Oral History of N. R. Narayana Murthy

Interviewed by:
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Uday Kapoor: On behalf of the Computer History Museum in Mountain View, California, David Brock and I would like to welcome Mr. Narayana Murthy. My name is Uday Kapoor, and I am a volunteer in the oral histories program, and David is the director of the Center for Software Histories at the Museum.

Mr. Murthy is an Indian information technology industrialist, and the founder of Infosys, one of the largest multinational corporations providing business consulting, technology, engineering and outsourcing services. Mr. Murthy received his bachelor's degree in electrical engineering from University of Mysore in 1967, and an MS in electrical engineering from IIT [Indian Institute of Technology] Kanpur in 1969. Mr. Murthy has been listed among the 12 greatest entrepreneurs of our time by *Fortune* magazine, and has been described as the father of the Indian IT sector by *Time* magazine. Mr. Murthy conceptualized, articulated and implemented the global delivery model which has become the backbone of the Indian software industry.

A few among his numerous awards are Padma Vibhushan from India, Commander of the Order of the British Empire, Legion of Honor from France, the Ernst Weber medal, the Hoover Medal, the Thomas Jefferson Medal, the Global Humanitarian Award and, most recently, the Founders Medal from IEEE. He serves on numerous boards across the globe. Mr. Murthy established the Infosys Foundation in 1996 to address the needs of the poorest of the poor and to support higher education and research. Ms. Sudha Murty, his wife, has been heading the Infosys Foundation since inception. Welcome, Mr. Murthy.

N.R. Narayana Murthy: Thank you very much for that. Thank you, David.

David Brock: Thank you.

Kapoor: Your full name is Nagavara Rama Rao Narayana Murthy.

Murthy: Yes.

Kapoor: Sometimes fondly mentioned as NRN.

Murthy: That's right.

Kapoor: You were born on August 20, 1946, in Mysore City in India.

Murthy: Yes.

Kapoor: At this stage we would like to start from your early life, and David can jump in whenever he would like to. You were born into a Brahmin family.

Murthy: Yes.

Kapoor: Could you give us a sense of what this meant for your experience of the Indian society in the 1940s?

Murthy: My father was a schoolteacher. He taught English, physics and mathematics in high school. We were eight children. My grandmother was there. So, there we were eleven people in the family. Since my father, the only breadwinner of the family, was a schoolteacher, obviously, we were a lower middle-class family.

But there was a lot of happiness, a lot of joy, a lot of camaraderie, a lot of banter among the siblings, sometimes fights. One sibling took care of the other sibling if sick because mother would always be very busy in the kitchen cooking on a wood stove. Therefore, we learned to be self-sufficient. We learned to take care of each other. There was a lot of sharing. There was a lot of caring.

Kapoor: That's what I would say. David.

Brock: Could you describe for us the community in which your family lived? Was it an intensely urban environment? Or were you on the outskirts of the city? If you could paint us a picture of what it was like for you.

Murthy: My father used to get transferred from one small town to another small town. Most often, we lived in the center of the town. It was quite urban. The school used to be very near where we lived, within walking distance. There would be just a main street - these were very small towns, not big at all. Everybody knew everybody else.

Children played in the evening. My father was a great believer in the adage that a healthy mind resides in a healthy body. Therefore, he insisted that we spent a little bit of our time playing. Of course, those days football or soccer and cricket were very popular in India.

Kapoor: Those were also the days of Indian independence, and there was a lot of turmoil. Of course, you were relatively young at that time. But do you recall any events or any happenings?

Murthy: No, I think the earliest years that I remember are after 1950 when I was about five years or so. We would all sit down together for dinner with father. Food would be served in plates on the floor. We would all be sitting on the floor and mother would serve food for us. Then, father would talk about the wonderful things that were happening in India because Jawaharlal Nehru had a great vision of building modern India.

My father would talk about how Nehru was building steel plants, he was building huge dams, he was building atomic energy establishment, he was building educational institutions of higher learning, et cetera. In other words, every day, there would be some discussion on the wonderful things that were happening in India at that point in time in preparing India to be a part of the modern world.

Brock: How did you react to your father's discussions about this? Was it something that, as a young person, made you feel excited and optimistic and something that you wanted to be a part of? How did you feel about that?

Murthy: We were all very excited because father and mother and even my grandmother would often talk about the sacrifices that Mahatma Gandhi, Jawaharlal Nehru and other leaders of the country had made in obtaining independence for India. Father would talk about the great vision that Nehru had, and the need for India to become integrated with the modern world.

Therefore, we would be very, very excited to hear the next bit of good news from father, because those days we were not subscribing to any newspaper in our home. We just could not afford to subscribe. We did not even have a radio at home at that point of time. Therefore, father would read newspapers in his school and he would come and tell us the wonderful things that were happening. We were very upbeat, we were very positive about India. We were very, very excited.

Kapoor: Wonderful. In terms of your personal interest in reading and interest in your future were there any topics that excited you? Were you reading any books that impacted you?

Murthy: Father was a great believer that we should all learn English. Therefore, every Sunday, he would read classical books like books of Shakespeare, Charles Dickens and other well-known writers of English. We would have a dictionary by our side. He would ask us to look up the dictionary and find out the meaning of new words. In other words, it was a learning exercise for us. We read these wonderful authors, and it was, in some sense, a window to us to the outside world.

Kapoor: How was your experience in the school? Were there any teachers that you remember that were good mentors, for example?

Murthy: We had excellent teachers. Teachers who taught us good values. Teachers who were very strict. Teachers who were pretty good in their subjects. Teachers who walked the talk. Therefore, we were highly inspired by these teachers.

Brock: I was reading in an interview with you, you talked about education being kind of a major part of your household, which I think we just touched on, but also respect. I was really curious to hear what did that really mean? What were the lessons in respect? How was that manifest in your household?

Murthy: Well, first of all, respecting people who are older than you was very, very important in our tradition. What did I mean by respect? First of all, it is about listening to what the elders say very attentively. Trying to internalize the advice. Then, perhaps thinking about it ourselves but not questioning. Somehow, questioning was not very much encouraged in India of those years.

It meant introspecting on the words of the elders and then asking ourselves questions like, “What did this person mean by this particular advice? How will it benefit me? What is it that we need to do from now on?” Those were the kinds of things that manifested as respect. Respect also meant giving up your chair

if an elder came and stand if there was only one chair. These were some of the dimensions of respect that we, as children, were encouraged to follow.

Kapoor: When did you start thinking about your career? What kind of career, especially engineering, do you remember?

Murthy: Those days, India was on to lots of engineering projects. There were steel plants being constructed. There were power plants being constructed. There were dams being constructed. We knew that there was going to be a big opportunity if we became either an engineer or a doctor. However, a job as a civil servant in the government was also very, very attractive. But my father felt that becoming a skill-based person like an engineer or a doctor would be much more appropriate if we wanted to succeed in the India of the ‘70s and ‘80s, and, therefore, he advised us to take up one of the professions. That's how I became an electrical engineer.

Brock: Interesting. I was particularly interested in what I understood was your particular ambition to be an electrical engineer associated with hydroelectric power production.

Murthy: Yes.

Brock: It's my sense, and please let me know if I’m right or wrong, but that these large hydroelectric power stations were also—had a kind of resonance as projects of national pride. That these were big projects, socially, politically.

Murthy: You're absolutely right. First of all, they resonated with the idea of a resurgent India, of a modern India. These were huge. There would be a huge dam and lots of water falling. Electricity was getting generated. That electricity was being used to run pumps which provided water to fields and to cities for people to drink. In other words, there was a sense of being part of building modern India.

Second, most of these hydroelectric power stations were in green valleys, and were in very pristine and serene environments. Therefore, they had a big attraction in terms of the job opportunities that it gave me. Both in terms of these projects being of national value, and also their providing me an opportunity to lead a very comfortable life in a serene environment; these were very attractive.

Kapoor: So, your interest in—I'm sure, at that time you heard about the IITs.

Murthy: Yes.

Kapoor: They were pretty prestigious institutions. You had an interest in joining one of the IITs, and you passed the exam, in fact. But I understand that there was some financial difficulties in terms of being able to attend the IITs in the family.

Murthy: In those years, I used to get what is called national scholarship. If you were in the top four in a state in your high school examination in the state, then you were eligible for a national scholarship. But, the money would be dispersed at the end of the year. That was the way it worked.

When I went to my father and told him about my desire, he said, “Look, there is no way I can support you, because putting you up in a hostel,” (outside the hometown of Mysore where we all lived) he said, “would require me to spend probably one third of my salary. I have eight children. So, I don't think I can do that.” And he also said, “Look, if you are smart, if you work hard, it doesn't matter where you study. You will do well in your future.” That's how I did not go to an IIT. But I don't regret it at all.

Kapoor: He was so right. How was the University of Mysore, looking back? Was that part of your education very satisfying to you?

Murthy: It was satisfactory because the teachers, that we had those days, were quite knowledgeable. There was no research component in the college where I studied.

Kapoor: Actually, even in the IITs there was not that much research.

Murthy: Hardly. It was more like a liberal arts college here where the focus was on good education. We had very good teachers in all branches of engineering - civil, electrical, and mechanical. There were good teachers in physics and mathematics too. It was a wonderful period of five years that I spent at the University of Mysore.

Kapoor: That's very nice. You chose electrical engineering as your topic.

Murthy: Yes.

Kapoor: Were there any particular experiences of teachers that impacted you as to what field of electrical engineering you wanted to go into?

Murthy: Well, first of all, I was reasonably good in mathematics. My teacher said, “Look, if you are reasonably good in mathematics, probably electrical engineering or electronics engineering would be a good area to pursue because most of what you study would be based on mathematics.” It was also a field that did not require me to do a lot of physical work. Therefore, I chose electrical engineering.

Kapoor: Would it be fair to say that, as you mentioned mathematics, you were partial to mathematics, that your interest in control theory developed towards the end?

Murthy: Oh, yes. My father was interested in mathematics. Even my children are interested in mathematics. At home, there has always been considerable reverence and respect for mathematics. It started from my grandfather, perhaps. It was very, very easy for us to do reasonably well in mathematics, and to choose a discipline of engineering that used a lot of mathematics.

Kapoor: Right, right. It was my experience because I enjoyed mathematics as well and I chose control theory. Even coming to this country, I continued in that, and then I had to change my field for different reasons. But, thank you.

Brock: How large was the university during your years there in terms of the student population?

Murthy: The engineering discipline had about 200 students every year. They took a five-year course. So, there were 1000 students. But my own branch of electrical engineering had about 40 students each year. In other words, you're looking at only about 200 students, not too many.

Kapoor: Then, I think, you moved to Indian Institute of Technology in Kanpur. How did that come about? I understand that you had spoken to some professor who guided you into computer engineering.

Murthy: I wanted to go to IIT Kanpur because I had heard that it was a good institute. It was supported by eight American universities. It had two computers - IBM 7044, and IBM 1620. It had the American system of education where you could take courses from any department that you wanted as long as you satisfied the core requirements. Because of this flexibility, I wanted to go to IIT Kanpur. In fact, the first year, I took several courses in control theory. I did courses on modern control theory, optimal controls, calculus of variation, et cetera, basically mathematics.

<laughter>

Kapoor: Yes, yes.

Murthy: But then one day, I listened to an American professor, who was on sabbatical from Princeton at IIT Kanpur, talk about the future of the world, and the computers. It was a fascinating talk that he gave. It was just a breakfast table talk. I requested him to suggest to me a few papers that I could go to the Central Library and read. I went to the Central Library after breakfast. I read those papers.

Monday morning, I went to my advisor and I said, "Look, I have decided to change my field from control theory to computer science." He was a wonderful human being. Very generous. He asked me a couple of questions to ascertain that I had thought about it a little bit. Once he was certain that I had thought about it deeply, he said, "My best wishes. And whatever you do, do it well with seriousness." That is how I changed my specialization.

Kapoor: So, your first experience with computers was at IIT?

Murthy: My first experience with computers was at IIT Kanpur. We had an IBM 7044. We had an IBM 1620. We had an IBM 1401. They were all IBM machines. The first time I saw what I thought was a computer was an IBM 407 printing machine, just a printer really. It was swallowing cards on one side and then spewing printout on the other side. I thought it was a computer. My friends fooled me to believe that it was a genuine computer. Then, they made fun of me in the hostel that evening.

But then, I would say, over a period of a few months, I became pretty good in using IBM 7044 because some of us had to use the entire computer in the night to run some simulation programs using what's called GPSS, General Purpose System Simulator. It was a language that helped us to do simulation. And that required us to mount six tapes on the six tape units. It was a macho thing to make the six tape units rotate fast. That was a big deal. We had a wonderful time.

Brock: Had the computer been in your imagination at all before this discussion with the visiting professor? Had it been in your consciousness or imagination up to that time?

Murthy: You know, when I was a student in the undergraduate course I had heard that IIT Kanpur was the only institute of higher learning in India which had a computer, a digital computer. Many institutions had analog computers, but this was the only one that had a digital computer. Therefore, I wanted to go to IIT Kanpur.

In the first semester, because I liked mathematics so much and I liked control theory so much, somehow, I was still focused on control theory. But when I listened to this professor from Princeton give a stunning discourse on how computers would impact the world, that was a transformational moment for me. That is what made me go to the library, read the papers, and then decide to change my field.

Kapoor: So, you were learning programming. Were you into software at that time? Or more like computer architecture, the hardware design?

Murthy: We had courses on computer architecture. We had a course on operating systems. We had a course on compilers. We had a course on automata theory. We had a course on switching theory. We had a course on - it was a very early course - on algorithms, not as developed as today. But still, it was a course on algorithms. It was very exciting.

Kapoor: Following your college and IIT, what was your inclination? Were you looking at working in the industry, and what kind of job were you looking for?

Murthy: There were only 12 students who were doing the graduate course in computer science at that time. Every one of us had about four or five jobs in companies that had installed a very old computer called IBM 1401 computer which is there in this museum. <laughs>

As I was about to decide on which job to take, I got a call from my professor, Professor Rajaraman, and he said, “Look, here is this professor from the Indian Institute of Management, Ahmedabad. He has come for recruitment. I believe he is going to install the first timesharing system in the country. Why don't you go and talk to him?” I went in and spoke to Professor Krishnayya from IIM Ahmedabad. And, he gave another stunning exposé on how this timesharing system would be a leapfrog for me in terms of my knowledge of computer science, my knowledge of what can be done, et cetera.

But the only catch was and the only negative was the salary. It was just half the salary of the other jobs that I had gotten. I went back to my professor and told him about the salary differential. He said, “At your

age, if I were you, I would take the job at IIM Ahmedabad because you're going to be using a timesharing system. You will have the opportunity to study how a timesharing system works and about the various components of the timesharing system. You will also have an opportunity to develop interpreters and simulators." Because, at that time, ECIL, the Electronics Corporation of India Limited, was manufacturing computers in India. He said, "They need a lot of software. You will be able to develop that." I listened to my professor. Then, I spoke to my father. My father said, "I don't know anything. You speak to your teacher and whatever your teacher says do it." I did exactly that, and that's the best decision I have made in life.

Kapoor: Very nice. Professor Krishnayya, of course, I had heard about him when I talked to Dr. Kailath, Professor Kailath, because he knew his dad.

Murthy: Yes, they were classmates.

Kapoor: Yes, so his decision to come to this country was also influenced by him, which is a fascinating linkage.

Murthy: Yes.

Brock: Before we move to your new position, I was curious about just those years when you were pursuing your graduate studies, which I think were 1967 to 1969.

Murthy: Yes.

Brock: That's a very—those are very eventful years in world history. I just wondered how the sort of cultural and political developments going on elsewhere in the world were evident or not in your experience? What you were making of the news, what was your thinking was like?

Murthy: As far as we, the students IIT Kanpur, were concerned we were heavily influenced by the wonderful advances that were taking place in the U.S. Because MIT, Princeton, University of Pennsylvania, University of Michigan and University of Berkeley were among the eight very famous universities in this country that were associated with IIT Kanpur. Because there were a few professors from each of these universities present at IIT Kanpur in India, we were very excited about learning new things from these professors, interacting with them, and to understand the American culture.

In other words, we were very positive about what was happening in this country. That was the time of the '68 Berkeley revolution. John F. Kennedy had died in 1963, (November 22), if I'm not wrong. President Johnson was there. I suppose, Nixon had just started in '68. But, the reality was simply that we were identifying with all of the wonderful things that were happening in this world in terms of the Berkeley revolution, the student revolution in Paris, et cetera. So, they were wonderful days.

Brock: And your engagement with politics, I guess that really happened with your father's discussion to you and your siblings. Did you still feel—what was your politics like in those years?

Murthy: I must admit that we were all left of center at that time for two important reasons. One, the Soviet Union was closer to India at the government-to-government level. When India requested the United States for help in building a steel plant, the U.S. senators and the members of Congress refused saying that there would not be any market opportunity for the US steel companies. If I'm not wrong, the Soviet Union ended up building two steel plants for India. Therefore, in some way—there was a feeling that the Soviet Union was our friend at the government level.

But, at the person-to-person level, at the people-to-people level, U.S. was clearly the friend because there were so many wonderful professors from these eight universities. It was clear that the U.S. was the technology leader. There were two levels of friendship. At the person-to-person level, our interaction with the US and our appreciation for the U. S. was the highest. But, at a government-to-government level, it was the Soviet Union.

Second, because I belong to a generation that had seen leaders who had gotten independence for India, there was this whole feeling of nationalism. There was this whole feeling of wanting to be self-reliant, and that we must develop. The whole feeling of anti-imperialism. To that extent, we were left of center. These were the two aspects of our personality at that time.

Kapoor: Right. At that time, what I remember also, the conflict with Pakistan. That influenced life on campus as well, for me, at least, at IIT. I remember the war, and the blackouts and so on.

Murthy: Yes, absolutely. But the war with Pakistan happened after I left IIT Kanpur. But, during my time at IIT Kanpur, it was really one of US not building the steel plant and the Soviet Union helping us the second time. And then, the leaders of independence movement were right in front of us. I think those were the two factors that influenced us just a little bit.

Kapoor: Going back to Professor Krishnayya, what I remember is that he had a lot of connections abroad. He had worked overseas. I understand that he recommended SESA in France to you. Would you elaborate on that?

Murthy: He and I had produced a paper on deadlock resolution which we presented at a conference in Italy. The chairman of that session was the director of a company called SESA in Paris. My paper was liked very much. My professor, Professor Krishnayya, was very kind to say that it was me, his student, had done the work. That's how he recommended me for a job.

But at that time, I had got a scholarship to do my PhD in computer science from Technion — Israel. For me, Technion - Israel was the most attractive option to go and do my PhD. When my friends said, “You are young. The city is Paris. The job is to design an operating system,” I just said, “Okay. I will take up this job”

Brock: I was wondering about your—with your experience of timeshare computing, and if you could just talk a little bit about, I think, that was Hewlett-Packard equipment that you were using. If you could talk about just your experience with that and what you learned.

Murthy: Yes. When I joined Indian Institute of Management Ahmedabad I was the chief system programmer. I was the head of the computer center. I had the opportunity to install this timesharing system. It was based on HP 2116B computer. It had 16 teletypewriters. It ran BASIC. We had gotten the source code of the timesharing system.

We learned a lot about how the scheduler worked, how interrupt drivers worked, and how we could modify the operating system to suit our needs. In addition, we also built a simulator for one of the Indian computers, TDC-312, on top of the operating system that ran on HP 2116B. We developed a BASIC interpreter running on the simulator. That was a wonderful experience.

The second observation I have is that I have not seen another piece of software that was as infallible as the software that HP had produced for timesharing on that HP 2116B. It did not have a single bug. Even today, when youngsters come to me and talk to me about this bug or that bug, I tell them, “Look, HP produced this unbelievable timesharing software in 1968. Why can't you guys do that? They did it in 1968.” I must say that the HP time sharing operating system software showed me how one should write a piece of large software. HP is a remarkable company.

Brock: May I ask just one more quick question about that BASIC interpreter that you made for the simulator. Was that an Indian-produced minicomputer?

Murthy: Yes. It was an Indian computer. TDC-312 was an India-produced minicomputer. It was a 12-bit minicomputer. It was modeled after PDP-8.

Kapoor: What was your experience like in France, in Paris with SESA? Did you speak French?

Murthy: When I went to France I did not know a word of French. I decided to attend Alliance Française every day after my work. I learned French within the first six months. It required a little bit of hard work, but I managed. Paris of the seventies was a wonderful city. The student revolution of ‘68 had just taken place. Once you speak a little bit of French, the French people are very kind. Even today, I visit that city at least twice a year, and I enjoy every minute of my stay. The city never slept. I would walk from one end of the city to the other end of the city at one o'clock in the morning, or two o'clock. It was absolutely safe. It was a wonderful place.

Then in the office, there was a lot of learning. Most importantly, for somebody who was a left-of-center person, I learned several important lessons outside the office - that the only way a society can solve the problem of poverty is through creation of jobs; and that it is not the responsibility of the government to create these jobs but it is the responsibility of the government to create an environment where more and more entrepreneurs can create better and better jobs in larger and larger numbers. That was the biggest lesson I learned in France. That is when my leftism started to become weaker and weaker.

Kapoor: Then you had the experience in Bulgaria. Maybe you can mention it briefly.

Murthy: Yes. When I decided to go back to my country at the end of the project, I wanted to hitchhike because I said, look, I am pretty young. if I do not take that kind of risk and have some fun now, I will never do that. I hitchhiked my way from Paris to Kabul. I took a flight from Kabul to Amritsar. I went to a lot of cities, a lot of countries, in both Western Europe and Eastern Europe.

I went to a place called Niš, which is a border town between what was then Yugoslavia (now Serbia) and Bulgaria. It was 9:30 P.M. on a Saturday night. I went to the restaurant in the railway station. I asked for food. They said, “We will give you food only if you have the Yugoslavian Dinars.” But, I did not have the Yugoslavian money. So, I lay down on the platform. The next morning, I went into the town. In a communist country, why would any bank be open on a Sunday? Those days, there were no ATMs, no credit cards, nothing.

I came back to the railway station and I lay down on the platform because I wanted to conserve my energy. At eight thirty in the night, Sofia Express came. I got onto the train. There was a girl and a boy sitting opposite me. I tried to strike a conversation with them. I first tried my Russian. I knew Russian at that time. But, neither of them wanted to speak to me in Russian because they probably hated Russia. Then I tried my English. They did not understand English. Finally, I tried my French, and the girl understood French. She started talking to me.

The boy got upset with us for some reason. He brought the police. The police took the girl away, and they ransacked my backpack and sleeping bag. They dragged me out of the train. They locked me up in a small eight-foot by eight-foot room in the railway station. It had a cold floor. There was just a hole in the corner for toilet facilities. And, there was just a tap for toilet water. I was there for about 120 hours without food or water. They opened the door at 1:00 A.M. on Wednesday night. I had been locked up since Sunday night. They dragged me on the platform and put me in the guard’s compartment of a departing freight train.

Then they said something that totally transformed my life. They said, “You are from a friendly country called India. Therefore, we are letting you go.” I said, “If this society treats friends like this, I don't want to be part of such a society.” That is what transformed me from a confused leftist to a determined, compassionate capitalist. I said to myself, “I'll go back to my country. I’ll conduct an experiment in entrepreneurship.” That's how I was totally transformed.

Kapoor: I think that term compassionate capitalist, I first heard that when I read about Jamsetji Tata. He was the first compassionate capitalist in the country.

Murthy: To me, compassionate capitalism is about capitalism in mind and socialism at heart. In any society, if you want peace, stability, and harmony, then the rich, the powerful, and the elite will have to show self-restraint. Self-restraint from allocating for themselves more power, and a bigger part of the fruit of the labor of their company. Right? Therefore, only a society where the rich and the powerful demonstrate self-restraint is a society where capitalism will flourish. Otherwise, capitalism has the danger of becoming unpopular amongst the poorer sections of a society.

Kapoor: Right. If there's a divide with the upper management with high salaries and people with very low salaries, that's like a big divide.

Murthy: Absolutely.

Brock: Would it be fair to say that at this stage you were looking at capitalism as a tool to accomplish an end? Rather than an end in and of itself? That's what it sounds like to me listening to you.

Murthy: You are right. For me, capitalism is a tool for abolishing poverty in a country like India because capitalism is what encourages entrepreneurship best. As I said earlier, entrepreneurs convert the power of an idea into wealth for themselves and jobs for others. Therefore, if we want more and more jobs to be created, then we need to embrace entrepreneurship. Entrepreneurship flourishes best under capitalism. Therefore, capitalism is a very important instrument for the economic progress of a society.

Kapoor: Yes. But, also, if there are shackles, like the time in India, before 1991, even with the best intentions, one can only have moderate results, as I was talking to some other folks. Let's go back to your travel to Pune after you came back from France. Can you maybe tell us about that?

Murthy: After I returned from France, my professor, Professor Krishnayya, started a think tank in Pune called Systems Research Institute. Systems Research Institute was, in some sense, modeled after Stanford Research Institute. It used operations research, systems theory and mathematical modeling to address the problems of large-scale public systems. I was very excited by it. I was quite happy being part of that.

Kapoor: So, at this time you also met your future wife Sudha Murthy. Maybe you can say a few words about that experience.

Murthy: I met my wife Sudha through a friend of mine who was working with her at TELCO which is an automobile manufacturing company in Pune. She is an engineer. Her graduate study is in computer science. She was working at TELCO, and that is how we got introduced. I was very lucky to get to know her.

Kapoor: She's a remarkable lady. I met her as I have mentioned to you. So, thank you very much.

Brock: Could you describe your initial work at the institute when you got back? Had they established a computer operation?

Murthy: No. It was just a think tank. We had not yet installed any computer. We were using the computer at the Tata Institute of Fundamental Research in Mumbai. We compared the drilling performance of oil and natural gas commission with a company in the private sector called Oil India. We then looked at why one of these two companies was doing better than the other in certain parameters and why it was not doing as well in certain other parameters. Then, we wrote up a report to the government suggesting the ways they could make the public sector drilling company become more efficient. That was the idea.

Kapoor: So, you created a company called Softronics in 1975, ‘76 timeframe. Could you say a few words about that?

Murthy: My desire to become an entrepreneur was still burning. At the earliest opportunity, I wanted to get back to entrepreneurship. So, I left Systems Research Institute, and I created a company called Softronics which was about developing application software for Indian corporations.

But then, that company was a little bit too advanced for its time in India because there were hardly any computers in the country. That was the time when IBM and Coca-Cola had walked out of India because of a certain restriction that the government had placed in their equity structure. Therefore, even the outdated computers like the IBM 1401, which IBM was manufacturing in India, were no more available. ICL [International Computers Limited] 1901 was another outdated computer. They had also left India. The only computer manufacturing company that was present in the country was ECIL, Electronics Corporation of India Limited. But, they were not producing enough computers.

In a matter of eight to nine months I realized that there was a structural problem in the market. Therefore, I closed down Softronics and decided to get experience to enter the export market later. I learned an important lesson and closed Softronics within eight to nine months.

Brock: Was your idea for the firm that you would work with a group of employees to develop the software? Or was the idea that it would be—the company would be a structure where you could bring people in sort of like on a more contractual basis to work on projects?

Murthy: No. Those days the only model that worked in India was if those employees were full-time employees.

Kapoor: The next phase of your life, I think, you were with Patni Computers. Can you explain what happened and how you left?

Murthy: I was invited by the Patnis to become the general manager of software. They had decided to represent Data General computers in India. They had also started a business to develop software for export to the United States. It was a great opportunity for me to learn this new business. I would also have the opportunity of working with bright youngsters. I developed a group of about 100 youngsters at PCS [Patni Computer Systems].

We sold Data General computers in India. We also developed application software on Data General computers for our clients in India. In other words, there were three aspects of our business: selling the Data General computers, exporting software on digital computers and, finally, developing application software for local customers. I was there for about four years before I started Infosys.

Kapoor: Okay. By now, your emphasis was really on software and application software.

Murthy: Yes.

Brock: My impression was that both for the application software, for this firm, textile and textile-related companies seems to be the customer base. Is it both for the export market and the domestic market, is that correct?

Murthy: You're right insofar as the export market was concerned. There was a company in New York which had developed an application package called comprehensive apparel manufacturer's package (CAMP) which was primarily aimed at companies in the U.S. that were producing or importing clothing as well as shoes from the Far East and selling it in the U.S. Examples are Reebok, Tropical Garments, Capital Mercury Corporation and Jockey.

We were in charge of upgrading that package to run on a much larger computer, a super minicomputer like Data General MV/8000. We upgraded the package onto the DG MV/8000 first. Then, we rehosted it with additional functionality on an IBM 4341. Our specialty was in software development. Our customer's specialty was selling the package.

Brock: I see.

Kapoor: We're starting to talk about Infosys and how it got started and how you worked with these other gentlemen that joined you. How did you select them? Or how did you start Infosys?

Murthy: I had this urge to become an entrepreneur. I tried once and it didn't take off. But then after spending four years at PCS, I realized that I had to start pretty quickly because I was reaching my 35th year. Somehow, I had this belief that if I did not become an entrepreneur before my 35th year then I would not succeed. I was born on 20 August 1946. The company was founded on 7 July 1981. Just a month, a month and a few days before my 35th year, 35th birthday!

There were six bright youngsters who were working with me at PCS. When I told them that I was going to branch off on my own they said, "No, we would leave our jobs here. We want to work with you" because they enjoyed working with me. I had enjoyed working with them. We had lots of hopes, lots of dreams, some confidence, but no money. But it all worked out well because we worked out a deal with our client who gave us a reasonably good advance. So, we managed that. And that's how Infosys took off.

Kapoor: Yes, it's almost legendary how everybody talks about meeting in your bedroom and talking about the vision and the values of the company. Let's hear it from you.

Murthy: I modeled Infosys on the same lines as Abraham Lincoln defined U.S. democracy in his Gettysburg Address. I said, "I want Infosys to be the first Indian company of the professional, for the professional, and by the professional." There was no such company in India at that time.

My Indian colleagues were also highly thrilled with that definition. They were very happy. We conducted ourselves like that. Everything was highly professional. We adhered to the highest level of transparency, and to the highest level of fairness and accountability. We followed the finest principles of corporate governance right from the day we were a small start-up to 2014 when I left.

Kapoor: I'm sure your wife was very supportive. By now, you had family, you had children at that time. How did she react to your going to a start up?

Murthy: My wife has always been very supportive. Without her support I don't think I could have achieved even a small fraction of whatever Infosys has achieved. She provided all the help she could. In fact, she gave the initial amount of $250, equivalent to 10,000 rupees, because some of my colleagues did not even have a small amount of money to contribute towards equity. She worked hard. She had a job. She supported me. And I think she's quite happy now.

<laughs>

END OF THE INTERVIEW

