

TRAILBLAZERS TALK

**Ravi Kumar S,
President, Infosys,
with Nicholas Dirks,
President and CEO of
New York Academy
of Sciences**

Ravi Kumar S (0:13)

Hello, everyone, my name is Ravi Kumar, President at Infosys. Welcome to this chapter of Trailblazers Talk. Our guest today is - Nicholas Dirks, the President and CEO of New York Academy of Sciences. I've interacted with Nick as a part of the Board of Governors of the New York Academy of Sciences. I'm deeply honored to have the pleasure of interacting with Nick. I learn significantly from these interactions, am very enriched in terms of the cross-functional knowledge he gets to the New York Academy, as well as a variety of topics of great interest to me. Nick is the former chancellor of the University of California, Berkeley, author of numerous books on South Asian culture and history, a historian anthropologist, has taught at a number of universities and has a very illustrious and successful career in higher education. Thank you, Nick, for joining us today.

Nicholas B. Dirks (1:26)

It's great to be here, Ravi. And great to be with you.

Ravi Kumar S (1:29)

Thank you so much. Nick, you've had such an illustrious career in higher education. Serving as the chancellor of the University of California at Berkeley, Dean at Columbia, Professor at the University of Michigan, and many others. What really inspired you to join the New York Academy of Sciences? Very different kind of a job and different kind of a role. And how do you draw from the diverse set of experiences as a historian and anthropologist, a professor, a university administrator to your current job of being the CEO of the academy?

Nicholas B. Dirks (2:08)

Well, thank you for saying that I had an illustrious career, I taught at a number of universities, and as you said, I was very happy being a professor and working in the fields of history and anthropology, writing books about the history of the caste system and things that you know are still of great interest to me. But when I was at Columbia, I had the opportunity to become a dean of the arts and sciences, and I found it a fascinating opportunity to learn much more about all the different parts of the university from the sciences, both the basic and theoretical sciences to the applied and more engineering focused sciences across the social sciences and humanities and in the arts as well. For me, it just opened up many parts of the university that I had only seen from a distance before. I had the good fortune of working to build and design a new science building that was an interdisciplinary science building at Columbia. And I was able to work with some wonderful, wonderful scientists, as well as scholars and researchers in a variety of different fields. And I realized that some of the same wanderlust that had taken me as a young academic to small villages in South India to learn more about the world was also propelling me to learn more about the different things that go on in the university outside of the two departments where I had appointments and affiliations. When I was at Columbia, I had a number of opportunities to go off and lead other universities. I chose to go to Berkeley because of course it is a great university, but also because as a public university committed to serving the public good both in California and around the world, it too gave me opportunities I hadn't had before to see how a great research university could also put such extraordinary emphasis on access on recruiting students from all kinds of different backgrounds to the university to have the opportunity to study with Nobel laureates and great scholars. And it was in some sense that kind of move from being more of

an academic to being more of an actor in the space of higher education, trying to bring the advantages of great research universities to bear on the lives of so many more people than I had originally been able to do, that made me think that really, at this point in my career, I wanted to find ways in which I could have a great impact. So, when I stepped down from UC Berkeley, I could have gone back to the faculty as many former administrators do. I was approached by the New York Academy of Sciences and I will say I was approached in the first instance by John Sexton, who had been President of NYU, a good friend and colleague during my time, both at Columbia and Berkeley. But John had been the chair of the board of the New York Academy, and he said, "You know, this is something you should really look at because it has this set of programs and it has this network of extraordinary people that will connect your life and the university with your world at Berkeley, where you were trying to bring academic knowledge to bear on the world and come up with all kinds of positive outcomes". So, I came to the academy because it really did seem like the appropriate next chapter. It's a two hundred- and four-year-old institution that's had an illustrious membership from Thomas Jefferson to Charles Darwin, and more recently, even in my own field of anthropology from Franz Boas, the founder of the first American Department of Anthropology and namely at Columbia, and Margaret Mead, who was the vice president of the academy for many years in the fifties and sixties. And I came to see also that the academy really did bring together the best of science with a kind of public mission that I found very compatible. So, it was a great opportunity to continue doing some of the things that I'd been doing at Berkeley. Obviously, it's very different. No faculty, no students directly. But we have education programs. We support research. We administer awards for great scientists, frequently for younger scientists at early stages of their careers. We have programs in nutrition, including very extensive programming in nutrition in South and Southeast Asia. We publish scholarly articles in the annals of the New York Academy of Sciences. And indeed, we are now developing a set of new initiatives, from fellowships to the international science reserve that I'll talk about later, perhaps if you're interested, which expand even the provenance and portfolio of the academy and areas that I find very, very important. And of course, I came to this role just to the point at which the pandemic shut the world down, and we all realized at that point, everyone everywhere around the world, not only how important science is, but how important it is to find ways to communicate science in much more effective ways to the public. Because in fact, of course, we're encountering both the miracle of science, but also the predicament of growing distrust about scientific expertise, about scientific discovery. And it's in some ways a time when the academy's work and role is more important than ever before.

Ravi Kumar S (7:50)

Thank you, Nick. That was really a comprehensive response to what the Academy stands for, its mission for science, for good. In fact, that was one of the reasons it attracted me as well, just to be a part of the Board of Governors and see it in closer circles and to hopefully help make that impact. Advanced scientific research, education, policy. The confluence of all these three. What really intrigued me is one of the op-eds you recently wrote about the two cultures of science and humanity, how they have to reconcile, and you touched a little bit upon it, a resistance to the knowledge generated by science in some ways has to be overcome with the help of humanities. And you have seen both sides, and in some ways, this just got tested in our health crisis as societies, which really coped up with COVID 19 were the ones which actually worked on the confluence of Science and Humanity. So I wanted to,

you know, get your views on how you bring these two cultures together and what can the Academy do in this mission?

Nicholas B. Dirks (9:03)

So Ravi, I'm going to go back a little bit. My first teaching job was actually at Caltech, and I was hired there to teach Asian civilization to these extraordinarily brilliant young students who were for the most part majoring in physics, chemistry and engineering and biology and biological sciences. But when I was at Caltech, I got to know a number of its luminous faculty, Nobel laureates like Richard Feynman and Murray Gilmon and Max Delbruck and others. And I realized that these scientists, the scientists at the top of their game in every possible way, were just so interested in learning about literature, philosophy, cultures of different parts of the world history. And they themselves didn't live in a kind of bubble of science that was a separate culture from that of other fields and disciplines. But as I moved around from university to university, Michigan, Columbia, Berkeley, I found that what C.P. Snow, a great British author and commentator and public intellectual in the 1950s and 60s, said in his infamous Rede Lectures of 1959, namely that there are two cultures on all university campuses and we have to break those two cultures down was absolutely correct because once you really get into a major research university, you find that if you live in the humanities or even humanistic social sciences, you have almost no connection with your colleagues in the sciences and vice versa. Now, just to go back to what I said about Columbia, one of the things that I loved about being the vice president and dean of the faculty was that I had this chance to. because I had departments of chemistry, biology, sustainable development, etc. reporting into my office, I had the opportunity to learn what they were doing, and I saw again that there were all kinds of connections, but connections that were hard to make because of this problem of two cultures. In my own academic work, I've worked between two different fields, but I've always been interested in trying to mix and match the disciplines to get different disciplinary silos, to break down and connect and communicate much better with each other. And so, in the bigger scheme of things in the university context, anyway, the effort to break down these two cultures of the sciences and the humanities or the arts seemed to me to be absolutely critical. And I've been thinking about this therefore, you know, for my entire academic career, beginning with Caltech, but in particular when I went into academic administration, how can you make better connections? And so, at Berkeley, when I was chancellor, I sponsored and led a data science initiative where we were trying specifically to bring humanist and social scientist, together with computer scientists and computational biologists and others who were doing work in data analytics, bring them together and show them that they had a lot to learn from each other and in fact, of course, in the present age, you can't really keep the two apart. Since algorithms are everywhere and computational thinking is a critical part of all thinking, including critical thinking. So, we sponsored that. I sponsored another set of initiatives in neuroscience that again connects the study of consciousness with the study of the organ the brain. And I realized that, you know, there are ways, in fact, to break these two cultures down, but they do remain to a very large extent as separate cultures on college campuses and students who then go to study at university tend to either go into the sciences or they go into arts and humanities, and we need to really work against that. Researchers, scholars have to be able to work together. Students have to be able to see a more synoptic view of knowledge. And all of this came to a head in a way during the pandemic. We realized that we had some of the most, in fact, we have the leading biological scientists in the world here in the United States, many of them working in

our university departments and laboratories. But you know, that work to develop the basis for mRNA vaccines that were then developed by Pfizer and Moderna was nothing short of miraculous in terms of coming up with vaccines that are just remarkably effective against COVID 19. But you can't necessarily, even once you make those vaccines, make people take them or wear masks or understand social distancing. I mean, it's been a wakeup call, I think, for science and scientists to realize that science can't do it alone. And so, this is a moment when I've been thinking a lot about the two cultures and went back to C.P. Snow and his writings and thought it was time to really identify this problem again and try to get to the point where we can overcome it. Because in fact, indeed, almost every one of our challenges, whether it's a local challenge, whether it's a specific issue that we're dealing with, or whether it's a global challenge from a pandemic to climate change to cyber-attacks and the threats that they pose, you're going to have to have people working together from every possible disciplinary background, not just from disciplines, but also from institutions. And you need people in the private sector. You need people in government, people in universities and other kinds of nonprofits to figure out how to work together. The resources that these different kinds of institutional sectors can bring to bear on any one of these issues is extraordinary, but also hugely benefited by working alongside these other sectors. And again, to the question of the New York Academy. The academy is an important institution precisely because it convenes people from the university, from the corporate world. We have a membership on our board, from a number of big pharma companies, from foundations and nonprofits, you know, from all kinds of institutional backgrounds. And it's that convening function that we use to try to bring people together to bring science, to bear on the public good.

Ravi Kumar S (15:44)

That is so well said, in fact, the world we all living in now is very interdependent, very interconnected. The value is actually at that intersection of these disciplines. In fact, in a small way, Infosys is evangelizing the role of non-STEM disciplines in digital technologies, and we are finding it to be very exciting, especially in the age where machines are going to do so much of problem solving. The human endeavor has to be finding new problems, and that will come from very distinctively different disciplines. So, we are experimenting with graduates from liberal arts and anthropologists and historians to be a part of our digital talent pool. Switching gears one of the other unique things, Nick, you got to the academy, very unique, very noble is the international science reserve, completely conceptualized by you and with the partnership with IBM, the Academy's wanting to harness the power of science to participate in an interdisciplinary response to a major global crisis in the future. I think COVID-19 taught us that humanity can be very slow when you actually have to bring different disciplines together for a transnational crisis. Tell us a little bit about the International Science Reserve. I find this to be very unique and very novel.

Nicholas B. Dirks (17:18)

Yeah. Well, thank you for asking. I was hoping you would ask me more about the International Science Reserve. And it's something that we are deeply committed to in the Academy, and which we are beginning to figure out how to put together. But the idea behind it comes, in fact, out of a very successful effort during the pandemic to try to figure out a different way to fast track research that was specifically about some way to mitigate the pandemic itself to deal with COVID. And it's the high-performance computing consortium that was set up in the first instance by Dario Gil, who was on

our board of Governors, he is a fellow governor with you. He's the head of research at IBM. But he brought in a number of different technology companies. He worked with national laboratories, he worked with universities, he worked with the White House, with the Office of Science and Technology Policy to put together effectively a kind of panel of experts who took proposals and very quickly, if they seem to be worth pursuing, matched research proposals with excess or surplus computational capacity again, usually in a national lab, in order to fast track the research and provide computational power that no single researcher was able to get without the benefit of the HPCC. This was something that was stood up within weeks of the pandemic. At the same time, we know from the pandemic, that we were not ready. There were a number of different pandemic response units, including in the government and in Washington that had not been well tended. And overall, as you look across not just different kinds of agencies in the U.S., but internationally, we'd have to give most of the institutions that exist a pretty low grade when it comes to the response that they made to the pandemic. So, we've learned a lot during this pandemic and one of the things that we decided at the academy that is really important at this moment is not to forget what we've learned and to act on what we've learned. So, the idea is to set up a kind of network, even a kind of network of networks to effectively create a database of all of the scientific experts and resources and institutional laboratory computers, et cetera. kinds of resources that would be necessary in the event of another global catastrophe now could be another pandemic, but it could also be something very different. It could be a climate change induced flood or a climate change induced heat wave that causes massive, interconnected wildfires. It could be a cyber-attack or some other kind of attack on our electricity and computer grid, even from solar flares that some scientists tell me are due to happen any year now, which would shut down the energy grid, the transportation grid. And what we know from the pandemic is that we simply are not well-positioned to bring all the different kinds of important resources and experts together in the time that you need to do so in the event of a major, catastrophe. And we've seen that catastrophe and we've realized we fell short in responding well to it. So, the International Science Reserve is, in the first instance, a kind of annotated, almost linked in for science and scientific resources. So, we know who's doing what where. If the catastrophe is one of the things I mentioned, who you would call, but it's also an effort to not just have a network, but to actually prepare that network for real emergencies by conducting a series of readiness exercises, scenario exercises that allow us to test how well this network or network of networks might work in the event that we really need to deploy it. And we have a lot of interest, we had a wonderful evening recently where we've had representatives from Schmidt Futures, from the Sloan Foundation, from the Rockefeller Foundation, from a number of different companies as well and many more expressing interest to pitch in. Now, when the high-performance computing consortium worked, the computer resources were made available for free. People suspended normal concerns about intellectual property. You know, people were sharing preprints, preprints of scientific research without worrying about patents or claiming ownership of these things. And people were sharing their expertise and they were in the case of the HPCC actually sharing computational significant surplus computational capacity. We think the same thing can happen with the ISR. We think it's an institution that is new in its formulation and which is necessary for our time. In the wake of World War Two, we saw a Vannevar Bush calling for a major investment on the part of the federal government in the US and in serious research in the sciences. And we saw the National Science Foundation come out of that. Then we saw NASA and Dorkbot come out of the Cold War well out of the

pandemic. We also think that new institutions have to be built. This isn't going to be the only one. We're not trying to replace many of the wonderful things that are coming up, including pandemic response or preparedness, institutes and initiatives as a result of the experience of the pandemic. But what we want to do is be able to connect them to know where they are, know how to mobilize them, know how to bring them together again. One of the great strengths of the academy is our convening power. And then, of course, really try to figure out how to make these networks work in the event that something like this happens again, which we know will be the case.

Ravi Kumar S (23:41)

Nick, thank you so much. It was such an innovative approach. You know, personally I am always enriched interacting with you with deep learning about a variety of topics of great interest. Thank you so much for the huge impact you've made to the academy in the last one plus year since you've been on board. And thank you for joining us today for this wonderful conversation.

Nicholas B. Dirks (24:17)

Well, Ravi, I want to say that first of all, it's a delight to talk with you. We are thrilled that you joined our board of Governors. We've had some wonderful conversations and the truth is that Infosys is supporting a number of different projects in our education programming, which we're very grateful for. And of course, we support all the work that Infosys is doing in the areas of education and skilling. And we think there are all kinds of programs there, as well as across all the other kinds of things that we're doing, including the International Science Reserve. So thank you, Ravi, for your leadership. And I look forward to many years of close collaboration with you and with Infosys as we try to build ways in which we can really advance public good and make the world a better place.

Ravi Kumar S (25:08)

Thank you, Nick. Thanks for joining us today.