



Kotak Conference 'Automation and Future of IT Services'

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CORPORATE PARTICIPANTS

Vishal Sikka

Chief Executive Officer & Managing Director

Moderator

Our First Speaker “Chasing Growth 2016” will be speaking about Automation and the Future of IT Services. Please welcome on to stage the CEO and Managing Director of Infosys -- Dr. Vishal Sikka.

Vishal Sikka

Thank you Uday. Thanks for the opportunity. Uday, your point about models and the human intermediation applies to our industry as well. We obviously hear about the threat of Automation and what it will do to jobs. I have always viewed that as an opportunity for Automation because our ability to model complex systems is fundamentally limited to our understanding of it, the way they used to be, whereas systems continue to of course evolve and so that unknown parts, the new things are things that still require a deeper connection to unpredictable and things that we cannot model yet and therein lies the opportunity.

I want to talk to you about services in the times of being digital; about Automation and its role in our industry. I will speak for about thirty minutes and then we will have fifteen minutes of Q&A. My sense of the great transformation of the world around us is that things are all becoming services. If you observe Uday's remarks, he was talking about stock and flow. We tend to think about things as things, but, in fact, they are activities in motion and more and more people who have built products for a long time are beginning to realize that, in fact, air plane engines and printers and trucks and complex machines are all becoming available as services. At one level the great transformation of our times is the transformation of everything becoming services. So in that sense being a services company and being a software-driven services company and being a human driven services company is a great place to be.

The times that we are in I see a lot of client anxiety around their future in every industry. There is a very clear sense that there is a huge transformation that is happening all around us. There is a digital transformation that it is a computing and connectivity-led transformation. In this time, companies pretty much in every industry, in every walk of life seem to be in a sense of a deep anxiety about what does this all mean for their future and it puts this dual burden on them on the one hand on the costs, on the other hand on the innovation. Our big clients, I speak to management teams and Boards very often and they routinely ask me what is going on. Anyhow, it is very difficult to summarize what is going on in a few words.

Design Thinking teaches us that any successful product or service has three underlying components that is the desirability of it, how attractive is it to end users, how well does it reflect the life, the reality, and the needs of the end users. That is the desirability, there is the feasibility of it which is how well is it made, how well is it engineered, how well is it put together, that is the feasibility and then there is the viability, the economics, does it make sense economically for both the buyer and for the seller. So when you look at the great transformation around us from that point of view there are the same three parts, the end user part. All the service transformation that is happening around us is deeply about the end user, about empowering the end user. So in that sense this deep end user centricity is the hallmark of every product and service that is around us. If you look at Uber, if you look at Airbnb, if you look at any of the services that are increasingly powering our lives they are all about a deep understanding of the end-user and being relevant to them.

On the feasibility dimension, it is about an extreme scale of cost performance that has become available in infrastructure and I will talk a little bit more about that. That extreme scale in computing

infrastructure is matched by the emergence of more and more intelligent, more and more automated systems which can increasingly do more and more sophisticated things. So that is the feasibility that is powering this great transformation.

The viability that is powering this great transformation is the fact that it has become easier than ever to disintermediate an existing industry. It has become possible to disintermediate a long established industry in very powerful new ways, faster than ever and more effectively than ever and that is also fueled by a tremendous cost pressure that businesses feel because the existing infrastructure that businesses have, becomes much more of a burden to deal with because of its limitations, because of its high cost, and lowering the cost on that existing landscape becomes a massive priority for businesses.

Let us look at the three of these in a little bit more detail: The ability to understand in order to serve the needs of the end-user. One of the effects of disintermediation is that end-users become more powerful. More and more of the services that used to be in the middle go to the end points. So the end-users become more powerful and then understanding what the end-users are doing become that much more important. So we see now digital connectivity, we see computing making its way into places where they were never there before. If you look at some places where we inhabit, cars, for example, assistive driving, driverless car infrastructure has become quite commonplace, in fact we hear about Google Self- Driving Cars but actually assistive driving capabilities are in basically every car now. I drive an Audi. It has a lane assist feature. It basically drives itself when I am on a freeway and have the cruise control on and the cruise control is also an adaptive cruise control; it detects cars in front of it, on the sides, even when it is on turns and things like that. So basically the car drives itself once it is on the freeway. We do a lot of this work around driving in automation of the driving experience for companies like Toyota and Boeing and so forth.

If you look at our own bodies and how we are increasingly beginning to instrument our own bodies, there is a lot of work going on there and this is quite an amazing new frontier that is emerging in front of us, understanding people's behavior by actually putting sensor inside our own bodies has become a great opportunity. We see that already with the Apple Watch and so forth but more and more invasive kinds of sensors and wearables are around the corner. We recently invested in a company called WHOOP which today brings this extremely detailed instrumentation to professional athletes. People wonder why professional athletes? Because professional athletes today are the ones who have this much more than normal need for instrumentation in their bodies but five years from now, the more regular people will be doing the kinds of things that professional athletes are doing today and if you do not believe that, just look at what was happening five years ago. Today, everybody wears these kinds of watches and wearables and this was things that the more extreme marathon runners and professional athletes were doing five years ago. So we do a lot of work there.

We have also invested in a company called "Speck", which is Air Quality Detection Instrument. It is a tiny instrument that detects air quality. You can sprinkle it by the thousands in a building like this and it measures air quality. It is continuously connected to the cloud and so forth.

The Third Key Area is the home where connected living and more intelligent infrastructure has become a common thing and GE of course is leading the charge there, we do a lot of work with GE, a ton of work around building digital twins of all the machines that they make and things like that. Of course, our own campuses, all our delivery centers here in India are instrumented. We have a command center both in Bangalore and Mysore where we can basically control the entire 11 DCs that we have around the country. Two of those are already self-sufficient. Our campus in Hyderabad is 100% off-the-grid because of 7.2 MW solar array that we have there. Similarly, the campus in Mysore basically has zero waste going to landfill and all that and that is all because of the instrumentation that we have in there. These are extremely elaborate beautiful campuses but they are incredibly cost efficient.

When we will look a little bit further out into this dimension of end-user centricity we see a deep reimagining of the experiences of spaces that we inhabit today, whether it is in financial and banking services, ubiquitous touch points, the ability to conduct transactions wherever we are, more and more digital spaces not only getting people to interact with computing through this two dimensional rectangular screen, whether it is a big one or a small one, but actually putting in computing in spaces all around us. The ability to understand what customers are doing, no matter what situation they are in, no matter where they are in, with better simulation and predictive capabilities and actually reimagining spaces that we sit in buses, cars, trains, manufacturing spaces, the picture on the bottom right is of a seeing space that we are designing where people can conduct, engineers can do much deeper simulations of complex machines, zooming them out, zooming them in, being able to do things that are not possible in the physical world, and all of this is of course possible with digital technology increasingly with what we can think of as services that are emerging to transcend space and time constraints.

One example of this is the work that we have done with GE. This is a picture of a digital twin of a landing gear that GE makes for airlines. The landing gear traditionally used to have four sensors. Landing gear is an incredibly important part of an airplane. We talk about in IT systems five nines reliability and things like that. These systems have to have 100% reliability, otherwise people die. We have recently together with GE instrumented these landing gears with another 30 additional sensors and we can basically do everything that we can think of on the digital twin of the landing gear, all its operational behaviors, its operational parameters, its health, predicting its useful remaining life and how does that intersect with the number of flights it has planned and things like that. So it gives the airline as well as GE as well as the manufacturer of the airplane complete control over understanding the behavior of the landing gear.

Here is an example of some very exciting work that we are doing in virtual reality. This is at our booth in Davos, where we had this virtual reality equipment from Oculus. Together with Carnegie Mellon we made it possible for people to experience what has been going on to the planet in ways that were not possible before and virtual reality actually creates a tremendous opportunity to reimagine experiences of the physical world. Already, the virtual reality glasses are close to the precision and the resolution of the physical world around us. So it is possible to actually create a replica of walking around in the Burberry Regent Street Store or in the Macy's Union Square Store and do your purchases without leaving your home or your office or your bus or whatever. So some tremendous applications of digital experiences, around stores, around buses and things like that as well as in repair, engineering spaces, education and collaboration are all possible with this virtual reality technology.

One of the points here that is important for all of you analysts is that the view of the industry around Digital has been a very limited world. Putting together a mobile website is not Digital. All these things are what Digital is all about, where the physical world is turning into bits and that opportunity of Digital is a far more interesting one. Slapping a mobile front end on top on an existing e-commerce website is not exactly Digital. That is stuff that we have all been doing for more than three decades.

The Second Dimension of this is the "Intelligent Systems and Infrastructure". The Moore's Law turned 50 last year. For 50-years engineers in the hardware industry have been consistently doubling price performance of computing equipment actually every 18-months, Moore had predicted 2-years, it has actually been happening closer to 18 months. We know that the traditional Moore's Law on the traditional CMOS technology is going to continue until 2024. So another eight more years and then after that there are other fancier computing infrastructures that people have designs for. I have spent all my life in the hi-tech industry as a technologist. Even though we understand Moore's Law we still do not understand Moore's law. It is difficult for the human brain to comprehend the power of an exponential.

I want to give you one shocking example that just happened to us in the last twelve-months. The machine on the left is the machine that we showed at our confluence event in April last year for our Big Data Machine Learning Applications for a lot of the big customers that we have in Banking, in Manufacturing, Retail, etc., we do complex analytics work on that kind of a machine, that is a staggering machine; it has more than a 1000 CPU cores, it has more than 22 terabytes of D-RAM, and this machine at that time cost us approximately \$900,000 to build which is a shocking number that has 1000 CPU cores and 22 terabytes of D-RAM. This is bigger than the super computers of 20 years ago was basically available for less than a million dollars. Just out of curiosity, last month, I asked the vendor who makes this machine for us, what has happened in the last ten months. The 18 cores have become 22 cores for CPU. So therefore in that same rack now we can put 1,320 CPU. This is just in the last 10 months. The memory has become 1.5x as in. Instead of 22 terabytes we can put more than 30 terabytes on the same sized cluster and the power consumption, despite adding 300 more CPU cores which burn and consume power actually has gone down by 10% on this rack and if you compare the price performance, the price performance actually has also dropped by 50% in ten-months. So you can imagine what five years do to this kind of an equation. That is the amazing thing that I find in our IT industry. We have mainframes running. I do not know Uday if you run a mainframe in your shop, but we have mainframes running better part of the Financial Services industry, Insurance and there are millions and millions of MIPS that are powering this thing, which are keeping a lot of the legacy companies alive and afloat and yet we have already computing power in our hands that is able to process things at an unbelievable price performance. So this is at the heart of the big transformation that is happening around us is because anything that we can imagine is already possible to process. Any question that we can imagine no matter how large the data is can actually be processed instantaneously.

The Third Part of it is the “Cost Economics and the Disintermediation”. This is perhaps the most important dimension. Uday was talking about producers and consumers in the early part of his introduction. The distance between the producer and consumers in the world of today, it has basically narrowed down to zero. This is the meaning of disintermediation. It is a fancy word for all the MBA and MBA aficionados, but what it really means is that middle layers go away, which means that producers can get to talk to consumers directly. What that means is that the layers of inefficiency go away, but also that the layers of opacity go away which means that producers can get a much better handle on what the consumer is doing and get a sense of the demand, get a sense of feedback around quality immediately and consumers have the much better ability to command price because all the other complexities have been stripped away and the marginal cost of adding a new customer is basically zero because of the infrastructure that I talked about earlier and so you have this effect where costs come down dramatically. If you are a large bank or an insurance company or a healthcare company and you see some new company showing up running its infrastructure in the Cloud by the hour and doing the same kinds of services and far more digitally than you do, this is what hits you. That same displacement, the same dislocation also applies to our industry.

Services that have been provided by people are becoming increasingly possible to be performed by these intelligent systems. So the shift that happened 15-16 years ago, the flat world shift which dramatically expanded the market scope of companies like mine and others in my industry and even bigger shift than that. If you look at the flat world situation that happened 16 or so years ago, what it was about was that it was possible to perform a job from India without loss of quality but at a much cheaper rate. So there was this great rush of value to our country, to our companies and equally as large and arguably a much larger force than the flat world force is what is now impacting our industry and that is automation. Things that were done by people albeit with the same quality and cheaper are now possible to be done by Automation. I will give you one example -- a large company, just to manage their IT infrastructure, file systems, databases, networks will typically employs hundreds of people. If you look at Google or Alibaba or Facebook, these guys do not have this many people running their infrastructure. We do not know exactly the economics

there, but some of the surveys, some research indicates that at Facebook for example, 20,000 servers are administered by one person and actually they are not administering the servers, they are administering the system that is administering the servers, site reliability engineers is what they are called. So what happened there? Instead of hundreds of people managing and doing backups and recoveries and connections and upgrades and repairs and all that, all of that is happening automatically. This of course is still a bit far away from enterprises because of inherent legacy dependencies and all of that, but it is possible, ultimately, this is the direction of the future, the work that can be easily described, that can be easily mechanized is being mechanized. So that shift to Automation is inevitable. There is no doubt that it is going to happen, there is no doubt that it is already happening. I have been saying this for the last eighteen-months since I have been the CEO at Infosys and the more that we see the numbers of companies, you see them clearly written underneath the numbers that there is a huge force behind that is powering this change in the numbers and that force is Automation. That force is the cost pressure that the businesses are under which is driving down the prices and the only way to survive this thing, it is not to make the horses run faster and faster or to feed them better feed or to give them better scheduling and so forth, but it is to turn the horse cart into an automobile.

Prof. Mashelkar said this famously many years ago “Doing more with less for more”. There is actually a great analogy for this from our own recent history and that is the Green Revolution. I remember I was four years old when the war that created Bangladesh happened and I still remember the time that there was a tremendous food shortage and actually there were dire prognostications by famous people like Paul Ehrlich, who said that “There was no way that the food problem was going to be solved in India”. I know most of you are probably too young to remember this, but my memory of it is I was between four and five years old and my parents were discussing the fact that there was this one ship that was supposed to come to the shore from the United States with some wheat and food and it was not being allowed to come to the shore because there was some ceasefire that was being negotiated or something like that and there was a tremendous sense of anxiety that, “is there going to be food”. Milk used to be rationed and so forth. The Green Revolution happened. Norman Borlaug invented this germ resistant wheat and that was disseminated to all the farmers. There were these programs put in place to communicate to farmers about what the new crop methodologies are all about and so on. Basically within a generation, the productivity of farming outpaced the increase in the population. Not only did we not have the mass starvation that Ehrlich had predicted, he had actually said that 300-400 million people will have to die in order for the food problem to be solved in India. You can look this up on Wikipedia if not the actual book that Ehrlich wrote this in. Instead in less than a generation India not only became self-sufficient for food we now have “Right to Food” Act that every citizen has a right to food and we export wheat, we are one of the largest exporters of rice, we even export milk now. This has happened in one generation or less. It is the same thing. Getting technology, getting automation, getting software to power the people, to make them more productive. The basic underlying equation of my company and of my industry, whether other companies realize it or not, is that the people only model conducting a project with only people and tools from the client that they have installed, has to be replaced by people plus software. Less number of people plus software. If you had certain number of people only that number has to go down and software has to be added into that. If you do it in the right way then these three things happen -- Margin goes up because now you have less people on the project and you have Software which is a higher margin thing, the Cost to the Consumer and to You goes down, but you can actually price the project lower now. The bandwidth increases because you have more people to do same kinds of projects. There is a classic triple virtuous cycle instead of the downward spiral of the costs, it is to transition from anything which required a bunch of people showing up to do a project, has to be replaced by a smaller number of people showing up with software that amplifies them. So software to amplify them, helping them do more with less for more is the way that we have to get out of this.

Here is an example in our own little world that we have done -- one institution in my industry that despite being here for 18-months I cannot put my arms around is this idea of a bench. All of you

measure utilization; 81% utilization is actually considered not bad. I talk to my teams and they say, "Sir, we are at 81%. What is your problem? We are the highest it has ever been?" We have gone up by 1.5% in the last 14-months or whatever." Actually in our world 81% utilization means that 9,000 people are sitting on the bench. This is more than the number of applications developers I had at SAP – the World's #1 Application Development Company. This is more than the number of engineers at Facebook. So unless you guys are building a Facebook, this is a colossal waste of human potential. So since July we have had this zero bench marketplace up there and this is a screen shot from it, this is Tou's account. You can see this on that day. Actually the number has now crossed 10,300. This is from a few weeks ago. You can see that there are 9,500 jobs on this thing. So we basically challenged our teams, project manager, delivery manager, to put jobs up there, that they want to get done that are relevant to the company. There is also a very deep human dimension to this. The people on the bench actually hate being on the bench and a lot of them are youngsters, who come out of Mysore and then they are raring to go and then they go to bench and nobody wants them because they do not have experience and they do not have experience because they are on the bench. So it is like this; this bizarre cycle that they are on. So this has been an amazing experience to get this out there. Basically, 70% of the people on the bench have done at least one job. From the metrics that you guys use this does not unfortunately change utilization because of the billing and contractual things and all of that, but for the people while they are on the official bench they are actually doing this stuff. As you can see on that particular day, 3,470 jobs were in progress, 2,000 were completed. This is our own little attempt to address this disintermediation that is going on. There are other experiments that we are trying now to also get customers to have visibility into this marketplace that they can actually take advantage of people who are sitting on the bench and things of this nature.

Here is one of the interesting examples; we actually had a robot serving beer and the robot is by our friends at KUKA. We work together with them and a beer serving robot which served perfect German style beer at the house of an Indian outsourcing company was quite an irony in Davos and that was an exciting experience.

The strategy underneath is very straightforward; in 1964 Arthur Koestler wrote about "The Act of Creation". We all face this. This is a universally applicable strategy and of course, therefore, it is also Infosys' strategy that there is the renewal of the existing business that we are in to ensure that it continues to be relevant to the times that are there. But renewal of the existing business is by itself not enough, it has to be complemented by completely new things that we never did before. So there is the 'renew' which is the existing business or yesterday's business and there is the 'new' which is things that are alien to us and both have to happen at the same time. Koestler said that the essence of creativity lies in these two self-consistent, they are consistent with each other, otherwise, you would have a cultural conflict in the company but in compatible frameworks of reference there is the incremental improvement plain which is where you continually improve the metrics that you already know about so that the business that you are running continues to be relevant to the times that are there and the paradigm shift plain where you address completely new kinds of things that were not possible to do before. This duality of 'Renew' plus 'New' has to be carried out under a common frame of culture. This we usually do not pay so much attention to. In that culture, the fundamental pillar of that culture is education, it is learning. It is to ensure that our people, no matter which business we are in, that our people have the ability, have the skills to deal with what is going to be the 'new' in their world. If we do not have that, then no matter how well we 'renew' ourselves, we will continue to be relevant a while but ultimately the 'new' then takes over.

A Quick Update on our Execution Along The Strategy: As I mentioned earlier, the 'renew' is all about software plus people. Every single service line that we have in the company is going through this transition from 'people only' to 'software plus people'. In Q3 the quarter that just ended in December, we saved 1,100 people through automation, we will continue to increase that number. We have to ultimately increase that number faster than any decline, any pressure on the cost side

and that is how we will continue to maintain and increase our margin. The entire renewal of every services driven by automation and we are going beyond basic automation around the BPO, L1, IT support type automation towards more higher value kinds of automation in application maintenance, L3 support and things like that which requires more sophisticated AI technology and things of this nature. The more bandwidth that we save from people because of automation, we apply that towards innovation and that is why we have been investing heavily in teaching people new things like Design Thinking and so forth.

One key dimension of 'Renew' is this initiative that we started called "Zero Distance." When I started at Infosys, the main perception of not only Infosys but of all IT services companies was that we are a bunch of order takers, that we do what we are told and we do not innovate. This was the primary criticism from clients. It was a shock to me that we do not innovate and clients would routinely tell me that you do a great job, the quality is great, the delivery excellence when there is an escalation all of that, but you guys do not tell us proactively what we should be doing, what our strategy should be, you are not participants in our innovation journey and things like that. So one of the initiatives that we started is called "Zero Distance" which was to inspire every single project in the company to do something innovative, to go beyond what they are delivering and to doing something innovative. I am very happy to report that for all the projects that are managed by an Infosys project manager, which is not staff augmentation, etc., where the client actually tells you what to do and you are just a body sitting there, so that is about 8,790 projects, so every project that is managed by an Infosys project manager, that started roughly six-weeks ago, we have 100% coverage on "Zero Distance" now. This has happened at a speed that I could not have imagined when I started this initiative. Every single project in the company that has our own project manager on it has a "Zero Distance" idea. These are usually very small ideas, every once in a while I am sitting on a long distance airplane flight and I go through these "Zero Distance" Projects and it is astonishing, you get hit by this dual feeling that on the one hand you find that the innovations that they all come with are usually not that great, they are small ones, but there are thousands and thousands of them, it is incredibly inspiring to read that.

The New Dimension that we are on is Software-led Innovation. It is innovating in software itself. That is our "AiKiDo" work. "Ai" is the software platform, "Ki" is the capture of knowledge that we do - our clients knowledge as well as our knowledge and "Do" is the Design Thinking. Our work on our platforms, the Infosys Information Platform, I earlier mentioned this huge machine, this is going extremely well, we have roughly four dozen deployments of this already. Our work with our Automation Platform is going extremely well. The Automation Platform is what is powering all the Automation being embraced by our services. Our two acquisitions – Skava and Panaya in software is going very well. We are expanding our work for "Ki" of AiKiDo into our Infosys Knowledge Platform. We have just started handful of engagements on that. Our work on Innovation Services and AI Systems that we build for the more complex problems like the Internet of Things, Digital Twins, Predictive Test, these kinds of custom high value innovation projects that is also going very well.

We have done about close to 200 Design Thinking Workshops with our clients already and we are constantly engaging in new ways of co-creating the future great problems of our clients as well as new strategic partnerships like with Amazon, with Microsoft, with Huawei, Cisco, companies like that as well as with NetSuite that we just announced. Enabling this human revolution, this basic idea of amplifying people with software is our educational infrastructure. That is the picture of our campus in Mysore, I was just there for the last four-days at our Annual Strategy Meeting and we are constantly investing and learning in our learning platform, we are doing some amazing work there. The Design Thinking count has crossed 80,000, that is the number of Infoscions who have gone through Design Thinking Training, 2,000 people have gone through the AI class; AI class is much longer, it is about three-weeks long and 2,000 of our project managers are now certified on

DevOps and Agile and by the end of this calendar year every project manager of the company as well as 70% of the delivery organization will have gone through DevOps and Agile Training.

In addition to Learning, we are also constantly investing in internal technologies to enable a culture of collaboration. A company where employees collaborate with each other is exponentially more powerful than one where it is not and we are looking into delayering the organizations. IT services organizations that have been around for decades like Infosys end up having layers and layers and layers of people and usually that ends up impacting productivity. So in certain service lines, we are trying out a radical delayering, a next-generation delivery construct where projects managers are empowered to work directly with people, where we expand the number of project managers and create this reverse pyramid where the project managers and the teams are in front working directly with customers and taking decisions and the management and the business enabling functions support them to achieve a great agility.

We are also creating new ecosystems, I mentioned new partnerships, but we have also done new kinds of initiatives like Open AI to invest in AI technology in the greater public good and of course we will all benefit from it including us as well as our work on our foundation. So, I would say 18-months into this it is still early, but the clear signs of the execution along our strategy are now becoming visible.

Our endeavor what we are trying to get done here is very simple – our mission has always been about consistent profitable growth that continues to be the case. We are confident to get to industry leading growth by financial '17 which starts month after next. I believe that we are in a very interesting time. We are in a time where there is a massive transformation happening of the world around us driven by digital technology and at this time the world is in a very interesting situation; the traditional IT companies are not the ones helping the great IT transformation, they are in fact a part of the problem, not a part of the solution and then you have a whole bunch of start-ups, while they have exciting ideas and technologies and solutions, they do not have the maturity, the scale to solve the complex problems that enterprises need. So, I believe that we have a unique opportunity to be the leading IT Services Company in this time and that is our endeavor. As I have said before, by the year 2020, our endeavor is to get to \$20 bn in revenue at 30% margin and \$80,000 revenue per employee. We are roughly at \$50,000 right now revenue per employee and between now and then our aspiration is to get to that \$80,000 number which will mean going from people only to people plus software in a very big way.

Thank you very much. With that I would love to take some questions.

Moderator

Thank you Mr. Sikka. Any questions from the audience? There is a small caveat; we would like you to keep the subject of your questions only related to Automation and the talk that Sikka just gave. If you have questions outside of these, I would encourage you to take that up at other forums, not this one. We request you to stand up, tell us who you are and then ask us your question.

Rajesh Bhatia

I am Rajesh Bhatia from Tata Investments. Actually it did make me a little more nervous about the outlook for the traditional IT Services in India. You talked about how Digital changes taking place which requires slightly higher end skills, solution-based approaches. You talked about change which is exponential and you talked about automation, which is doing more with very less. That actually stands slightly contrast to what traditional Indian IT Services have been used to which is standardized processes and focus on execution. So I just wanted to understand, I see your vision,

but how comfortable are you that the DNA of Infosys is changing very quickly because the speed needs to be really fast towards this goal?

Vishal Sikka

I am extremely comfortable with that. I say this because I was just in Mysore yesterday for the last four days, I stayed an extra day, I spent some time with the trainees who were there. Right now, as we speak, we have 8,500 trainees in Mysore, I spoke to them for two hours on Saturday, 23-24-year old kids absolutely fired up, everyone of them go through Design Thinking Training for a full day. You ask them, do you all think that you could all be innovators. Not one of them bats an eyelid. When I started "Zero Distance" back in March, it was a very interesting experience. Back in January of last year I was doing a project review with the team and they were doing a massive data warehouse for a massive company and they showed me all the things that they had done. I asked them, "When is it going to go live?" They said, "Sir, this has actually been live for the last three months." I said, "Who runs it?" "We do." I said, "75% of this huge company's revenue is flowing through our data warehouse and we are the ones running it. Have you told them what you have seen inside this? Have you given them forecast?" Predict their revenue in the next week, next month, next quarter, this would be of incredible value to this company because you actually see it before they do. This thought had not occurred to anybody. So I went through 7 or 8 experiences like that, came up with this idea of "Zero Distance" that every project manager has to find a way to innovate in this project. The average age of our project manager is about 31. They are 31-year-old kids. They have been in Infosys on average 7-8-years and they are managing this 8,800 or so projects. I launched it to 1,000 projects in March and at the end of April, I expanded that to the entire company and since then roughly twice a month I go through reviews of this thing. This program has reached 100% coverage. I am not talking about setting up a lab in Palo Alto or in Israel where 30 people innovate and they say Oh sir, we have a center of excellence in innovation here. This is 90,000 people who have been participating in this. So financially, economically, from a strategic perspective, this is still very-very early but what I am telling you has already happened. With one-day long Design Thinking Training, you cannot turn a person into a designer, but you can turn on a switch that it is possible to ask why and say, "Hmm, I am looking at this thing. How can I improve this?" That spark can be ignited and I have no doubt that this cultural transformation can be achieved.

Rahul Rathi

I am Rahul Rathi from Purnartha. The question is with this innovation, what does it mean for the industry and the targets that you have set and when I look at NASSCOM targets, there is a disconnect, so will the industry catch up to Infosys or will there be a reversion to the mean?

Vishal Sikka

I have no idea, maybe Pravin can talk about how NASSCOM does their forecasting, I do not know how they do it, I will leave it at that. "Will the industry catch up to this?" I do not know. I hope they do. I hope that we all thrive. We in India have a great culture of learning, a great background in software, these are the skills of our times, I hope that all of us can thrive and certainly our endeavor is that Infosys can.

Participant

A thought from you on the ethical and moral issues behind Automation. What happens for instance if a driverless car has an accident, who is culpable?

Vishal Sikka

This is one of those tale of two cities type situations. We have had these ethical dilemmas for a long time, nuclear containment was one, when the large machines came up, the steam engines and so forth. At every phase of the great industrial revolutions of the last 300-years this has happened and this is no different. Having said that, this particular time we are all worried about it because it is about white collar jobs that are being transformed by many of these Automation, AI Systems. So, there are some very serious ethical issues underneath there; however, they are no different than the ones that we have dealt with before, like when the steam engines and the big trains came around and so forth. In the US, there is a panel that was formed by President Obama, that is looking into this with some very-very smart people; Prof. Russell who is a friend of mine, is on that list and so forth. So, I think that they will all figure out. By the way if you are all thinking the Asimov laws - Asimov laws were actually more like a joke, there were more proof by Isaac Asimov that such laws would not work and people somehow think that those are laws for robots. If you just think a little bit about those three laws, you realize that they do not actually work. There is a classic example of "I have to feed my masters and I am a food-making robot and I have no food, therefore I should kill the dog and feed the dog to the owners." This is obviously not going to happen. It is a complex problem and smart people are working on it but it is no different than problems that we have dealt with before in some sense.

Participant

If you look at the IT industry, that has been built on the bottom feeding of the pyramid and employees in turn having a defined career goal. Now, if you look at Automation, this takes out a lot of those roles and the entire supply chain gets disrupted. So my question is really that with Automation, what do you think will be the impact for managing employee resources, managing the supply chain, career roadmap of employees as such?

Vishal Sikka

I have probably been asked this question 200 times in the last 12-months. The important thing to keep in mind is if we look backwards in time, we see that the jobs that were the jobs of yesterday go away. It is true, there is no doubt. But, if we switch the perspective to the future, looking forward, we realize that the same Automation that is taking away the jobs of yesterday is creating completely new kinds of jobs of tomorrow. This room was probably made by 10-15 people with a lot of machines, construction equipment. 100 years ago, building a room like this was probably not even possible. If it was possible it would have required 500-600 people. And yet, unemployment between then and now is not only the same, it is even better now than it used to be back then. So, the perspective that we have to take is that Automation creates more opportunities than it displaces. Deloitte recently did a study of the last 140-years of jobs and they found the same thing. The challenge therefore is, "Do we have the ability to teach the people those skills that will be relevant tomorrow?" If the answer to that question is "Yes" then there is no problem. If we do not have the ability to teach the people, to reskill them, to ensure that they have the skills, that will be relevant 2-3-4-5-10-years from now, then we have a serious problem. That is what it comes down to. This is why learning in Mysore, these things are so fundamental to our future. A couple of days in the newspaper there was a headline that there is a shortage of e-Commerce delivery people in India. This headline would have been a shock to somebody 20-years ago. If somebody opened up the Economic Times and saw this, they would be like what is an e-Commerce delivery person. So new technologies create new opportunities at a rate that is equal to or even faster than the jobs that it takes away. If we stay focused on the way the jobs used to be, we will not be the ones that survive. If we look at the jobs of tomorrow that are yet to be, then we will be okay.

Moderator

Alright. That is all the questions we have time for. Thank you Mr. Sikka.

Vishal Sikka

Thank you very much.
