

**Indian Institute of Science
Bangalore**

NPTEL

**National Programme on
Technology Enhanced Learning**

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Global Supply Chain Management

Lecture-15

Indian telecom and bharti airtel

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So the we are going to continue this lecture on innovation in emerging markets taking off.

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From last time what we did last time was we defined what are emerging markets these are countries like India, China, Russia, Brazil and so on the BRIC countries plus several otherwise have lists shown a list of 31 countries and there is the we also defined two kinds of innovation a new to the world and new to the market kind of innovations and we said in emerging markets new to the market kind of innovations are more needed because there are developing economies.

And the infrastructure you speak so whatever the development side are cell phones or packaged food or whatever innovations that has happened in the developed world can be transferred here and vice versa and we have developed an innovation framework for this but we also considered under the ecosystem framework we also talked about co evolution and we also talked about conflict in the innovations and so on so we also construct the for innovations.

In innovations in supply chains and resources and delivery mechanisms so today what we are going to do is to talk about the innovations in the institutions the situations are government's and social groups and they matter a lot nowadays and in terms of because the after the financial crisis governments are taking a very active role in solicitation of various activities and in the world so basically we will talk about what are the innovations that are possible in institutions.

And I will take as a case or an example of the telecom growth in India telecom growth in India if you look at it that I am going to present that it is the result of innovations both in institutions as well as by companies so this is an illustrative case where companies and countries can work together towards innovations and building a blockbuster market so we will conclude this lecture.

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So what are the innovations in Institution.

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So what is the role of government the capacity of a nation to innovate in the corner so low productivity and then there are several examples of countries were taken for example the countries like Singapore and countries like Finland which has invented they basically a cluster

for cell phones and so on which I change with their economies so I think the country should know where their strengths are and try to do the corresponding innovations.

What is innovation it refers to the country's ability to upgrade business environment continually to support and encourage it is companies to be competitive both nationally and international so what we are Having is innovation you know product innovation in a sub process is our innovations in resources they are different for innovation in the government need not how to invent the products but it has to have a business environment that supports and encourages the companies to be competitive and now both nationally and internationally and it is also support the educational institutions and other R&D institutions.

Which will basically innovate new products and processes earlier the government's who are running the companies but now most of the government's are going out of this because after the liberalization so-called privatization has happened and after the privatization there ambassador zoom new roles what are the roles the government should have they should be catalysts of market development in a blurs of productivity and efficiency how do you how can they enable the productivity and efficiency.

They can enable the labor productivity by having skill based trainings as well as educational institutions and as regulators ensuring markets remain open and equitable so this is one of the things of all the telecom regulator with regulator that promoters of private sector expansion by providing funds by providing education manpower by providing all the facilities like power water and by promoting special economic zones and so on.

And stimulations of human capital for a source human capital resource development so basically they should start the educational institutions can development institutions health infrastructure and all that and provide a business environment for companies to grow that is what it means that's the purpose of this so there are several innovations that the government have said special economic zones for example is an innovation PPP that is the pub that is the private public partnership is another innovations.

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That the government sector can now deregulation as an innovation is another many successful service companies.

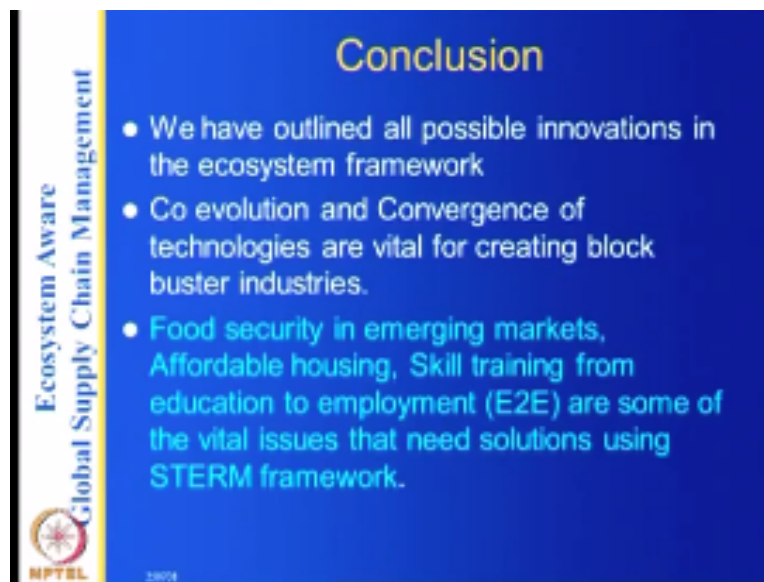
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Were their existence and success to the opening of markets or deregulation many governments for example companies such as air tell JackWalesAirways in India Southwest eBay and others in us year so on so you know today is all the infrastructure companies are wound by the government's like power telecom the airlines all these companies which are critical from the country they are all want by the company.

But this new but what happened was that the government's privatized started by the United States and in the UK and the regulation of this have succeeded through these Center and succeeded through their own innovations now when do you do it you when you enter a market a company faces competition to succeed in the market what they companies they how to innovate so they innovate new products new this one new business models or they use the new technologies and try to succeed in that and be competitive so this is this is the thing that the deregulation as in yes innovation has happened.

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Conclusion

- We have outlined all possible innovations in the ecosystem framework
- Co evolution and Convergence of technologies are vital for creating block buster industries.
- Food security in emerging markets, Affordable housing, Skill training from education to employment (E2E) are some of the vital issues that need solutions using STER framework.

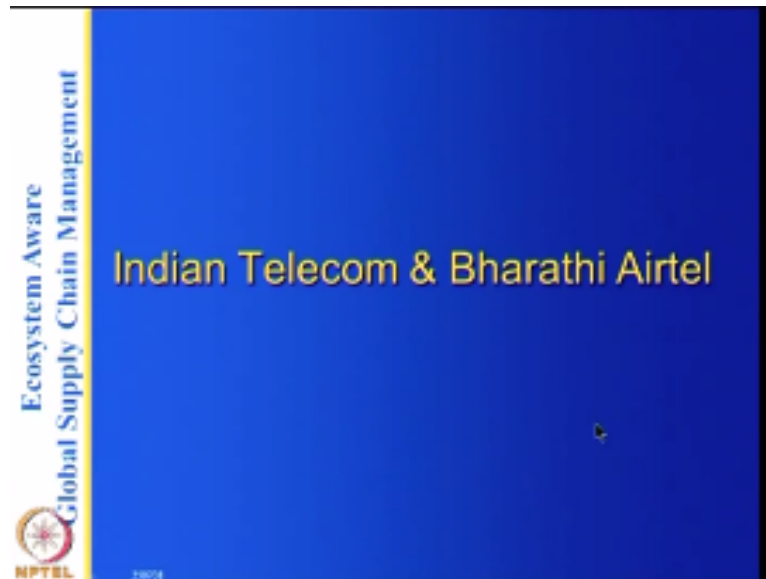
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So we have outlined that that is the this one so what happened in this particular chapter who have tried all possible innovations in the ecosystem frame work people may say why you know what do I do with all the lists so but it is important when you are in a particular vertical you should look at the innovations that your government to innovations in resources your own supply chain in your own delivery so that you can evaluate the options.

And then see depending on if some things are fixed you can see how you can quell and convergence of technologies so that you can create a blockbuster industry now what are the people ask what are the kinds of things that you expect which will be blockbuster industries in the near future the food security in emerging markets affordable housing skill training education to employment now one thing that happens in education is it does not guarantee you employment so the education to employment is another this one that some of the vital issues they need that

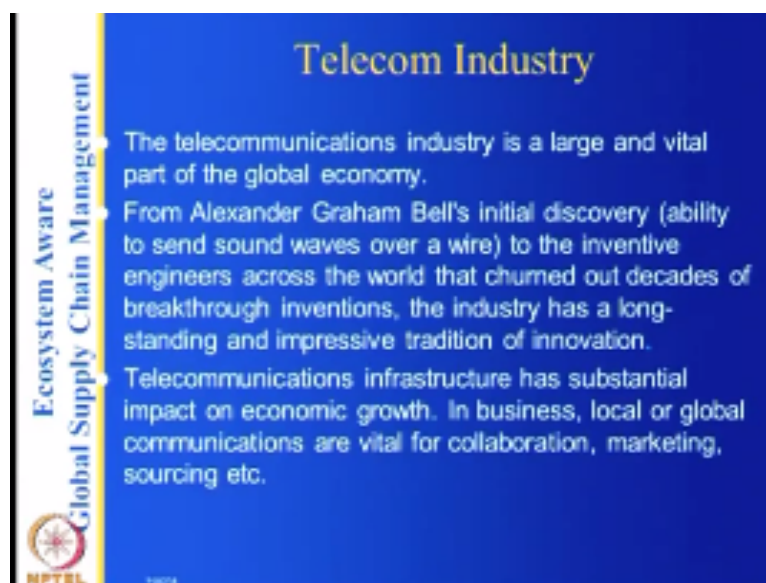
you stem framework in the emerging markets so we will conclude this particular lecture here with this here and then I will just do one example.

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And that example is on Indian Telecom and for the Airtel so the Indian telecommunication telecom industry.

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Is a large and vital part of the global economy any telecom industry is this one I looked at a Graham Belle's the initial discovery is sand sound waves over white back to assist discovery and

to inventive engineers across the world turned out decades of breakthrough innovations the industry has long-standing an impressive tradition of innovation so everything is innovation from Alexander Graham Bell to now there you have a cell phone not only carries audio it also carries visual things you could do several things using your cell phone.

Nowadays telecommunications Infrastructure a substantial impact on economic growth it is known now that that telecom infrastructure matters a lot in terms of the growth and in every sector of the economy in agriculture and in marketing in manufacturing finance services in business local or global communications are vital for collaboration marketing sourcing etc.

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The slide features a blue background with yellow and white text. On the left, a vertical sidebar contains the text 'Ecosystem Aware' and 'Global Supply Chain Management' next to a circular logo with a red and yellow design. The main title is 'Factors that Drove Reforms around the World in Telecom'. Below the title is a bulleted list of factors. At the bottom left of the slide is the 'NPTEL' logo.

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Global Supply Chain Management

Factors that Drove Reforms around the World in Telecom

- Exceptionally poor performance of state-owned telecom firms
 - Long waiting periods for telephone connections
 - Unreliability of the connections
 - Large subsidies draining national treasuries.
- Pressure from International lending organizations to divest
 - Comparison of pre- and post-privatization financial and operating performance reveals increased sales, profits, investments, and employment following privatization
- Worldwide wave towards "privatization" started by Britain's Thatcher government in 1979
 - Privatization faced resistance from labor unions, opposition's parties and armed force (national security concern due to involvement of foreigners)

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So the telecom industry one need know I do talk loud about it is this one it is well known so what are the factors that Rao reforms around the world until Co you know the telecom every country in the world used to warn telecom in this every government but why the Saudi regulation of this exceptionally poor performance of state-owned telecom firms long waiting periods for telephone connections unreliability of connections.

Large subsidies training national Treasuries in other words these companies instead of making profit they are making losses but since they are government-owned the government has to basically subsidize these enterprises or because they cannot close down because telecommunications is such a vital industry for the country so they have to keep it or so pressure from international lending organizations.

To divest comparison of pre and post privatization financial and operating performance remains increased sales profits investments and employment following privatization and also worldwide way of towards privatizations hard by started by Britain's That government in 1979 privatization faced resistance from labor unions because labor unions are more comfortable as government Employees opposition parties and armed forces national security concern duty involvement of foreigners so people were saying if they telecom companies are or privatized or and globalized then there is going to be national security concern.

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World growth depends on the telecommunications sector.

- The telecommunication's market is highly concentrated in the developed world
- In the developing countries, investment in Telecom infrastructure is considered a necessary foundation for economic growth. Privatization has also been done to meet the WTO obligations.
- In a landmark pact by the WTO, 68 countries, which control 95% of the world's market have agreed to completely liberalize their telecommunications.

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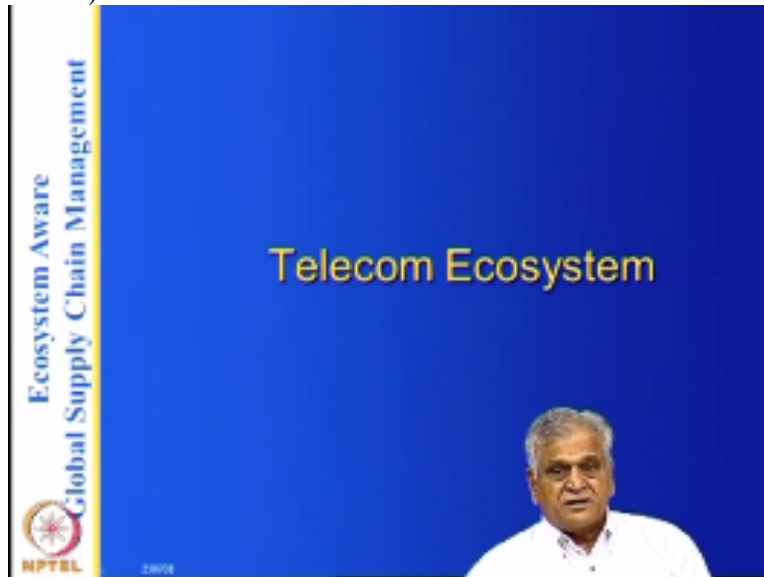
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So world growth depends on the telecom industry sector sure let us see what they growth telecom market is highly concentrated in the developed world and in the developing countries investment in telecom infrastructure is considered a necessary foundation for economic growth but a weight ejection has also this has been done to meet the WTO obligations several countries are members of the WTO and wt1 has rolled has privatization of the telecom.

This one and several countries have liberalized their telecom this one and the growth has been phenomenal since then landmark fact 68 countries which control 95% of world's market and agreed completely liberalized their telecommunications but of course nowhere are problems with the IT you know Facebook LinkedIn and all that what you say there and what this one that is different from having a telecommunication link.

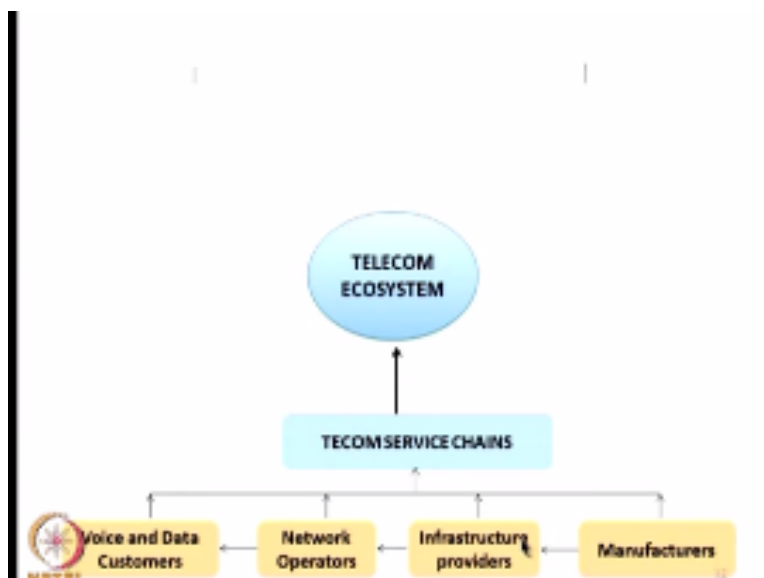
In other words having a telephone is vital and how you use it having an internet adviser but how do you use it is a different thing so there are a lot of restrictions on how to use this facility as long as you use it in the internet fashion there should not be any problem.

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So if you want to map the telecom ecosystem how do you map what is a telecom missile system ecosystem I mean it all depends on what players you are talking about are you talking as a subscriber that what you have or you are talking of the telecom ecosystem telecom subsystem itself.

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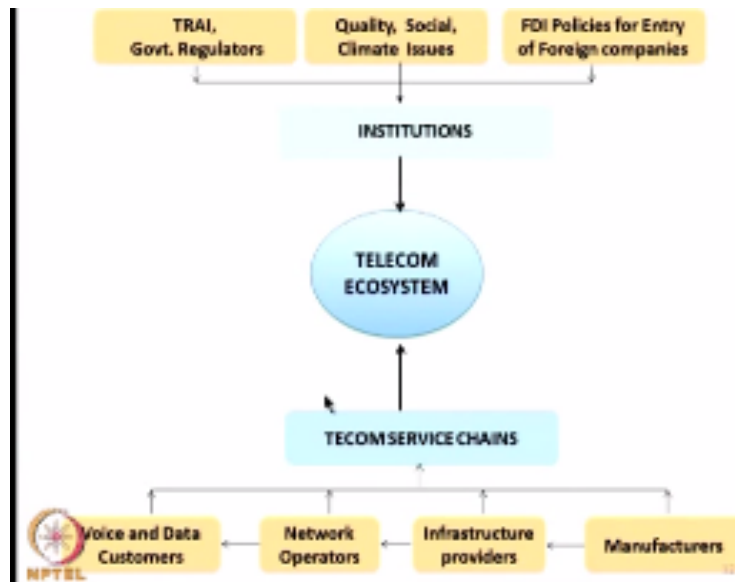
So let us look at the telecom system so if you have a telecom system this is called a service check there are supply chains and service chains usually supply chain term is used for goods transfer where as service chain is used for when there is a service transfers across the network so basically you can see that there are voice and data customers like you and me we use.

Wise customers their network operators like we have so many network operators here BSNL Airtel to learn others and their infrastructure providers I mean there are all kinds of towers and other equipment that are needed to for this or are they telephone cables either optical cables or whatever underground cables that infrastructure provides the towers in case of Wi-Fi and all that and also the manufacturers of this equipment cables and others.

So you have the manufacturers and the manufacturers provide to the infrastructures and network operators and voice data customers that we have so whether they are linked or not they are linked and in some fashion but they could be independent operators each have their own supply chain the other in other words if you are a voice and data customers you have to have a buy a cell phone you have to have a connection from some somebody.

And then you know how to pay the bills all that use the network and so on so that becomes your problem so the telecom service chain has this and similarly the infrastructure if you are providing the cables and we are providing the covers and so on then there depend on the manufacturer or another levels to use this and also the cost and other kinds of things the network operators are the interface between the customers and the network there is basically they may not all the infrastructure but they use the infrastructure and they will have a deal for this so the network operators are the one that most visible or to do the data customers and they are responsible for providing these facilities.

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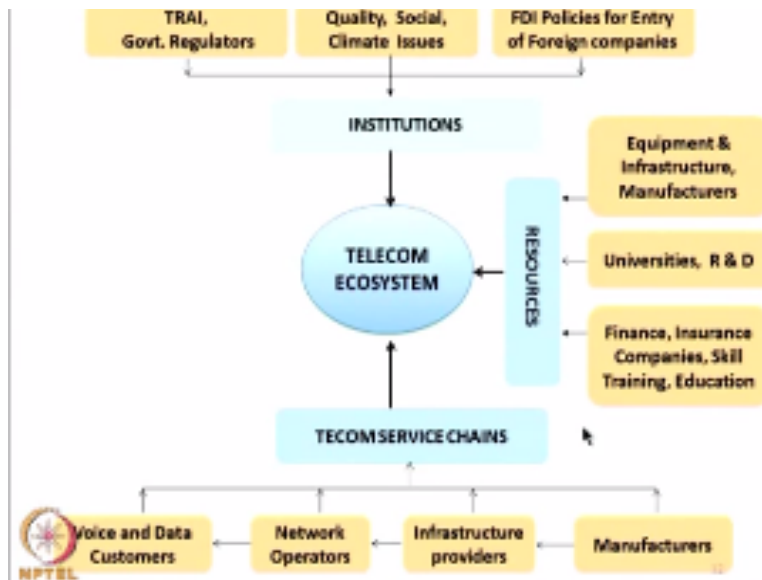


So if you look at the institutions that there are lots of institutions because telecom activity is a very sensitive activity it is a very important activity but highly sensitive to the national interest so there is telecom regulatory authorities whether it is India some other planes. There are lots of government originators and their quality social and climate issues of course you have particularly if you are using wireless then it is supposed to there are lots of health issues concerned with cell phones and others and there are other social issues and FDI policies for entry of foreign.

Then Your globalizing this the infrastructure providers if you want them to come and provide the infrastructure that and then at work operators and the manufacturers then you have to have foreign direct investment property entry for those so you have to have regulations to be changed to allow they telecom operators business mean it is important one should recognize that in India after civilization the three each month one crore new customers.

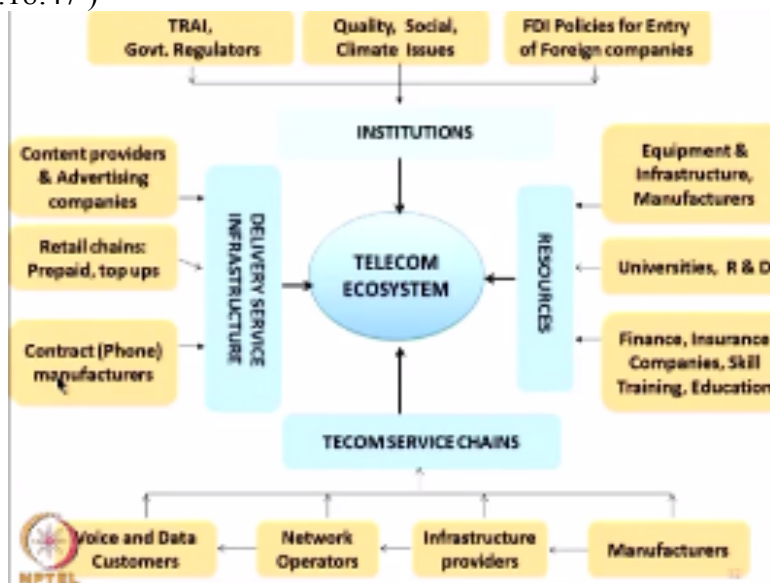
New customers are added in the telephone in the previous years so the tele dense has is almost like 80 percent that means 80% of the people in India rich or poor or whatever they have a telephone connection or a son telephone so these are basically the issues that like one need to one need to consider so the FDA policies for entry of foreign companies these needed.

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And resources what are the resources needed for the telephone companies there of course finance insurance companies skill training education and so on they need equipment manufacturers here the equipment manufacturers who provide this and the universities are in de and so on they are needed because there is a lot of research not needed in terms of materials and so on and of course there is a there is the power and water and other issues.

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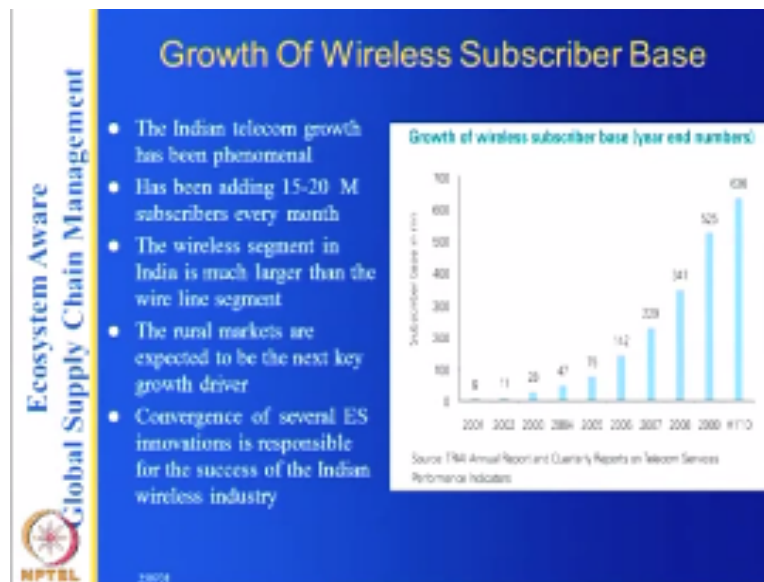


And then of course in terms of delivery infrastructure is a very important thing its contract manufacturers for cell phones and content providers for advertising because their advertising that is used using the telecom this one the retail chains for example if you are using a cell phones

their retail chains who sell basically for a prepaid they top-ups and so on and all that so if you were looking at the telecom ACO system it is a very interesting ecosystem.

Which you can map so you can take if you are using some other particular this one like Airtel or BSNL you can take this and more particularly map the ecosystem for that all right so that should be a very interesting exercise to map the telephone ecosystem where you have the service chains resources institutions and delivery service mechanisms.

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So the growth of the wireless subscriber base in India you can see from 2001 to 2010 there are not six Oh No 36 million subscribers India's population is 1.2 billion and is wireless subscribers there in addition to the wild land wireless their landline subscribers and so on but more importantly you should see the growth you should see the growth of this particular thing from 2000 to 2010 so this is this is a phenomenal growth.

That is seen in anywhere and in India where the telephone I mean 10 years ago the telephone services are not very good but today everybody has a cell phone so the Indian telecom growth has been phenomenal it has been adding one 15 to 20 million subscribers per month and the wireless segment in India is much larger than the wide line segment and the rural markets are expected to be the next key drivers.

So if you look at India it has about 400million people in the urban areas and 800 million people in the rural areas so if it percolates it to the rural areas then the growth is going to be this one I mean another thing one should recognize is communication is important for everyone but the telephone gives you a voice communication now voice communication is more important particularly and people are not educated.


They know they do not know how to read and write but they know how to speak and they are intelligent enough and they are communicators so convergence of several ecosystem innovations is responsible for success of Indian wireless industry so if you look at the Indian wireless industry this is the phenomenal growth that has happened or why did and how did this happen so there are two factors that we are going to show to explain this particular slide that is the innovations in the government particularly in terms of deregulation and second thing is innovation from the companies in the changing in the business models and so basically that is what this slide is what right.

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So what are the innovations and telescopic ecosystem from the government and companies so were going to look at this.

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Innovation through Deregulations

- The government has deregulated the telecom industry and many positive policies.
- It allowed private and foreign players to set up shops through FDI independently or through joint ventures, created Special Economic Zones to attract equipment and other manufacturers, allocated spectrum through auctions, and allowed foreign players to participate as manufacturing and service providers, creating a booming industry through FDI.

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So the deregulation of the telecom that has happened the government has deregulated the telecom industry and with many positive policies so it used to be completely warned by the government it used to have land line that one the entire network it used to have a telephone. Company which manufactures the defaults and so on so it is entirely the government-owned so people used to say you take it or leave it.

And if you had to wait four years for getting a landline connection so the landline connection used to be a big problem but what happened with the deregulation it allowed private and foreign players to set up shops through FDI independently or through joint ventures so there are a lot of foreign players there from developed countries where the market has been saturated they were invited into this and they created special economic zones to attract.

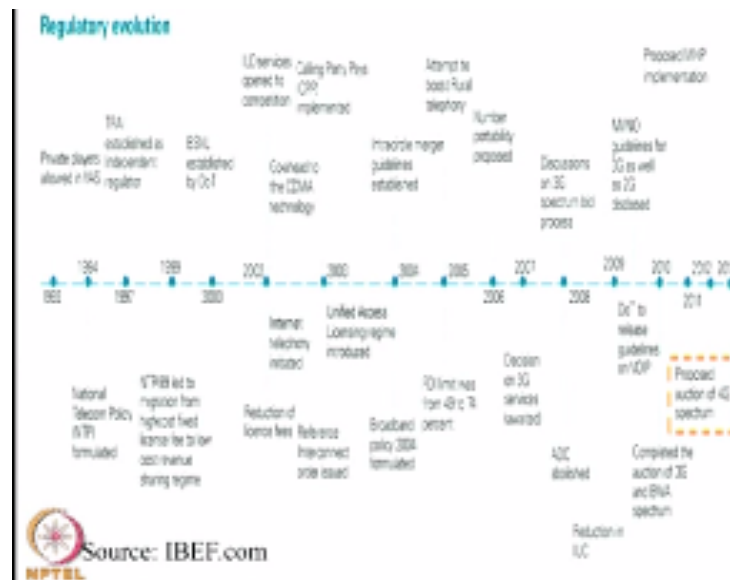
Equipment and other manufacturers so this special Oh cramp Jones as I told you in the last class that there Jones where if they have power water and all the infrastructure is a thing and they are given shops in terms of the taxes and others and they can export if they want and there they have to give the percentage of the manufactured equipment to local government forms and soon so the special economic Jones is one thing that that this one allocated spectrum through options.

Well I allowed foreign players to participate as manufacturing and service players creating a booming industry through FDI so basically the deregulation it has created a booming industry in India and because of deregulation privatization are also it allowed lot of foreign players into the company into the country and not only they were they allowed foreign players but they have

provided them with lot of facilities apart from deregulation they can come independently or they can throw joint ventures and they are given status of special economic zones they.

Then it I have to pay taxes and other things of course everything is still regulated but still they were given lot of benefits.

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So if you look at this I mean the evolution of the regression from IbI.com from1992 private players allowed and there is a national telecom policy formulated in 1994 tri established as an independent regulator troy us Telecom Regulatory Authority of India this has been established in 1997and 1999 the NTP led to migration from high-cost fixer license fee to low-cost revenue sharing and BSNL established by Department of Telecommunications.

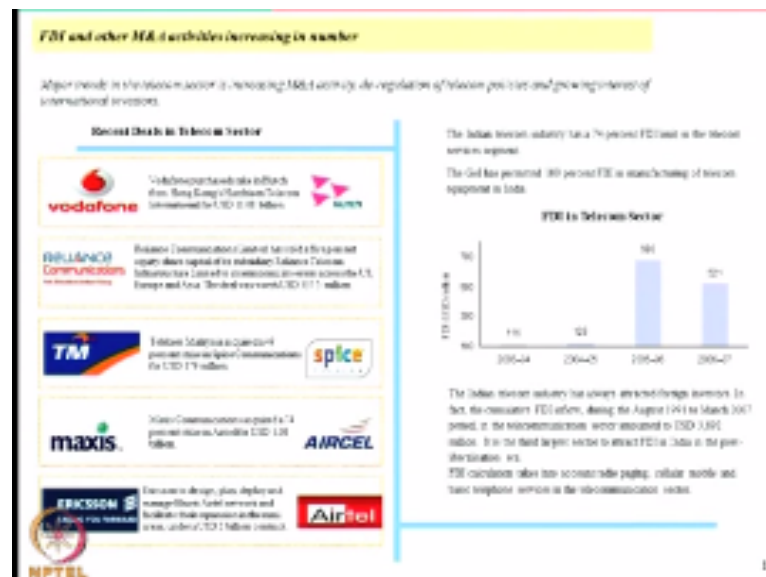
So an internet telephone telephony initiated you reduction of license fees broadband policy formulated Fe FDI limit from 59to 74 in 2004 attempt to boost rural telephony so number of portability increased station of 3G services in 2007so in other words if you look at all this as we went along from the timeline this gives you a list of regulations which have a wand and which have led to what we are today in terms of the telephone industry.

So see the point is that the FDA limit is one thing and the broadband policy is another and another one that this one is that was the earth is from postpaid to prepaid in other words instead of having a connection which postpaid means you use the telephone and then pay it and they will

mail you and so on the other hand you can get a SIM card with prepaid money of whatever money you have and then you can use it and that is jump in the numbers.

That is because the most people want to have it cell phone they may not have a house address they do not want to be bothered with they will be paying these telephone bills every month and so on it is also good for these telephone companies because the prepaid they prepared one they are getting the money before the services are used and that is an advantage for them.

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So here we see that a foreign direct investment and other merchant activities increased in number for example in the telecom Vodafone has purchased has taken hutch and Reliance Communications is a big player and Cal calm Malaysia is another player and Maxis water and telecommunications Communications acquired 7% taken itself Erickson so these are all the big players that in the telecom sector which this one they have this Airtel aircel spies and so on.

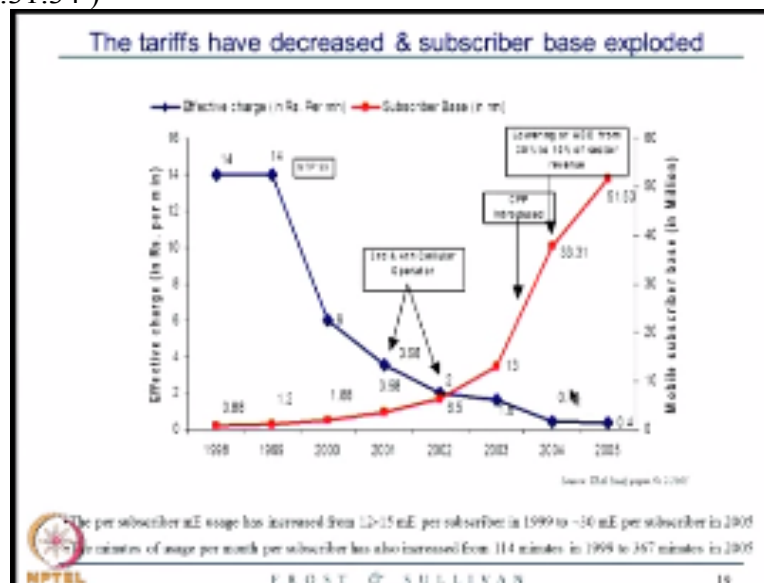
So Erickson to design plan and deploy manage party I'll tell Network to facilitate their expansion in the rural areas and so on so basically there are collaborations between companies with foreign players and that has given rise to a lot of strength to this the Indian telecom industry has a 74% limit on the telecom services segment and the Government of India parameter 100% if they I manufacture our telephone equipment.

So we escalate the telecom equipment is vital so the FDI and telecom equipment is the foreign direct investment it was highest six hundred eighty million dollars in two thousand five six and in six seven it is five twenty one and so on the Indian telecom industry has always attracted foreign investors so the cumulative FDI flow during August 91 to March 2007 period in the telecom sector amounted to three billion dollars and it is the largest sector to attract FDI.

In India in the post liberalization era FDI calculation takes into account radio patient cellular mobile and basic telephone services in the telephone sector see the point I am making here if you look at these statistics this and the previous one there are regulatory innovations which are happening and these innovations are mostly in terms of allowing foreign players in terms of the FDI in terms of how much stake.

They can have and you will find that this all these players came and they put in lot of money and the result is an improvement in the telecom sector the telecom sector is vital both for personal. Communications as well as better business communications the number of Internet users have has increased enormously so what we have here is a sector that is so important for the economy of this country and for its growth the government policies have given a slip that is the idea here.

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So if you look at this for example this is the growth in the year 1997 to 2005 you can find this steep growth and they also discharges per minute also have come down the charges per minute also have come down and due to various reasons now one of the reasons a steep reason is the

reason where they have introduced three prepaid SIM cards rather than post paid SIM cards in this particular cycle so well so several of these innovations have come into this.

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So we have seen so far the innovations by the country that is the India how it is basically in terms of three or four factors one is you deregulating the industrial second one that means in the stop by the government it can be private companies these private companies can be either Indian. Or they can be foreign companies and foreign companies are allowed foreign direct investment include infrastructure companies they include the manufacturers like cell phones and others and they were given FC judge status and some of this so basically the government has done several things by liberalizing the economy at various points in to get the booming telecom sector now it is not enough if the government does it government.

Does do all this as a facilitator but it is the companies to take on and take these things and improve further because ultimately where do you get your service from now let us get your service from a company's so let us look at what the companies did in this particular case.

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Supply Chain Innovation

- The major innovation in this industry came from creating a quality with product redesign at affordable cost, with features for voice, text, picture, games etc.
- This created the contract manufacturing industry in India with Nokia, Flextronics and the likes playing a key role.
- There were marketing innovations such as prepaid, family and corporate connection discounts, etc. that led to obtaining a large share from every customer



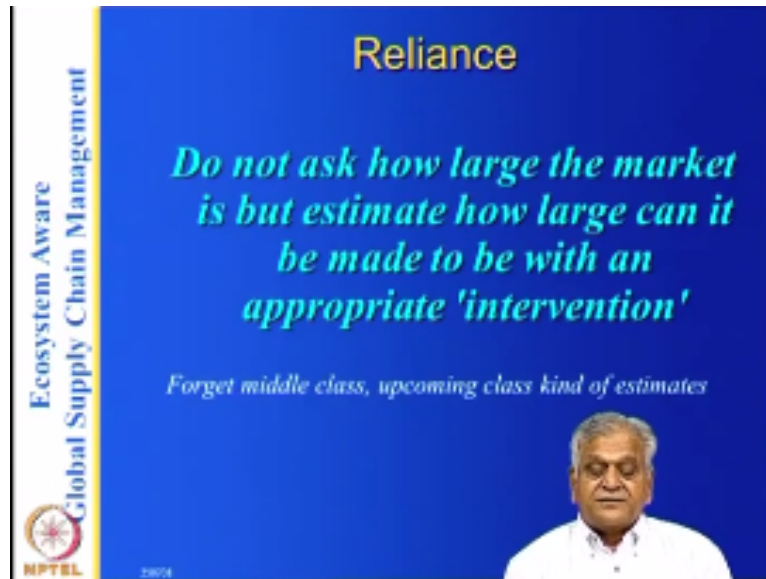
So there is this what is called supply chain innovation so the major innovation in this industry came from creating quality with the product redesign at affordable cost with features of wise text which show games etc now if you take a cell phone then the cheapest cell phone today is about thousand rupees 1200 rupees you get a form with all the features are wise text picture games etc you can SMS you can receive calls and so on now how is this possible its product.

Is a tiny design at affordable cost so who is responsible for this industry so industry came up with creative product it may not be anew cell phone it is the same product same designs but how do we make it cheap this is like Tata Nano how do you make a cheap cell phone which is we have heard about thousand rupees of course if you want to pay more money you can get it up to any amount of money this created a contract manufacturing industry.

In India with Nokia of except Remix and the likes playing a key role so they are given an essay chat status in Chennai and other places and this has created a big industry there were marketing. Innovations such as prepaid family and corporate connection discounts etc that led to obtaining a large tear from every customer so these are the marketing innovations like prepaid this may not be you know a product process innovations which require a lot of research and so on it is basically smart moves by some of These companies by knowing that people you know they do not want to get a telephone bill they do not know how to pay and all that so all that is whenever they have the money they fail and they the SIM card and use it so and this cell phones have

replaced lot of other things in this and of course the landline connections in India is almost like one-fifth one-sixth of what they sell phones.

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Are so if you take reliance for example it's a company which has this it asks the question I tell actually it has one which has revolutionized some of the markets do not ask how lot the market is but estimate how large it can be made to be with an appropriate interment how can you how much can you make this market this is like Tata Nano carbon do you have a big market for this effect well give a car for one lakh what is my market so if you are a marketing professional.

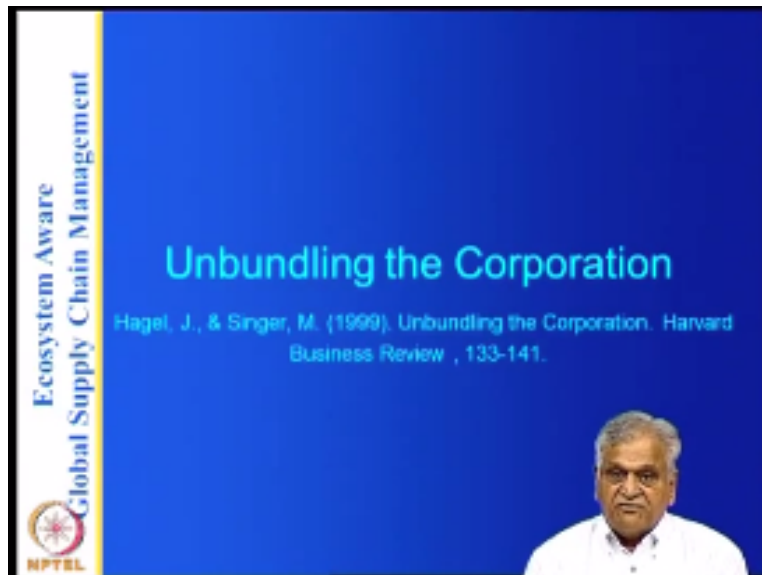
And when the cell phones are being introduced into the country how do you estimate the market you estimate the market saying that oh there are so many landlines how people will shift here and there will be some people corporate will shift into cell phone or with all this you will get some number and that number will be probably the same lines anything as in landlines number of landlines but here the question is asked look how large can this market be and they came out.

With an answer of hate hundred million they are 1.2 billion people if you take the kids and very old people the rest of them who can read who can speak they want to have a cell phone of their own but when will they have it how do you make it affordable and that is the one that they said.

If you make it as cheap as a postcard writing a postcard 1minute rupee kind of thing then you can you can make the with this large as a large Market so they said forget miss class upcoming class kind of estimates so tell me how much how large it can be how many people can use the

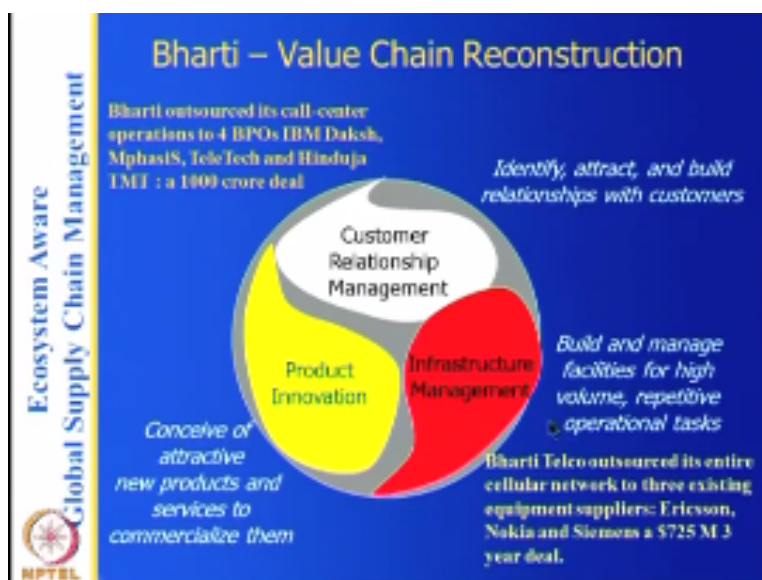
phone If I can make it make it happen so that is how the reliance came up with an estimate of 800 million And that is the correct kind of innovation like this one this is you can call it marketing estimation but that has led to a blockbuster industry .

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And the second thing that airtel has done is what we call unbundling the corporation this is a famous paper by Hard and others is unbundling the corporation in Hard well Business Review but my interpretation of what Airtel did is that they have one bundle this corporation so.

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If you take apart the value chain on this one any company value chain there are three products one is infrastructure management built and managed facilities for high-volume repetitive operation with us that is these are all the things like the towers the cables and so on you have to build and manage the facilities for high volume and operational tasks so that the people can use it the second one is the product innovation conceived attractive new products and services.

And commercialize them so that is the third one is customer relations management I do not find attract and build relationships with customers so what party did was enemy if you were doing this for telephone what is infrastructure is the towers and other kinds of telephone equipment cables and all that now and mostly if you take at the world telephone companies all these three or would not buy all the companies are there by all the telephone providers.

But this particular diagram is available this is valid for any company in any industry but we are talking only in terms of telecom this infrastructure and the customer relations and product animation are basically are the three parts of this now the problem is with this an infrastructure is cost effective cost intensive because you are building an infrastructure and the returns are very slow to come in and they are high volumes and the repetitive operational tasks.

Because if you want to maintain this one thing is to build this and second thing is to manage this third one is to use the services behind this so all these three require lot of money it is asset intensive and it requires lot of maintenance it requires people with low skilled well trained level now on the other hand if you go to product innovation now you have conceived new products and services for this then these require researchers and they have to be high paid and they have to be given other they have to be treated differently from others.

Then as customer relations management is identify attract and build relationships with customers you have to basically have relationship house shops nearby or go to the customer and you as get as many customers as possible and see that they pay the bills and you collect the money from them and so on this was the airtel outsource the intention in our network the three existing equipment suppliers Eriksson okay on Siemens at the seventh 725million for a three-year deal and party out rolls call center operations for BP was IBM duct.

And this is tell attack and Hinduja TMT a thousand Crawley so what does it do I mean it has outsourced the part of the customer is one and product animation and Telecom is not very much

because you know you have the cell phones which you buy and only thing that is left there is the customer relations management basically attract as many customers as possible and see that they pay the bills and collect the money so that is what they have this one so using my interpretation of what party has done is this value chain reconstruction by using this and this has created.

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Ecosystem Aware Global Supply Chain Management NPTEL	Characteristics of the three Processes		
	Product Innovation	CRM	Infrastructure Management
	Economics Early market entry allows for a premium price and large market share Speed is key	High cost of customer acquisition makes it imperative to gain large shares of wallet Economies of scope are key	High fixed costs make large volumes essential to achieving low unit large shares of wallet Economies of scale are key
	Culture Employee centered; coddling the creative "stars"	Highly service oriented; "customer comes first"	Cost focused; stress on standardization, predictability, efficiency
	Competition Battle for talent; low barriers to entry; Many small players thrive	Battle for scope; rapid consolidation; a few big players dominate	Battle for scale; rapid consolidation; a few big players dominate

Huge this one for this particular company so if it if you look at them in a let's look at a little bored of this in this because if you take product animation the economic says early market entry allows for a premium price on large market share so speed is the key speed is the key in this and you know I call customer relations management high cost of customer acquisition makes it imperative to gain larger shares of the valid once you have spent the infrastructure.

Money economies of scope of the key so you should get a variety of customers from this and infrastructure management high figure cars make large volumes essential so economies of scale at so if you are in a company then speed economies of cooperation scale they require different kinds of people different kinds of culture.

The product innovation is employee centered coddling creative stars whereas in customer relations management highly service-oriented customer comes first where as in infrastructure cost focused stress on standardization.

Predictability inefficiency as I said before infrastructure management requires skill training and low cost labor days where product innovation requires discovery product discovery and there are high cost people this whereas serum is lot offhand shake innocent world and here you require a talented people who can attract customers so that is where the mystery this one once you realize that in the telecom industry is three and where to concentrate you also surest to good people and use concentrate only on that so that you can build a good business.

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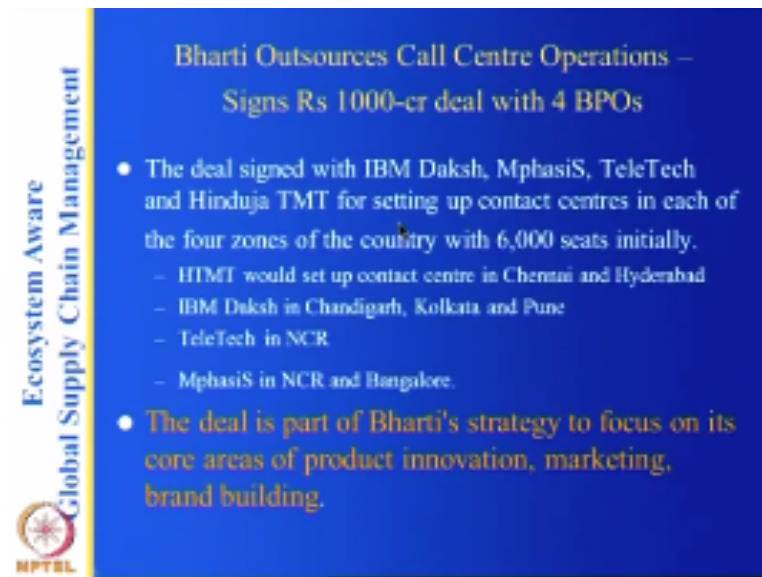
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So that is what happened in this name sign with IBM - memos says tell attack on Hinduja TMT for setting up contacts and test in each of the four zones of the country with six thousand seats initially so they basically they have this the deal is a part of bharti strategy to focus on core areas of product innovation marketing and brand building so that is where the this outsourcing deals have come up with this so this is the basic diagram packed supposing.

This can be extended to others will just give an example of a hospital supposing you have a hospital has an infrastructure and it has also the equipment medical equipment and soon so if you do not know if you take any particular hospital the 80% of the cost goes for the building and the equipment and what are the kinds of innovations that you require and customer relations management and of course you know in terms of customer relations.

This is the service delivery doctors and all that so the management of the hospital and the delivery take the rest so if you if you look at if you concentrate on only on a particular service industry if we take educational institutions what are they you have lot of into buildings and all that you have basically your students this one if you have all the processes and all that you can see what you can outsource and what you have to do it yourself.

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Global Supply Chain Management

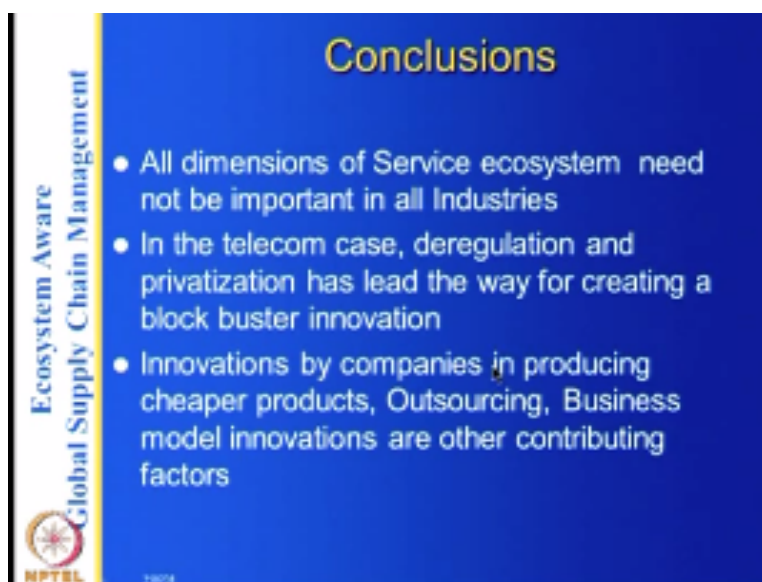
Bharti Outsources Call Centre Operations – Signs Rs 1000-cr deal with 4 BPOs

- The deal signed with IBM Daksh, Mphasis, TeleTech and Hinduja TMT for setting up contact centres in each of the four zones of the country with 6,000 seats initially.
 - HTMT would set up contact centre in Chennai and Hyderabad
 - IBM Daksh in Chandigarh, Kolkata and Pune
 - TeleTech in NCR
 - Mphasis in NCR and Bangalore.
- The deal is part of Bharti's strategy to focus on its core areas of product innovation, marketing, brand building.

NPTEL

So if you look at the party the core product innovation marketing and brand building or the ones.

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Conclusions

- All dimensions of Service ecosystem need not be important in all Industries
- In the telecom case, deregulation and privatization has lead the way for creating a block buster innovation
- Innovations by companies in producing cheaper products, Outsourcing, Business model innovations are other contributing factors

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So what we have here is all dimensions of service ecosystem need not be important to all the industries so if you have a taken ecosystem has the service chain it has the regulators it has the delivery mechanisms and it has the resources so if you take the bhartiairtel the institutions are the regulations they are the ones which became very important and the supply chain of various companies became very important so in terms of the resources.

As resource providers and all that that has come and the delivery mechanisms are pretty simple in terms of there are no innovations although they are needed so if you take some other service chain like a hospital or an education system then the dimensions of service ecosystem need not be all the things may not be important in the if you take a education then the service delivery becomes delivery mechanisms become important.

Whether it is web-based whether it is the first of s and so on and the resources become important the teachers become important and the institution's may not be that important because all the rules regulations are made one time and they need to be followed so it depends on the service chain that you have and in the telecom case deregulation and privatization and not even for creating blockbuster innovation and of course the government's have done.

This but it is also important to see the fact that the companies also played very positive role for example reliance worthy and all that so they looked at the entire scenario and they looked at the fact that is this is a kind of co evolution that you have seen the telecom industry and in the telecom industry the government is deregulated the foreign players would come can I use that to advantage the foreign players instead of my setting up the facilities.

So that is where party said look let me have the infrastructure of the other people and let me be the call center instead of having my own call center let me have my own call center. From somebody else but let me do the others which others cannot do for me so let me innovate the products for this how do I what are the packages I give it to the customers and let me do the customer relations management and that is how the innovations have come into this.

One telecom deregulation privatization and let the way of creating blockbuster industries innovations by companies introducing cheaper products for example people like Affleck's atonics and others are nokia they came up with a very cheap products and also they are come with the

sim cards which they would said that you pay so much money and you get so many so many minutes of time and also so many your incoming calls are free.

These kind of deals have created this and of course outsourcing has created four party Airtel the outsourcing is one of the prime things that they have done and business model innovations or other contributing factors for this so what we have done here in this lectures is that in the innovations in the emerging markets this we have first defined the emerging markets and we have said that in emerging markets a successful innovation.

Is one which creates a blockbuster industry that is what looking at and who has seen the innovation framework which has innovation and supply chain resources delivery mechanisms on this and how in certain sectors like the telecom which was basically in the hands of the government till now when it was liberalized and privatized and it allowed other.

Foreign players into the country how it has led to growth I mean you can you can take other sectors of the economy the other sectors like education and others or healthcare to see what they are doing I mean even sector we need every sector has not prospered as much as the telecom sector with the telecom sector has that that is a sector which is very information and communication is basically vital for the growth of both individuals.

As well as companies as well as countries but there are other sectors like education skill based training and food security which where you can use these technologies and these kind of ideas and create blockbuster industries one of the things is I am going to do in future classes is for food security using the current players like the shoppers like Khorana shops how do you create a blockbuster for security industry so we will do all that in a next class Thank you.

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