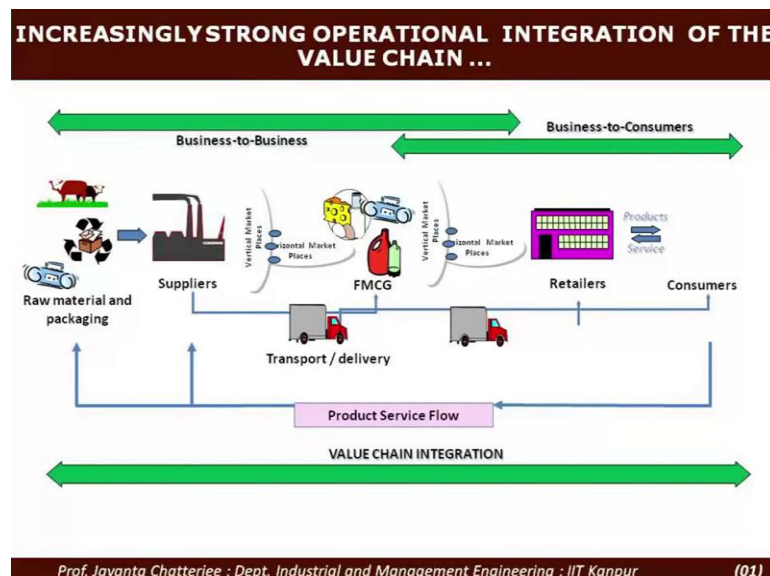


Managing Services
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Lecture – 04
Product Service Systems

Hello, I am Jayanta Chatterjee, Professor at IIT, Kanpur and as you know, we are interacting over these 8 weeks on Managing Services and we are looking at various contemporary issues relating to service management, service business and its importance in today's economy. Today, I will focus on one of the quite interesting contemporary business model. I have referred to this new business model in my introduction to this course as well as over the last few sessions, which is the concept of Product Service Systems, in short often known as PSS.

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This concept is simple and this concept has been talked about from the disciplines related to service science. But, lately this concept also is being often referred to as a preferred system of business modeling by environment conscious, green economy exponents. And we will see, why it is important for our planet and for our future generations to create a better, cleaner, greener world.

Now, on your screen in front of you, you now see the traditional model of business. So, we have on the left hand side inputs, which are coming as raw material, sometimes these raw materials are processed as components, sometimes as sub systems. So, that means,

there is some value addition before the raw material comes to the middle section, which is the plant, the manufacturing operation.

Traditionally, raw materials, whether package done packaged, like iron ore as unpackaged or coal as unpackaged or pre-prepared or preprocessed packaged inputs like say a ((Refer Time: 03:17)) pallets, etcetera. Both types flow to the operation plant and then, they are processed through different manufacturing stages and we create products. These products could be what we call FMCG, Fast Moving Consumer Goods like toothpaste or soap, they could be industrial products or they could be products required for businesses or for professional use like a computer and so on.

And then, they are, they came to the consumer either directly or through different kinds of channels of distribution, this is the traditional flow of goods and products through the economic system. So, on the left hand side the transactions we often call them business to business, because it is still being serving as inputs to a manufacturing process. But, post manufacturing process, post industrial systems as outputs, they go to the consumer through the market and we call it as the business to consumer stream.

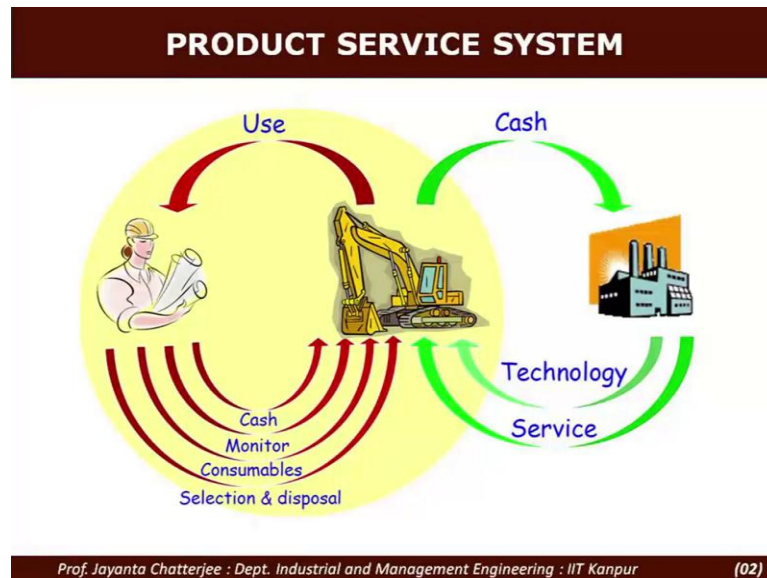
Over last several decades, the focus has been on faster through put, focus has been on accelerating the business, focus has been on producing more with the same system, same set of resources or the same fixed assets setup, the same sets of machines and other infrastructure. So, the focus was on titer value integration, closer cooperation among the various departments, but it still, it increased worlds industrial output significantly over the last few decades.

The business velocity as it is called accelerate and we had a plethora of goods and gadgets of various types flooding the market. But, we now have a concern that more we take from nature, raw materials, process them, produce all kinds of goods, all kinds of products or we creating for a temporary enjoyment, a permanent problem or we in the process of creating more and more goods, creating more and more rubbish and waste and often an unsolvable problem like various kinds of plastic waste, non-biodegradable waste.

So, this value chain that is in front of you, you have to notice one particular future of this value chain, is that at every stage there is a transfer of ownership. The supplier of coal or supplier of iron ore would be transferring the ownership of those to the plant producing steel and across the value chain, when the steel producer produces flat role of stainless

steel, they will be then used by people manufacturing, kitchen equipment or other stuff. But, at every stage there will be a change of ownership, the new paradigm however looks at this whole issue of value chain a little differently.

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Initially, this concept came about from industries like earth moving machinery in a excavation and various other kinds of construction machinery that are used, when you are creating a large planned or creating a large residential complex. Now, in these cases, the machines in the old economy were purchased. So, there was a transfer of ownership from the machine manufacturer to the contractor or to the factory system constructing the new plant.

At the end of the construction period, when all the buildings were done, all the plant structures were done, these machines had no further use. And at various plants across the country, at various residential, large residential complexes, he will find that at one corner there is this huge heap of old machines rusting away, not coming to any productive use. And over time, they become a junk heap and at sold off, often you have to pay for taking them away removing from your site.

Under some competitive pressures, the manufacturers of earth moving machineries came up with a simple, but innovative and in some way, a solution of far reaching impact. They thought that the customer is not interested exactly in that machine, the earth moving machine, the customer is interested in the solution provided by that machine, which is moving earth away to create the foundation for the plant or for the building.

So, they came up with a new business proposition, that the machine purchase was no longer needed, rather the excavator manufacturer, the earth moving machinery manufacturer offered a solution in terms of the removal of earth, excavation of earth in per ton, per hour basis or total tonnage of earth or a foundation structure to be created over a certain span of time.

So, material to be removed, ground to be cleared, foundation to be created over a targeted time span; that was the solution the customer was looking for and that was the solution that was offered. So, the sale of the excavation machine, excavator machine as a product was replaced by excavation service. So, this was what then got termed as servitization or servisization.

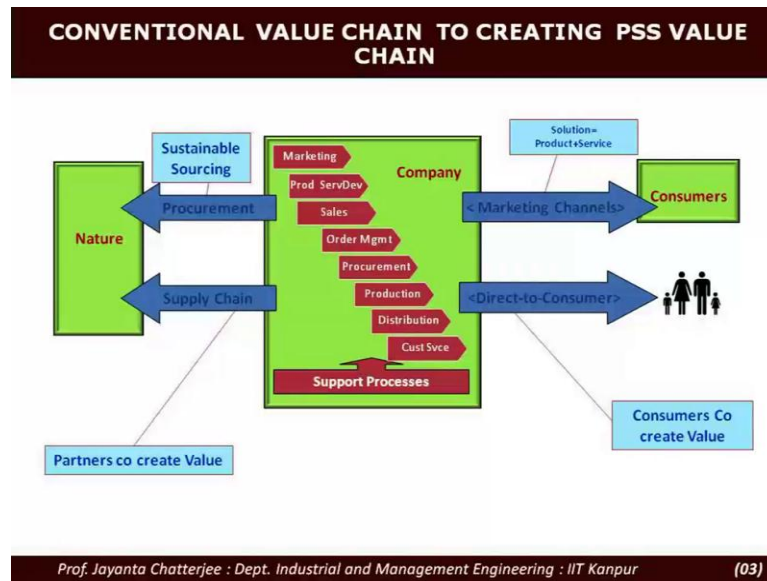
Now, what was the advantage? The advantage was that at the end of the job, the machine was no longer rusting away at one corner of the plant, at the end of the project, when the foundation was created, earth was removed, the machine was taken away by the machine supplier was reconditioned, was remanufactured and was reused that another site. If the machine was purchased, then selling a second hand machine or buying a way second hand excavation machine may post different kinds of legal and business problems.

But, in this case, the customer was getting the solution, that so many tones of earth were to be removed in so many weeks. The customer no longer had to bother that whether it was done with in brand new machine or with a second hand machine. So, the machine could be reused again and again with proper maintenance and reconditioning.

There was no more junk heap rusting away and solution was there to the satisfaction of the customer, who was looking for the foundation base, looking for earth removal and not necessarily the earth removing machine. This in short is what we call product service model; there is a product, there is a machine, but what the customer is procuring is the final solution as service, paying on per ton, per hour, per units of usage.

So, the exchange of value is taking place on the basis of solution and service and not on the basis of transfer of ownership. This model has now permitted many segments of our economy and it is being said that this model of based on reuse, based on recycling, based on remanufacturing or reassignment is a fair better model than the earlier model of take from nature, makes stuff and ultimately enhance the waste heap, the garbage heap.

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If you see therefore in this new model, we have sustainable sourcing from nature, there will be those earlier supply chain, but now, they will have per with green supply chain. There will be the traditional business functions in the middle, but by involving customer in co-creating the solution, instead of focusing on transfer of ownership based value exchange, we now the value exchange based on solution.

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As a result, we find that, this model is now available in number of different ways in very traditional light industries as well as having heavy industries or professional industries. So, you need buy a washing machine, we can have a good organize Laundromat services, but people can get their close done washed on per unit of usage basis. In various

countries today instead of encouraging private ownership of motor vehicles, which has number of impacts, adverse impacts on the environment, there is an increasing emphasize on pooled usage, shared usage of cars.

If you have a car, whenever needed, you make an call, you will perhaps do not no longer feel the need of possessing a car. Unless, you really are in the profession of car driving or it is your hobby, but was most practical cases, then it could be based on this per unit of usage basis of value exchange. Already, in aircraft engines, this is the only business model; that is now available, because aircraft engines are provided on the basis of mileage to be flown.

And therefore, there is any problem with the engine, the engine repair, replacement, all those things are taken care of by the engine supplier, the flight owner, the airline service owner, they do not have to bother about owning the engines and maintaining the engines and so on. Similarly, power by hour is also very valid business model today, it is not only our regular everyday usage of electricity where we are using kilowatt hour based consumption.

But, there are various industrial usage of power where it is sold by power by hour and lastly, very well known to most of you is that, photo copying service is norm of known of procurement instead of copies. So, photo copying machines are supplied at the customers premises, the customer base on the machines of number of copies made; that means number of service units consumed. And the photo copy machine remains the property of the supplier and after a certain time of life, they take it, they manufacture it, we use it and the value is provided.

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REFLECT ON

- **Competitive strategy**
- *Customer Intimacy:...creating the best total solution for the customer...*
- *Delivering the best total cost to the customers*
- *The Service Logic for competing*

So, at the end of today's module, I leave with you some thoughts, we can consider this as an assignment for participation in the forum. So, I would look forward to your discussions on these new forms of competitive strategy to what extent it helps us to get close up to the customer. How it improves the total value provided to the customer per unit of payment and on the whole, I would like your thoughts to hear from you about this product service system as a new logic for competitiveness and for conducting visits.

Thank you.