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**Session 3 by Subhash Dhar**

**Subash**

Well, you know I call the communications industry as a industry in transformation, because many of you have been tracking this industry know that there are fundamental shifts happening in this industry which is changing a lot of things in terms who plays in this industry, what gets sold, and how do you charge. I think those are some of the major changes that are happening in this industry, but in terms of really the forces that are defining this industry going forward, they are few and I will cover those.

Just to have a quick introduction about me, my name is Subash, I am based out of Fremont, California, in the US, and I am Head of the communication service providers business, which basically is just one part, it is a bigger part, of our overall telecom revenues. The other part is the OEM business, which is housed under our high-tech business unit, and the OEMs are really the equipment manufactures for who we do outsource product development and research and mostly development work. Just as an introduction again, traditionally the Indian IT industry has been working more with the OEM segment, I think in the past 10 years or so, ever since Nortel came into this industry since more than 10 years now, and that has been the mainstay, so when somebody says telecom, it is mostly the equipment manufactured business that they are talking about. That has changed dramatically for Infosys at least in the last 3 years, ever since we founded the CSP business unit. Today some of the slides will tell you that that is the dominant part of our telecom revenues and it is increasingly becoming so going forward.

So back to the forces that I was talking about the defining forces that is transforming the communications industry; well before we get there is a safe harbor for you all to see that in, these are all the usual disclaimers. These are the three major forces that I will talk about:

1. The abundance of the core network fiber. It is kind of a technical word out there but basically what it means is around the turn of the century the telecom operators worldwide, basically the big ones, they put in a lot of fiber in the ground which forms the backbone of the global network. They built the capacity to the extent that it became an over capacity and this was really done in anticipation of the internet boom continuing for the next century or so what they thought and that over capacity was built in and as you know in 2001, when things started looking south, that is when everybody felt that there was a overcapacity and that there was not as much demand to fill it. That situation continues even today and that traditionally has had a downward pressure on connectivity. Anything that we pay for connectivity has come down. That is changing but it is still the case.
2. Around the same time the internet protocol which had been around for 50 years got commercial acceptance in the form of the whole dot.com boom and then the E-business system that the enterprises started building, so the internet protocol is really a new technology for communications and telecom companies had not adopted that, they have not adopted it even today in a big way, but that is a big new area where telecom companies should and are making their investments. Basically what it does to them is that it reduces their operational cost by a significant percentage, if they build an internet protocol network or the IP network. Why is that? It is because traditionally telecom companies build a network for a service and as they keep adding services they keep adding networks. This is the way it is, and not only that they keep adding organizations behind it and everything, so it is all silo way is how they work, but IP technology can change that where they can use the same network to offer multiple voice services, data services, and even video services, all on the same network and that is basically because internet protocol works in a different way, you do not need a dedicated line for a conversation. In an internet protocol basically the same line can be used by many people to call each other without having to create any cross connections, so by and by they will be investing in this but this requires a lot of capital investment, it will save them a lot of operational expenditure, but it will need a lot of capital expenditure. Again there is a deflationary effect of the IP - internet protocol on prices, because internet deem to be free and therefore if a portion of your traffic is going on internet, customers expect lower price.

3. Third force is deregulation. Now this being an infrastructure business is always subject to regulation and licensing and whatever else, and it is different in different countries, so you see it is slightly different value change in different countries, but by and large regulation or deregulation has a big role to play in the communications business. And in the countries like the US, UK, and a few other western countries, where deregulation has happened in a big way, it is really creating a lot of competition in terms of new kind of players, telecom operators, cable operators, even companies who have never been in the telecom business get into this business of communication and ultimately when there is more competition prices come down, so if you really look at the unifying thing between all these three it is really a deflationary effect on prices. Now that is definitely not good news for operators:
  - a. The effect of price drop has been revenue has declined, year on year, quarter on quarter over the past 4 to 5 years, and that is why everybody says telecom industry is in trouble. That is true? But there has been some positive effect of what has happened, not favoring necessarily the operator but in an indirect way helping them as well. There has been an inclusive effect on customers in the lower income group and lower economies of the world, India is a great example of that, how we have become a great users of communication technology, thanks to what happened in the first slide, if that over abundance of core network fiber had not happened we would not be seeing the seven rupees a minute US calls that we get today out of MTNL or BSNL. We would not have seen the Infosys would not be getting a continuously declining telecom costs from its vendors if that would not have happened, so in a way, it has had an inclusive effect on economics like China and India specifically and many other countries, in terms of how they got into the communication chain.
  - b. There has been an increase in network load, which is actually good news, because there is an over capacity out there, so I think it sometimes the network load increasing is a good news because only when there is a full utilization of the network can companies make money, but still not there where it has created the overcapacity situation has not been corrected yet. It is not really that much load.
  - c. There has been an increased global collaboration, people have been able to work out of distances, and that is really at the bed rock of our business model and several other businesses like BPO and other you know many other business models which are now working more in the global collaboration, it is also a major theme of what world is flat book is all about.

So these are some of the positive aspects of what has happened, but there has been a revenue decline nevertheless for the operator. So what are the operators doing? What are the incumbents doing? The growth areas for them, they are focusing on wireless and broadband, because these are the new areas worldwide. There are some exceptions to this where it had matured in Europe, but by and large, the US market, the Asian market and well not of all of Asian market but most of the growing Asian market is unsaturated on wireless and therefore if there is an unsaturation there is growth. So we are seeing that broadband is definitely an area of unsaturation in most of the world, and that is a growth area worldwide for all. So these are the services that they are trying to make more revenues out of and certainly more profits out of.

The other area where there were some of them not everyone is trying to make revenues out of is the enterprise network business, it is basically enterprises are using networks more and more as they go forward, because of their complex data-voice-video needs, and they are buying more and more bandwidth from these operators and sometimes even giving them outsourced contracts for running those networks. What else are they doing? Operators are arguing with their governments, that is the part they know very well, because they have always been very intimate with the government, they are seeking legislative protection for the investments they are making in broadband and in fiber and all of that, and a lot of that is justified because they are the once who make the investment, but they have threats from companies like the Google and E-bay of the world who have very compelling business model which run on the network; without having to make any investment in the network, they run on the network, and that actually starts threatening the revenue model for some of these operators, so they have to make sure that they get legislative protection, and one of the biggest debates right now which is happening in the US and the world is watching this, is the debate on net neutrality, which is about the internet. There is a big debate going on is the internet really free and should it be free? Because the internet and the phone companies are arguing that they are the once who are enabling the internet in everybody's home and they are making those investments and how can the Google and the E-bay and the Yahoo just ride over them without paying any dues to these guys and have a direct relationship with their customers, so they are excepting, so based on based the debate goes and if the phone company do win their argument, essentially what we will see is some kind of a toll coming into place. I do not know how it will implement at this point of time, it is unclear, but the debate is really about that. So it will take away one of the three forces that I talked about in the beginning that internet being free and therefore it have a deflationary effect on the price, that will be taken away, so that is a big argument going on.

What else is the operator doing? They are merging and acquiring because when the prices go down, you will have to consolidate in the market so that the prices get firm, and that is what is going on at least in the US in a big way, but in many other places in Europe as well, but basically with all of this stuff including wireless and broadband, that is not the end game, because wireless and broadband is growing because it is not saturated, once it get saturated, as it is in Finland or in other European countries, it will have the same problem that the wire line is having today, which is people will ask for cheaper rates and your average revenue per users will start declining. So essentially what they are doing with all this is they are buying time, and the end game is something different. The end game is this, they have to make their networks IP - internet protocol, which means they bring down the operational cost, substantially. Today if you look at the budget, annual budget of a service provider, 50% of his operational cost, 50% is about capital cost. The 50% of the operational cost can be significantly lowered if they build an internet protocol network, which can basically obviate the need of having other networks, so instead of maintaining 25 networks, they can potentially, theoretically, maintain only one. Practically speaking may be more than one. That is the big one. So that will fundamentally change their cost structure for the future.

#2, they have to not just launch VoIP or broadband or wireless, these are all independent freestanding services today, or IP TV that these guys are talking about, there are all freestanding services, they still do not have any shared infrastructure, what you really want is the integrated multimedia services, which the customer can provision on demand, but it should not be about, it is like the human interaction right. We do not say I am going to talk to you and not see you, right, it is integrated, you got be visual and everything, and depending on the user choice they can switch on and off what they want at whatever point in time, whether it is voice video or data, because communication is all three things, so those are the services which are being conceived now and that is really one of the end games, and that you know, you can never achieve total domination in that area, because it is a vast area.

The third area which they have to innovate on is how are they going to price whatever they offer. If it is going be rupees per minute or dollars per minute the game is over, because you know all customers want is lesser rupees per minute every 3 months, if not every month, right, so that is not going to work, what they have to charge for is for what goes on the network, they do not have to charge for the connectivity because connectivity is all commodity now. They have to charge for content, the transaction, and those kind of, but those are very complex pricing models and they are still working on it, and that is the game.

So where is Infosys in all this? So here we are. Put them in 5 buckets of the kind of work we are doing with the service provider.

1. Is a new service build out, not exactly integrated, but new service build out, VoIP broadband and all that stuff. Where we are doing a lot of work with the operators, really value proposition is on the right hand inside which is faster time to market for them.
2. Is the future integrated multimedia services, which is the holy grave, really speaking, very few companies are really thinking about it or have the luxury to think about it at this point in time, but wherever they are we are working on creating business cases for them, evangelizing it, building the whole investment model for them. It is lot of consultative work there.
3. Legacy systems, many of them are being replaced by the one of the top by having the legacy being phased out or they have to be maintained forever, in which case we are in the maintain and retire mode there.
4. Legacy processes, many of them again have to be maintained and retired or they have to be improved and run by us, so this is a very fast growing part of the business that we are facing today.
5. And the last one is we are helping them go to their markets, which is to enterprise markets, because we are playing in that market ourselves as in the application area, we can go with them in the managed network services area.

So those were the five buckets that we were working a lot on. In terms of where are we doing most of our work? I would say #1 and #3 is where most of our work is happening at this point in time; #4 here the legacy process is what we see is going to be the next big wave which we are already started getting, we have signed some contracts, but they will ramp up over the next year of two in a big way, where there is a lot of processes which will come offshore for us to run. The #2 is the one which will take probably few more quarters for us to really make good money in terms of revenue, but this is a very high margin business in the sense is a very high consulting businesses. Enterprise manage network services is actually very very large deals of which we can get fairly large deals ourselves, because overall the deal for the managed network services can be in a billion or 2 billion dollars, but most of it is really asset intensive, which basically operators would like to go for, and as their partner we would like to go for the application development or their application management kind of part of it, which could be 50 to

100 million dollars deals. So these are what we are trying to bake now. This requires very strong partnership, it also requires very mature partnership, because this will take sometime.

Let me give you a couple of examples on what we are doing.

1. This is a large, I talked about the deregulation, this is an example of that, this is one of the national operators in the country which had deregulation going on at this point, is the incumbent national operator. They have been asked to open up their network and share it with their competitors. Now, when they have to do that they have very strict service line levels and deadlines to do that. So in order to make sure that there is transparency in this process, they chose Infosys as a trusted third party service provider, which will validate all the measures that they take in terms of systems and processes, to process the competitors orders, when they go through their networks, so that there is no ambiguity or no accusation of foul play when a competitor order comes through. So what Infosys did was to create a virtual CSP customer kind of harness, a software based harness, which is a really a simulated customer, against which they test all the order flow work through and all that stuff so that when they launch a particular service for the competitor to avail of, the competitor should not complain that I am getting a sub par service level as opposed to their own service provider, for example, if A wants to offer a broadband service and wants to use the national operators networks, and if they take 5 days to process that order, and the operator themselves offer the broadband and it takes 2 days for them to process that order, that is unfair, so there is a huge penalty that the guy has to pay. So essentially we are playing that middle trusted third party validation entity for this and basically plays within the competitors, regulators, and all that. So that is very interesting. There is also a spin off business that comes out of it is when the competitor CSP look at us say hey these are the guys who are my clearing house, then they invite us and they have already started inviting us to fix their systems so that they can take their orders faster through the systems. This is a very interesting play in the deregulated environment.
2. The second good example is a US cable provider, which is trying to get into this whole integrated multimedia service, this is a example I was talking about that we are using Infosys Consulting, our own solution consulting team, and then system integration which is SI unit together to create a unit which is helping build a business and evangelize this creating many workshops within the unit and also creating the capital expense, the operation expense investment model for the integrated multimedia services for this cable operator.

These are the areas we are making our investments on obviously; solutions, training, consulting. There is a lot of training happening here, and the first two ones are really, the first one is about speed of how we can help them do their new service launch very fast, the second is about innovation, how we can innovate so that their customer service and network operations management can be done in a very different way, and that is the whole flat world thing that Nandan was talking about yesterday, how there is completely different approach to do customer service, is where we are building a solution on. And then I talked about consulting, this is about building solutions together, this is about doing downstream projects together, so there is lot of inter-unit collaboration which is being leveraged for this part.

In terms of numbers we have, you know, this has been the total telecom revenue at the top. The second line is about CSP revenues, which has grown over the years, and basically the point we were trying to highlight here is the CSP is not just a dominant share of telecom, it is also an increasing share of telecom revenues for us, because of the whole transformational demand that we are seeing in the CSP, but I think the OEM business will also grow, but down the road as the investment philosophy cascades down to the next level.

This is the split of the geography. We have grown faster in Europe than American, in a way this reflects a unique thing about this industry is that industry this industry and the infrastructure industry and you will not have too many players in any given country, and if there are they will get consolidated. So essentially you have to go country by country and keep opening this thing and therefore since there are more countries in Europe than in the US, that is changing, as we switch to another country we get a whole new incumbent operator. I am not sure this is something which will continue as a trend, I think we have reached a point where this is fairly healthy, but because of merges and acquisitions a lot of this things can change very fast.

Last slide, what is our market outlook for the CSP industry? I think CSP will continue to drive the spending in the telecom market. CSP will first drive it and then OEMs will do it in a phased lag, and we see a continued strong growth in years to come thanks to all the transformational needs, which means they have to replace the old, reengineer the old stuff and to build the new integrated multimedia services, so I think both the old and the new side is driving the spend. The third point which is the bigger one, which is the addressable market itself is expanding. So when you are talking about telecom operators, then there are cable operators, and then there are

you know wireless and wire line cable operators, so those are there, but the important thing is that most of the elements of telecom which used to be network or systems and products everything is becoming software, very soon there wont be any of those things where you pick up and you get a dial tone and talk, it will always be something like closer to what a mobile phone is and even better where you actually have an operating system and you know you fire up a phone service, so everything is becoming more software oriented, it is getting into really our domain, so more and more elements of telecom is coming up. Earlier we used to say okay network engineering is something which we don't want to work in, because it is all hardware driven, but not any more, so it is coming more and more into our space.

The second is that because of the deregulation, there are new competitors coming in. There are companies who are not even in the communication business, there are companies like TESCO, like Lloyds Bank, who have started their own phone business, so that is creating the expanding the market as well, and then the media and entertainment guys were saying you know I can sell content online over the communication channel, so they are getting into this business, so the addressable market is changing. So I think those are the very positive outlook on the industry going forward.

If you have some questions, I will be happy to answer those.

**Male Participant**

\_\_\_\_\_ have a large percentage of your activity in Europe, is that a English language or .....

**Subash**

It is mostly English language at this point in time, I think our challenge has been, well Germany is the other market we have penetrated in the last 6 months in terms of the new account openings, but the ramp up will happen only later, but so far we have dominated only in the English speaking markets.

**Male Participant**

Even in German?

**Subash**

Well in Germany it is we cannot live without German, so it is a mix there, we work with, I mean the business communication language is English, but a lot of the work the requirements and all that some of the operators do it in German, so those are the markets. And then as you move to France you will have do in French and those kind of things.

**Male Participant**

You are located in Freemont, how much of this work is done in India?

**Subash**

How much of this work?

**Male Participant**

The work that you are doing in your department?

**Subash**

Well 76% I think 75% is in india.

**Male Participant**

You know BT is pretty large customer for you and can you just help us understand BT has a sort of own subsidiary in India, through Tech Mahindra venture, so can you just help us understand how the work is getting divided?

**Suabsh**

Well Tech Mahindra has been their incumbent provider for a large number of years, 15 to 16 years, we went in only 3 years ago, and clearly at that point the reason they brought us in was because they were not getting the advantage of a global delivery model with their incumbent provider, very surprisingly so, but that is the way it was. In fact the highest amongst all ..., you were probably the last to enter in terms of anybody who is based out of India into this account, and we were told the highest offshore we have ever achieved is 45%, and that was very very surprising for us is that why is that, and may be the customer themselves were responsible for that in a way because they wanted to work in that kind of an onsite body shopping mode or may be the vendors wanted to do that, but essentially in the first year itself we got an award for highest offshoring, and we did only 65% in the first year. The second year we moved to 80% and we got that award again of the best offshore service provider, and we were wondering what was going for the last 15 years in that account, so I think there were many reasons why, you know, just because companies are from India does not mean that they are delivering the same value to the client. So in a way the #1 value that BT saw in us was that we actually made offshore happen, and then of course you know they said okay if it can be 80 we can do it at 90, so you know they started this whole 90:10 program. Then everybody had to fall in line on that one. The second big area, I think that was the good one for the first two years, the third year onwards what we have been hearing from them is that you guys are making the right investments in the right area, namely the whole IP area, which will help us get into those services faster; now remember this is not outsourcing for cost anymore, because this is outsourcing for expertise, because they don't have enough people on this themselves, on this new area, they want to work on this, and this is also a more price elastic area, you can get better pricing in this segment, so they outsourced this network operation center, the knock that they maintained for their enterprise clients, and that was a big decision not many operators will outsource their knock. Companies like enterprises will outsource their knock, but operator do not outsource their knock much, because these knocks serve their customers, and they are very sensitive because then you will be holding the customer relationship, so they did that, and that was I think a very big strong message of the kind of confidence they have in our capability to handle the enterprise market. So I think, depending on the time we spend with them, the reasons are changing, why they would like to work more with us in certain areas.

**Male Participant**

Just on the same question, is the current situation is the same work being done by different vendors for them or different vendor do completely different pieces of work?

**Subash**

No, many of their projects are under the same value proposition, but just divided between vendors. Some projects are focused on certain value proposition. For example, the knock example which I gave you, is not being done by anybody else. So they definitely have a different perception of some of these vendors, but a bulk of the application development work, which probably they are giving out, application maintenance work they are giving out, is just in different buckets. They have marked out certain domains that they are giving out, but basically they are interchangeable in some way, but I would say about 70:30; 70% is probably interchangeable and 30% is specific to vendors in terms of kind of services they provide.

**Male Participant**

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**Subash**

The validation of that as a trusted third party, see we are not building the service. So we are the third party out there which will certify the regulator and the competitor that whatever BT has built in that area is tested and validated by a third party, and therefore it is compliant and you know it is fair, so that is the part we are doing, we are not building, they will build services, and I mean we are building some services for the unbundled entity, but there are other vendors who are doing that as well, the building part, that is not the example which I took, I took the testing and validation point.

**Male Participant**

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**Subash**

Yeah, well actually I am referred to a couple of them and paucity of time I did not elaborate much, but basically the number one solution that we talked about is the new service concept of launch, how do you do that in a very agile way in terms of \_\_\_\_\_ development, and using tools which we used to use in the e-business day of, you know, how do you roll out something in a very compressed timeframe without having large development cycles and all that. So I mean we can take another presentation on that, but basically that is one area of new service concept to launch, faster time to market. The number two is the scenario-based approach to customer service management. Today customer service is typically done when there is a fault in the network. It is recorded, it is fixed, and the fix is recorded. Then the second fault, you do the same thing. Third fault, you do the same thing. So you basically go after every fault. What we are saying is, you look at scenarios, we will look at your fault database and will come up with scenario which will basically give you the second level of abstraction on why the fault occur. So you solve those scenarios, you solve a class of faults. Basically it is learning system that you built, and it is a whole new concept and in fact we presented that at a tele management forum and it was very well received as one of the catalyst projects, and we are leading this whole initiative, and we are actually building algorithms in this area, which will completely change the speed at which you can do customer service, which will be very important for the future, because in the past there were very few services. You build ISD, and it has been there like for 30 years now, 40 years, STD has been there for even longer. These services never change, so you don't need to innovate all the time, but in the future IP based services are going to be very, very, fast changing, and every time if you are going to go after customer service like this, you are going to be killed. So there is a much faster way of doing customer services. So that is what we call scenario-based customer service and network ops management, that is the other solution. These are two major solutions. One is around speed and the other is around innovation.

**Male Participant**

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**Subash**

See the fact that they are sending stuff, see they have started embracing this offshore delivery model only in the last 3 years or so, I mean average I would say last 2 years when it really speeded up.

**Male Participant**

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**Subash**

60% of 40 companies, right, so may be you are just talking about 20 company really who are doing that, because there is very small scale. Yes, but they have not spent enough time on this. They have not offshored enough. See the kind of size of offshoring they are going to do is much bigger than, because the adoption cycle is much higher, because they are looking at Infosys as a much matured company and complete like us. So yes, pricing pressure will come down the road, but right now, the fact that they can bring there thing down from where it is to where itself is a big incentive, that is one. Second, they are not only outsourcing the old stuff, because the old stuff needs to die, many of it needs to die, so why outsource it. They are trying to get, it is a war of talent on the new stuff and that new stuff cannot be done at a downward price pressure point. It will not be done. In fact you talk about the Indian vendor theme here and actually that is something I will urge the analysts to stop looking at telecom as one big thing. Because telecom from IT service provider in India have always meant OEM business; completely different business, in fact in Infosys we have separated that two out, one is high tech and the other is communication service provider. It is a very different business and most of the Indian vendors are there, the point is from a talent perspective may be there is a lot of overlap from a talent perspective, but from go to market perspective there is very little overlap. So what is going to happen is, why I am saying that is that the pricing pressure will not be high, in fact we are not seeing the competitors that we used to see in the OEM segments. Some of the biggest names in the telecom in the country are not present in the CSP segment. So if you look at their split of their telecom, is CSP the driving part of their telecom, then I think they are on the right path, but if that is not the driving path, then they will see anther 2001. So, I do not think the pricing pressure is going to be very high just because these guys are offshoring and there are plenty of people who play in telecom. That will not cut it when it comes to a CSP; CSP is all about business process transformation.

**Male Participant**

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**Subash**

As long as we can keep leap frogging the value chain, see here is my strategy; we were at the OEM segment, now we are at the CSP segment, now this is closer to the customer, because they have the direct relationship with the customer, so they will always be more willing to give you the right money if you can give them the right value. This segment will never do that, because they are getting squeezed by the segment. There is the third segment emerging, which is the media entertainment part of the talk. They will take two to three years for it to emerge, but we have started investing in that right now. As long as you are in the top of the value chain, your pricing will always be much better compared to at the bottom of the value chain or in the middle of value chain. That is a strategy we are taking. We are not abdicating any layer. I think our OEM is still growing, but it is just a question of the pricing pressure will always be bigger in the lower part of the value chain than in the higher part of the value chain, because there is a revenue side advantage that you can give them, right.

Alright. Thanks very much. Over to lunch.