



Podcast with Mohit Joshi and Pramod Pratap

From 0.51

Pramod: Good afternoon. Welcome to Perspectives, our podcast and video interview series. My name is Pramod Pratap, and I head marketing for life sciences and healthcare. Today I'm very excited to introduce our guest, Mohit Joshi, president of BFSI, and healthcare and life sciences at Infosys. Welcome, Mohit. And many thanks for joining us to share your insights on the data driven paradigm shifts that we are witnessing in the healthcare and life sciences industry. Thank you again for joining us.

Mohit: Thank you, Pramod. It's great to be here.

Pramod: Great. Let's get started off, Mohit. I know we are talking about data driven insights. There's a huge number of data points and a very impressive numbers that we have in context here. According to one of the research markets, one of the key data metrics, it says the data now has really quadrupled to 700 hexabytes between the last couple of years in 2013 to 2017. Now again, it's projected to increase hugely by this year (2020). There's no doubt there's a huge potential value of data for businesses getting even more impressive as we move on. What's your first take on that when you see such data and the huge quantum of numbers that we see in this context?

Mohit: Pramod, I think you're absolutely right. The explosion of data is something that we have seen across the world, across industries. The reality is that all of this data is extremely valuable, right? So you spoke about a bunch of estimates. But there's a different set of estimates that suggest that for the UK National Health Service, and you know, I'm based here in London... The NHS data sets could be worth approximately six and a half billion dollars per year. So that's hugely significant, right?

But even more than that, these data sets have the capability to deliver almost 6 billion of patient benefits every year in potential operational savings for the NHS, in terms of improved patient outcomes, in terms of generation of broader economic benefits in the UK. The NHS is such a significant component of the entire economic system of the UK. So what is true for the UK is obviously true globally as well. And I think the key message here is there's a huge amount of healthcare data and potentially very valuable in terms of patient outcomes, in terms of general economic growth, and in terms of operational savings for healthcare systems.

Pramod: Absolutely. I mean it's very staggering to hear these data points, Mohit. And you really talked about the advantages of being able to harness the healthcare data. But you know, we hear about this data and the specifics of the process, which is not really clear. What kind of data are we looking at? I mean where does it come from? How is it accessed? How is it really analysed? And does it ultimately result in a tangible value for patients and consumers that we're talking about? And not just about consumers, but the entire ecosystem of players - whether it's healthcare providers, pharma companies and the peers in the healthcare system? What do you think is a great deal of complexity that lies there? Isn't it the case in the first place?

Mohit: Look, the catch is that a lot of the data that we've spoken about is typically patient data because that's the way medicine has evolved - in the sense that it's traditionally relied on a single primary source of information for the diagnosis and treatment of disease, and that is individual patients. So today, this data stream has become much more complex and rich, because of advances in imaging, advances in biochemistry, advances in genetics, the amount of data that we're generating from our daily metabolic activities, for instance, that is being recorded. So this accounts for the growth in the data sets in healthcare that we spoke about. But the largest part of it is still fundamentally patient based.

Pramod: Interesting, which actually brings me to a very pertinent point. This means this data that you gave us is only one part of a larger story as we see it. There might be so many other ways in which data can be encouraged, deepened, more diversified to create a fuller picture of insights from us, but it is beyond the patient data, we would think, right?

Mohit: Exactly. Look, this is the difference, right? Because today, unlike in the past, there's a second data stream that is emerging that will impact the entire healthcare delivery system, in terms of outcomes, in terms of cost, and that is population based data. The sources of this data are manifold, right? Some of it comes from census records, it comes from various government agencies, it comes from community health records. The information from these resources can give us really valuable insights into neighbourhood and housing conditions, economic stability, educational attainment levels, social and community conditions and the broad availability of healthcare within communities.

And when you put this all together, it really helps us construct a three-dimensional view of the patient. What we're getting from purely patient data is only part of the picture. Once you have this richer data set - this entire population-based data - you can then get insights into treatment options, management of chronic conditions, etc. Again, the National Academy of Medicine has said that social determinants can account for 80-90% of modifiable contributors to healthy outcomes. So again, like you mentioned, patient data is great. Once you marry it with the richer data stream from imaging, biochemistry, genetics... and most importantly, you marry it with population data, you're getting a dramatic change in the richness of data, which can hugely make an impact to have the outcomes.

Pramod: It's fascinating when you say that almost 80 to 90% is modifiable contributed to healthy outcomes. I mean, this is really interesting. Do you really see the healthcare outcomes that could actually change with this data now that effectively it can be used?

Mohit: So I gave you the number earlier from the National Academy of Medicine, right? But there is real world evidence that is accumulating over here. So in Maricopa County in Arizona, there is a program that incorporated social determinants, and it played a huge role in a 67% decrease in suicides in the first three months. Now, in this case, the data that they collected related to poverty, food and housing, security and environmental exposure, right? Like are you likely to have lead paint inside your house? So efforts to reduce some of these problems like delivery meals or installing air conditioners - because Arizona gets really hot in the summer - were most likely central to the program success. So again, you have a program - which was based on population based data - and it led to a 67% decrease in suicides because it paid a very close eye to the social determinants of health.

Pramod: Absolutely. I think it's very fascinating when you quote these instances. I mean, we didn't even know that population data can be actually used in such multiple interventions, you can say. Do you have some others that you can share in terms of population data that can be actually leveraged?

Mohit: Look, population data is something that we've spoken about. We spoke about patient data and about enriching it with imaging, biochemistry and genetics. One of the other exciting areas - and it has been exciting actually for the past 20 years - is genome sequencing, which has increasingly become very affordable. It is a process that once cost hundreds of thousands of dollars, but now companies are offering it for as low as 199 dollars. So access to this data is also a very important development for personalized medicine. And this is especially true for cancer, this is especially true for cancer patients where targeted therapies based on genomic analysis can really make a huge difference. The "one size fits all" approach to cancer, which was tried with radiotherapy and chemotherapy is now giving way to detailed genome-based therapies and targeted therapies. And I think this is another exciting area to watch out for, which is again linked to the explosion of data that we are seeing in the world.

Pramod: You bring a very pertinent point again on personalized medicine. We've seen how data and the huge, unprecedented opportunity that brings us new ways to build improved consumer expenses and patient cure. Now, I know cases like Pfizer and some other companies that have been actually working on this in terms of personalized data, personalized medicine <unclear>. From your conversations largely with our clients and customers that you've talked to whether it's your pharma companies, whether it's our healthcare companies, what are the concerns that you see when some of the huge amount of data-driven insights that come about, especially in the healthcare industry? Is there something that has come about with your conversations with the clients? And what do they think are some common challenges in this context?

Mohit: Sure. Look, the idea of data-driven healthcare is widely accepted, right? I think nobody's questioning it. There have been a huge number of both academic studies and real world evidence that supports this, but putting it into practice has been messy. And there are several barriers to the widespread use of statistical data as a new weapon in the ongoing battle against disease. I think firstly, there are technical challenges, right? Of collecting and analysing data, and these are very significant. There was a survey done most recently, and it's published on PR Newswire for a web-based electronic health record company. And it found that the average American patient accumulates records from 18 different providers over a lifetime. So the fact is that the data from many of these visits is in incompatible formats. Even data collected by governments tends to be in silos.

So there's a huge amount of data integration work that is required before this data is even ready for analysis. To compound this problem, you know, the fact is people have multiple providers. This is especially true, by the way, for the US. In countries like the UK, which have a national health system, I think the problem is less acute. But in the US or in India, for instance, where you have fragmentation of providers, this problem is very acute. And then every provider has their own software based system. The software systems have completely different data dictionaries, completely different data models. So, you know, just having this one source of <unclear>, even for an individual patient has been a challenge.

Pramod: I think that's again a good point that you raised. I don't think there's challenge <unclear> of data that is there. I think in the industry increasingly people see accessing this data and using it the right way or collating it the right way is the challenge. Do you see that as a challenge are in the forthcoming days as well?

Mohit: Look, there is the challenge of privacy and security, right? And these are major barriers to data sharing. But the reality is that patients will be willing to share the health data when it's for a good cause, like better outcomes for others or better outcomes for them. We also have to make sure that we address the risk that the data should not be used to discriminate against people with health conditions. The issue of security is very significant. Something like 13 million healthcare records were exposed in breaches in 2018 alone. And finally, we have to make sure that the commercial element is taken care of right? There should not be the issue that providers fear losing their competitive advantage by sharing data. Because at the end of the day, this is going to be as close to a universal good as possible.

Pramod: I think that's also very much agreed upon. I mean we increasingly see the pharma companies also very conservative in sharing the data that they've been doing with clinical trials and things like that. You really see that as they are spending big bucks on R&D, the clinical trials and so on. But is that really a challenge on which a lot of these things are not being brought into the public domain?

Mohit: I think the tide is beginning to turn. If you recollect, way back in 2012, GlaxoSmithKline announced their intention to make their clinical data - trials data - openly available to external researchers. I think that marked a defining moment. Today, I think we can count on many



more open platforms to catalyse research and to move us forward. There's also now a sizable marketplace for anonymous data. Cloud-based HealthVerity marketplace, for example. You can go there, it can let customers browse and license data from something like 50 billion anonymized transactions. So the growth of these marketplaces and this growing culture of data sharing, is something that we have to look forward to.

Over time, there will be more partnerships, there will be more vertical marketplaces for data. So I'm quite confident that data sharing and privacy are not insurmountable barriers, because these have to do with cultural changes, which we are starting to see. At the end of the day, digital data has enormous potential to influence outcomes, and to deliver significantly higher value. This potential will not go untapped. I think patient data will be extremely important still, but it will get enhanced by data from external sources. And this will truly result in a win-win model for patients, for pharma companies, for governments and for the broader economy as a whole, which is so dependent on good health outcomes.

Pramod: Absolutely. As we see, there will be new strategies, new partnerships that will pan out in the industry. And I believe that will be a good outcome for the overall healthcare ecosystem as such. Lastly, final question, in terms of players like Infosys... Do you think companies like Infosys have a role to play in terms of integrating challenges and insights that we can actually bring forward for greater outcomes for healthcare in the industry?

Mohit: Sure. Look, I think our healthcare and life sciences practice is central to Infosys. We have over a billion dollars in annual revenue from this practice, and it's one where we see a huge potential for growth. Once you marry the deep domain expertise that we've built in healthcare on the payer side, on the provider side, on the pharma and the biotech side... once you marry that deep domain expertise to the horizontal tools that we built, like the gigantic tools that we built, to port data, to sort data, to analyse data, the fact that we have started to work with a number of clients to leverage the power of the cloud, to rapidly crunch through huge data sets, I think makes us a partner of choice.

There's also a huge sense of purpose here within Infosys. We recognize that this is for the greater good of humanity. It is something that we are extremely passionate about and driven by using the power of technology and using our deep domain expertise, to effect better outcomes for patients, because we are also individuals, we've also been patients in the past and are likely to be patients in the future. So it is a very exciting area. It is a very meaningful area, where I'm very keen that we continue to make an increasing contribution to using data effectively for health outcomes.

Pramod: Absolutely, Mohit. I think it's wonderful to get some of your insights and perspectives on our podcast series. I couldn't help but ask this question. I know you're a voracious reader. In the last year, I'm told that you've read 100 books. Two quick questions - how do you manage to get time for this? And which is your favourite pick for the last year, 2019?

Mohit: I think given the amount of time that I spend travelling for client meetings or for conferences - an inordinate amount of time spent on planes and lounges - that certainly gives one the opportunity to catch up on books. I also try and read a little bit - maybe half an hour to 45 minutes - every night before I go to bed. And it's just a habit, right? It's something that I'm passionate about. So it's not something that I do to hit a particular number.

Pramod, I can't pick just one book that I can recommend because there were several truly outstanding books that I read this year. I've got the entire list on my LinkedIn profile. So if you go to my LinkedIn profile, you will see the entire list of the 102 books I read. And there are 16 books where I've made specific recommendations. So I want to keep the mystery going for a little while. I want to encourage you to go and see the website and to pick your own favourites. And then through the comments, let me know what you think.



Pramod: Absolutely, Mohit. Probably we will have a dedicated edition of podcast series on some of the books that you've talked about. Thank you, Mohit. Appreciate your time. It's always fascinating and interesting to hear your insights and perspectives. Thanks again for your time and appreciate you talking to us.

Mohit: Thank you, Pramod. Great to be here.