

**Indian Institute of Science
Bangalore**

NPTEL

**National Programme on
Technology Enhanced Learning**

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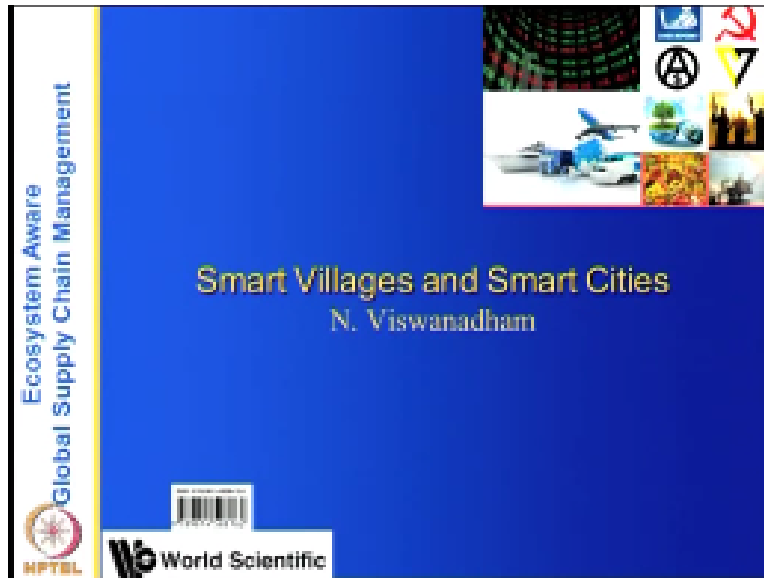
Global Supply Chain Management

Lecture- 35
Smart Villages and Cities – part1

Prof .N. Viswanadham
Department of Computer Science and Automation
Indian Institute of Science
Bangalore

These two lectures this one and the next one we are going to talk about very important topic that is building smart villagers and smart cities.

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So this villages are in the cities they were not built they had just grown in a haphazard fashion so particularly cities although they may have been planned but people have not expected the growth the unprecedented growth that has happened and so and also the cities they were planned during the times there were no ICT technologies no information technologies no internet no smart devices no Wi-Fi and so on so the water networks the power networks the health networks all those networks that were built for the cities.

There were basically ancient and they were designed oh maybe the knowledge and the times of that day but today they can be made smart what is smart means you can smart actually means intelligent you can make a device intelligently what is intelligence means that the device can make its own based on the information that is given in the environment in its environment it can make a decision on itself so this is how do you build these Greece kind of using new technologies smart city smart villages that is the topic that we are having today.

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Mahatma Gandhi; Harijan, 18-1-1922

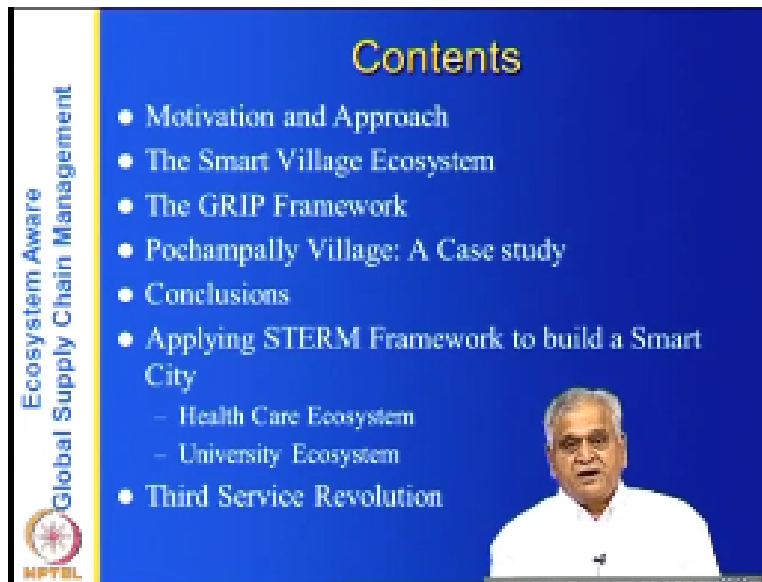
- *The best, quickest and most efficient way is to build up from the bottom . . . Every village has to become a self-sufficient republic. This does not require brave resolutions. It requires **brave, corporate, intelligent** work. . .*
- If we interpret **brave** as **entrepreneurial and risk taking** attitude, **corporate** to mean **setting & meeting strategic goals and objectives**, **intelligent** with **IT enabled governance models**, called smart nowadays, we implement Mahatma's vision.

So it is a very important topic in the way we will start with that whenever you think of a village you think of Mahatma Gandhi and in 18 18 January 1922 he has written an article in her region that is the magazine and he said the following the best quickest and most efficient way is to build up from the bottom he is talking of villagers ever village has to become a self sufficient Republic this does not require bravery solutions it requires brave corporate intelligent worker.

So you can see his vision by proper interpretation of what brave what corporate what intelligent means if we interpret dream as entrepreneurial and risk taking attitude I mean today if you want to be an entrepreneur you want to have a startup you have to take a risk you know one thing is to join some company get young a monthly salary and so on but on the other hand if you want to be an entrepreneur you build up a company and you provide jobs for others that is highly risk taking attitude.

So corporate to me when you say corporate means setting and creating strategy goals and objectives and intelligent means IT and evolve governance models called Smart nowadays so we implement Mahatma Gandhi's vision so if we interpret properly what it is today like brave then enter corporate and entrepreneurial attitude and intelligent work then we are implementing this masturbation so let us see how we can we can do these three things the entrepreneurial work the corporate governance as well as the intelligent use of smart things in the building of villages and cities.

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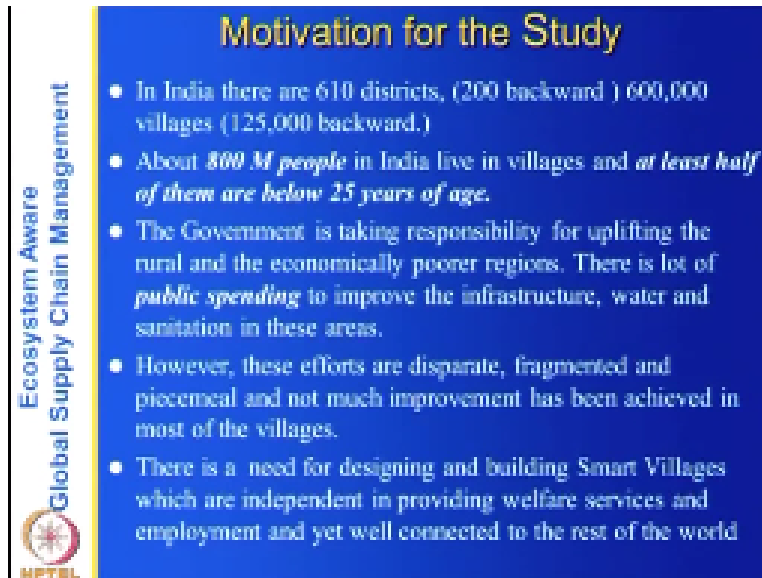
So let us look at the contents our first where first of all what is the motivation for doing this looking at smart villages now there are two motivations here one is there are several villages six thousand six hundred thousand villages in this one and villages are very important we will look at that but another one is whatever ecosystem framework that we have developed for supply chains earlier it is applicable in a larger context in the larger context of villages cities countries and so on.

So just to show that the larger context of the frame framework we have learnt in the previous lectures I want to do this how to develop a smart village and look at what is the ecosystem for the smart village and develop the grip framework we have learnt earlier and I will do a case of a village called Pochampally village this is near Hyderabad and it is one supposed to be a module village and I will do a case and I will conclude the villages chapter and afterwards I will apply the stem framework to build a smart city.

And smart city is health care system and university ecosystems are important I will do that and the others can be done in a similar mission and finally end up this two hour lecture with the third service revolution and what it should be now the fundamental point that we should see we have learnt the ecosystem for a supply China service chain but the village is these are different this one how do you apply this ecosystem framework to a village so then that is it the fundamental question.

So what is a village I have been in the context of what we are talking here today in the ecosystem framework supply chain service chains are not that we will consider the village is nothing but dozens of a bundle of supply chains and service chains so if you accept that definition which it is true then you can apply the ecosystem framework not only for the village but also for each service and each supply to each product each service that the village supplies so with that let us start looking at what is the motivation.

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Motivation for the Study

- In India there are 610 districts, (200 backward) 600,000 villages (125,000 backward.)
- About *800 M people* in India live in villages and *at least half of them are below 25 years of age.*
- The Government is taking responsibility for uplifting the rural and the economically poorer regions. There is lot of *public spending* to improve the infrastructure, water and sanitation in these areas.
- However, these efforts are disparate, fragmented and piecemeal and not much improvement has been achieved in most of the villages.
- There is a need for designing and building Smart Villages which are independent in providing welfare services and employment and yet well connected to the rest of the world

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The motivation is India has 601, 610 districts and 200 of them are considered to be backward and 600,000 villages with her 125 villages which are backward this comes to and about 800 million people India live in the villages and at least half of them are below 25 years so this is called demographic dividend and who had to provide all the kinds of facilities one thing is to move one of them to look to the cities we have then crowd them in the cities but on the other hand it is very important to create these facilities in the villagers.

So that you know they are happy in the villages they keep living there but getting the same kind of facilities and same conveniences the government is taking responsibility for uplifting the rural and economically poorer regions and there is a lot of public spending to improve the infrastructure whatever sanitation education and all the other things so basically today the rural development is the government's responsibility and how were these effects are desperate fragmented and piecemeal not much improvement has been achieved in most of the villages now there is what is called Panchayat raj.

In other words each village has a Panchayat board and this is more political than professionals so basically they are try to try to do some improvements in the village but it is not strategy in other words there is no plan there is no growth plans and so on and there is a need for designing and building smart villages which are independent in providing welfare services and employment at they are well connected to the rest of the world it took one should understand what Mahatma sudhirshan is it should be corporate which it can be independent Republic.

But as a republic it should be connected with the other sides of the world so basically the village is well connected it is a part of the global country it is a power of the world and all the services and supply chains within the village are connected globally so if you produce a product you should be able to export it to foreign countries or you should be able to get marketing they demand they demand in the outside the world should be able to translate it into your work into your inputs into for your supply chains.

So basically this is what other motivation is for studying this there are several government programs for in the villages these there are programs in agriculture.

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Government Programs for The Villages

- **Major Programs in Agriculture**
 - National Agricultural Development Program
 - Accelerated Irrigation Benefit Program
 - Fertilizer Subsidy
 - Bank loans, Free Electricity
- **Major Programs to Improve Employment**
 - Public Distribution System
 - Mahatma Gandhi National Rural Employment Guarantee Scheme
 - National Food Security Bill
- **Major Programs & Partnerships to Improve Nutrition Security**
 - Mid Day Meal Scheme
 - Integrated Child Development Scheme (ICDS)
 - Aarapurna Scheme (Ministry of Rural Development) for senior citizens
 - The Nutritional Program for Adolescent Girls
 - Emergency feeding program (in eight districts in Orissa)

There is the national agriculture development program I mean accelerated integration irrigation benefit fertilizer subsidy bank loans free electricity and so on so if you because most of the villagers have the agriculture as the primary occupation so they have this government gives lot of subsidies there major programs to improve the employment so in the villages there is the

employment problem because there are no small and medium enterprises so there is the public distribution system that is the PDS.


Which is a ration if you have a ration card then you can get through this but they the ration shops and all that they basically provide some employment that is what is called MN pirogues that is Mahatma Gandhi National Rural Development guarantee program where people about who are employable they are basically guaranteed employment they are paid they paid some money per month for a hundred days a year and depending on the possibility and they are given some employment.

And there is a national food security bill took a white foot for them so that that is about the employment and major programs to improve the nutrition security in this in other words in the villages there is a children or malnutrition and their pregnant mothers who do not have proper care so there are lots of programs make their meal integrated child development program on the corner scheme for senior citizens and a nutritional program for adults and girls and emergency feeding program and all that so they basically programs to provide nutritional security for wide employment for agriculture but these are all programs from the government.

And these are all in the hands of the panchayat and the other government officers and the result yes I do not think they are working right I mean the lot of these programs they get they do not get very good reviews but still you know it is just government giving away money to this it is not as though they are trying to take the families take the people and giving them enough education enough employment so that they can purify themselves and also villages how long can you subsidize how the Kenyan government's can keep on subsidizing these villages and population keeps on growing.

And so there is a better idea to grow the village so that it becomes self sufficient rather than giving subsidies so our vision here which is mahatmas vision is to make it a self sufficient to correct it grow by itself rather than giving subsidies so what is a smart village.

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Smart Village

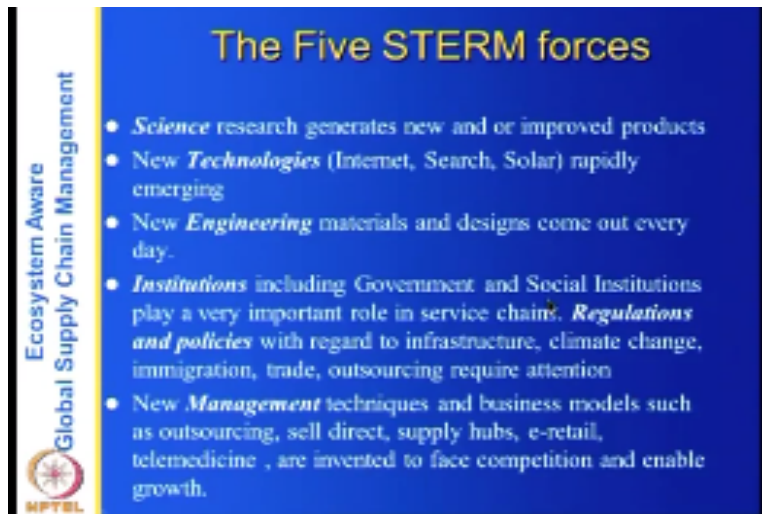
- A **Smart Village** is a bundle of dozens of services delivered effectively to the residents and businesses in an efficient manner.
- These services could be location specific depending on the demography of the village and occupations of the residents.
- These services such as Power, Water, Buildings, Retail, Health care, etc. were built several decades ago. New designs, technologies and management models should be used to upgrade the existing ones and in building the new ones. This requires standardization, use of IT and sensor networks.
- Requires strategy, integrated planning and above all monitoring and execution of the activities using appropriate governance models.

And so people treat a smart village as a bundle of services of dozens of services delivered effectively to the residents and businesses in an effective manner so we will see what these services are their water power but in there nothing new here and these services could be location specific depending on the demography of the village and occupation of the residents so this basically is an important factor we are looking at we look at the investment climate of a country and we investment comment of a state in India by any of these 28 states in India.

But it is possible to take that investment climate concept to a village so let us I mean before doing these services such as power, water, buildings, retail, health care etc were built several decades ago if they are all they are built these are basically they village this one or touches they're like slums and new designs technologies and management models should be used to upgrade the existing ones and build the new ones this requires standardization use of IT instance of networks.

So that was strategy integrated planning and above all monitoring and execution of the activities using appropriate governance models so whatever we have learnt what the supply chains we are going to apply to you so we are going to develop a governance model and so on and compare it with the pancetta model that we have here.

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The Five STERM forces

- *Science* research generates new and or improved products
- New *Technologies* (Internet, Search, Solar) rapidly emerging
- New *Engineering* materials and designs come out every day.
- *Institutions* including Government and Social Institutions play a very important role in service chains. *Regulations and policies* with regard to infrastructure, climate change, immigration, trade, outsourcing require attention
- New *Management* techniques and business models such as outsourcing, sell direct, supply hubs, e-retail, telemedicine, are invented to face competition and enable growth.

So we use the following things I mean we have developed the when we develop the supply chain ecosystem framework we mentioned their five stem forces usually people talk of stem forces STEM but with a different interpretation we have Sterm here science S stands for science which is science research generation new and improved products and new technologies that is T stands for technologies that is internet search solar energies and so on and new engineering materials and designs come out every day that is E stands for engineering R stands for regulations which is institutions including government and social institutions play a very important role in service chains regulations.

And policies with regard to infrastructure climate change immigration trade outsourced in require attention in the village context regulations regarding the agriculture regulations regarding SME industries regarding the climate change they basically require attention and new management techniques like business models such as such as outsourcing direct supply chains and so on these are the management techniques we have to see what are these management techniques for the particular village is it possible to apply some of these to the village.

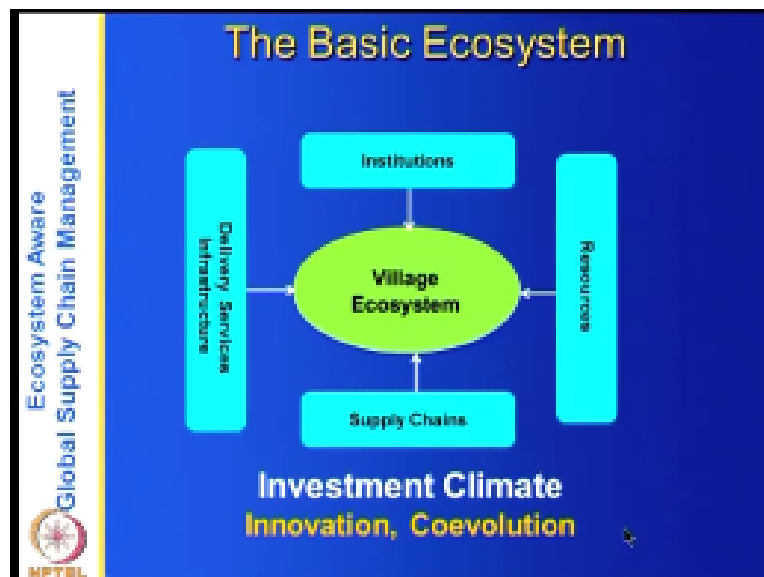
Now for example telemedicine you know villages and we may not have hospitals and all that but telemedicine is one of the possibilities where villages can be used for this one and similarly you retail through kayaks and post offices so there are several things that the villagers can use in this process so let us try and apply this all this term framework for Five STERM forces to this village.

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So first thing we do here is to map the village ecosystem.

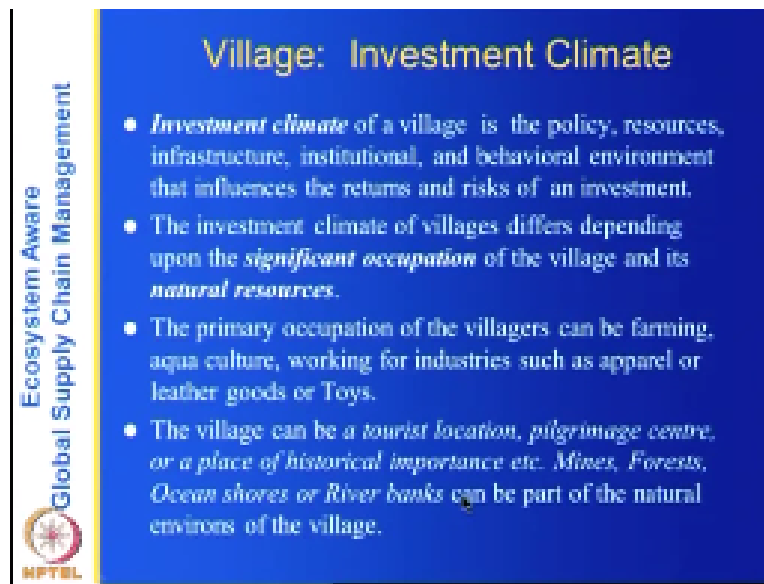
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What is their Eco system of the village because we have the supply chains or service chains we have the resources institutions and delivery service mechanisms that is the general ecosystem and we have to these three define the ecosystem now what would the ecosystem if there is lot of land and there is water and the land is first tile then in other words you have land resources and you have the delivery well connected to the authorities one through canals and so on and the institutions the source of groups permit then you have agriculture based ecosystem.

But on the other hand if we have same mines or old this one that is the resource here coal mines here then you will have a different delivery mechanisms working here on the other hand if you are very close by the city then providing services to the city will become this one so you have to have innovation co evolution and all that as we saw earlier that this requires any kind of innovation that you have if you want to start a doll factory here making dolls Barbie dolls and they want to export it to United States then do you have all the resources do you that your government permit or do you have the delivery record mechanisms all the connections to do that so let us look at it one by one.

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Village: Investment Climate

- *Investment climate* of a village is the policy, resources, infrastructure, institutional, and behavioral environment that influences the returns and risks of an investment.
- The investment climate of villages differs depending upon the *significant occupation* of the village and its *natural resources*.
- The primary occupation of the villagers can be farming, aqua culture, working for industries such as apparel or leather goods or Toys.
- The village can be a *tourist location, pilgrimage centre, or a place of historical importance etc. Mines, Forests, Ocean shores or River banks* can be part of the natural environs of the village.

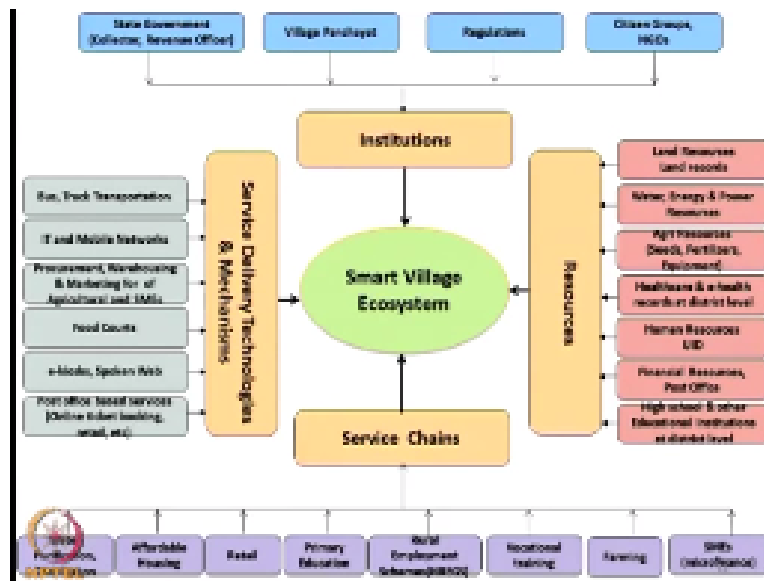
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So we will map the investment climate urban age is the policy resources infrastructure institutional and behavior environment that influences the returns and risks of the investment the investment climate there first depending on the significant occupation and its natural resources the primary occupation of the village can be farming it can be aquaculture you can be working for industries such as April other goods or toys so you can see what is the kind of village that you are talking of the village can be a tourist location.

An example if you are near Taj Mahal in Agra or you are a pilgrimage Center like if you have close to Thirupathi or a place of historical importance then etc mines forest portion source or riverbanks can be part of the natural environments of the village so depending on what your environment is you should be able to define both the services that you require for the village

and also the kind of industries you can start and what are how do you basically have the delivery mechanisms and so on.

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So let us map the smart village here the smart village is that there we have these various kinds of service chains let us look at each of them we have water purification and have affordable housing now affordable housing requires a lot of innovations in other words they have basically poured hurts most of them and so if you want to make say like one lakh car one lakh house you have this care but you should be able to innovate in terms of the concrete and other material slabs those so that it is possible to make a house within been in that this one of course there is the retail there Karana shops in the in the village.

But they need an improvement in terms of what is needed what is supplied to them because village cannot have a distribution centre the retail centre has to be subset has to be connected to a distribution center which is located elsewhere and there should be a possible movement of goods between the distribution center and the retail and of course the children need education that is the primary education love in other words and when you go into secondary and higher education probably they can move over to the accounts but what is needed certainly is the primary education and Rural Employment schemes and recommend regards and so on so.

Basically you have to have employment for the people this vocational training vocational training if you are then do it all doll factory or if you want to be a cab driver or if you want to have a restaurant and so on so this is basically education to employment kind of vocational

training that is needed but of course farming for me you know people think farming does not require any expertise but this is not true so basically there are several things that you need to know about farming and so there is some intelligent advice that needs to be given by agencies to this of course.

We have the SMEs which are microfinance this depends on the this one so basically depending on the village investment climate you have all these service chains if you want you can add more butchers particular to that particular village but these are all the kinds of service chains now the institutions are the government has these institutions which are for example healthy state governments there at the there are the officers of the in the venue officers and the in district collectors and so on.

And if the village one type which is basically part of the political schemes and of course there each one has the regulations and their citizens and NGO groups and so on so basically the institutions here it does not play the display role in then the subsidies are given to the village as well as in terms of the infrastructure development and in terms of farming giving the seeds and so on so basically they are forming a cooperative society and of course we have the land resources water a great resources health care and human resources UID and then financial resources through a post office at all high school and other educational institutions at the district level.

So these resources for education for finance and also for agriculture because we are assuming of course indirectly that the ecosystem is agriculture based eco system which is true in most of the villages and of course you have to have the water energy and power networks these are networks for everyone and you are just using those networks so but you should have connectivity ever ability may not have been correctly connected to all the water and energy networks and finally the service delivery which accuse you connections for example post office based services or light ticket booking and retail and so on.

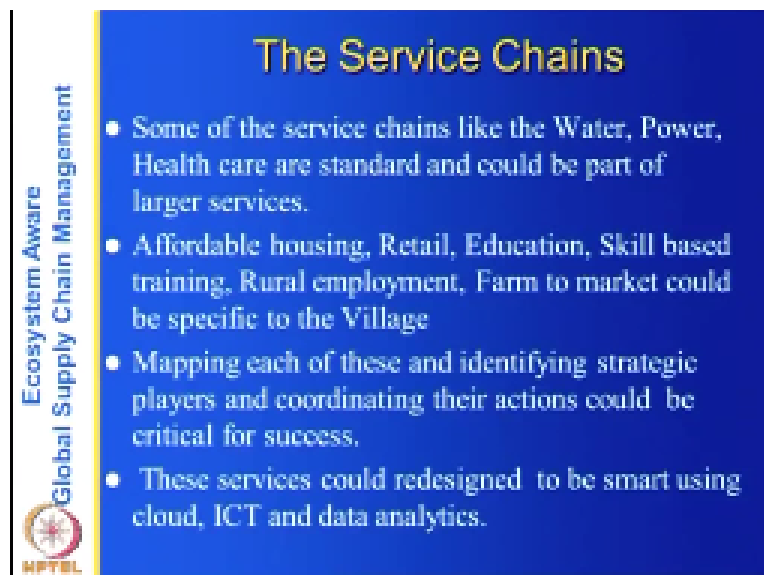
In other words you want to try out I go by train or by air or something and you can get the tickets because spoken well spoken web is where you know the most of the bunch understand that 700 million people of cannot then all know how to read and write so then you do not know how to read and write how are you going to use internet or communicate write letters and so on so but other hand they are intelligent people they know how to speak in the natural languages so what you need are the audiovisual technologies to communicate so this means there should have a cell phone or let us call spoken web if you do not have a cell phone.

And if you want to meet somebody else or you want to you want to get a carpenter or somebody instead of advertising on the internet sending a message to everybody and so on you can leave the message on the spoken web and people listen to that and they respond so it is possible that this one and of course food quotes like if you want to provide secure food which is nutritious then if you have food courts which are basically advised by noticed nutritionist and they run they run nutritious food then that is one thing and of course you had have procurement warehousing and marketing for agriculture as well as the service.

So in other words whether it is whether you have an SME or not you need procurement warehousing and marketing so you need those services and of course the IT and mobile services you need both the truck transport for movement of boots outside or your earn you need bus and other train transport to more people outside so the connectivity to the outside world is important so this is the village ecosystem that that we have so for this ecosystem we have we have two now you can easily look at the service chains you can look at the resources institutions and so on.

The institutions are all done by any pachayat raj thorough and all that so this is the cosmic view of our village now how do you the question big question how do you make this village smarter.

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The Service Chains

- Some of the service chains like the Water, Power, Health care are standard and could be part of larger services.
- Affordable housing, Retail, Education, Skill based training, Rural employment, Farm to market could be specific to the Village
- Mapping each of these and identifying strategic players and coordinating their actions could be critical for success.
- These services could redesigned to be smart using cloud, ICT and data analytics.

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So the service chains are some of these service chains like water power healthcare ER standard and could be a part of larger services in other words they could be initiatives like health services and all that affordable housing retail education skill base training Rural Employment

form to market could be specific to the village now it depends how many people have house what is the kind of environment of the village mapping each of this and identifying strategy players and coordinating these actions could be crucial for success.

So how this the power does it have power connections does it have water connections that is it okay the where does the water come from is it safe drinking water so you have to basically map for each of them and you have to coordinate this one most of these are government control so you have government officers coordinating their actions and all that so these services could be redesigned to be smart using cloud ICT and data analytics in other words who is leaving the village with a right entities for their land and their land ownership and can all this be collected data I mean there were efforts earlier to collect it at how can it be put on a cloud.

And do the data analytics to find out where the poor people who are the rich people and what do they do and so on so is it basically to make smart and give them the kind of orientation and can you crowd be used for education in other words can you have your network TV kind of network which will educate these people so there are several service chains that are possible.

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Resources

- Land and water are the natural resources
- Education, Finance, Seed, Fertilizers, etc are necessary resources
- The Government support from various programs provides either cash or subsidies
- Entrepreneurial environment would require Micro Financing organizations, Supporting industries and Orchestrators to connect the SMEs to the Global Value Chains

And of course the resources are of course the land water or natural resources education finance seed fertilizers etc necessary resources they need to be produced by the government, government support from various programs provide attachment subsidies so the earlier programs that we have seen in the government support for various programs it provides either

cash or substance he does not provide you the service if we have to service it will it will provide the subsidy but it does not provide you.

With this entrepreneurial environment would require micro financing organizations supporting industries or orchestrators to connect SMEs to the global value chains so if you have this entrepreneurial and what might you want to create then it requires micro financing and artist returns to connect to the global value chains.

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The slide features a blue background with a yellow title 'Delivery Services'. On the left, there is a vertical logo for 'Ecosystem Aware Global Supply Chain Management' with 'HPTCL' at the bottom. The main content is a bulleted list of delivery services.

Delivery Services

- Telecom, IT, Mobile, E-Kiosk and Spoken Web are the delivery services
- Post office serves both as a logistics service provider and Bank
- Food Courts supplying nutritious food is essential for countering malnutrition.
- Warehousing and Marketing services as relevant are needed both for Agriculture or SME oriented environs.
- Connectivity to the external world is important

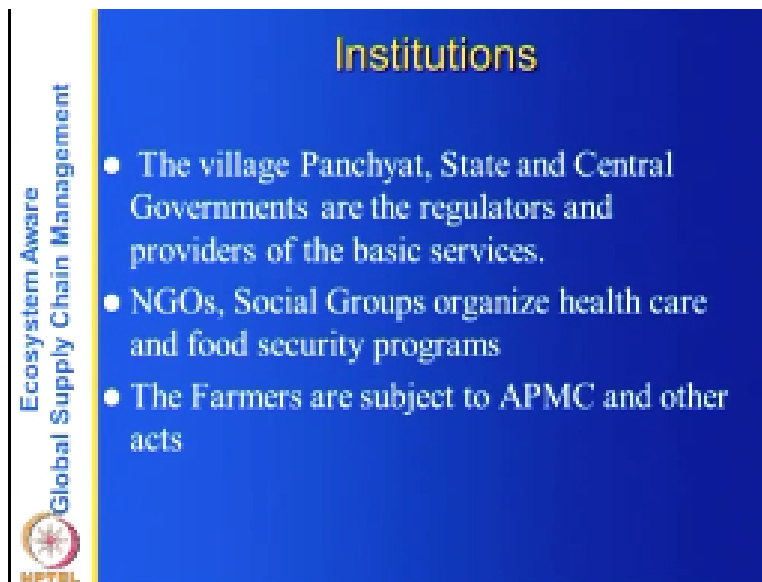
So the resources basically what we have here and what is usually conceived has to be the resources in a particular village are different for each this one and what about the delivery services telecom IT mobile, E kiosk and spoken web delivery services and first off itself both in the logistics service provider an idea Bank the post office is the register Bank in India so it basically has you could have a post office account and it also delivers the parcels as well as the letters.

So now the post office can also act as a tip since it has an internet connection and all that it can also act as a service provider for reservations and all that railway reservations train reservations and payment of cash transfers and so on so basically it is the post office can be certainly be upgraded to be a smart post office and which to provide the logistics service for example if you want parcels of right which comes on a bus which is a passenger bus which is coming from some headquarters.

They can be delivered to the post office and post office in turn can deliver it to the village villager and then collect the money from him and pass it on back so it access basically somebody who is as a middle man in this as an intermediary as a digital intermediary in between the various businesses food courts applying nutrition food is essential for countering malnutrition now here one thing is there you provide the subsidies and so on but if we cook food or prepared food in safe packaging like that supplying that is a searching.

And we are also when marketing services as relevant or needed both for agriculture and SME you would not oriented environment so it is important to do to have both the warehousing on this one okay these can be shared services in other words you need not how to have warehouse for each village but depending a group of villages can have a warehouse and similarly a group of villages can have a Wellness Center the group of villager can have marketing services but as well as they are reachable either by phone or by personally then they are okay so that is about the delivery services that we have and connectivity to the external world of course is important this that is through either trains buses and so on so.

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Institutions

- The village Panchayat, State and Central Governments are the regulators and providers of the basic services.
- NGOs, Social Groups organize health care and food security programs
- The Farmers are subject to APMC and other acts

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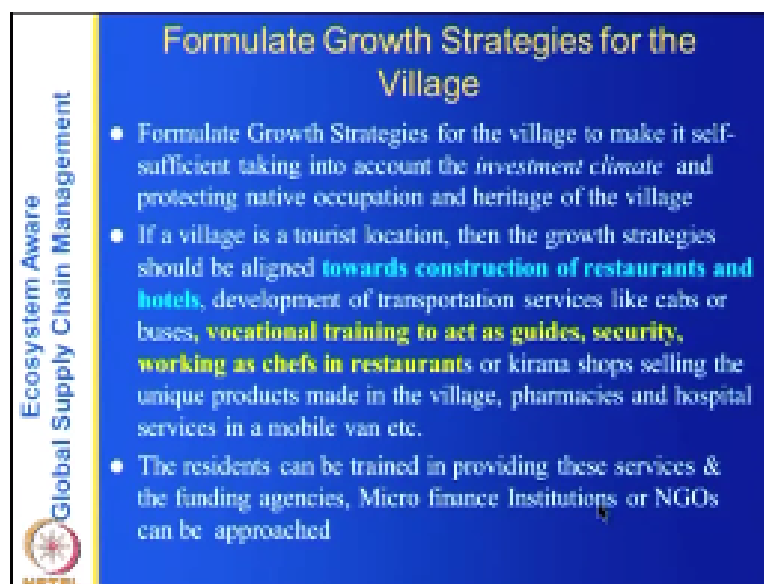
Well of course the institutions a village one charge state and central governments are the regulators and providers of basic services so that our who is going to see that the governance model that we are going to suggest this way to be much different from the existing governance model so that is one of the fundamental changes that needs to happen and until those social

groups organize health care and food security programs in the villages I mean there are lots of lots of these programs that and the farmers are subject to a PMC.

And other acts there is a lots of other acts that are there in the villages for example the farmers cannot directly sell to the to the retailer her sir and so on they had people there to sell to through the money and so on and similarly if they if you are a small and medium scale enterprise then you are subject to there was particular loss you have to be registered company and if you want to export then you should follow the export regulations you should be it is full deck sport then you should follow the I gene and other issues.

And if it is doll export then you know if you are using paint then the paint has to be followed so there are several rules and regulations that for each of these industries and people have to follow those.

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The slide is titled "Formulate Growth Strategies for the Village". On the left side, there is a vertical banner with the text "Ecosystem Aware Global Supply Chain Management" and the NPTEL logo at the bottom. The main content area is blue with white text. It contains three bullet points:

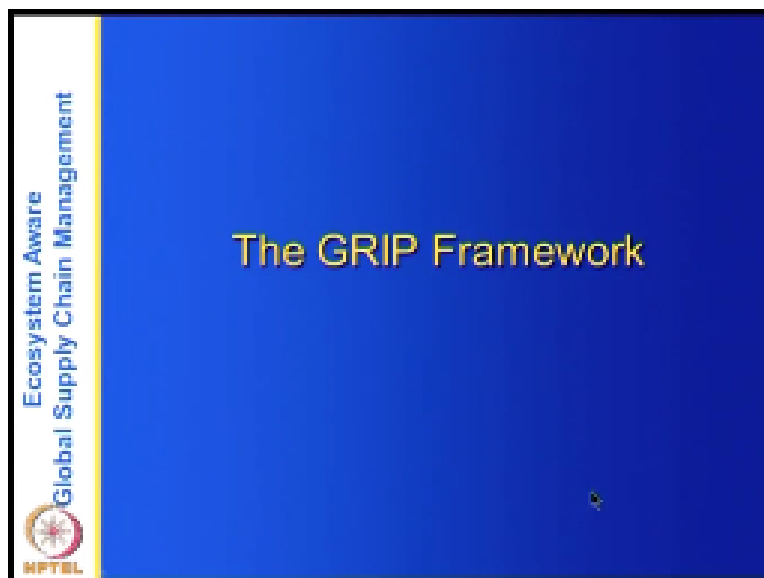
- Formulate Growth Strategies for the village to make it self-sufficient taking into account the investment climate and protecting native occupation and heritage of the village
- If a village is a tourist location, then the growth strategies should be aligned towards construction of restaurants and hotels, development of transportation services like cabs or buses, vocational training to act as guides, security, working as chefs in restaurants or kirana shops selling the unique products made in the village, pharmacies and hospital services in a mobile van etc.
- The residents can be trained in providing these services & the funding agencies, Micro finance Institutions or NGOs can be approached

So formulate growth strategies from the village formulate grow status for a less to make it self-sufficient taking into account the investment climate and protecting native occupation and heritage of the village so this is and if a village is a tourist location then suppose I am you are talking of a tourist location where it is nearby the Tirupathi or nearby Taj Mahal or nearby very famous tourist locations the growth strategies should be towards construction of restaurants and hotels development of transportation services like cabs or buses and vocational training to act as guides security and working at chefs and restaurants or Kenosha katana shop selling unique products made in the village.

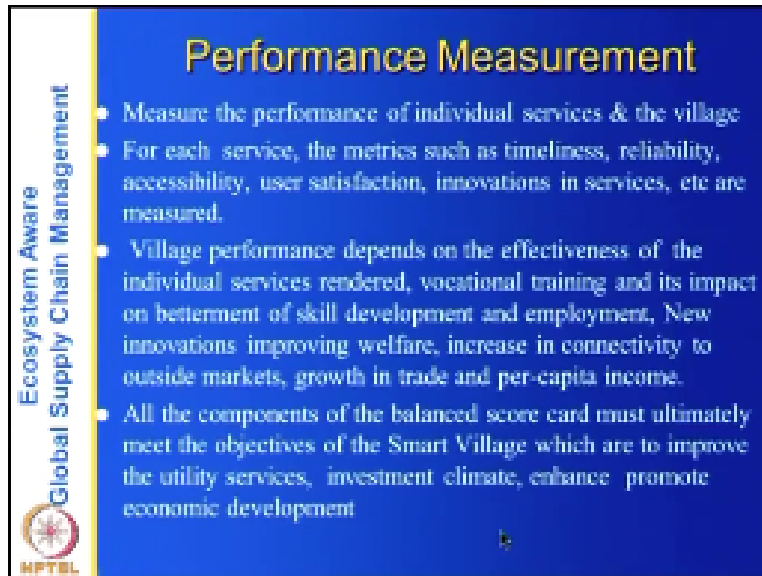
In other word like dolls if it is this one pharmacies and hospital services in a mobile van etc so basically you can think of services future useful nearby and that can be your occupation and the residents can be trained in providing these services and the funding agencies microfinance institutions are a new words can be approaching so basically once there is the growth plan for from the village and the village you know you have to finance these activities and also you require industry support.

And you require NGOs depending on whatever activity you want to do if you want to have food courts then you can certainly approach institutions if you want to start an entrepreneurial center startup then you can have approached the microfinance institutions and so on so that is they formulate the growth strategies for the village.

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Performance Measurement

- Measure the performance of individual services & the village
- For each service, the metrics such as timeliness, reliability, accessibility, user satisfaction, innovations in services, etc are measured.
- Village performance depends on the effectiveness of the individual services rendered, vocational training and its impact on betterment of skill development and employment, New innovations improving welfare, increase in connectivity to outside markets, growth in trade and per-capita income.
- All the components of the balanced score card must ultimately meet the objectives of the Smart Village which are to improve the utility services, investment climate, enhance promote economic development

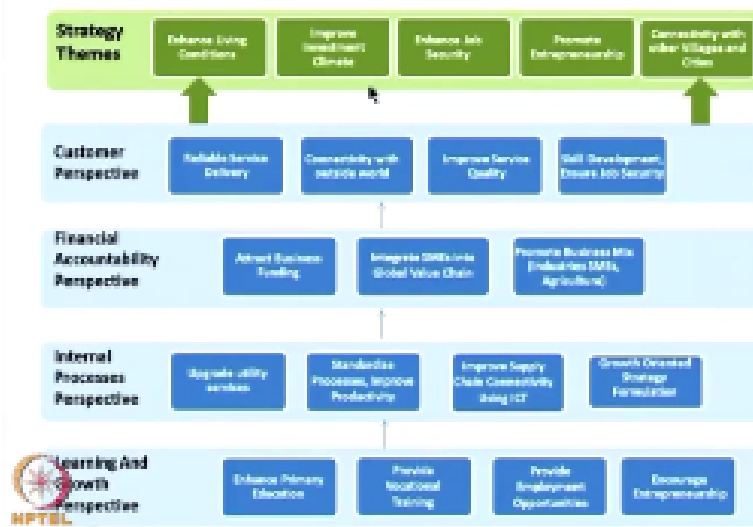
Because we have a great framework in other words now having formulated a village this one then you need to apply the performance the risks that are possible and what are the kinds of innovations that this one and also what is the governance models what is how do you measure the performance of a village so measure the performance of individual services on the village I mean individual services you have you can measure if it is water power and so on by the continuity by the quality of delivery year and so on so.

And but then you are talking abilities a month of services how do you do it for each service the metrics such as timeline Ness reliability accessibility user satisfaction innovation and services as a cross measured so you can measure these things for each service that is easy the next performance defense depends on the effectiveness of the individual services rendered vocational training its impact on betterment of skill development and employment new innovations improving welfare increase in connectivity to outside markets growth in trade.

And third cup guy income all the company of balanced scorecard must ultimately meet the objectives on a smart village which are to improve the utilities our business investment climate enhanced remote chemical it can make tournament so there is what is called a balanced scorecard which is used in management literature for they perform its measurement who have mapped they will each this one village performance measurement using a balanced scorecard I will present that now.

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Balanced Score Card and Smart Village Performance



So that a scorecard has four different activities the first one is learning and the first one is customer perspective that is reliable service connectivity with outside world improve service quality skill development etc and the second one is the financial accountability forum this one that is attract business funding integrate SMEs into global value chain promote business makes the third one is internal processes upgrade utility services standardized processes improve supply chain connectivity growth oriented strategy formulation and so on.

And learning and growth they say the future and has primary education a wider vocational training provide employment opportunities encourage entrepreneurship so let us go a balanced scorecard has customer finance internal processes and learning and growth that is which is defined of a future learning for the future now all these things should lead to the games for this village so we have given for each of them the whatever it means for the village and enhance living conditions that is one of the strategy teams improve investment climate that is another start anything and has job security and promote entrepreneurship and connectivity with other villages and cities.

So if these are our primary objective strategy teams whatever hobbies our performance in all this contributed to that that is ultimately the performance this one that that will come out so the balanced scorecard actually is a good device good methodology okay that can be used particularly when you are talking of bundle of services like we are dealing with here.

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And of course there are several innovations for example audio visual interfaces for all applications that is because as I mentioned you know most people cannot read and write so they will require either they can speak they are intelligent and they can respond so unique what are the visual interfaces now on language support this is one thing writing languages in India and the local people the villagers they only the local they are educated only in the local Muslim so it cannot be English or any other national language like Hindi.

The equipment that can stand harsh environments you cannot have temperature cells to environmental equipment in the villages because that is going to be very expensive because even the power that is needed is to them to the houses and all that is at a premium so you cannot have this equipment that is low cost medical devices that is the kind of thing that the GE has developed with the low cost housing how do we develop low cost housing processed food and food courts with hygienic and nutritious food investment climate based on innovations.

So investment climate based innovations so you want to innovate only those things that are applicable here I do not want to have 3d printing innovation to the village what do I do with it so this is the kind of thing that is needed so if you look at the innovations I think it is a big challenge to find out these innovations and develop that village.

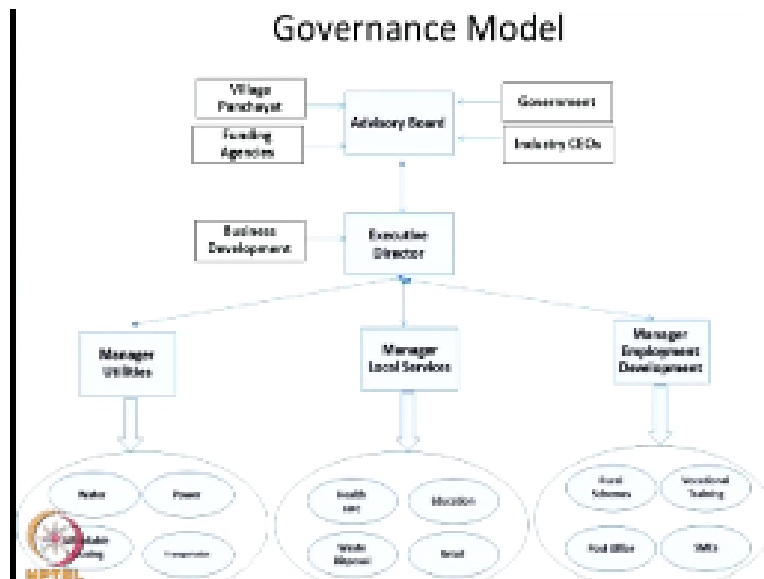
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Risks

- Failures in the supply chain due to lack of communication & management expertise
- Weak Infrastructure and resultant Operational inefficiencies
- Availability of resources from Govt. and other FIIs due to lack of confidence
- Inertia in adapting to anything new due to lack of awareness and education among the villagers
- Exploitation by political parties, corruption and mismanagement of funds

So they brought embrace of course failures in the supply chain through the lack of communication and a management expertise that is very common we infrastructure resultant operational infant efficiencies availability of resources from government and other FII co2 lack of confidence and inertia adopting anything new due to lack of awareness and education among the villages so there is a lot of inertia of this exploitation by political parties corruption and mismanagement of funds so once difference of the combo and so on so there is a lot of mismanagement so we looked at a creep framework here.

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And what is the governance model the governance model is the following so you have the manager utilities so we looked at the village so for example you have water power affordable housing and transportation and so on for example if you look at what a power transportation then these are basically the utilities which are which are controlled by the central agencies of the state agencies and affordable housing and they basically you need to have somebody who can handle those that is healthcare education retail and waste disposal.

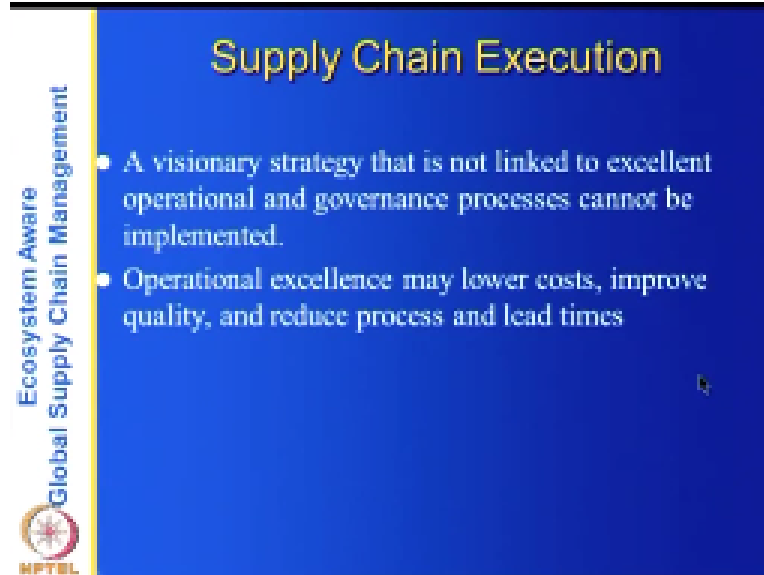
So these are local services you should have a manager local services and we have manager Employment Development like rural schemes vocational training SMEs and a post office or a local ice pack which acts both as I ran for transportation and so on so fishery is that the kind of services that that we have said in the village I mean if you want you can add more services if you want you can add another manager so but when I say manager it is not like an official job here but it is somebody who is responsible for the performance of these things.

So how do you how do you get to the performance of this so you have an executive director well let us call him thank you about the management this manager of these services and there is a business development why do you need business development here that is because if you want to develop SMEs and connect them to microfinance organizations connect them to venture capital fund X and if you have the SMEs which are connected to the global value chains maybe make them a part of the global value chains.

Then how do you do that so to do those things you need to you need to have a Business Development Division so these kind of things can be shared across villages you need not have to be the same is development but what I am saying here is these are not employment opportunities but you should have the village should consider this particular thing and it should not be like ad hoc somebody comes and then this one it should be a strategic plan that goes on but then what happens to the current recharge functionality board and all that so you have an advisory board you have the advisory board with government representatives with industry see it was for them this and with funding agencies and the village panchayat.

So this is like you know this is really Mahatma's mission here this is like the corporate board and he is here at the CEO he has the business development manager and you have the HR you have the manager of these local services and so on but city but the point is it could be you can say it is a corporate model and all that but corporate I am not out there corporatization of villages but what I am talking here is getting the models that work making models that work here in the village atmosphere village this one and then making things work.

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Supply Chain Execution


- A visionary strategy that is not linked to excellent operational and governance processes cannot be implemented.
- Operational excellence may lower costs, improve quality, and reduce process and lead times

Ecosystem Aware
Global Supply Chain Management
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So there is one thing I mean we have seen that earlier that one of the very important things is the execution and in the they said then we have talked about the supply chain execution but this is the execution of all the ideas execution of the vision and execution of the balanced scorecard or what you talked about the central strategy that is not linked to excellent operational and governance processes cannot be implemented so it is important that you should have you know like in a balance recorder you have a strategy.

You want to develop an independent this one which is we can have a growth strategy for the village and your operational excellence should link so that and governing processes also should link to do those so your world governments say something and your strategy is something different which happens very frequently that could be dangerous operational excellence mean over cost improve quality and reduce processes and lead types but operational access is important it will provide you the services at the right time at the right place at the right cost and if they grow the quality and all that that it is that is where the execution becomes important.

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Ecosystem Aware
Global Supply Chain Management

Where is future growth coming from?

- “While the fear for big change and sticking to familiar markets may tempt companies to focus on “bargain shopping” in the Urban markets, building a position in the growing Village Markets will provide important sources of future growth for many industries”

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So there is the future growth coming from for the country while the fear of big change now I mean when you give you this kind of a vision in terms of having these villagers it is a big change why is it a big change it is a big change because you are talking of 600,000 villages you are talking of each of them you know trying to have this kind of big change in terms of making them self sufficient and so on and but what happens is and sticking to familiar markets might tempt companies to focus on parking shopping in the urban markets.

What are companies doing now they will concentrate on urban markets why are the concentrating on urban markets because there are people who are middle class upper middle class and they can sell whatever they are producing today and they have the infrastructure it's easy to do whatever you are doing to sell this but if you want to do this and then sell in sell in this one you have to develop products which are low cost you have to deliver the products where the infrastructure is weak and so on so.

Basically they you know the companies need to go from urban to rural markets so and building a position in the growing village markets will provide important sources future growth to this one I mean although it is a tough job but if you start developing the villages as smart villager markets then companies will go there because they will provide important versus future growth for many industries there are several industries where the villages provide this one for example in the Eller in the energy area this all our energy this is one of the very important things.

That you can you can see that is happening in the this one similarly the food industry's food processing industries so you can have at various districts in a in a fact land area you can have areas for processing industries make them be several other industries future which are possible

which does not require this one lot of IT companies can go there and start this so that several of these companies not can growth and growth can come and so on.

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So I mean having done this what we had to do is to look at a particular example in other words so far what we have been doing is to do a sort of abstract setting of a village which is possible which is good we trying to be as close to reality as possible but still our ends up being now is it possible to do it at all in the real world that is the question we are going to look at in the poor chap le village in our next lecture thank you.

Programme Assistance

Guruprakash P
Dipali K Salokhe

Technical Supervision

B K A N Singh
Gururaj Kadloor

**Indian Institute of Science
Bangalore**