

Shifts in Business Practices and Models on Account of Technology

Prof. N. Venkat Venkatraman, David J. McGrath Jr. Professor of Management, Questrom School of Business, Boston University, is in conversation with **Prof. Janat Shah**, Director, IIM Udaipur and **Prof. Prarthan Desai**, Adjunct Faculty, IIM Udaipur regarding his book, *The Digital Matrix*.

Prof. Janat Shah: So first thank you. Prof. Venkatraman it's a pleasure to thank you for agreeing to be part of this and I realized that so I work on an operation and supply chain and I have my colleague, Prof. Prathan Desai who works on a strategy. And both of us are your fan in terms of I've been following your literature for quite some time and it's a pleasure and I also realized that we have so many common points. You have been a distinguished alumnus of IIM Calcutta an interestingly professor Prathan [PH] has taught at IIM Calcutta for a couple of years. I have a couple of my doctoral students at IIM Calcutta. So, it is great to see that connection and I also notice one more connection you have written papers along with Professor John Camillus and interestingly Prof. John Camillus is on advisory board, academic advisory board at IIM, Udaipur. So, it is very nice to see those connections.

Prof. Venkat: Excellent and John Camillus was the reason I went to the University of Pittsburgh to study.

Prof. Janat Shah: This is wonderful because John has been a great mentor to me personally and for our institution. So, it's good to see this several of this connection. I must tell John that you know. So let me start with just to understand what's been your motivation and inspiration to write this book because I admit before I came across your book have been struggling to understand this whole landscape and trying to make sense out of it and I think your book helped Prof. Prathan to get a make a sense out of this whole complex phenomenon which are happening but it will be good to understand from you, to hear from you, the way you looked at this whole exercise of writing this book would be just good to understand that.

Prof. Venkat: Okay. I think I was fortunate when I started my academic career at MIT in 1985. I got involved in a research project. At that time was called management in the 1990s. This is important to put it in the context that in 1985 the biggest technology that we had was the IBM PC and the most important software that we had was Lotus 123. Microsoft was just emerging and there was no internet and Lotus was this big software company in Boston.

The premise of the research project was how will the discipline of management change in the 1990s because of the pervasive availability of technology. Data general, digital equipment all were just ideas and we had 10 companies both in the U.S. and outside the U.S. were really interested in this question and from my academic research with the strategy I got really interested in the role of IT and strategy in the 1980s. The premise was how would the discipline of management change. Now the same question applies in 2019; how would the discipline of management change because of pervasive availability of technology in the next decade. The only difference is that now we have far more technologies, more widespread acceptance and deployment of technology than we had in the 1980s but we haven't answered that question how will management change, how what we research and how we teach change because of technology. What has also changed in the last 30 years is we have gone from IT for process improvement with big ERP systems and big CRM systems and supply chain to now IT becoming an important enabler for redesigning processes but it's also a driver of redesigning products and how we deliver services. So from a process view that was predominant in the 90s and the early 21st century, we have not gone to a pervasive view of technology with product processes and services and when you put it all together it changes the business models which is how do we generate revenue and earn profits and the implications for how we organize ourselves as companies with humans and technology working in tandem rather than humans competing against technology or technology taken over our jobs. So I believe that the digitization of industries and digitization of companies is going to be the single most important issue in the next 10 years across geographies, across industries and across companies. So part of my in taking a canvas that's a book-length canvas rather than academic articles that we write it's really mostly constraining ability to write these ideas well I decided to write the book 2015-2016 and over the last two years I mean I've had a chance to share my thinking with the managers pretty much all over the world and that's been very gratifying and and I am working on follow-on issues that we can come back and talk about it as we go along.

Prof. Janat Shah:

This is a fascinating journey of almost 25 years in terms of how you started looking at process improvement and answering those questions for those 10 corporates to today looking at the whole change in the way business models itself including product process, service redesign thing and I think you mentioned in this whole book of the nexus of scale, scope and speed. I found it very fascinating that what was, I mean the way at least I understood, correct me if I am wrong, that what was probably not possible forget 25 years back or even 10 years back has become possible

today because of the way you describe this whole nexus of scale, scope and speed. Would you just probably give us a sense of the way used to this being the major driver where from a process improvement to now talking about the business improvement model and as you said whole range of industries across the board and across geographies going to be have been affected by this nexus of scale, scope and speed.

Prof. Venkat: Yeah. And for anyone dealing with strategy Alfred Chandler's word scale and scope is extremely important.

Prof. Janat Shah: Right.

Prof. Venkat: And if we now look at the scale and most companies still look at the scale in terms of market share. So they say we have 30% of the market or 40% of the market and that logic worked very well and we used the 30-40% of the market to get economies of scale in production, economies of scale in the unit cost reduction so that we can charge slightly more premium and utilize the benefit of economies of scale to be a profitable company. You can go back and look at my early work on market share and profitability relationship and all that is based on physical products. So the scale and physical products which are economies of scale in production and the unit cost was the driver of advantage. Now it is really economies of scale in understanding and having access to data and understanding about our consumers are creating touch points for our products. So if you take the Amazon versus Walmart in the U.S. if we take a traditional way of looking at competition Walmart still has lots of reach in terms of scale but what Amazon has a scale in terms of data and touch points for the consumer and what the web has allowed us to do and as you said it's really in the last ten years the web has allowed us to collect data in multiple millions of data points where the scale of an industry no longer matters because what Amazon is able to do is to collect data on how 200 million consumers use different types of consumer products, different types of services, different types of information products to get insights that transcend industry boundaries and so the scale is now web scale. So that's in multiple hundreds of millions of data points and I think this has significant implications for companies in India as we look at India becoming digital through the availability of Jio and 5G in the next five years whose going to essentially capture data at multiple hundred million data points and start to compete and then if we take a global perspective beyond India then we have got Alibaba and Amazon and then maybe Reliance or others in India in the next five-seven years could be the custodian of data on scale which is different from scale the way we thought about an industrial world. So that's really

the distinction between scale in the physical world to scale in digital world scale of access in data points and why this happens in the last 10 years. It really happened because of the availability of smartphones. In 2007 there was no smartphone. In 2019 we've got 4.6 billion smartphones and that 4.6 billion smartphones allow the brand companies to potentially killing data from hundreds of millions if not billions of consumers because they have direct access to it and they don't have to invest in the infrastructure to collect the data and if they don't do that somebody else collects the data and commoditize this the value in the physical products because the value shifts from physical products to information around how the products are being used. So that's scale.

The scope is also interesting. The C.K. Prahalad work on core competence and how far can you go and how it should be focused all were really useful ideas. Now what we have not core competencies to constraint the company from looking beyond this core boundaries but scope where a digital company comes into an industry which may not look like competitors that you might have thought about but companies that use their power of digital technologies whether it is the mobile phone or social connections or apps or cloud to solve the problem in an industry that the incumbents are not able to solve. So we can say what happened to be advertising industry before Google why couldn't they have created Google, the answer is no because the advertisers didn't think about the role of algorithms and analytics as part of advertising. Similarly what happened to the traditional telecom companies. The traditional telecom companies were thinking about voice communication and instant messaging and chat and Apple saw it as a multi-architecture that can go from iPod which was a single app architecture with the single app being music to a multi app architecture that allowed them to get into the telecommunication industry then the traditional industry didn't have their competence and we can go on and talk about many others. So for me, the fascinating aspect of digital transformation is when the incumbents face a new competitive threat from these digital giants that are able to parlay their ability with technology to go from one industry to a different industry and the incumbents are unable to match the digital functionality or the digital competence. So that's really where the scope comes in and then the third one is speed. The speed is an area that I'm sure whether you are in supply chain or whether strategy or operation management we talked about it or where speed is different in the digital world is the nonlinear aspect of individuals embracing the technology, the availability of this 4.8 billion devices that we carry in our hands pretty much every moment of our making days has allowed us to think about deployment of technology in the nonlinear fashion

which means I can now add a heart rate sensor or an EKG sensor into a phone and suddenly I have the possibility of collecting data from a billion people. So if I'm still thinking about incremental 10% improvement in my ability to collect data on service customers and Apple comes in and says in five years I may have data on the heart condition of a billion people on the planet the traditional healthcare companies find themselves at a competitive disadvantage. So the speed is linear to nonlinear. Scope is adjacencies to problem solving with digital. Scale is economies of scale in production to economies of scale in access to information and utilization of that data to get insights.

So that when you put it all together even individually you can begin to see the shift, but when you put it all together you find that the incumbents find themselves at a profound point of inflection which in my view is even more extreme than click instances disruption logic because he was really talking about disruption from a product perspective that went into business models whereas this is product processing services business models and the organizing logic and so to me this is a obviously I'm biased but I see the next decade as profoundly important transformation across industries and we can talk more about it. So that's really why I think scale, scope and speed taken together provides the new strategic logic for strategy and operations.

Prof. Janat Shah:

No, I mean it's a fascinating way being able to weave this together where how this whole nexus changing the whole way we look at from a strategy or operations or supply chain perspective and you give up examples of couple of industry advertising, retail, telecom; in your book you covered extensively healthcare which you also touched upon and somewhere this whole idea for any industry that can I say that maybe I am safe but from what you describe I think there is no industry, so I must share with you when I read your book for the next few days, I was stunned that what would does it be for education if for example Google comes into education where would the management school be at both side you talk about the startup some of the startup we look at any businesses and the way digital giant look at it. Is there any industry which you think can say that look probably my industry I can be, I can have a slightly longer horizon then the kind of industries you talked about advertising, retailing, telecom and healthcare. I am sure since you've been speaking to several industries is there any industry which thinks that maybe I don't need to worry too much or I have probably another decade to worry about it or saying that I can wait and watch.

Prof. Venkat:

No, it's a great question. It's a question that always comes up because people want to have some level of comfort and it's not too late for them. And my quick response is the moment you're thinking about that window of comfort somebody else is already thinking about how to disrupt you and I don't think we should really give that false sense of hope to the executives or to our generation or to next generation of students but having said that so let me give you my high level where I think the transformation challenges are. What we have seen so far are what I didn't quite articulate it in the book but the later on when I talk about it I make the distinction it's the we have seen the transformation in analog to digital industries so far. So it is easy to digitize books. It is easy to digitize movies. It is easy to digitize software. It is easy to digitize advertising, maybe it is easy to digitize banking of some products analog to digital which means the analog version per se is more inefficient and the digital version doesn't take away from the richness of what the product is. Music is still rich except for the aficionados, movie is maybe he's even better and so on and so forth. The next wave of transformation is what I'm calling is the physical plus digital where the physical product will still be needed. I'll still need a car, but the value may not be in the car. The value will be in the one who gets me to go from point A to point B uses the car, deploys the car and gets me to go from point A to point B or gets goods to go from point A to point B. Then, the larger question is there is this new value and is it going to go to the incumbent that owns the physical asset or is it going to go to the company that manages the digital overlay on the physical products and here the digital transformation is still using the same ideas of scale, scope and speed but the speed is in both in the transformation of the product as well as in the speed at which I understand how consumers and individuals move. This will give you some numbers. For seven billion people on the planet seven plus million people on the planet we have two billion motorized devices that move, whether it is I mean I'm not counting the two wheelers. I'm really counting the four wheelers and the trucks and so on. If we add two wheelers it's even more. I think that is an unacceptable ratio going forward as population lives in mega cities. So whether you take Calcutta or Chennai or Bangalore or whatever else India is going to go through the transformation of the next 20 years. So if you think about the car industry you know whether it is Tata Motors or Mahendra's or else read redefining themselves as a mobility company will they be able to succeed and bring in that transformation space or will they be seen as providing the cars and the Olas and the Ubers and the Googles and the Apples are much better and understanding individual preferences and personalizing our transportation needs at scale. So it's physical

plus digital and the same thing and farming. Farms are still going to be important but a tractor combined with data on weather and data on fertilizer, data on soil deficiency of the farm is going to be valuable compared to just simply delivering a tractor or a earth-moving equipment or a combi and so we can keep going and asking in every industry what is the value of information about the product when used how will you take advantage of that shift while preventing a company that's asset light and information-rich to take advantage of this shift and the point that I make to all the companies is the incumbents in the first wave of transformation missed seeing the digital shifts. The Warner Brothers and the Sony Music and the Manzo Noble and the bookstores missed it and the digital companies won out. If you have physical plus digital industry which is pretty much every other industry, are you going to miss out and allow the digital companies to win or are you going to transform your physical asset to really deliver greater value and now let's come to our education which is our profession. And much of what we do and we're at this point in time going through an exercise ourselves but let me just get us to think about our model is based on the sage on the stage model. You or I stand in front of it and we got 40-50-60 people, students that are listening to us because we have the information is that the best way to teach, is that the best way to learn better than asking the question is the best way to teach is it the best way to learn the answer it is not the best way to learn. It maybe the best way to teach from an economies of scale and production point of view and delivery point of view it's not the best way to learn. So how will we now decompose what we teach into skills and perspective. Skills can be taught online where different people with different levels of engagement and understanding of the concept take different modes of learning. Some people learn by reading. Some people learn by watching. Some people learn by doing things. Some people learn individually. Some people learn in teams. Let them learn all the basic concepts of supply chain and strategy and perspectives is debates, dialogue and discussions where the classroom is still best suited because these are unstructured problems that is best suited by having us engage with the student to go deeper and connect the dots and so can we now look at education as skills and perspectives, skills done predominantly, digitally and perspectives on predominantly physically with some aspect of physical and digital connection. We, at Boston University as you may know have announced the first online MBA degree on *AdEx* platform at disruptive price point that is our way of saying that if we don't disrupt ourselves we got to let other people come in and so it's an experiment. It's what I call in the book an experiment at the edge which will tomorrow create collision at the core. It will force us to

reimagine how often do we need people to come is in to medium model still a legitimate model where people give up two years of opportunity loss of income and relocate to a place like you and like Udaipur and places like that or can we allow them to learn while they're on the job and then come for focus time in which that one-week intervention is far more effective rather than a two-year elapsed time which might have been a great model 25 years back when I went to IIM, Calcutta I was 24 and at 24 I want to be with my colleagues but at 30 I have maybe I am married, I have got a young kid, I can't afford to take two years and come to a university and study and maybe logic of an elapsed time of two years is our constraint not customer's preference. So I think the same issue is happening with car industry. The same issue is happening in logistics. So we got to really think about all of these ideas as well you see the physical plus digital transformation in the next 10 years.

Prof. Janat Shah: I think it's a fascinating the way you putting this physical plus digital together and essentially saying at the heart finally it's a customer that are you able to give a value to the customer and how you are able to leverage the data which traditionally we have not done as much and if I am incumbent if I am able to do that well I will survive and prosper otherwise within the whole value chain relatively this newer players will come and extract the value. This whole, so it's going to be a very interesting journey and how the incumbents are going to take advantage of their existing physical assets, understanding of a customer, will that become a liability or would they be able to take that as a strength and as you said they seem to have missed, most seemed to have missed the digital the first bus but will they embrace this whole digital and go through a transformation which you have argued.

Prof. Venkat: Yeah.

Prof. Janat Shah: Just just curious so far we've been looking at a lot more from a industry perspective. It will be good to look at from an individual perspective which is where you did talk about from education sector but as manager if I'm a manager, if I am a student we are actually the way you talked about we also think that digital is going to be a future and can we prepare our students and manager for that future world. It would be interesting to hear your thoughts in terms of how I as a young manager or a student when I'm looking at career ahead how should I look at when the industry are going to be disrupted, industry is going to try and transform themselves; how do I look at myself as a manager and as a student.

Prof. Venkat:

Yeah. It's a great question. A question that comes up. Let me try to differentiate a practicing manager today from maybe a student who is just coming into an IIM right now. For a practicing manager what I tell them to do is a very simple exercise. I tell them for the next four weeks after every meeting you make a note in your diary whether you added value in that meeting, what decisions did you contribute where your expertise was needed for the decision to be taken in your view in the best interest of the organization and then is that decision something that could be automated today but you have not automated it because the process didn't allow it but it could be automated but you didn't do it, or it could be automated in the next year or the next three years or it cannot be automated that you think in your life period whatever that is, let's say ten years and then at the end of the week, at the end of the four weeks just do your own math. You don't have to show it with anybody else because it's individual reflective exercise about where I am adding value in my job today. Most people when I see them next time they say that exercise would be an extremely useful because much of the reason why I am spending my time and adding values because the organization hasn't quite figured out how to automate what I'm doing and I'm in meetings in which historically a marketing function meets with a center I'm there but for 45 minutes I will just give an information that I could read in five minutes. So I still have this very arcane processes in which we have not automated which means our skills have not being put to full use. Then I ask them if you had allowed those activities to be automated how would you now spend your time, what kinds of problems would you now want to address that today you're not addressing because you are attending low value-added meetings and that's a very important exercise for every manager to go through is what is an unaddressed problem? It's the original intent of Google's 10%. originally when Google's ordered 70:20:10 we just become roughly 80:20 or 70:90:10 depending on who you talk to but the intent is what we need to do not the actual calculation. The intent is if you want to be inside Google and you had time to think about it what problem would you solve out of which came Gmail and out of which came you know a project Sunroof out of which came Google Phi and many other things; for a thousand ideas will come and only if you would have traction but at least you're getting every manager to say if you are not adding value today where would you add value and then the next question is what skills will be needed for you to solve that problem. I may be able to identify the problem but I may not have the skills.

Prof. Janat Shah:

Correct.

Prof. Venkat:

Actually if I am health care and important problems always personalized medicine at scale. I know that I need to solve it but I may not have the skill to actually do personalized medicine at scale then what do I need to learn so that I'm able to address personalized medicine at scale. I'm giving you a short version of what you can easily see as a discussion that you can have with the managers. But the current students and it's really more for us than educators than for the current student all our education system is based on helping the students understand the answers not framing questions. We evaluate them on their ability to answer. The reason why I got into IIT or I got into IIM on that given day is because I must have answered more questions than the next person. There's no other reason. I mean it's whatever it is I mean that day I answered more questions and I went in IIT . There is no reason why I'm any better than the next thousand students that didn't get into IIT but we already categorized them into one or the other and knowing answer is no longer enough in the age of Google, in the age of AI, in the age of data it's more important for the individuals to know how to frame question and have a profound sense of curiosity to connect the dots and see the bigger picture rather than mastery in analytics or mastery in marketing or mastery in something. So really give students more opportunities to be framing questions and answering rather than writing answers to predefined questions. So in my own class in the final paper I tell the students to frame the question and answer it which makes it more difficult for me because I've got 60 different papers but if I had given a question for which I know the answer if the grading is very simple but it is monotonous. I'm using the rubric that I know to evaluate my students and I tell them that's the toughest problem is for me but in doing so I'm really giving you this thing to say what is an area where digital technology will now help us solve the problem that historically we haven't been able to solve and then write an answer to say how can we solve it today, how can this be solved in three to five years and beyond and students find it extremely difficult thing to write. But I said that hopefully you will realize that that is what you'll be asked to do and then connecting the two the student today and the manager of today the distinction that I make is managers are people that solve the problems as framed and leaders are the ones that are constantly reframing the problem and as digital technology transforms every industry, every sector everywhere leaders should then re-frame the problem to address while letting the managers solve the problem and the transition from manager to leadership is more attention to reframing and less attention to how to solve it.

And so, that really is the issue that we need to help both our current set of managers and the current set of students to think through.

Prof. Janat Shah: So this is a very interesting way of looking at this whole phenomenon. Am I am given enough free given a solution or a framework execution or do I reframe the question. So here is a challenge which you facing that is if I am looking at let's say MBA student what do I need to spend enough time on tools and techniques or do I just focus on you know the way to reframe the question, the way you may want to lead the team or should they also dirty their hands and also actually look at detailed tools and techniques, look at technology and actually get into find the solution for a given frame. I don't have any question but I am just curious your thoughts on this.

Prof. Venkat: No. This is something that obviously all of us are dealing with which is the trade-off between breadth and depth and so if you go back to a origin of business schools and the original Harvard model of general management right and during a period where we had functional specialists and then the MBAs came in the MBAs all moved up very fast because we knew how to apply tools, look at a problem in a broader context, look at strengths, weaknesses, opportunities, and threats so we understood comparative forces or be it core competencies or whatever else that we can add to it. We knew something that the existing managers they know because they were narrow and we were broad and I think we are reaching a point where can you really be a general manager without knowing enough about the underlying technology. So this is important question. I think Jeff Immelt at GE made an observation that I think it's in public domain but we can look through it. He made the observation that in the future there's no general manager. You need a manager that is a function as an understanding of how that particular thing works. So you can't be a manager inside GE and go from being an aircraft engineer to healthcare to NBC Universal to transportation which was the old GE model where because the old GE model is that you can look at numbers you can figure out how to resource allocator. You can identify good people and you can now motivate them and if you motivate them and give the right incentive and look at the numbers which projects to stop, which projects to innovate and let the functional experts do that and now what I'm getting us to think about is that we really need leaders that have enough understanding of what technology can do. So I don't need to be an AI expert but I need to know what AI will do to make a car an autonomous car. I don't need to know the details of the algorithm of how the car navigates using the light sensors and sound sensors but I need to know the progression of the evolution

of the light sensors and the sound sensors enough to know that in three to five years the cars will be able to see the road much better than humans which is even today possible but I know it's going to navigate through winter conditions all the different conditions much better than the best human today and then what does that mean to redefine the architecture of the car. So if I'm a car executive I need to know that. If not I need to at least get myself familiar with a level of technology to really ask that question. So what I am trying to tell my students is this is very interesting Netflix show called Inside Bill's Brain. Inside Bill Gates's brain. And it's worth watching not because I'm saying Bill Gates is the answer but it really is but how is he thinking about problems like polio and sanitation. He is able to look at the importance of sanitation and engage in the enough conversations with the experts to motivate them to look at different way of solving the problem and to try to address something and we can all come at the same thing at a lower level and say I need to have enough curiosity to know how will the development of human genome decoding help find the cure for cancer without being a serious biochemist or a biopharma because I'm going to be an executive in the pharmaceutical industry. So that balance between breadth and depth is important when digitization starts to change every industry. I think that's our big issue.

So this emphasis on general management value where we give this false sense that you can go from selling Pepsi to running Tech Mahindra. No, I think students have to make a choice and develop a deeper understanding of the industry's architecture and how that'll be impacted by technology and then evolve it rather than say I'm an MBA from IIM Udaipur and I can do and be a manager from point A to point B I think that for the next 10 years will prove to be the Achille's Heel for managers today.

Prof. Janat Shah:

No I think it's a, thanks for answering that very complex question of how do I balance breadth versus depth and especially looking at digital future how should a student and a young manager should look at these issues. It's been fascinating. You talked about your thought processes till 2015-16 where a lot of focus on analog to digital then over last few years you been looking at whole digital plus physical and so just curious at this point in time what do you think are the questions which you think in your mind are unanswered and when you look at next two years, two to three years, what are the questions you would be looking at when you look at, so some areas I think you've given it fairly I would say probably one of the best framework to look at issues from analog to digital none of them are simple but at least there is a direction and also this whole idea that you need to be paranoid about some

of those issues. So you looked at analog to digital. You looked at both physical plus digital. Are there questions which you think as a researcher, as a scholar who been you know leading the way industry look at this as well as academia? What are the probably two or three questions, which you think you would like to see answers in next two to three years?

Prof. Venkat:

Okay. There is quite a few. The challenge is to find the few that's really vexing for me. For me the number one issue that is still troubling me in some sense is most people including most of our colleagues in the academic community plus most of the people in the industry still look at IT and digital as a specialist idiom that only affects some function and then some industry. They say oh why can't I delegate this to at the IT organization, why can't I delegate it to the technical people that are more technically minded to solve this problem. Why can't I create a new function called digital organization or appoint the chief digital officer and let her or him deal with this and not treated as something that is strategic and important and the reason why that is frustrating is because the moment we frame it as it is something outside of business, something outside of what we do as managers then we have this false sense that I don't need to deal with this, let specialist do that and come back. So what I like to do is to see more a better understanding of how do we articulate the centrality of digital as the fabric of where the world is going to go in the next 10 years. As somebody told me few months back in the future there will be no digital strategy. There will only be strategy. In the future there will be no separation but I'm saying yeah I'd like to see that today but in the absence of that we still have this separation and we say well let's create an AI team or let's create a machine learning team I am saying that's the problem. Let's create an IT team. No that's it's really what you identified in our conversation earlier what is the fundamental customer problem they want to solve and how do we solve it at scale at speed. How do we get a better handle of what value we can deliver to customers where the old industry boundaries are no longer relevant or people use regulation the regulation is preventing me. The regulation has not stopped Google getting into the self-driving cars just like regulation has not stopped Google creating wearily to put data and analytics of the core of figuring out new way of ways of solving healthcare problems. Regulation is not going to prevent Amazon and JP Morgan and Berkshire Hathaway to create a healthcare company in Boston called Haven and recruit Atul Gawande to be the CEO to come up with a new way of solving healthcare problem. These are people that are able to look outside the boundary of our thinking to see how we can solve the problem. So I hope in the next five years we have a newer understanding a nuance understanding of how

digital impacts industry societies companies and individuals and not treated as separate. I think we are seeing trends but I like to see that much more. And then the second and maybe more important issue is what do we do as humans against the backdrop of massive automation that's going to be just around the corner and maybe IIM Udaipur is dealing with this but I look at the Indian IT industry and then all the second-order implications of what happened with that is everybody wanted to get into this software and software related skills and what are we doing when we going to have massive automation of the skills for which we falsely created a sense of hope for a whole generation of students to want to take it because they think there is job that is going to be far more lucrative and guaranteed and those are precisely the jobs that are going to get automated. So we have a young economy. We got a young demographics in India how do we deal with this automation question, value creation question it's not going to get played out in the next 10 years but it's something that I'm obviously very much interested in but it's something I'm sure you're dealing with and so those are two. At every level there is going to be a disruption. So this innovation disruption transformation is a cycle and innovation destruction transformation is the cycle that I try to depict using experimentation, collision and reinvention and we will see that get played out much more and it will open up more questions. It will open up more fascinating areas of discovery that I hope more people spend time studying because we need everyone to bring an energy to solve this problem.

Prof. Janat Shah: So thank you for sharing this too. You're absolutely right. I think unless we get more managers and leaders to see this as a central problem the first part which is saying that digital it's not somebody else's that just appoint digital officer or chief digital, CDO or that's not going to solve the problem somewhere all of us need to embrace this and how do we create that sense of urgency in all of us. I think we actually decided to take a plunge and offer a one-year MBA in digital enterprise because we saw there is an operational force all of us.

Prof. Venkat: I think I just lost you in the last few seconds.

Prof. Janat Shah: Sorry. I think the issue which you raised that how do you bring digital at a central for all of us we try we are trying to do that at IIM Udaipur by saying can we launch this one year MBA in a digital enterprise management and in the process force each of our colleague to look at their discipline in terms of how are you going to look at from a digital perspective. So we using this as a way of reinventing all of us in a experiment way, the way you talked about let's do innovation let's do experiment and in the process reinvent.

So I think we will share with you our own journey how we're using this as to reinvent ourselves and we are saying let's do this as an experiment. To some extent we are following the approach which you have advocated saying let's do this in the process we'll be able to reinvent ourselves but I must admit the larger question which you're asking is something honestly it's too scary and somehow I think in our disciplinary approach we are not asking this question in a larger context that how this automation is going to affect all of us and especially for a young country like India but I am going to take this message to my colleagues and saying these are all difficult questions but I think if you don't answer this question who will.

Prof. Venkat: Exactly. Right.

Prof. Janat Shah: Thank you for raising those two questions and which I'm happy to know that you struggling with those question and so in that sense I can hope to see a book or article on this issue two to three years from now from your side because you've been guiding whole lot of scholars and leaders in this journey and I hope you will give us insight in those two areas and we will update you in terms of what we have done in some of the area. Our own experience of doing this experiment by offering this MBA in digital enterprise. Thank you.

Prof. Venkat: Wonderful.

Prof. Janat Shah: It's been great. Actually it's a lot of insights which go beyond your book and several of your articles so for me and Prathan it's been a wonderful this one hour listening to you, in the process shaping our own thoughts in the way we may look at our own research as well as teaching but larger issue of society that how do we look at various members. Thank you and it would be nice to have you here some point in time because the kind of issues you're handling with is a larger question all of us are struggling. It will be interesting to continue this dialogue where we keep sharing our own journeys and learn from each other. Thank you very much.

Prof. Venkat: I look forward to visiting.

Prof. Janat Shah: Okay. Thank you sir. Thank you very much.