Oral History of Nandan Nilekani

Interviewed by:
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Recorded January 8, 2019
Bangalore, India

CHM Reference number: X9234.2020

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Kapoor: On behalf of the Computer History Museum in Mountain View, California, it gives me great pleasure to welcome Mr. Nandan Nilekani for his oral history. I hope I pronounced your name right. My name is Uday Kapoor, and I'm a volunteer in the oral histories program at the museum. Joining me is David Brock, director of the Software History Center at the museum. Nandan cofounded Infosys in 1981 where over the years he was president, COO, CEO, and co-chairman of the board before leaving Infosys in 2009 to serve as a chairman of the Unique Identification Authority of India at the invitation of Prime Minister Dr. Manmohan Singh. As chair of UIDAI he was responsible for implementing the biometric ID system to give a unique ID to all the residents of India. It was called the biggest social project on the planet. Nandan serves on numerous boards and is chairman of *EkStep*, a nonprofit literacy and numeracy platform. Nandan has invested in more than 12 startups, probably more by now, and is a generous donor to charities. He has won many prestigious honors -- I won't mention all of them-- including the Padma Bhushan. His book, *Imagining India* with a foreword by Tom Friedman is widely acclaimed, so with that we'll begin. If there are any corrections, please tell me.

Nilekani: No, that was perfect.

Kapoor: So, with that let's begin with your early life. We typically want to start with where you were born. I believe you were born in Bangalore, and let's start from there.

Nilekani: Sure. Yeah, I was born in Bangalore in 1955, which I think was a good year for computer guys – some very famous tech guys were born in 1955. And I grew up in Bangalore until the age of 12. My father worked in a textile mill in Bangalore, and then the company that he was part of had some difficulty, so he moved to jobs in different cities, working in the mills.

But he wanted me to have a stable education, so I went to stay with my uncle in a small town called Dharwad, which is midway between Bombay [now Mumbai] and Bangalore. I stayed with my uncle, and had a wonderful time there, went to school, did my first two years of college, and then I was very fortunate to get admission in IIT [Indian Institute of Technology] Bombay. So, in the year of 1973, I moved from Dharwad to Bombay to start living at the IIT campus.

Kapoor: So, we can come back to your later education. Let's go back to your early childhood and learn a little bit about the environment with your parents and siblings and what kind of schooling, who were your mentors, so if you could give us a little bit of that.

Nilekani: Yeah, so, as I said, I spent the first 12 years of my life in Bangalore. I do have an elder brother. He lives in Wilmington, Delaware. He's eight years older than me, so when I grew up it was almost like being an only child because by the time I grew up he was already in college, and he had left home. But I had a very nice environment where I was encouraged to read and learn. I was sort of a nerd. Went to the library, British Council library, and many other libraries in Bangalore, so I had a very good time in those 12 years. I went to a couple of schools.

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I went to a school called St. Anthony's, and then I went to Bishop Cotton Boys' School, which is--

Kapoor: It's very famous.

Nilekani: -- a very renowned school, a very old school in Bangalore. But then at the age of 12, as I said, I moved to Dharwad. I joined a school called St. Joseph's, another good school, and I had a wonderful experience. It was a different experience because I was going from a bigger city to a smaller town, but I made a whole new set of friends, and then I went to a leading college in Dharwad called Karnatak College. Karnatak College is probably the oldest college in that part of the world. It's very, very famous. It has a huge number of illustrious alumni, and I spent two years there, and in those days people who went to IIT were typically from large cities – they would be from Bombay or Delhi. They would be from very good schools. They would have IIT coaching classes, and so a large number of them would get into IIT. It was not that common for people from smaller towns to make it, but I was very fortunate that we had a cohort of people who wanted to make that happen, so we all studied together. I had a lot of cousins who were in IIT, so they handed me down their books, and we were able to study together.

Kapoor: I'm an IIT graduate, too. IIT Delhi, 10 years senior to you, and so I remember the environment, and, like you said, I came from a big city. I didn't have to go through that, but luckily in those days there was less competition.

Nilekani: That's true. Oh, absolutely. I made it only because it was less competitive. So, I think for me the first turning point was moving as a 12-year-old from Bangalore to Dharwad because I think at an early age I learned to be self-sufficient. I was no longer staying with my parents. I was staying with a very, very, very hospitable and affectionate family, my uncle's family, but my parents were not there, so I learned to manage by myself. I also learned to handle different environments, so I think the first big transition for me was that move where I spent six wonderful years in Dharwad, and then at the age of 18 I went to IIT, another big transformation.

Kapoor: Right, right. So, without assumption, I'm sure you did well in all the schooling and did well in your results.

Nilekani: Yes, I think I had a good academic record in my school, so I did well both in Dharwad and in Bangalore, and it was a time when I realized that I had a lot of interests, so I would read widely.

Kapoor: In fact, I was going to ask your interest in engineering versus arts.

Nilekani: Yeah. Well, I used to read a lot, both fiction and nonfiction, and I think that was an era where most young people would pursue a career in professional schools, either in engineering or medicine. In my case, I was fortunate that I had a number of cousins who were at IITs. Many of them were at IIT Bombay, so I was very fortunate that I had their mentorship to

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advise me on how to make it to IIT. Because they were all in IIT Bombay I decided to join IIT Bombay, because technically I could have joined any IIT. My father sent me a telegram when I had to go to Chennai for my interview, saying join IIT Chennai chemical engineering or something like that. So at the age of 18 you want to do the opposite of what your father tells you, so I said, "No, I'll join electrical engineering in IIT Bombay." And of course, as I said, I had my cousins there, so I had a lot of affinity for IIT Bombay.

Brock: May I ask you a little bit more about what you were reading as a youth, and just ask you if there's anything in particular, any sort of subject or genre or author that really strikes you as relevant to the way your life has unfolded?

Nilekani: Well, I read widely both fiction and nonfiction. Fiction of the day was Enid Blyton or William [by Richmal Crompton] or all kinds of books that we had, but I also read science fiction, Asimov and people like that and Arthur C. Clarke. So I was into science fiction -- and of course I read on technology and science. At that time I don't think I had any particular predisposition towards computers, but I think it was a more wide-ranging sort of reading habit.

Brock: When did an interest in computers first begin to emerge for you?

Nilekani: Oh, that emerged entirely at IIT because -- Do you want to switch to my IIT period or...

Kapoor: Sure, yes. I think that's a good segue.

Nilekani: Yeah, at the age of 18, I came to IIT Bombay, and that was of course personally a very different experience for me. I was moving into a hostel. I was making new friends. At first, I was a bit -- what shall I say? I was not that assured about myself, so it took me time to get my self-confidence, but over time I became very confident, and it was at that time that my interest in computers sort of took off.

Kapoor: And I think that technology had changed, too. When I was in IIT Delhi they didn't have computers. Very little emphasis on software. Most of it was IIT Kanpur.

Nilekani: Yes, I think it's important to understand, I think, what happened with the IITs. Each of the IITs had a different country as a partner. And the U.S. was the partner of IIT Kanpur, and in the case of IIT Bombay, the partner was at that time the U.S.S.R., so we had a computer called the EC-1030, which effectively was a clone of the IBM 360. So those were the days when we entered our data using punch cards and tapes and so on, if you had something in the night--

Kapoor: I think you'll enjoy the museum because we've got a lot of those era gadgets.

Nilekani: So, I give you a program, punched it, and gave it at night. In the morning you got the output, and I think one good thing about that era for all of us was that was the time when

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computing was scarce and expensive, and, therefore, when you wrote a program you really checked it and double checked it to make sure there were no errors, because if you made an error then it would go down to the next morning, and you would lose a whole day. Today because computing is so profuse, so prolific, people are willing to write something, give it to the computer, get it back, and then correct it based on that input, but in those days we had to be a lot more careful, so I think to that extent I think those of us who grew up in that era had to be more rigorous in the way we thought about things.

Kapoor: I remember when I interviewed Mr. Murthy he was talking about his selection of control theory as the topic, which was my topic, and I went to Seattle in the University of Washington, hoping to have a career, Boeing laid off two thirds of its workforce because they were cutting back, so I had to change from control theory because I was a mathematician. But anyways, please.

Nilekani: At that time in the '70s in IIT there was no separate stream called computer science. All of us did double E, Electrical Engineering, and we selected our choices through electives, so I took a lot of electives in Computer Science. In fact, there was no separate Computer Science department. It was part of the double E, Electrical Engineering department. But the good thing was that IIT Bombay had some fabulous professors. Professor Isaac [J. R. Isaac] is a legendary professor. Then Professor Deepak Phatak, who is still very active, and many, many professors of that league, and they were all quite young, so they were not that much older than us. So I think working with them was a terrific experience, so that's how I got into technology. But the other big thing which happened to me in IIT was I built my organizational and social skills a lot, which in some sense came in pretty handy later on because I became an organizer. IIT Bombay had a festival called Mood Indigo, which is even today, regarded as the best student festival in the country, and I was the organizer of it. I was the general secretary. I did lots of things, so I think doing all those things gave me a huge amount of self-confidence and sort of street smarts in some sense. So it was both a technical education, but equally it was a social education on collaboration, learning to deal with people, engaging with them, and so on.

Kapoor: Right, and now I notice kind of going forward a little bit from yesterday's prize [Infosys Prize 2019] event, how much research is going on in IITs.

Nilekani: Yes, I think that's a big change from the time that we went. One of the things that happened in India, I think, was that the research money started going to government institutions. So the government set up research labs, and the CSIR [Council of Scientific & Industrial Research] system is a great example of that, but even in defense it went to DRDO [Defense Research and Development Organization]. IIT essentially became a more teaching environment, and a fantastic teaching environment, obviously. IIT graduates have done very well, but the big shift that happened over the last maybe 10, 15 years was the huge focus on also making the IITs research institutions. Because people realize that you need both research and teaching together to fuel the system. You also need a large number of PhDs. During our years, it was more of an undergraduate institution. Now I think it's great, and I've been involved

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subsequently -- I was on the board of IIT Bombay, and I've seen how the transformation has happened. New departments, more PhD students, more research, more interdisciplinary work, so, yes, I think you see a definite shift.

Kapoor: Right. I noticed that Professor Paulraj, who did his PhD at IIT Delhi under Professor Indresan -- Professor Indresan was our teacher as well, and Professor Paulraj is considered the father of 4G, so that was kind of the beginning stages of the original thought.

Nilekani: Yes, in fact it's a huge coincidence because I spoke to Paulraj this morning, and Paul called me because he's very keen that India becomes a leader in core technology, and he's been doing a lot of work in preparing a plan on how--

Kapoor: He and I have been communicating. In fact, he was supposed to meet the Prime Minister.

Nilekani: That's right. In fact, he called me this morning, or rather he sent me a message last night. I called him back in the morning saying how can we get this to move faster. It's coincidental that I just spoke to Paulraj this morning.

Brock: I just had one follow-up question about your engagement with software in particular while at university. Many people who have been involved with software describe just a kind of a joy and a pleasure when they're programming. Could you talk about your experience of programming and of creating software in particular?

Nilekani: Yeah, I think I definitely saw it as a creative process. I saw it as some place where I could actually create something that worked. I liked the rigor of it, the fact that you had to do it in a very systematic way and that you had to make sure it was bug free and so on. So I think certainly the simplicity and the elegance appealed to me. And this was a time, as I said, this was before all the interactive computers came, right? This was in the '70s, so we didn't actually interact on a screen with the computer. We thought through the program and punched it in a card or a tape, submitted it, and got the results next day, but still I think the elegance of the business of software was exciting even in those days.

Kapoor: So if you want to move on from IIT, I guess you first joined Patni Computer.

Nilekani: That's right, and that's entirely thanks to Mr. Narayana Murthy because it's actually interesting how your life moves, right? The typical route in those days for IIT graduates was either to go to the U.S. and do a Master's, and then do something there, or go to one of the Indian Institutes of Management, complete an MBA, and then become a business guy. It so happened that in the December of 1979, I was supposed to take the entrance exam for the MBAs, but I fell sick, and didn't take the exam. I had taken a few more months to finish my undergrad, so I finished it in November of '78, and I was really wondering what to do., That's when I heard about this small company, which was the agent for Data General, which at that time was this

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very, very exciting minicomputer company from Route 128, Westborough, Massachusetts. This was a very interesting time because IBM had just left India because of the issues IBM and the government of the day had.

Kapoor: My brother had joined IBM from the U.S., and he had to go back because of that.

Nilekani: That's right, so the government that came to power had a minister called George Fernandes. And there were issues about how much equity they should dilute, and so IBM and Coke [Coca-Cola Company] effectively left India at that time, and there was a vacuum of computing. This was a time when the whole Route 128 belt of Boston had taken off. DEC was already a big company, but then there was Prime, Wang and Data General. And, the Patni family, and Narendra Patni, who unfortunately is no more, was based in Boston, at MIT. He had a good relationship with the founders of Data General, and had the agency for Data General in India, and Mr. Murthy was their software manager. He was, I think, their first employee. You can ask him more about that. So I had heard about this company through the IIT grapevine, and said to myself, "Let me go check it out, some exciting, new minicomputer stuff." I walked into his [N. Murthy's] cabin -- he had a small cabin in a building in Nariman Point -- and he interviewed me. His style is to give you puzzles, and he hired me on the spot -- a very unusual way to hire someone. So I joined under his leadership at Patni sometime in January of '79 or thereabouts, and I was there until July of '81 under his leadership.

Kapoor: So in terms of your experience when you joined Patni under Mr. Murthy, what was it like and also the software group that was there?

Nilekani: I think working under Murthy -- with Murthy in the period from 1979 January to July '81 was probably the most exciting time that I ever had, because he was an extraordinary boss. He believed that everybody should operate at their fullest potential. He gave us tremendous freedom, empowerment, allowed us to do our job, make our mistakes, and we had the advantage of a Data General computer, which had been brought down. It was often not used at night, and for those of us who had grown up sending these cards, to have a terminal where you could do whatever you wanted was unbelievable luxury. And, therefore, I would work all night on that, learning. He encouraged us to learn a lot, so it was a terrific experience working for Murthy at that time. He was also a great believer in young talent, and he had faith in young people. He had faith that they would learn and do the job, that he didn't necessarily need people with "experience", and he assembled some fabulous -- and many of them were part of the Infosys journey like Kris Gopalakrishnan, actually everybody, the whole team, so I think we had a terrific time together. I learned a lot. I used that time to really upgrade my skills, become good at programming, become good at databases. I also taught because part of the job was when people invested in the computer that you would teach them, so I think overall it was a very well-rounded experience for me and one of the best times in my life.

Kapoor: And what languages were you using at this time?

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Nilekani: Basically it was COBOL, BASIC in those days.

Kapoor: So how was the business of Patni at that time? Was it growing?

Nilekani: Oh, it was growing! They had actually multiple lines of business, one of those, of course, was as the agency for Data General in India. They sold these computers, and part of our job was to help install them, but they also did a lot of work for clients in the U.S., and that's how I got to go to Boston a couple of times and work with Data General. I actually was at Data General for almost a year. I used to live in Cambridge and take the bus and go to Westborough, Route 128, and I actually saw how a company works. At that time Data General was a very scrappy, young company. I don't know whether you remember Data General. It came after DEC, and they're the original guys who put that famous ad. I don't know the name of this ad, in I think, the Wall Street Journal and New York Times when IBM came into the minicomputer business. It said something like, "If IBM entering a business legitimizes it, then the bastards say welcome" something like that, so they were very scrappy guys.

Kapoor: So in terms of the work that Data General was doing, were they outsourcing work to Patni --

Nilekani: Yes.

Kapoor: -- to do for them or were they doing it for clients?

Nilekani: No, for themselves, so the time I spent there I went every day to the Data General office where I worked on some of the software.

Kapoor: So of course you were there for some time and a lot of you left to start Infosys. Maybe you can spend some time on that aspect.

Nilekani: I think it was, as I said a very, very exciting time, Murthy always felt that this was an industry of people, it was an industry of intellectual brain power, expertise, and, therefore, that a company in this industry should be set up by professionals for professionals based on merit, attract great people, and so on. He had a certain philosophy, and that philosophy was best done by being entrepreneurs. Most people, by the way, were very skeptical about this. In 1981 to be an entrepreneur in India was a brave decision, and everybody dissuaded us and said, "Well, what are you guys trying?" and "This is not usual."

Kapoor: There were a lot of restrictions on computers.

Nilekani: Yeah, the computer restrictions, he'll tell you more about that. You couldn't get foreign exchange to go abroad. You couldn't get a phone for two years. Most people from our background -- were professionals with no capital -- would take up a job or go abroad. So, I think that there were a lot of naysayers, a lot of people who said that we were crazy. The credit goes

entirely to Murthy that we stepped out. In some sense, the way to think about this is that he had the most to lose. Because at that time he was head of the software group. He was obviously paid very well. He had a great position. He was treated with respect. We were younger. He was in his mid 30s. I was 25, so I think my ability or the ability of many of us who were all in our mid 20s, our ability to take risks were much greater, in the sense we had nothing to lose, whereas he had a lot to lose, so I think it's to his credit that he stepped out and set this up.

Brock: Could you speak a little bit more about in the face of all of these kinds of negative pressures, if you will, to founding a new firm a little bit more about what gave the group the confidence that they could actually do it?

Nilekani: Well, I think we got a lot of our confidence from Mr. Murthy because he was our unquestioned leader. He was willing to give up a very well-paid job as the head of the software group at Patni. He was highly respected, and he was absolutely committed to this idea, so that gave us tremendous confidence, and as I said, I think for the rest of us, especially the other founders who were in their mid 20s, the risks were a lot lower. We were just two or three years out of college, and we could take a gamble. In his case, I think it was very different. He was married. He was 35. He really took the big plunge, and another colleague, called Raghavan [N. S. Raghavan], was a little older, so they really took the bulk of the risk. I think we were sort of going along for the ride. We had so much faith in him that we had no doubt that we would do well.

Kapoor: You were all brilliant, and your contribution, everybody's contribution must have done the trick.

Nilekani: Obviously I think there was a great sort of chemistry — like in an orchestra. I don't know whether you know, but he's a big fan of Western music. He would listen to Beethoven, Mozart, some philharmonic orchestra. And I think his uncanny ability to assemble a group of people who are all individually good at something but also together were phenomenal, was his great achievement. He assembled the founding team of Infosys. I think his ability to bring this team together and lead us, was exceptional. So I think it was the synergy of this group that also made a big difference.

Kapoor: So the center of gravity then changed from Mumbai to Bangalore?

Nilekani: Well, that happened later. When we began, Murthy actually opened an office in his apartment in Pune, and we all went abroad, so he was the only guy here. We were all sitting in Florida or somewhere doing some programming work for a company which was a client, and Murthy was holding the fort here [in India]. He worked very hard, and he'll tell you more about it. It was only in 1983 when he landed a deal with MICO Bosch, which is a company here [in Bangalore], to put a Data General computer here, that we moved here. We moved here in '83, and for me it didn't matter. For most of us, we were not in India at the time. Essentially from 1981 to 1987 I was in the U.S. working on various projects for Infosys for clients in the U.S.

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Kapoor: So that kind of was the genesis of the business model.

Nilekani: That's right. That's right. I think in the early days when the technology was not there yet, we had to actually go and do this work physically. The big shift happened in the late '80s, and the credit for that should go to Texas Instruments, because there was an Indian guy called Mohan Rao there. He was a pioneer, and he said that there's great talent in India, and we need all this software expertise. So he set up India's first Earth station in a building, called Sona Towers, on Millers Road in Bangalore, and actually started having engineers sitting in Bangalore connected to their centers in Dallas or Houston, or wherever they were, and doing software over the satellite. They were the pioneers. And then that movement grew dramatically, and the biggest investment that the government made strategically, was to set up a range of Earth stations -- the second one came up in Electronic City, and then they set them up all over the country, and that provided the impetus for doing development from here. So if you think about the first phase which is up to late '89, we couldn't even do it. But after that, offshore work became known as global software development and it became very popular.

Kapoor: So the environment in Bangalore. It was early days, and entrepreneurship was in its infancy I'd imagine, so when did everybody move to Bangalore?

Nilekani: Well, I think Bangalore historically has had several waves of technology, and in some sense the Valley has a similar thing, right? If you go back and look at it, I think Bangalore benefited from extremely forward-looking rulers. If you go back more than 100 years, the Maharaja was a very forward-looking Maharaja. He had Prime Ministers or Diwans who were very forward looking.

Kapoor: Is this the Maharaja of Karnataka?

Nilekani: The Maharaja of Mysore, the state of Mysore, and we had people like Visvesvaraya [M. Visvesvaraya] who's a legendry engineer from here, and it's very interesting that the Indian Institute of Science is in Bangalore.

Kapoor: Yeah, when I talked to Mr. Ratan Tata and the legacy of the Tatas.

Nilekani: That is a great example of a public/private partnership because it was a partnership between Sir Jamsedji Tata and the Maharaja of Mysore. The Maharaja of Mysore actually gave him the land for the university, and he brought in some money, and so they created the Indian Institute of Science way back in 1908. So there was always tech, IISC [Indian Institute of Science] was like the starting point. Then the other big thing which happened was that it became a center for huge public sector investments.

Pre-Independence, for example, Hindustan Aeronautics was set up here by Walchand Hirachand, but Post-Independence when Jawaharlal Nehru came up with the idea of creating a strong public sector he chose Bangalore, especially for high-tech and electronics, so you had Bharat

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Electronics Limited, Indian Telephone Industries. You already had all that here and the culture as well. And, then there was the computer wave of which we were among the pioneers. There was also Wipro and others. That happened more in the '80s, so there's been waves and waves of companies, and the latest wave is the startup wave, which is about 10 years old.

Kapoor: So would you like to ask anything on Infosys or should we?

Brock: Yeah, I was curious to hear your thoughts about why the software industry in particular was able to flourish so particularly in India.

Nilekani: Well, first of all, at least our generation of software companies were very globally focused. We didn't do that much work in India. We did it for the world, and the reason I think is that starting in the '80s, as IBM unbundled the software, OS/360 from IBM 360, and then I think, also under pressure on the antitrust there to have people build software. Oracle came up, then the rise of the minicomputer, Data General, DEC, HP, then the rise of PCs and so on. All this led to a dramatic surge in the need for software development, and software development still required people. We saw that India was really a great place for software skills because people here had a bias for engineering, mathematics. In a country where domestic jobs are not that readily available, being in the software export business was a great way to earn money. So I think all these factors came together and led to the rise of a whole generation of companies -- TCS, Wipro, Infosys, and today that whole industry. Domestic and exports are $180 billion, so it's a massive industry employing millions of people. And then apart from the Indian companies that did well, it also became a base for global companies. When Jack Welch came here, he started doing software from here. Then they started the Jack Welch R&D Center, which is in Bangalore, which is the largest R&D center GE has outside Schenectady in New York. And now every major global company, be it a Cisco, JP Morgan, they all have large centers here, so all of a sudden we had critical mass.

Brock: May I ask just one follow-up question to that--

Nilekani: Please.

Brock: --which is that all of what you describe makes perfect sense, but the interesting ingredient to me in it that is necessary, and that is kind of remarkable, is that supply of engineering talent and the people who could do the software development, and that to me, that whatever cultural forces or educational forces are behind that, seems to me like a very essential ingredient to the story.

Nilekani: Oh, absolutely.

Brock: Any insight you have about where that comes from?

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Nilekani: Yes, but it is actually what led to what? What is the causality? So, there was already a culture of engineering talent, but there were not that many. There were the IITs and there were what were called regional engineering colleges, now they are called the National Institutes of Technology. But what the IT revolution did, starting in the '90s, was that the rapid growth of firms like Infosys, and the liberal policy of allowing engineering colleges to open up led to a massive increase in capacity of engineering colleges in India from the '90s onwards. And it became the profession of choice for young people because they could get jobs in this industry, so you had global demand for our services that led to the rise of firms like Infosys. The rise of firms like Infosys led to the need to hire thousands of engineers. The fact that such well-paying jobs were available created a supply side opening up. Government policy encouraged that. Governments were quite liberal, especially in the southern states, to open up a lot of engineering colleges, so engineering capacity in the country went up dramatically between say 1990 to 2005.

Brock: So it's a virtuous circle or a feedback loop if you want. Fascinating. Thank you.

Kapoor: So the other question that I have is on I heard the term compassionate capitalism or in your parent's description, father's description, Fabian Socialism. I read up on Fabian Socialism that it is really a gradual for people to accept growth and working together rather than a revolution, and I also learned that from the Tatas, from Sir Jamsedji, that he was also a compassionate capitalist. So could you say a few words about that aspect with respect to running Infosys?

Nilekani: Well, I think that was very much in our DNA. Murthy himself as you know, began as a communist who became a capitalist.

Kapoor: Right, and the famous incident in Eastern Europe.

Nilekani: In Bulgaria or somewhere. We were all left-leaning in our younger days. Sometimes you can think of Infosys as a reaction to it. You know, if you go back and look at 1981 in India -- you had three types of companies. You had large multinationals, the global companies, you know, Unilever or IBM, and other global Western companies who had outposts here. And then your large public sector firms, funded by the government, HAL, BEL etc. And then the large family businesses, the Tatas, the Birlas and so on.

But the notion of first-generation entrepreneurs with no prior history of entrepreneurship and no family background of entrepreneurship was very important. Setting up a company was a new phenomenon. And we, in some sense, are the first startup in India, if you think about it. Or the first successful startup in India. Because none of our parents were businesspeople. My father was a textile mill manager, Murthy's father was a high school teacher. Raghavan's father was a lighthouse keeper. You know, it was really very different backgrounds. So, the notion that people who don't have a historic affinity for business, could start a business and be successful without capital was a whole new concept.

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I remember this story, an American -- I forget who it was -- an American business or political leader came to Delhi and he met a bunch of business guys, and he asked everyone, "What does your father do?" He said, "My father is in the same business." So, this whole notion that people who are outside the system, outside the financial system, or outside the business system can become entrepreneurs and be successful, was a whole new paradigm. And that I think that actually, in some sense, the greater social contribution of Infosys is that it brought out what is possible. And it inspired a whole generation of entrepreneurs who look like the guys next door. "If they can do it, we can do it." So, I think the larger thing was it opened up the possibilities for the first generation entrepreneurs.

Kapoor: And we took a tour of the campus, and we'll talk more with Mr. Murthy because he's very proud of it.

Nilekani: Oh, I think he's been an extraordinary visionary about the campuses. Tomorrow you'll see Mysore, I mean, again that's his brainchild. And I think one of the big things we did, and credit goes to Mr. Murthy and people like Mohandas Pai, was building these campuses. I mean, we have some 47 million square feet of office space, and we built campuses long before Silicon Valley built campuses -- maybe some of them had campuses where you had a crèche for babies, where you had a gym, where you had a swimming pool. But we did this in '90s!

Kapoor: Yeah, because they talk about that with Google and Sun Microsystems doing that, but that came so much later.

Nilekani: Oh, yeah, we did that in the '90s-- this campus began in '92. That's a long time back.

Kapoor: That's amazing. Very, very, quite impressive. So maybe you could say a few words about how you left Infosys, and then we can come back to--

Nilekani: Sure. Yeah, so as I said, I had a phenomenal time at Infosys. You know, we had the first ten years where we grew slowly, then we had the next ten years when we grew at rocket speed. We went public in India. We'll talk about that. We went public on the NASDAQ. So, we had a wonderful journey. I was the CEO from 2002-2007, glory years, the company was growing very well, etc. And then I stepped down as CEO and my colleague, Kris, became the CEO, I became the Co-Chairman. And, at that time, I was looking at larger issues of India and I wrote my book, *Imagining India*. In that book I talked about digital I.Ds. and how an I.D. for everyone would make a big difference. I've been doing some work in the public space, in the sense that I was involved in public policy, though I was business guy. But only part-time. I still worked at Infosys.

Sometime in 2009, the government, after a lot of deliberation, three years of deliberation, decided to set up an I.D. project. But, to rewind just a bit, in 2009 May, the elections took place, and the UPA, which was the congress-led government, actually came back with a better performance. And I was approached by them to become the HRD Minister [Ministry of Human

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Resource Development]. Saying that we need someone to do to work on HRD. I didn't get that job for a whole variety of reasons.

Kapoor: Right, you called it "successfully lost the election" or something.

Nilekani: No, that is later.

Kapoor: That was later, okay.

Nilekani: This was the job as the HRD Minister. And then the Prime Minister got back to me and said, "Is there something else you would like to do?" And then after that I said, "Let me do this I.D. stuff, because it's technology, and it suits my interests." They said, "Yeah, why don't you do it." In July 2009, I joined the government, and because I'd written about it, they said, "Okay, walk your talk. Make it happen." And that's how I joined the government. I spent four-and-a-half wonderful, but very challenging, years in the system and built this platform, which is both technologically very sophisticated, but also politically very complex to execute in the sort of chaotic world we have.

Kapoor: So was Nadhamuni one of the guys there?

Nilekani: Yes, yes, yes. Srikanth Nadhamuni. Actually, I assembled a fabulous set of people, and I think one thing I learned from the Infosys experience is you can't do anything unless you have a bunch of great people. And I assembled two sets of groups. I assembled guys from the private sector, so Srikanth was a Valley guy, had worked in Sun Microsystems, Healtheon, Intel chip design, etc. And he had come back saying, "I want to do something in India." Dr. Pramod Varma the architect, had worked in Infosys, and then had been with a startup in Boston. Vivek Raghavan was IIT Delhi, Computer Science, Robotics from Carnegie Mellon, startup in the Valley, he also had come back. Jagadish Babu was a chip guy from Intel. So we had some very good talent on the private side.

But I had equally good talent on the government side, which is as important. My CEO was a guy called Ram Sewak Sharma -- M-Tech or M.S. from IIT Kanpur, M.S. from U.C. Riverside, and an IAS officer who programmed for a hobby. He's currently the Chairman of the TRAI [Telecom Regulatory Authority of India]. He's the head telecom regulator right now. And people like that. A lady called Ganga [K. Ganga] was our CFO, great talent! I think my value addition was that I assembled a bunch of people who were technology guys. Almost like Valley guys who were from the private sector, who were very good. And assembled a team of bureaucrats, who were also extremely good, and blended this together. This was not easy, because they came from very different cultures, and there was a lot of mistrust in the beginning. But the fact that we were all working together for this huge thing brought everybody together.

Kapoor: Right. So the I.D., Unique I.D. system, how did it do, and where is it now? Just briefly.

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Nilekani: Yeah, so I think I worked in the government for four-and-a-half years. And about 600 million people were issued the I.D. We built a platform using open source, highly scalable, you know, stuff like that. And then when I left, the new government came. I met Prime Minister Modi, and he was a big supporter of it, and he's taken it forward. So today, we are 1.2 to 1.25 billion people have the I.D. It's the world's largest I.D. project. It's also linked to the banking system, so about 600 or 700 million people have linked their bank accounts to their I.D. And the government does electronic transfers to these bank accounts. So, India has the world's largest cash transfer system. And we provide online authentication. I can also use my I.D. anywhere and verify that it is my I.D. That is a few billion transactions, a billion transactions a month. So, it's a massive, highly scalable system.

Kapoor: Has there been any criticism of Aadhaar, because there has been some--

Nilekani: No, there's been a lot of back and forth on privacy, this, that. But actually by-and-large, it's come out very well. In fact, just yesterday I did a piece in the *Times of India*. A report came out recently, "Ten Years of Aadhaar" and the impact it has had. And 92 percent of Indians approve of Aadhaar. So that's pretty good -- I don't think many people can get 92 percent.

Kapoor: <laughs> Right, right.

Nikelani: So I mean, it has had its challenges in many ways, but fundamentally it's made a huge impact. That was a big contribution I made, but I also did a few other things. I helped to design the payment system called UPI [Unified Payments Interface], ~~which is a very, very -- I did that in the sense I led it~~. I won't take the sole credit. I helped visualize it, and worked with people like Pramod [Pramod Varma] and NPCI [National Payments Corporation of India], who actually built it. And that also has a billion payments a month, 1.2 billion payments a month. I worked on data empowerment, on something called Account Aggregators. I headed a group that led to the original design of the FastTag, which is the electronic tolling system. I I chaired a Committee to design the basic architecture of the GST [Goods and Services Tax] system. Since I was in the government, and I had time on my hands, I laid the foundation for a huge amount of digital infrastructure for the country. I did that from 2009 to 2017. And, even today I'm involved informally.

Kapoor: So can I ask you one more question?

Nilekani: Sure.

Kapoor: So in terms of the technology for the Unique I.D. and the way it's being run right now, have they utilized any of the Big Data and data analytics?

Nilekani: Oh, yeah, oh, yeah! This was in 2009, we were the first project, I think probably in the country, which was a completely open source stack. We used Hadoop, MySQL, MQSeries. Obviously, Apache, Linux and that whole stack. We built it using these kind of analytic tools. I

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think today they probably use Druid or something. I forget what they use now. But it was a completely open source stack. And that's why it worked. We designed it using the infrastructure which is inside these Silicon Valley companies, but applied it for a very different purpose.

Kapoor: Okay, and please go ahead.

Nilekani: Yeah, then in 2017, and actually at that time I thought my Infosys journey was over, because I had moved into all these other things, and I was doing that. But what had happened is after Murthy had stepped down, and the other founders had stepped down, we had new leadership. There were some things, and I ended up becoming the only guy about who everybody said, "Okay, fine, this guy should do this stuff," because I was acceptable to all the parties. So that's how I came back as Chairman in August of 2017. And I've been here for the last two years.

Kapoor: Great.

Nilekani: Leading this company as a Non-Executive Chairman.

Kapoor: Yeah, so what's the difference between and Executive and Non-Executive Chairman?

Nilekani: Well, you know, first of all, we have a very, very competent and efficient CEO, who actually runs the business, Salil Parekh, he's also from IIT Bombay. Great guy. So he runs the business. I'm not involved in the business. Where I contribute is really -- I come here one day a week, I don't spend that much time. But where I contribute is strategy, thinking about the future. And providing the overall governance. But I'm not involved in the operations at all.

Kapoor: Right, okay.

Brock: Could you talk about how the strategy for the firm has changed over that time when you were doing all these activities in government? How does Infosys look from a strategic point of view today versus--

Nilekani: Yeah, so I think the big change from when I left. I left in July 2009. Now the big consumerization of the industry happened around the same time, right? The iPhone was launched in 2007; Android was launched in 2008. The smartphone era had just started. Cloud was just beginning. AWS was there, others were just launching cloud. So I think the big change between the time I left and the time I came back was, one, consumerization and the rise of smartphone, 3.5 billion smartphones; the rise of the cloud; the rise of open source, Big Data, analytics. The huge rise of A.I., Deep Learning and all that.

So I think I had seen that from the outside, but I had applied my mind to applying these technologies to public purposes. I realized when I came back was that there was this big shift. And what had begun in the Valley companies, the Googles and the Facebooks, now applied to *every* company. Every company had to become agile. Every company had to become digital first.

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So I think the big realization for us was that "How can Infosys be useful to our large clients in helping them in their digital transformation?" And I think what we have been doing over the last two years is gearing up in every possible way to be able to help our global clients. Because our clients, globally, tend to be incumbent companies in their industries. So large utilities, large banks, large telecom companies are facing digital pressure as much as anybody else. So our role as being their trusted advisor and navigator is to help them make their digital transformation a reality.

Brock: So in some ways, there's a continuity, because you were performing that function for your clients in the earlier phase, this is just the current phase of the digital transformation--

Nilekani: Yes.

Brock: -- that you--

Nilekani: But I think this phase is bigger, more strategic, more disruptive for them, and also more threatening to their business model. I mean, we have been doing tech for large companies for years. But -- and I've been in this industry for 40 years – I've never seen this level of concern, paranoia. Because fundamentally what the Valley guys have done is gone beyond their existing models right now. You have driverless cars, or you have streaming of television, you have banking on your phone. So it's gone beyond -- retailing, of course, we saw with Amazon -- so every industry is getting affected.

If you are a large bank, you worry about whether some big tech company is going to do banking. If you're a large automotive company, you worry about whether Waymo is going make driverless cars, and, "What happens to us?" So, this fundamental existential threat of the digital world is hitting everyone. While it is a continuation in the sense that we continue to do what our customers want us to do, the level of change, the speed of change, the level of disruption, and the level of concern about their existential future, is unprecedented.

Brock: I wanted to ask you, if I could, too, to talk a little bit about the background to the I.D. program. And this is maybe for the benefit of other people looking at this or reading this who are like me, who initially I didn't properly understand the importance of identification in the context of India with this idea of the formal and the informal sectors, and the sort of critical place of provable identity in that. So if you could-- I'd just love it if you could expand a little bit on how profound the need is there.

Nilekani: Sure, sure, yeah, absolutely. Yes, yes. Let me explain why this I.D. was required. There were two drivers for this I.D. One was inclusion, and the other is efficiency of public service delivery. And they're actually complimentary in some sense. The inclusion challenge, which is by the way, common, not only in India, but in many parts of the world, is that countries in Asia, Africa and so on, don't have robust birth registration systems.

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So in North America, Western Europe, when a baby is born, the baby is registered. And there's a historical reason for this. So today in the Western countries, you have 98 percent registration of births. Once you have a birth registration, then you have a birth certificate. And then the birth certificate becomes your basic life document. It establishes where you were born, when you were born, your age, your citizenship. It's all rooted in the birth certificate. And you have only one birth certificate. It's also unique.

Now what has happened in countries like India is that our fundamental civil registration system of birth itself, and deaths, has gaps. And there are many states in India where, even today, half the babies are not registered. When you don't have a birth certificate and have no way of proving who you are, that's a huge challenge. Now it did not matter, perhaps, in the earlier days when you spent your entire life in one village or one city, and you were not dependent on any formalities. It was all informal. But today, as people migrate, they migrate from North India to South India, East India to West India, rural India to urban India. Everything requires an I.D.

To board a train, you need to show who you are. To get a bank account, you need to show who you are. To get a job, you need to show who you are. When the policeman stops you on the road, you have to have some proof of who you are. So having some kind of an identification becomes very important. And how do you do it in the country where you have a starting stock of people, hundreds of millions of people without an I.D.? And the only way was to make sure they got a unique I.D., to make sure they get only one? That's the hard part. And the only way you can do that is with biometric deduplication. By saying that, everybody has a unique biometric signature, and therefore if the same person tries to register twice under two different names, the biometric signature will establish it's a duplicate, which is what we did. So that is the inclusion argument -- how to get everybody into the system and have an I.D. for them.

The second reason was that as the government built a welfare state, they created more and more programs to provide benefits to people, they found that without an underlying I.D. system, they couldn't identify beneficiaries. Therefore, many, many of the beneficiary lists had a lot of fakes and duplicates, leading to a lot of wastage and corruption. Think about the U.S. In the U.S., the Social Security Number began because of the Social Security Act in 1936, as part of the whole Roosevelt administration. And they had to have a way of having a person pay into Social Security while he was working and then get the benefits when they retired. And that's how they would have a way of tracking through his life, which is how the SSN came about. So all these are led by similar needs. So a combination of inclusion on one end, and efficient delivery, both of them made it a politically compelling reason to do this project.

Brock: Thank you.

Kapoor: So I had just a short follow-up question. And then we'll come back to a different topic. Which is that moving forward, you know, I don't want to go into the politics, but there are different ways of the citizenship being established. So, and they're saying it's not related to

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Aadhaar, because that's just unique I.D. Here they're establishing the background and the religion. Do you have any comment on that?

Nilekani: Well, I think the issue of citizenship is a slippery one. And it actually leads to the work I did, right? You see, one thing to explain the Aadhaar case -- we were very clear that Aadhaar is not a citizenship I.D. It only says John is John, Adam is Adam, Ashok is Ashok, Mohmad is Mohmad, that's it. We do not get -- the information we collect is a name, address, date of birth, sex, email I.D., phone number and biometrics. We don't collect religion, ethnicity, nothing. So it's really a way of saying John is John. And part of the reason is that the government felt that we had to fix the I.D. issue. But also because proving citizenship goes back to birth. And if you have hundreds of millions of people who don't have a birth certificate, how on earth are you going to prove their citizenship? So I think citizenship is a slippery slope.

Kapoor: Right. Yeah, I understand. So the other thing I want to mention is I listened to your TED Talk, and I read the foreword by Tom Friedman to your book. And I was just ready to join you. It was so impressive! And you are very visionary about India's future and the strength. Maybe say a few words about then and now. You know, it's been a few years since that has happened.

Nilekani: Yeah, I wrote my book in 2008-09, and it was, if you go back and look at it, that was the decade of massive globalization. In fact, I had given the thought to Tom Friedman which led to the book, "The World is Flat."

Kapoor: "The World is Flat," yeah.

Nilekani: So that was globalization. China had joined the WTO. The world economy was booming. India was booming. Infosys was booming. So it was also a time of unbridled optimism.

Kapoor: Exactly.

Nilekani: And in some sense my book is a reflection of that era. However, ten years later, I think the dimensions are different. I think we have a number of introspections. One of course, is about globalization itself. In some sense, because the middle classes in the West didn't benefit from globalization as much as others did, there's a pushback on that. So globalization itself is getting a pushback.

We are having a pushback on technology. There's a whole concern about technology, data gathering, privacy, surveillance, all that stuff. India itself is going through different kinds of new politics. So I think I would not be as optimistic today as I was say ten years back. Maybe I'm older also. But I think I'm still an optimist. I still believe that India has a phenomenal future. However, it's not a done deal. It's not automatic. And that a lot of things have to be done in our politics, in our society, in our economy to realize the benefits. See, India still has a unique demographic dividend. That hasn't gone away. And it's the only young country in an aging

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world. Especially with China now aging, thanks to the one child policy. And therefore, I think, India has a huge opportunity. But it's not automatic. We have to execute on that.

Kapoor: So the technology based governance that you wrote about, that still stands.

Nilekani: Oh, that! Oh, absolutely! I mean, if you look at my work in the last decade, it's all been about putting in population-scale technology with identity, payments, and that is huge. You know, because that's the only way I think that we can change lives for billions of people. So that part very much stands.

Kapoor: Okay, unless you have--

Brock: Just one, with this whole notion of the India Stack, which I've -- you know, that incorporates payments, data empowerment, all these things we've been talking about. I was very intrigued with the notion that not only is this a solution or a way forward for India, but also a model for other countries.

Nilekani: Oh, yeah.

Brock: And I was -- and in the talk that I saw by you, you were mentioning maybe other places in Africa or the developing world. It struck me that, you know, there would be important elements of this for the West. You know, could you talk about it?

Nilekani: Yeah, yeah, I don't know if you saw a recent talk of mine on this?

Brock: You did, yeah.

Nilekani: Is that the recent talk?

Brock: Yeah.

Nilekani: The one on three big ideas?

Brock: Exactly.

Nilekani: So I think all these three are valid. I think identity, having a digital identity, which is neutral, which is not collecting information about where it's used, is very important, because that's a way of protecting your privacy. And having a digital I.D. like Aadhaar means I can use it without it creating data about where I'm going on the web now. So there's a big benefit. So I.Ds are a big part of it. But, western societies are not that comfortable with government's issuing I.Ds, so there's that issue. But fundamentally we think an I.D. is very important. Payments also, what India has done is very, very useful, because it's created a model of payments which does not create a winner-take-all model. So UPI actually has five or six companies competing and

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innovating, including Google, WhatsApp, PhonePe, Paytm and so on. I think we want to create a market which is not a winner-take-all market, which has a lot of people competing, and there's innovation. Then UPI is a good example. Two recent things that have happened actually support this. One is Google has written to the U.S. government saying that the Indian UPI model should be adopted by the Fed for their real-time payment system.

Brock: Interesting.

Nilekani: So they want to take our model and apply it to the U.S., because the Federal Govt. in the U.S. is planning a real-time payment system called FedNow by 2024. And they've said this [UPI] has good architecture. And the BIS, which is the Bank of International Settlements, which is a group of central bankers has just published a paper on how the India model is globally applicable.

A third big thing which is happening which is also very, very important is that we are the only country in the world which has an architecture for data empowerment. Where people can use their own data for their benefit. As opposed to it being used to sell to you, or to show you an ad or whatever. And this inversion of data where an individual consumer and individual businesses are empowered is actually a very, very big idea. It's still in the early stages of rollout, but I think this it has huge implications, and it's absolutely applicable to the rest of the world.

Brock: Mm hm, thanks.

Kapoor: So I was going to go to the next step, which is your current activities. I think I read about *EkStep*, and your other investments. We can't go into everything, but please, tell us about your--

Nilekani: Yeah, so I think the way to think about this is that I have set of activities in the private sector space. Another set of activities in the public space. And in fact, my public activities are more than my private. The private it's really at three levels. One is as a Chair of Infosys, Non-Executive Chair leading the Board, where I spend maybe 20 percent of my time. Then I have a bunch of startup investments, where I help a few companies. I did that to understand this new world of startups, because I've not done this before, and you'll do it to know what's happening. But I no longer invest in startups, because the ones I have are quite good, and you know, I'm learning from them. And then one of the lessons I learned while working with startups is that with a lot of startups, scaling them up is a different game altogether. So I set up, along with a guy called Sanjeev Aggarwal also, an ex-IITian, a fund for the scale up of companies. It's a 100 million dollar fund, we invest in key companies, but it's not just about giving money, but helping them think how they should scale-up. So three levels: Infosys; my Fundamentum, which is my fund; and my startups.

On the public side, I do a large number of things. Obviously, the I.D.s now well established. Payments is also well established. Currently, the Account Aggregator, a framework for data

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empowerment, is just rolling out, so I'm helping to evangelize and get it going. We have a foundation called *EkStep*, which is looking at how to transform education, using digital methods, which is partnering with the government for learning at scale. It's also being used for skills and other things. Then I'm working--

Kapoor: There's a whole activity at the Museum with STEM, which may be very interesting to share with you.

Nilekani: Sure, sure, sure. And then I am part of a volunteer group called iSpirit, which is looking at how India can have a next generation health architecture, using tech. So I do a whole host of other things, which are essentially in the public space. All of them have a common theme, which is how to change society at scale. What we call a societal platform thinking, using a tech backbone.

Kapoor: Wonderful. Anything from you?

Brock: Uhm--

Kapoor: So if not, then I have another one.

Brock: Okay, please do.

Kapoor: Okay, so moving to another area, because we do have limited time, which is philanthropy. I read you've been very generous. You and your wife, Rohini, announced that you will give away half your wealth, let's say.

Nilekani: Sure, sure.

Kapoor: Maybe you could say a few words about the idea.

Nilekani: Yes, we've always been philanthropically minded. I mean, when we first came into wealth, I made -- probably even now—what is the biggest contribution to IIT Bombay as part of my giving back. We have been doing philanthropy for the last 20 years. But I think Bill Gates, who is a good friend, and he's been great — and with whom I work closely. Because a lot of the work he does is in education and in the financial services, I do the same. So we work closely together, and he encouraged us to join the Giving Pledge. So we are members of the Giving Pledge. There are about four Indian families who are members of the Giving Pledge. You have Mr. Premji who is a pioneer; Kiran Mazumdar-Shaw, Mr. Menon from Shobha Builders; and ourselves.

We signed the Giving Pledge, and we have found that it is a great experience, because you know, you're now with a group of around 200 philanthropists who all made the same commitment. And therefore working with this group led by Bill Gates, Melinda Gates and Warren Buffet has been

a terrific experience. We also have a lot of what we call as collaborative philanthropy. We are all investors in our philanthropy, we call it Co-Impact. We have Gates, us, the Skoll Foundation, which is Jeff Skoll, the Rockefeller Foundation, and we all collectively pool our capital for big projects. So you know, that's a big part of what we do.

Kapoor: Because there are other industrial families or corporations like Tatas, they also have, you know, big investments in different--

Nilekani: Oh, yeah, yeah.

Kapoor: So I wonder if there's any collaboration for--

Nilekani: Oh, yeah, yeah, I work actually, with Ratan Tata. I do some joint work with him. Ratan Tata and I have jointly set up a company called *Avanti*, to look at providing financial services to the underserved. And he and I started it together, and so I work with him on that, and that's also driven by philanthropy. How do we get people who don't have access to financial services? So, of course, the Tatas have been pioneers. I work with all of them -- we work with Mr. Premji. So you know, I think the philanthropists in India are in close touch with each other.

Kapoor: Wonderful. Do you have anything else? Or I have--

Brock: Well, I would like to hear your thoughts about where you see this whole story of technology taking the world as you look forward from today's vantagepoint. That's kind of a very metaphysical questions.

Kapoor: Broad.

Nilekani: I think, you know, I think on the one hand I'm a great believer that technology can -- and it's probably the only way we're going to solve a lot of the challenges the world faces. Be it poverty, be it environment, be it everything we have. At the same time, I think we've become more aware that technology, if it's not applied in the way it should be, can also lead to a lot of challenges. And so I think that while technology is a great force, it's only going to become a bigger force. I think we equally will have to think about how to make sure that we deploy it in a way that's pro-people, in some sense. And I think a lot of the work I do actually is that kind of work.

Kapoor: Professor Amartya Sen's talk yesterday on friendship and technology connection.

Nilekani: Yeah, that's right, yeah.

Kapoor: It was amazing.

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Nilekani: Yes, absolutely. I think a lot of the work I do is actually how to deploy technology to empower people. And, you have to think, it's not automatic. Because technology also has a massive concentration capability. You can end up with a concentration risk. Whereas, if you do it well, it democratizes. So my work is democratizing technology.

Kapoor: That's wonderful. So one other thing that I'd like you to comment on is how would you advise the new generation of people? What they should be doing, how they should be doing it?

Nilekani: Oh, you mean, entrepreneurs?

Kapoor: Entrepreneurs or just somebody who's seeking a new career. Just out of--

Nilekani: Well, first of all, I think I'm very excited -- but then I'm a perennial optimist -- so I'm very excited by possibilities. And I think young people just starting out today have huge opportunities. At the same time, I think the bar is raised because it's a very competitive world, people have to be always up-to-date. I think we are in the era of lifelong learning. I think the notion that you get a degree and then you get a job and do something is over. We have to be prepared to learn all the time. So I think you need a growth mindset -- as Satya Nadella has been promoting, which is actually Professor Carol Dweck at Stanford -- the idea of a growth mindset, is that we keep growing, keep learning, keep getting better. I think that's a very important learning that we need -- we can't sit still. We have to be current. And I think certainly as entrepreneurs, I think, there are huge opportunities. But I do believe at the end of the day, running a business is about creating profits and cash. And so many of the young businesses today, while they grow, they do it by spending more than they have. I'm always of the view that that's great to create a market share, but ultimately we have to have a path to profitability.

Kapoor: Right. Very, very wise. So unless you have anything more, thank you so much for your time!

Nilekani: Thank you! Thank you so much! Thank you very much.

Brock: Yes, thank you!

Kapoor: And you're very-- we really would like you to visit the Museum.

Nilekani: Yes, yes the next time I'm in California, I shall come.

END OF THE INTERVIEW

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