



INFOSYS ANALYST MEET
HEALTHCARE ECONOMY

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Eric Paternoster

Good morning. I am here to speak to you about the healthcare economy - what it is and what we have been seeing happening there.

As we have been helping companies 'build tomorrow's enterprise' across vertical industries, we are seeing that opportunities are very exciting, both for clients and for ourselves, to participate in this transformation that's happening in the healthcare economy. It's happening globally, not just in US and it's happening like I said across multiple industry sectors.

Just looking at the US where the forefront of this healthcare economy transformation is happening, if you look at these data points, the type of spending that is occurring on healthcare and how much it's increasing every year, the errors that occur in the system such as these re-admission costs that are mentioned, the lack of access concerns because of fluctuations in employment and also in other countries, your economic status determines the quality of care quite significantly. The type of legislation and regulatory activity that's happening across the world in the healthcare economy is really increasing dramatically not just in US. Regardless of what happens today in the mid-term elections, healthcare reform is going to continue to be a high priority for all companies, all individuals and for all governments in the US. These kinds of costs and this data shows that it's unsustainable for it to continue as it is. Regardless of how things shakeout today, healthcare reform will continue to be a huge spending item for the healthcare industry, for governments and also opportunities for a number of companies that aren't currently participating in the healthcare industry.

These economics are also true around the world even in countries where you think of it being a totally government function. We look at the growth in the private health insurance industry that's happening in Europe and in every economy in Asia as it develops, there is a huge rush by insurance companies to build product for the optional health insurance for people once they get to be in the middle class, they want an option outside of the standard government system.

The 3 biggest drivers that we see impacting these economics, No. 1 is the ageing of the population worldwide. These are US figures but the worldwide population is ageing and as it ages, it consumes a larger proportion of the total healthcare cost and it's been driving that cost to go up as therapeutic treatments become more and more advanced and are able to handle more and more aspects of the ageing process, the amount of money that gets invested in this increases also. No. 2, we also have a very large problem in the world with increased prevalence of chronic diseases. Those are diabetes, cardiac disease, high blood pressure related issues. In the case of developing wealth in other parts of the world and also if you look at the change in lifestyles in US as a precursor, you have this dynamic where the increase in obesity from starting with the childhood obesity leads to increased prevalence of chronic disease. So we've got a major issue that's happening worldwide in healthcare where we are not starting out healthy and we are living longer with a poor lifestyle and that's causing a greater and greater need to consume more healthcare to compensate for getting off to a bad start in terms of habits and then living a poor lifestyle even as we get more and more wealthy, that's a pattern that seems to be developing in any country as it increases its wealth. You can look at what's happening in US and then travel around the world and see the same indications of something that's going to be looking a lot like the US in another 15-20 years. No. 3, we also have with the increased mobility of the world population, there is lot of concern about the next global epidemic and what kind of toll it will take and our inability to really react fast enough, no matter how good we get in terms of monitoring and in terms of a science, these things happen a lot faster and cannot be controlled as easily as in the past when the transportation was limited, mobility could be controlled a lot more than it can be today. There is a recognition that almost any epidemic is going to go global very quickly. It's just a matter of how much the world population will be susceptible to whatever that disease is.

Now from these drivers, there are 3 primary trends that we look at in the healthcare economy and this is where the opportunity for our clients and for us exist for us to participate along these three trends. One is in prevention - I mentioned the dynamics that are happening in terms of lifestyles and how you live determining what you are susceptible to get and how much you are going to have to spend on healthcare, how much your government is going to have to spend on your healthcare. Prevention and being able to provide the wide incentives beyond this discussion that gets emotional about rationing, what kind of incentives can be provided to provide true prevention which is the best way of controlling healthcare cost, and improving the quality of life and length of life. Products and services innovation is the second major trend that we see. Lot of same points were made earlier about the innovation that's happening in emerging markets. One of the places you can see that is in healthcare. A lot of products that were thought to be unable to be taken to emerging markets have been re-engineered from emerging markets and brought back to developed markets very effectively by medical device manufacturers. Now the original innovation is starting to happen in developing countries, not just re-engineering and then it's brought back. We also have integrated care technologies and the medical process which is getting integrated across the value chain so that a lot of the cost and the leakage that happened, a lot of the information flows that had to be restarted multiple times during the process can be reduced significantly through this immigration of technology with the process and there is a lot of innovation happening here. The EMR (Electronic Medical Record) initiative that I am sure you are familiar with that the government sponsored as the first part of healthcare reform, is the first step towards this to get all of us onto our providers' electronic medical record and incentivize the provider to bring up electronic medical record and hopefully eliminate having to constantly say the same information every time you go to a new hospital or a new provider for anything. With a electronic medical record, it's transportable and it follows the standards. This should drive down cost significantly and also improve quality of care by reducing errors and increasing speed of diagnosis. No. 3, we also have consumer centricity becoming more and more important. Even in areas where you think that this is a government function or it's something my employer will determine if I am in US, part of the nature of healthcare reform in the US and in also what's being done to these government-centric systems outside the US by the middleclass is to create an atmosphere where the consumer has a lot more choices. There is a demand for better outcomes. You want to have the ability to choose how much risk you want to take on in your own insurance for your own healthcare and that's one of the bigger problems with the acceptance of healthcare reforms around this issue where consumer-centricity is really the major fear related to your healthcare reform. That's really where the battleground is going to be in the US. I think there is general agreement about most of the other aspects of healthcare reform. The use of telemedicine is not just for developing countries where they can't get physicians to work in rural areas. It's being applied now worldwide as a much more efficient delivery mechanism. Now we see a lot of companies now looking at these drivers and then focusing on these 3 areas for their innovation.

I mentioned a couple of times now that it's not just healthcare companies, the providers, the payers, the pharma companies, medical device manufacturers that you traditionally think of as being participants in the healthcare economy. Telecom companies feel like they know how to slice and dice customer data and understand the nature of a large group of a population, a lot better than a health insurance company does. They just need to bring in the expertise on managing the risk of that population, the actuarial element. Banks feel like they are 10 times better at doing any kind of payment system than its employee get today in reimbursements by either a government entity or by a private insurance company. Retail consumer products companies feel like they are lot better at looking at consumer needs and designing a product really targeted for that compared to a medical device company that they feel tends to over-engineer everything. So they are working on products that are at a lower level of FDA regulation that can handle prevention aspects, home testing kits, things like that or not being developed by medical device companies downgrading their original products being developed from the ground up by consumer products companies just bringing in a little bit of healthcare expertise. We are seeing opportunities for us to work on

healthcare related initiatives not just with our traditional healthcare clients in the segments I mentioned, but in other industries that see this as a tremendous market opportunity.

Just looking at the US data and the addressable spend and how much we have been able to capture, this is just the US healthcare revenue that we have been able to generate in this traditional segment. If you go to those other industries which we are starting to get into, you go into other geographies there are even more opportunities.

We started out about 5 or 6 years ago just working in a few major health insurance plans and now we have grown to work in, as you see on the right, all the sectors that I have mentioned - medical devices, pharma companies, providers. We have done this by focusing on building domain capabilities and building assets that we can take as a beginning of a discussion with the client and to anchor an engagement around and then growing into other aspects. We always have more commodity traditional type of work that would be done in this area, but increasingly especially driven by healthcare reform in the US, the growth in private insurance outside the US, there is a strong need for assets and domain expertise and that's where our primary investment is in. You can see some of the products Shibu mentioned like iTransform which is around a pre-healthcare reform US regulatory requirement in 2 areas - one was to upgrade the EDI protocol for healthcare transactions and the government is such a heavy player already in the healthcare system in the US that it can mandate this change and it would have a sweeping effect across all healthcare transactions. That's 4010 to 5010 migration. There are some ICD9 to ICD10 which are the diagnostic codes that your provider will use and that will drive all reimbursements in the country that would be increasing level of granularity which will be enforced on providers and it's in their best interest, it's in the payers' interest, the government's interest to be able to get more precise in terms of the diagnosis. These 2 kinds of Y2K-type events that apply just to the healthcare industry have a mandate to be done within the next 2 years and the date was extended once 2 years ago and now it's viewed as the cornerstone to be able to drive some of the savings from healthcare reform. Date is not going to be extended again and we are out doing a considerable amount of assessment work and we've sold our product to assist in this area to a client and we see continued revenue from our iTransform product for the next 2-3 years as this compliance is rolled out across the industry. Payers are very heavily doing it now, providers are just starting now and that will continue.

This is just one example of healthcare government related work that we have been doing for number of years for a major California health plan that focuses on the government-sponsored plan space. This is around how they got compliant reusing our tool for 5010 regulatory compliance requirement. We have been supporting Medicaid through this client and another couple of clients in a number of states in the country for the last 5 years as a subcontractor as Shibu mentioned. We have been participating in the government healthcare space for a long time and with healthcare reform, we feel like we are positioned to grow that significantly.

This is just another aspect of how we can improve the affordability and adjust our trend that is a strong driver for the investment by reducing time to market from new products and also reducing the total cost of ownership.

What questions can I answer?

Joe Vafi

It's generally in the healthcare vertical and your pharma and life sciences clients, could you kind of talk about the mix of business between what we call, real kind of IT systems work and back-end systems work versus maybe more of an analytics or kind of data analysis or things that may be more KPO-based. As those companies are trying to roll out drug and figure out how to go to market most effectively.

Eric Paternoster

It's interesting that in late 2008-2009 when a number of industries were cutting back and there was so much uncertainty about the economy, we saw spending in the health insurance sector and the pharma sector by all of our clients continue to increase. Most of it was in business intelligence and analytics space. The healthcare payers were looking at it as 'let's get a handle to handle on how we are performing because we know the government is going to regulate us a lot more and they are going to control how much we can charge, so let's make sure whether we are reimbursing properly and whether our providers are treating properly'. Then in case of the life sciences companies, it was really around a lot of data mining since their pipelines were shrinking across the board and where we still are, They were looking at how can we get a better handle on safety and getting early signal detection of any issues in the market with a drug that just come out of trials or is in Stage III trials, so we don't end up with a regulatory problem and have to withdraw the product. So that spending went up quite a bit. I would say that most of it continues at the same rate because the requirements, for example, on the provider's side around pay'-for-performance' are still being flushed out in regulation. Also in the international level, there is a lot spending that's being done to try to come up with country-specific analysis because of some of the restrictions on cross-border data flows that are coming in Europe and a lot of patient privacy concerns. The pharma companies are having to spend more on some of their internal systems on security and privacy compared to the past. The spending continues. I don't see a major change in the profile of it but it actually started really at the beginning of the recession and during the recession, both pharma and healthcare IT were one of the few sectors where employment actually increased globally and didn't get cut back.

Mayank Tandon

There was an article in a journal about the electronic record-keeping opportunity for the Indian firms but there could be some pushback from hospitals and doctors in terms of sending medical records offshore. Could you speak to that and also if that is an opportunity when does that hit and will that be sort of one-and-done or is it more of a step function type spend for you?

Eric Paternoster

There is going to be an ongoing opportunity to participate like on these exchanges. A number of states are going ahead with the exchanges. The large states that have the largest uninsured populations or have the highest healthcare costs are spending money to do studies right now and they will be putting out RFPs to set up the exchanges. These exchanges will be the custodian for large amounts of health information. What we are doing in looking at how to hedge against whatever happens in terms of privacy regulations on where the data can reside is where we are going to be investing heavily in the local markets in Europe and the US to build data centers for people to do development work even if extends to domestic content regulations as well as being able to store the data if we do that kind of work. We already have some capabilities in BPO today to do processing all by US citizens with the data residing in the US and we can extend that to doing this kind of record-keeping work if it comes to that. I am not qualified to predict how it's going to turn out but I would say that their privacy regulations that have caused a lot of problems with

some companies working in the UK market looks like that will become more of a standard across the entire Western Europe, US and Canada environment. I am expecting it to be looking more like the UK data privacy laws related to health information than what exists today in the US. But I am not expecting because the cost process is so high, for there to be some kind of permanent growing resistance to doing the development work offshore. There are two issues. One is the demographic factor, there are just not enough people to do the work all in developed countries. The second is the cost imperative is too high, Until the recession is over for most countries, there may be a short term restriction on it or some clients may come to us and say they want it to be done with US or UK citizens, but I don't think that that can be sustained permanently and still maintain the economics.
