TRAILBLAZERS TALK

Ravi Kumar S., President, Infosys, in conversation with J. Berger-Sweeney, Trinity College

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Ravi Kumar S. (RK): Hello everyone, my name is Ravi Kumar. I'm President at Infosys. Thank you so much for joining us today. We have a very interesting series called Trailblazers. The series focuses on conversations with leaders in the industry, the academia, the government, and the communities we live in, who are making a huge impact on our society. One of the things I'm most excited about is what we do with academia. Today, I have with me the president of Trinity College, Joanne, who is also a good friend of mine. I'm so honored to have her on this talk series. She's an eloquent speaker and a huge evangelist of the liberal arts. Joanne, thank you so much for joining us.

Joanne Berger-Sweeney (JBS): Absolutely! Thank you for inviting me.

RK: I'm in your home city, Hartford. Since we last met, we've made massive progress at our Hartford hub -- we've hired more than three hundred people, since we made the announcement, of which a hundred plus work at the hub and one batch is undergoing training, also in the hub. Another batch is training in Trinity College -- our first liberal arts batch! Liberal arts is one of our biggest bets in the digital space; we are creating a national experiment with Trinity College, so we're very excited about it. I heard the first batch is up and running and that they are very excited about the future.

You know, I was having a conversation with an expert in digital economy last evening. We spoke about this very interesting evolution which is taking place in the talent space. Workspaces are moving from a model where you have private human capacity to a model where you will have private human capacity plus the gig economy; so there's a huge virtual pool of talent available, which you could access… and then, there's going to be machines above it. So you're gonna move from humans to humans plus machines plus the gig economy. Now what's going to happen as this progresses -- and this looks real and I'm seeing this in our programs as well what we do with our customers -- machines are going to give data and insights; the gig economy is going to give the scale and agility needed in the digital world; and humans are going to bring the creative aspect to it. So, the creative human power is going to be amplified by machines and the gig economy. In this context, liberal arts is going to play a very large role as the transition takes place and what humans do in the work space, evolves. Can you tell us a little bit about this?

JBS: Yeah… so the first thing is I believe -- you know I'm a neuroscientist by training -- so I do study artificial intelligence what's going to happen with AI and what's clear to me is there always has to be a human in the loop to make it work, that as much data as you have you're still going to have to interpret it, you're going to have to analyze it, and that is a piece that humans will always be a part of. If you step back and think about the skill set that people are going to need in the new economy, I think you have to have data analytical skills you have to be able to learn how to learn because you're going to have to retrain yourselves all the time. You're absolutely going to have to need some kinds of data skills and the fourth skill that some people forget is how to interact with others because in all of the economies that you spoke about you still are going to have to bridge, connect with other people, connect with other kinds of divisions and that's going to take the people skills. Of all of those skills that we spoke about my guess is that the data skills may be the fastest to acquire. Analytical skills take a number of years to acquire you are connecting things that are disparate that people aren't used to connecting before all of those skill sets are going to take a bit of time and I think the data analysis piece is the part that we can teach probably a little bit more rapidly. I think that many digital companies have been focusing on the data stream as if that's the most important of the qualities and skillsets that I just described, when you talk about liberal arts we are focusing on all of those other three streams and some of our individuals are also coming out with the data skills. So the piece that we want to add is based on all those three skill sets that I think are important we're adding that digital bridge and that's what you're helping us do. Because we think we have the analytical skills, the ability to learn, the socialization piece.

RK: And, you know problem finding is gonna be a much bigger skill then problem solving and if you just go back to these three things I spoke about -- humans, gig, and machines – increasingly machines are going to take over problem-solving, and problem finding will be left to humans. So what do you teach in Liberal Arts, and how do these two streams of STEM on Liberal Arts and non-STEM on Liberal Arts differ?

JBS: Right. So I think the core of the liberal arts experience is a broad variety of subjects as well as depth in one or two subjects so sometimes we've referred to it as a T - breadth across and depth you know within a particular subject. So the particular part of the liberal arts education is that you're learning many different subjects, many

different areas, and you're starting to connect things that have never been connected before - what you're learning in a course about the civil war in the United States and what you're learning in a philosophy course and in the liberal arts, you start to connect pieces of those and you start to think about the morality of war, all kinds of subjects that are broadly based and it's because you've taken a combination of courses in the humanities and English and philosophy, the social sciences, economics, or you know political science and also some courses that you take in the sciences like physics chemistry and biology. So you have to take a broad set of courses and what you're allowing your mind to do a bit is go-between and among subjects and form connections that other people haven't formed before. So that when you come to a new setting and you see a new question that no one has asked before, you actually have developed a bit of a skill set of connecting things that people haven't connected before as I say…

RK: And, that's kind of foundational problem finding

JBS: … and the analytical skills that you're learning. You aren't becoming in a single course a political scientist or a philosopher or a biologist, but you're learning how they approach problem. Such that when you're faced with a new question you can step back and think how might different people in different fields approach the question and what you find is very often the question that someone has asked, is not the question you really need to solve… there's something deeper underneath that is really the cause of the effect that you're seeing. So even though someone has asked you a question you realize that to solve the problem you need to actually answer other questions. And I think those habits of mind are what we develop in the liberal arts.

RK: One of the trends in the workforce, which I believe is going to take place in the digital world is that the world is going to move from a disciplinary approach to studies to an almost anti-disciplinary approach. I call it anti-disciplinary because we have heard cross-functional and cross-disciplinary work, and I almost think we are going to go into an anti-disciplinary way of looking at higher studies… and Liberal Arts fits in so well. That's why we are reading big things for Liberal Arts and think that a large pool of our talent that is needed for the future, will come from Liberal Arts.

JBS: Exactly because as we're saying we can teach some of those data analytics skills once you have those broader analytic skills already developed and some of those social skills. The other thing that I think is particularly important about what we do in the liberal arts is we focus both on what's happening in the classroom but also outside of the classroom. So some of what is happening is a person decides I would like to start a new club, no one in our institution has ever had a club about India -- you know I'm just taking a random example -- and it's creating what you want to do, taking a leadership role, trying to figure out how you form a club, what do you need, who are the stakeholders, all of that learning is happening outside of the classroom. So if you combine incredible skill sets that you're doing developing inside the classroom with some of this leadership and even athletic skills that you're learning outside of the classroom you realize a bit what's particularly special about the liberal arts -- an additional element is you're learning in a liberal arts education how to be an engaged citizen in the world.

RK: And do you make a distinction between the STEM education and the Liberal Arts you have and the non-STEM education, or are they very similar?

JBS: I think there are a lot of similarities, and remember how I described you know liberal arts being a bit of a T - breadth with depth. The depth of the scientist or the mathematician is a little different from the depth that the person in an English major or a political science major has but that breadth is what's in common and in some ways you might think of it as the breadth that holds all of those depths together.

RK: In fact, we've created multiple streams in conjunction on data sciences, industry vertical domains, and design. We believe that the 'T' which you spoke about is something which we are fascinated with. But, I think at some point (the T) will become a 'Z'.

JBS: Now I like that… I'll think about it.

RK: At some point it is gonna become so anti-disciplinary…

JBS: …exactly. But one other thing that I want to share with you -- I said I'm a scientist, I'm a neuroscience.

RK: I know that you have a patent.

JBS: I do. I have a patent for what used to be the second-largest Alzheimer's drug in the world I've been you know very lucky in my career. But as a scientist I love experiments and what I appreciate so much about Infosys, and what you want to do is the experiment to prove if what we're saying makes sense. I mean we can all say that the liberal arts are a great training field for digital technology for the careers of the future, but you're willing to actually do the experiment to prove that it's true. And that's what I think is so unique about our partnership. We're willing to actually say, this is something we think is gonna happen, there's a lot of literature and a lot of talk and narrative about it, but we're actually going to do the experiment to prove it.

RK: Absolutely Joanne! In fact, the first batch is going to a great learning opportunity for us and our partnership. We are going to have batches almost every month, in the foreseeable future. We're hiring across the United States and then getting them to Hartford and Trinity College. We believe that this can redefine what Liberal Arts can mean for the digital age. You know, the world is moving from what used to be a straight line of higher studies to professional work, to a continuum where lifelong learning and continuous reskilling is almost a virtue in the digital age. And as we transition into lifelong learners, being learned is going to be a real virtue and absolutely essential to stay relevant in the digital age. And Liberal Arts is the very foundation to that. You create a learnability index, as I call it (I don't know whether learnability is in the dictionary), but the learnability index is what we want to look for when we're hiring, especially school grads that we are hiring. Do you want to tell us a little bit about how we can become learners for life. This, to me, is the most important virtue in this transition.

JBS: You are absolutely right, and thank you for giving me the opportunity to talk about how you learn to learn, because we all understand how critical that is, in the progress over a lifetime. And that if you look, for example at online learning, its most successful when people already know how to learn. So that's why online learning is often so successful with people who already have a college degree, because they've learned how to learn, and what they're doing is developing a new skill set because they understand how to learn. So I'll tell you a little bit about what I think is critical in learning how to learn. I think it's really important to do a wide variety of subjects, to see what you do well, what you don't do well, and I think it's particularly important to reflect on how you learn so when you go to a liberal arts college for four years, you're taking many different subjects, some of them you're going to be better at than others, and in this process of taking different subjects in different fields, you're learning a little bit about yourself and how you learn and you're reflecting on how you carry that skillset into a different arena, and you know a different class let's say for example. And I think that that process of taking once again different courses in different subject areas, you're learning differ   rent things about your own personal learning style, and you're reflecting on them so that by the time you get to the end of the four-year process… let's say for example, you understand so much better how you learn what's necessary. Do I learn better by seeing visuals? Do I learn better by having a conversation with you? And you're doing this with a group of peers and other people who are pushing you and pressing you, because that's really when you determine the limits of your own learning when other people are pushing you, asking you questions, really making you think and reflect… so that process comes with time. that's not something you learn in a single class in a couple of weeks. Whereas you can think some of the digital skills that you want to offer people you probably can learn in a couple of weeks, but these other kinds of analytical skills -- learning how to learn, it takes some time to develop… so I'm gonna say time is a factor. But I'm also going to speak as a neuroscientist a little bit about a concept that I call critical periods. And that is your brain is primed to learn certain kinds of things at certain different stages…you probably have heard people say if you learn to speak a language between the age of 0 to 5 you'll probably speak it like a native, whereas as you get older the critical period has moved on and you'll still be able to learn a language but not with the same kind of fluidity.

RK: …so does it… just teeing off on the topic… does it make sense in the digital age, which we all going to be part of, to create a culture of lifelong learning early,in K-12?

JBS: I think K through 12 is important for certain developmental skills, we all know that as a basic foundation, but they're also a group of higher-level analytical skills that are probably most important to learn in an area, I would say in age between 16 and 25, so there's certain things that are important to learn in the K through 12 age, but when you talk about higher-level, sophisticated, analytical training, where you're connecting disparate things some of that needs to come when you're a little bit older and you have different kinds of basic skills. And that's why I think so many people go to college in this time period between about 16 and 25 because that is a prime time when your brain is developing these very sophisticated analytical skills. Once again it doesn't mean you can't learn them outside of that range but your brain is primed in those late teenage years and early 20 years for this type of training, so we should take advantage of that and when you get that basic skill set you can kind of retrain and retrain and retrain at different periods in your life, so I think it's a combination as you're saying of some basic fundamental skills but I do think there's a critical window that time period from about as I said 15 - 25 16 to 25 in which those higher-level analytical skills, your brain is primed to make those kinds of neural connections, and I think that's an important time period too.

RK: It's probably relatively easier to be a lifelong learner than an unlearner… I want to know if you have a course on learning to unlearn?

JBS: You must, because as a neuroscientist what we discovered is the unlearning is essential for learning, because you can't keep it all there. There are some things you have to decide are less important less of a priority and actually on unlearn them so you you're being a brilliant neuroscientist that what we discovered is that unlearning is every bit as important as learning and it's that ability to go back and forth between learning and unlearning that's critical and once again your brain is very much primed to do those kinds of things in this time period that I spoke to you about, and once you learn once you develop the patterns of being able to do it, it's something that you will be able to retain and use your entire lifetime.

RK: Thank you, Joanne, this was very, very insightful. I personally learned a lot in this conversation. With every interaction we have, I'm left introspecting on how much we can do to build the talent pools of the future and the capabilities of the future. I think our partnership has some very exciting times in store. I am also very excited about the learnings of the very first batch, how we can apply these learnings to future batches, and create a national experiment for the Liberal Arts. Thank you for your time!

JBS: Oh, absolutely, it's always a pleasure.

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