability and universality was also felt by some, if not many, to be antagonistic to a lot of other messages. So once again we found ourselves becoming a "voice crying in the wilderness." Sometimes market leadership can become a lonely place to be. Many of the mainframe hardware, or software providers that I mentioned earlier questioned our strategy because we seemed to be moving away from the big iron of the mainframe environment. Some were then quite outspoken proponents of IBM and mainframe only as being the only way to go, and they weren't about to support these other environments. They were in effect trying to reposition Cincom as abandoning the mainframe while they were also trying to enlist IBM's support for their offerings.

CINCOM Didn't Abandon the Mainframe

In fact, we were not abandoning the mainframe. We were only abandoning the idea of hardware being the center of focus, to a world where software would become the center of focus. We promoted the idea that software could provide a platform to allow users to choose whichever kind of hardware they wanted. But, these ideas were only extensions forward of the thinking processes we had begun in the early seventies. We had already helped the user to gain more independence of various mainframes, and now we were making them independent of any processing paradigm -- mainframe, midframe, or

workstation. That is the strategy we began to promote long before the ideas of Unix and vendor independence became prominent throughout the IT industry.

Today some software vendors – even large, substantial ones -- are not supporting a mainframe environment - and in fact they are publicly saying that mainframes are dead. Possibly, that's because they may have software that only runs on workstations. But we believe that users' best interests are served by viewing their IT needs as being supported by an insulated network, much like the telephone communications system. A user picks up the phone, and it may go out of his building into wire, but it may be then beamed up into satellite, it may go to fiber optics, or a microwave tower, it may go back into wire, it may be passed around in many different ways without the user knowing that it has gone through all these different communications media. We felt that the user on a network with his keyboard should be just as insulated from the processing environment and all the software as someone using the telephone service. Basically that is what we have been promoting, and continue to promote today. Simplification of complexity through innovation and integration has long been a major Cincom strategy. Cincom simplifies complexity – that's a key Cincom value-add for our customers. And this simplification comes through innovation.

This approach caused some liabilities for us, because now we're promoting multiple environments. Such a software development strategy minimizes the thrust we can have in any one specific marketplace. But we believe that this is the correct direction for the long term. We believe that in time users will indeed want software that will run across all of their environments identically, and providing ever greater simplification will be a premier objective. This is something I believe will become the ideal and the environment of the future.

Comparing Digital to IBM

MR. ALLISON: Let me ask, going back, a historical question. As you began to do so much more with Digital, what was it like, or how different was it to work with Digital compared with people at IBM? Were they a radically different culture that you encountered, or were they relatively the same?

MR. NIES: They were radically different cultures. Digital and IBM in the late seventies and early eighties, were poles apart. That's partly because of their roots. IBM had grown out of the commercial arena and was primarily in the accounting fields and large scale commercial computing. Digital had grown out of the technical area. Digital was moving into commercial computing possibilities with its computer and software, but the mindset and the thinking processes and the selling and the service and support, everything about Digital was then still oriented around supporting the technical user, who was typically sold by a third party OEM or integrator.

Digital was never really into large scale account support teams or skillful sales methods. Their thinking seemed to be: we will build a better box, offer a better solution, and provide better technology, and offer lower costs and then discerning, knowledgeable users will buy Digital. Theirs seemed to be a kind of "Field of Dreams," if we build it, they will buy it strategy. Selling was not a particular Digital strength. By contrast, IBM has always been of the mindset that good technology is important, but selling, service, support, account management and marketing tactics are far more important. So, across these two different spectrums, and meeting in the middle somewhere, were two diversely different cultures. It was cultures colliding when these two organizations came into an account. One was promoting and pushing its better technology and lower costs; the other was pushing and promoting good technology with the IBM brand and excellent service and support justifying the higher costs.

MR. ALLISON: It put somebody in the middle, like you.

MR. NIES: Yes. We were trying to support both of them. And it was difficult because on the one hand we had to quite often prop up inadequate Digital selling efforts, and we had to do the account

management and account marketing for them. This wasn't always to our advantage. The support of Digital which we had hoped to get in many cases became almost a burden or a liability. At the same time this was happening, IBM continued to view Cincom now as not only a promoter of alternate software, but in effect a marketing extension of Digital, Hewlett-Packard, and other organizations; this made it even more difficult for us in the IBM world. So we were in an arena where we weren't able to properly focus ourselves as well as some other companies have been able to do. And, Digital wasn't helping us, while IBM was definitely hurting Cincom.

Perhaps not unlike others, I think one of the problems for Digital was actually caused by their past success and their remarkable growth. As they became a larger company, they began to try to become more like IBM, and try to make themselves into a "mini-IBM" and contend with IBM in IBM's arena. In doing so, they moved away from their strengths and played to IBM's strengths -- in this they were no match for IBM. The more they played IBM's game, the more difficult it became for Digital.

This is still a problem today. Digital, for example, as part of its recent downsizing process, has decided it will handle only 1,000 accounts itself, and all the rest of its accounts are going to be sold to third parties. This suggests that they realize they are a good technology provider, and they'll leave the selling and account support to third parties. In too many ways, it seems to me that Digital has become very confused and may have moved along a course of self-destruction. If Digital does not quickly correct its current failings, it seems to me that Digital may not survive as an independent organization. But, even though they have many more strengths, IBM seems to also have been actively engaging in some vigorous self-destruction efforts as well. And, these potentially self-damaging endeavors and pursuits have been underway for quite a few years. Still, for IBM, deep in its corporate psyche, it's all about account control. This is a very important issue to IBM.

Role of Research and Development at CINCOM

MR. ALLISON: Let me change the subject a little bit. To support your various ventures and your strategy of doing a number of different things, there was a strong need for research and development in your company, always. You mentioned in your early history how it was the same team that did the daytime selling of the services, who performed the nighttime R&D. Tell me how your R&D strategy has evolved in Cincom over the years as the company has grown and changed.

MR. NIES: That was true in the beginning. But, that was only to build some initial packaged software products. As we moved away from being a professional services company which also provided packaged software, to truly become a software products firm, we further thought through our priorities. Inevitably, it became necessary to find the ways and means to successfully compete with IBM. Since I had worked so many years with IBM and had great respect for their marketing, sales, distribution, market presence, account management, and account control, I believed that we could not consistently outsell them. So our best hope was to out-technology and out-service them.

We therefore moved heavily into becoming very committed to research and development. Typically, we had over 30 percent of our budget targeted for research and development. This was at a time when two or three percent of revenues were targeted for research and development in American industry -- perhaps somewhat more than that was allocated to R&D for software, but not much more. We became a great believer in the power and importance of research and development in order to effectively compete. We also believed that we had to be willing to make those investments or our technologies would come to a premature end of a life cycle, and this could cause our company to collapse. So we continued to make heavy R&D investments. We have always moved forward with new paradigms as rapidly as possible. That's always been fundamental to Cincom – relatively large scale emphasis on research and development continues to be a key priority for us.

The flip side of that emphasis was that we could not also emphasize marketing and sales to such a significant degree as we would have liked. Quite frankly, whilst these choices have given us longevity of life, thanks in large part to really truly excellent technology, and exceptionally fine service and support, some other companies which chose to much more heavily prioritize marketing, sales and advertising have leapt forward faster than Cincom. The industry has now become primarily a marketing and merchandising business, and unless heavily marketing and merchandising investments are made, the audience may not even know you're there -- no matter how valuable and useful the offerings.

Secondly, there are so many different technology choices that users can't analyze them all. They seem to go with what seems to be the most market-present. So it's very difficult for Cincom to find ways to continue to make the investment in research and development in order to have the premier technology and at the same time have enough resources to gain more market presence. But we still believe that R&D is fundamental, and will continue to build, develop and deliver high quality products that are competitive over time.

One of the ways we're finding to help to solve this dilemma is to enter into research and development alliances. We enter into development alliances with associated companies so that not only our own resources are working to develop the products we can offer to our customers. This enables Cincom to put somewhat more of its total budget into marketing, merchandising and sales. Collaborative research and development should also enable Cincom to market and distribute a composite product line of technologies which more completely satisfy the total customer requirement. These technologies are all integrated under a common architecture which we engineer, design and create ourselves.

In the future, Cincom will develop increasingly more of the central architecture. We will subcontract out, or work with, other allies to put together the parts, pieces, and components into a synthesized whole. In this way, we can deliver, as Mercedes does, a top notch, fully integrated product line, serviced and supported by the Mercedes company but incrementally built by hundreds of different suppliers. This is the model we have been working under over the last several years. Through this strategy we expect to not only become more able to bring more and better technology to the market than ever before but also to have the resources to expand our marketing distribution and our public awareness so that we can more fully participate in a marketplace which has become one of marketing and merchandising and not technology leadership.

R&D--Customer Driven or Visionary?

MR. ALLISON: Let me ask you one other question about R&D. To what extent are you continuing to work on problems that were established by your customer base, and to what extent are you working on problems that are set by where you think the future of the business is?

MR. NIES: That's a good question. We try to never think in a void – or to speculate too far into the future. There's an old saying that whoever lives by the crystal ball usually becomes accustomed to a diet of ground glass. Ground glass doesn't digest very well. So, we try to not rely on crystal balls. Even though some people call us visionaries, I think the reason we may be so called is because we work very closely with so many leading edge customers. These customers have advanced requirements. When we find that there are a number of customers who desire similar innovations, we work with a federation of these leading edge customers to so innovate. They help to guide our thinking as to what they want and need and where they believe their world is going. We also listen to top flight third-party gurus who either affirm, correct, or help guide our thinking, and then to this we bring our part of it – the judgment, the engineering, the development and the improvements and innovations of the technology. Customers help us to perfect the technology with their insights, and then later, through the usage and success leadership of these leading edge customers, we help to move the market forward.

At this stage, many other competitors may be bigger and better financed than we are, so we can't hope to hold 30 or 40 percent of a market over very extended periods of time. But, if we are a leader, we can garner a large percentage of a market in its inception stage. Then while we may hold a declining share of markets as they mature, we have an absolute growth overall while we're again looking to the next innovative opportunities. The more rapid the dynamics, the more rapid the paradigm shift, the more we must be at this bleeding, leading edge working with leading customers. This has become integral to our corporate strategy and tactics.

We have a technology group that analyzes and studies leading products from companies who themselves have leading ideas about technology. We might fund, and collaborate with them, or invite them into our particular development labs, or accept their invitations to put some of our people into their labs. And so this federation, this pooling of knowledge, becomes an advanced virtual technology center that transcends an individual company --the virtual corporation, the virtual R&D organization is how we're operating now. In these ways, we're rapidly increasing our emphasis on R&D and leading edge technology at the same time we're expanding our marketing and distribution.

MR. ALLISON: What you've talked about is certainly two strategies; companies usually take the one or the other, not take both at once. It must be a challenge.

MR. NIES: Nothing's easy in this business. There is no shortage of top flight competition. So, it's not enough to know that you're one of the best providers in the world, because you must consistently win in order to win the opportunity to serve customers. We must win in the marketplace. We can't just create good technology. We must make sure it's the technology that will win – and win – and win again, consistently against very strong and very aggressive competition. Sure, it's complex, it's difficult, and it's all-consuming. That's why there has to be a willingness to sacrifice, a continuing willingness to sacrifice for the good of the technology, and for the advancement of Cincom in the marketplace. That's what our willingness to do "Whatever It Takes" is all about.

We constantly try to infuse into our people the ideas drawn from John F. Kennedy's urging that we all should "ask not what Cincom can do for us, but what we can do for Cincom." We want Cincom to do well for our user community, for the state of the industry, for the advancement of technology and for our own best interests. To do so we must be givers more than takers. The idea of sacrifice and dedication and devotion to something that may not always benefit one's own self immediately, or personally, is a concept that I believe must be continuously promoted inside any, and every, company.

Managing the Company in Different Eras

MR. ALLISON: Tom, you know, so many people who have followed a company from its origins have difficulty in dealing with a company that grows beyond their individual span of control. Has this been a difficult transition for you personally to help the company move to this next phase of its evolution?

MR. NIES: That's an interesting question. I think the people who have difficulty in letting go, as you say, of an individualized span of control in some regards might be like the person who was a wonderful high school student, very gifted and popular then, but who has never been able to grow beyond that.

In my own personal situation and career, I've tried to balance between trying to hold onto all the loose ends myself and attempting to help Cincomers integrate everything together into systems and processes, and then to delegate as much as possible throughout our firm. Trying to personally hold onto too much, too tightly, could set a bad example for all of our people who are further developing as leaders and executives. I believe that a possessive strategy could be harmful and in the end might be destructive to Cincom. So even though I enjoy the involvement with almost all areas of Cincom I must limit my direct involvement. We talk a lot about the sacrifices that our people must make, and about putting the company ahead of personal interests, and the organizational goals ahead of individual

goals, and I don't believe that we can in fact present that message with any sense of conviction or credibility if I don't practice what I preach. There must be a proper balance between release and restraint, between control and distribution of authority and responsibility.

The primary exemplar must be the leader. The leader of every organization has privileges only because he has certain duties and responsibilities. If a leader doesn't put the duties and responsibilities first, he's ill-serving himself and his organization. So trying to make myself more and more dispensable to Cincom, I believe well-serves our organization, and is a major part of what I must continue to do. It's not so hard to let go of the past in some ways, because the idea is to get 25 or 30 years of experience in a career, not one year repeated many times. And it's only by growing and developing and letting go of the past that one can truly grasp the opportunities and potential of the future.

But it's a gradual process of continuously thinking, learning, and understanding how I can commit myself to the organization in a more productive way - both for myself and for the people who are dependent upon me for the proper leadership and guidance. Delegating, sharing of responsibility, sharing of authority, sharing of power, moving decision making into the organization, and then being willing to stand back and let people make mistakes and support them in spite of the mistakes is a major part, I believe, of the role of the senior executives and also for each of the other managers. The problem with this is that we don't want to make the same mistake over and over again. Becoming truly a learning organization throughout is essential to help an organization go forward. While we may err and err and err again, we must do so less and less and less.

It's one thing to say that Cincom started in database, or we started in mainframes, and another to ask if we can thrive and survive in the future as well as we did in the past. I believe that ability is more a function of the understandings and the willpower and the determination of the organization than on its set of skills and know-how. For example, many people know that Honda came into America selling motor scooters, and today are one of the biggest sellers of automobiles in America. So they've evolved away from what they once did to become something radically different. Most people don't know that Cadillac once made bicycles. They moved from a bicycle manufacturer to an automobile manufacturer -- but not just an automobile manufacturer, but a very prestigious automobile manufacturer. So when we say it's "the Cadillac of its class," that says something about the niche of that particular product.

An organization evolves, grows and improves based on its ability to let go of its past, and an individual does the same. And this constant process of studying and thinking and knowing where you're going is very, very important. When I was with IBM, Tom Watson, Sr. would give out placards, and one of the slogans they were famous for said simply: Think. You don't see those given out today, or you don't hear that talked about much, but I'm thinking quite frankly of doing that within Cincom, because the most important thing that our people can do is to think -- carefully, seriously and rigorously. Sure, we must act and act vigorously and effectively. Very good execution is essential to success. But, along with a track record of successful accomplishments, thorough thought and penetrating insights are almost always hallmarks of the very best achievers.

We usually do a good job, of thinking and acting. But too often the pressure to act and be involved in execution sometimes prevails over the thinking process. Unless one emphasizes the thinking and preparation processes constantly, these sometimes take latter places. When this happens, we're giving up the most powerful resource that any human individual has, the power to think and reason. So I believe that we must carefully and thoroughly think and plan and prepare as we act and execute our way forward. One thing is certain; this is that failing to plan and failing to prepare is planning and preparing to fail. Leaders simply cannot fail in either the planning or the preparation processes without placing one's organization, and themselves too, in grave peril. We must try as best we can to realize and understand quite fully the implications of our actions before we take them.

Learning from Mistakes

MR. ALLISON: You've mentioned that you talked about the growth, not only your own personal growth but the growth of Cincom, and that you need to not only look at what has made you successful, but look at some of the things that haven't worked, some of the mistakes that you've made. As you look back over your long history with Cincom, what are some of the things that you feel were mistakes in the past, or maybe missed opportunities that you've learned from, and what have you learned from them?

MR. NIES: I think one of the major mistakes I made was that I did not soon enough fully realize the importance of marketing and merchandising to an organization. Like Digital Equipment, Cincom was more focused along the central idea that better technology which delivers greater value and better solutions will consistently win. We believe deeply in providing superior technology, and we talk about marketing and merchandising and advertising and promotion as being important. But, even now I, and Cincom too, may not yet truly appreciate the importance of marketing and sales to the same degree that we believe in good technology, good service, and good support. That's a possible mistake I think I've made personally which may have hurt Cincom's ability to maximize our nearer term possibilities. Certainly, an IBM or an Oracle like approach which places extremely great emphasis on sales and marketing may have helped Cincom to grow faster, and perhaps have become more prominent. To be able to serve a customer demands that one must first win that right through competitive struggles in the marketplace. Cincom has always done "Whatever It Takes" to serve our customers, but we may not always have been as willing, or able, to do "Whatever It Takes" to win that customer.

I believe that I have not always properly led our organization in that regard, because of the influences on our thought and behavior established in our early years. I knew then that we couldn't win and survive if we competed against IBM only on the basis of sales strength. Few would disagree with that conclusion. If we had begun our experience competing with a group of different competitors, then we might have quite rightly felt that marketing and advertising could have been much more important for us when we were more evenly matched in sales capabilities. Still, I believe that it was a personal and leadership mistake to not emphasize sales and marketing to a much greater degree. We're working hard toward correcting it. But still, it's deep in the psyche of Cincom that if there's a dollar that has to be split between customer service and support, research and development for advanced technology, and sales and merchandising -- sales, marketing, and merchandising comes in a lesser place too often -- and that's probably not always good for our organization. Proportionately, Cincom allocates a lot less of its total expenses to sales and marketing than do most of the very successful software firms. We have to learn to balance that better. That's a major problem for us and also an opportunity for improvement.

A second mistake I believe I made is that while we saw clearly that there were multiple paradigms that had to be supported -- the mainframes, the midsize, and the workstations -- we tried to support all of them concurrently. And with the limited resources we had, we weren't able to become the major player in any one of the three. We were always a supporting player in each of the markets we were in, rather than the dominant player in one. I now believe that, we could have grown much faster had I directed Cincom to focus more intensively on fewer markets. We saw the potential of client server and workstations and of Unix and "open systems" and all their potential years ago . If we had more quickly and completely moved away from our mainframe commitments, and participated more fully in such new opportunities -- in effect put the past in a holding status we may have grown much faster. And so from a corporate standpoint one could say, that's a mistake. You made a mistake there. You should have really gone for faster corporate growth and greater profitability. Such critics might be right.

But we have thousands of customers who had bought into us over the years. How do you tell those customers that you can't really fulfill the promises and commitments made to them? Sometimes you make mistakes on the one hand so that you don't make them on another. But in trying to support these multiple markets concurrently, we didn't always orchestrate as well as we might have, and that's been a problem for us. Not being able to balance research and development, and customer service and

support, with marketing and sales as well as we might have; as well as not being able to balance the three major paradigms (mainframe, midsize, and distributed workstations) has been a problem for us. I readily admit and take full responsibility for any strategic mistakes Cincom may have made in the past, and may make in the future under, my watch.

Risk versus Stability

MR. ALLISON: I guess one of the advantages, however, is that it gives you stability -- even though you may not have explosive growth, it may mean that high risk doesn't pay off. Was that part of your decisionmaking? I mean, your growth has certainly been steady. It may not have been always explosive, but it's there. That may be a benefit of your strategy.

MR. NIES: That's a good point. There's a very good book available entitled *Built to Last*. It studies 18 major companies who are dominant in their field, and how they compare with their contenders. This book, by Jim Collins, shows how the philosophy of those organizations that were built to last, may go through peaks and valleys, but they're always progressing forward over the long term - and how everything about the company is always oriented to the longer-term horizons.

These same ideas were always in my mind from Cincom's earliest days. We have always worked to build a company that was built to last over time. And this came from two primary sources. The first one is directly from IBM. IBM is profiled as one of the 18 companies that this book believed was built to last. I was trained by IBM to think about the longer term. The second source of our long-term strategy is the strategic nature of the technology that we offer. Our customers build their strategic applications around Cincom software. So our customers become very dependent upon our software and support. Ours is strategic software. This means that the idea of building a company as fast as one can, and then seeking to liquidate or sell it at a premium when growth slows, might conflict with commitments and promises made to our staff and our clients. This is something we chose not to do.

Cincom cannot take our commitments lightly without a lot of adverse implications for us all. So, if we are to be a "strategic player," everything about us has to be about stability, growth, security and commitment over time. If I were talking to you 10 to 15 years ago about the meteoric successes of some of the companies in the late seventies and early eighties, you might have said that some had grown even faster than Cincom, and you would be quite correct. But, now almost all of those companies, public and private alike, that you would have then pointed to are no longer in business. They had meteoric rises, but then they plummeted almost as fast, and quite often even faster, than they had risen and were acquired and eliminated as ongoing operations. It may well be that some, maybe even many, of today's currently "hottest" software firms may similarly no longer exist five to ten years from now.

That's not to say that every great shooting star has to fall, but it is to say this: where is your priority? Are you willing to persevere over time, year after year, doing what you believe is right for yourselves, your customers, your people over the long term? If so, you might miss some of this explosive growth. But, you're also less likely to be feeling the pain of catastrophic failure when whatever it was you bet everything on eventually is no longer viable or fails to materialize as planned. In a field of super high technology that is changing more rapidly every day, the life cycle of a technology emphasis will continue to contract. What used to have a life cycle of seven to eight years has now become three to four years -- and may soon be down to even a one or two year cycle. So it's very hard to bet everything on high reward but high risk strategies as too many seem to have done.

It also may be important to note that Cincom's mission is not to primarily sell software shares at inflated prices; rather, our mission is to well serve our clients, to fully support and appreciate our staff and to provide great opportunities and very enjoyable work for our team; and to also provide good returns to our investors. And, our objectives are prioritized in this same order.

Stability over time. Built to last. Strategic commitments to customers. All of these ideas are not only important to Cincom, but they are the very "stuff" of which our company is made. It seems to me that the kind of business we're in must cause us to be a company that is year-in, year-out trying to improve itself and better itself and grow. But, I believe that very high risk is not for us. That's not to say that we're not looking for the explosive growth opportunities. We want to have them. But, we don't want to be a hero today and a bum tomorrow. Fame is fleeting. Today, many do not even know the names of many of the companies who were among the most famous and powerful in the software industry only 10 to 15 years ago. By contrast, we believe that Cincom has a very bright future, as well as a legendary and storied past. But, we want to realize our future potential much more than we want to enjoy reflections upon our past. There are many good opportunity areas for us today. For example, the area of object-oriented, the area of distributed and downsized manufacturing systems, the area of text and text application development and customer facing systems are all excellent opportunities. Four or five areas that look very good for us have very good possibilities in this second half of the 1990's decade and on into the 21st Century, and we hope to participate very fully in that bright future.

Quite frankly, we've been making some strategic retreats from markets that now may be mature, or even declining, so that we can participate more fully in attractive markets of the future. But steady, reliable, predictable growth with security and safety, are all very dear to us. We believe that the best way to be sure that one can participate in what is believed to be an excellent future for our industry is to be sure to survive into that future. "Built to Last" is a key Cincom strategy. Marketplace "tornados," no matter how powerful and attractive, also tend to have an increasingly shorter life cycle. So, "tornado" chasing can be a very high reward strategy. Some firms have benefited very well from such an approach. I applaud them. But, such an approach is also a high risk strategy which could quickly kill off some of today's currently very successful and very high visibility software firms once their specific "tornado" subsides – as "tornados" always seem to do.

Future Directions for CINCOM

MR. ALLISON: Well, the point that you were just making about where the future lies is where I wanted to go as the final thing that we talk about. How you do see this area of software that you're involved in developing and changing over the next few years, or where will be the major opportunities? How can you position the company to make it so that it can realize those opportunities most effectively?

MR. NIES: An interesting analogy from a fine author compares the idea of invention and innovation. In his example, there's a big difference between invention, which is where an idea is proved to work, and innovation, where everything is brought together so that it can be widely used, offers good value and is commercially viable. He uses the example of airplanes and points out that in 1903 in North Carolina at Kitty Hawk, the Wright Brothers proved that airplanes heavier than air could fly. This was the "Invention" of modern aircraft.

The first flight of that "invention" lasted only 12 seconds and flew for only 120 feet. But, that historic flight proved that the plane could fly. Yet it was another 35 years or so before air transportation became commercially viable, in other words, before airplanes could economically fly as well as physically fly. In order for that to happen, a confluence of technologies had to be united together into a composite which became known as the DC-3. In the DC-3 what was united together was a lightweight internal combustion engine, a monoque body construction which was lightweight, variable pitch propellers, a retractable landing gear, and wing flaps. The aircraft needed all of those things to become commercially viable, and really solve the customer's problem in a way that delivered high value and user satisfaction. Until the DC-3, air travel was not economically viable. This then was their innovation.

What has been going on over the past several years in the computer industry is similar. We now have a variety of technological components which need to be integrated into a technology ensemble - an ensemble so that within one technology, all the solutions enabling problems to be solved quickly and easily are provided in a unified solution. Such innovations provide tremendous breakthroughs. But until this innovation happens, users must pick and choose diverse technologies and fit and weld them together -- as though they're buying their own engine, their own landing gear, and so on, and trying to service their own airplane. This is really not viable. Even though our industry is selling billions of dollars of software "a part at a time," so to speak, it's not really what the customers need and will demand five to ten years from now. Users will want high value innovative solutions, not disjointed products that may cause yet more problems, as users try to use these diverse systems interdependently.

One example of new opportunities is an innovative ensemble which integrates together into a more unified system various software technologies which can automate the process of building, developing and maintaining applications so that orders of magnitude improvement over current development environments can be achieved. I believe that such innovations can increase the capability of building, developing, and maintaining applications very significantly over what is possible today.

Innovative integration of diverse technologies will likely be built around object-oriented technology. Object-oriented technology will enable end users to construct many of their own applications with much greater simplification in the building, developing, and maintaining of these systems. The software in effect will largely automate the building and developing processes. Costs can thereby be significantly lowered at the same time as the delivery time is greatly reduced.

In order to make this happen, we need technologies and innovation in the area of object-oriented software technologies. We need technologies also in the areas of automated workflow so that work doesn't move physically from desk to desk, but rather moves around networks. In this way, processes and objects are logically integrated as required. Similarly, a type of "universal view" can also be imagined which will enable any authorized user anywhere in the world to have appropriate access to any information in any application. The world of the future will be object-oriented. It will also be information rich.

Organizations that are down the road with relational data base and conventional application development technologies, which do not move to such advanced new innovative approaches, may become very severely handicapped when their competitors can do in a day what may take them months to do. We must become able to cut the cost of developing products or services by factors of 20, 30, or even 40 percent, because the future competitive effects of globalized competition will surely become very severe. Software innovations which greatly simplify manufacturing and services delivery may become one of the greatest levers for overall productivity gains and competitive advantages possible within Western society. That's why these new software innovations, which can herald in a whole new era of prosperity and progress for modern society, are so vitally needed.

We must use automated technology and computers and software to change the way the world thinks, works, services and supports its customers. We're on the very verge of a major and radical revolution which will mean as much to the 21st Century as the industrial revolution meant to the 20th Century. In the late 19th Century, when the industrial revolution developed, one 140 pound worker could sit on a tractor and in, a single afternoon, plow as much field as many Arnold Schwarzennegers, and their horses, could previously do when pushing or pulling plows by themselves. Today, we're approaching a similar breakthrough era which will enable one user with the right kind of software technology to be able to build, perhaps in a single afternoon, an application that might now require several developers a month or two or even several months to build. Software innovation which will simplify our complex world is key to all of this.

Thankfully, many of the necessary pre-requisite, or facilitating, tools and technologies have already been invented, and more will be invented every year by developers all over the world. But, many of these technology inventions haven't yet been innovated into a variety of integrated sets of technologies that will satisfy the ongoing requirements for countless as yet unmet need areas of opportunity and work simplification possibilities. We believe that companies like ourselves who see and understand these possibilities and are willing to make innovative solutions available across a broad array of paradigms - who are willing to forsake current market opportunities and invest in R&D and training and teaching and innovation, will be major participants in the 21st Century. We also believe it's absolutely imperative that this be done. Simplification through innovation! That's the essential, and absolutely necessary requirement.

MR. ALLISON: -- Could we explore a bit more how this automation and applications you were talking about in comparison with the industrial revolution of the 19th Century and the early 20th Century can have a similar affect on the information industry, particularly the way software has become the central driving force.

MR. NIES: As I mentioned before, it's necessary that we make this radical revolution in the way we build, develop, and maintain software and application systems so that we can universally use computers and networks on a much better and broader scale. In that process I believe we can, and must, cut the cost of time and effort consumed in the building, developing and maintaining applications by orders of magnitude. Radical, not just marginal improvements – must be gained. And it is necessary to employ these advances as quickly as we can in order to help everyone to become able to much more effectively compete in the future.

We're operating in a global economy today, and the worldwide comparative costs of labor and the ability to offer many new products is such that companies which are no longer competitive can be devastated very quickly. We've already seen this happen to General Motors in the 1980's. So far in the 1990's we've seen IBM and Digital go down so fast that it was almost unbelievable to behold what happened to them. IBM in the space of a couple of years lost total market share value of its company of over $100 billion dollars. To put that in perspective, that's more market share value than the most highly valued company now in 1995, or in the range of what a Standard Oil would be valued at – totally lost in the space of a couple of years time because IBM was no longer competitive. With Digital, we saw the same kind of devastation, the stock going rapidly downward from $200 to less than $20 a share, a 90 percent loss in its capital values. Today capital is increasingly mobile. It flees from declining situations quite quickly and seeks to fly to more promising situations as quickly as possible.

If such rapid declines can happen to companies with such great might and power, then certainly it can happen to $200 to $300 million sized companies. And just as certainly it can happen to the multi-billion dollar company and much larger ones as well. So, I suspect that in the not too distant future we may see rapid falls of other companies including some once thought to be virtually unassailable. We will also quite likely see new companies come into being which will be force-fed into very rapid growth, and like skyrockets soar into the skies, burst into radiance, and then almost as rapidly disappear and be soon forgotten. We are now into very dynamic times. The future will almost certainly be one of "extreme competition." Unless organizations are really on top of the technology, that will make the difference, they are very vulnerable. And in the IT industry the technology that may make the most difference is software, not hardware. Software gives life to the equipment. Software is the solution. In the past we talked about the software running on the hardware as though the hardware were the investment and the software was the expense. In fact, the software is the investment and the hardware is the expense. The software is where the risk of failure may be quite severe. So, the software and the innovative systems which provide the needed simplification of work, is where we should put most of our money, time, and interest so that in time the IT industry will become primarily a software and solution providing industry, with hardware providers supplying the technology that runs on those software powered platforms.

I wouldn't be the least bit surprised in years ahead to see IBM becoming primarily a software and services led company, which may mean subcontracting out its hardware manufacturing around the world. Today, their PC's are provided to them by suppliers all over the world. When you buy a Hewlett-Packard computer, you've got Intel inside. Very few computer manufacturers today are manufacturing computers. They're assembling computers.

The solution to the customer problem lies in the software, and the knowledge of the solution providing or problem solving value delivering staff. The money, the profit, the potential is in the software and in the services needed to implement and support software driven solutions. So we've come full circle from the '60s when IBM told me that the money's in the hardware, the problem's are in the software. In the 21st Century, the money and the opportunity will both be in the software and software related services. Smart company executives will see this and will rapidly transform their companies into being solution providers, which will include software in its diverse forms -- packaged software products, professional service support, advice and guidance, maybe even processing services much as EDS does. There will be a radical transformation into what really goes into the making and providing of a value delivering solution -- the incidental hardware that may be provided could come from many different companies. In the past the IT industry positioned the software as "running" on the hardware; in the future we will talk of the hardware "running" on the software, and the value that software powered solutions provide will become the pre-eminent consideration. I believe that this will all be made quite manifest much sooner than we may now imagine.

It should not surprise us to hear IBM and others saying, look, we're interested in providing a solution. It may or may not include IBM equipment. We don't need to gaze into the crystal ball to predict what's going to happen. All we need do is look into what is already happening and project it on a broader basis – and, the closer we look the more we realize that all of the things that we're talking about now are already happening. They're already in the system. They're being implemented. The smarter companies are already doing this, and the smarter customers are buying into these ideas -- so it will be a radical and rapid transformation, brought about by simplification through innovation – and all powered by software and knowledge.

Some years ago I wrote to Cincomers that in the future IBM may change its name from IBM, meaning International Business Machines, to IBS, meaning International Business Solutions, or International Business Software. It was then just a kind of joke that we speculated about. But, we see the transformation already happening, and it will continue in that direction. Even as we speak, "another IBM" seems to me to be already coming into existence.[1] Customers want solutions. There's no magic in the boxes any more. The days of the beautiful computers with flashing lights and consoles, and all that we long ago once fell in love with is just not there any more. Solutions are what customers want. Solutions are what customers need. Solutions are what people are willing to pay for, and providers always go where the money is. So in my opinion that's where the future of the business will be. Innovation and simplification. So, as best I can gauge, this is the future. These are key issues to value delivery.

MR. ALLISON: Thanks very much. This has been terrific. We've really enjoyed hearing your perspective. It's great to hear it from somebody who's seen so much of it.

MR. NIES: Thanks. Thanks a lot.

H:/TMN-Papers/Smithsonian Interview

[1] Almost 10 years after this interview IBM began promoting its solution emphasis as "The Other IBM."