

Business Analysis for Engineers
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Lecture -27
Value Chain Analysis

In last class, I just ended up saying that, in any organisation or a firm, it is possible to disaggregate various activities. And, I am talking about activities, that have the potential to create value. And value, our understanding is that, something that makes a customer to pay more. Something, that can add uniqueness, is what we consider to be valuable.


So, from that perspective, we are able to identify, all those sets of activities in a firm. And, put them under two broad categories, being primary activities, and support activities. And, that each of these activities, has a cost to it. And, can be done, in a way that is different, from the competition and, these are the two predominant sources, of gaining competitive advantage.

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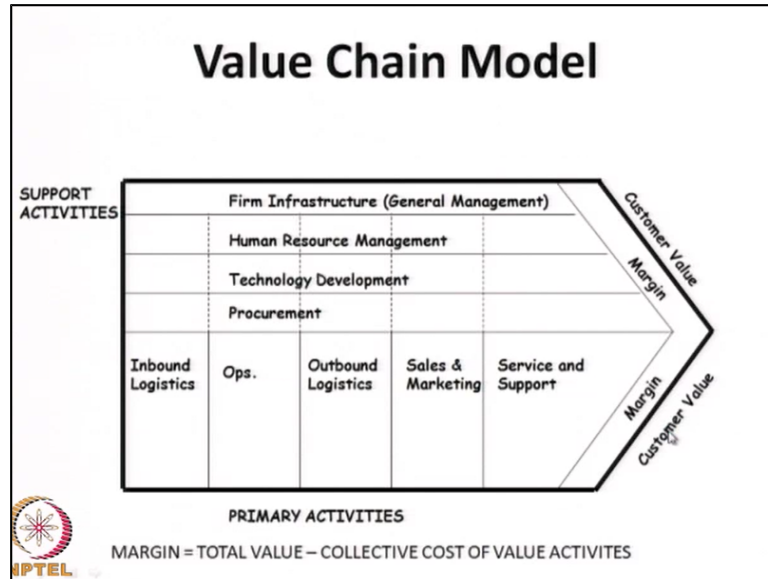
Value Chain Elements

Primary activities	Support Activities
<ul style="list-style-type: none">• Inbound logistics• Operations• Outbound logistics• Sales and marketing• Service and support	<ul style="list-style-type: none">• Human resources (general and admin.)• Tech. development• Procurement• Firm infrastructure

Each value activity is the building block of the firm's competitive advantage
How each of them is performed determines firms CompAdv relative to competition



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So, those activities, which were the primary activities and support activities, will provide a structure, a framework, that is very popularly called as the Value Chain Model. And, we will look at every firm to have, these sets of activities. And, the primary activities being, the Inbound Logistics, Operations, Outbound Logistics, Sales and Marketing, Service and Support. While, the support activities are, the Firm's Infrastructure, the Human Resource Management, the Technology Development, and the Procurement Practices.


And, as I said before, each of these activities, will have a cost to it. And, the customer value, or the end-user value, is a measure of that incremental margin, that the firm makes. Remember, I said, it was the willingness of the end-user to pay more, is the quantifiable indicator of the value, that is been delivered. So, from that perspective, if you are able to see the total value as the total cost, or the total price that somebody is willing to pay, and you are able to remove the collective cost, of these activities that generate the value, then that is the margin.

That is, for the profitability point of view. And, that is the incremental customer value, or the end-user value, that one gets by using this product, or availing a particular service. So, that is why, the willingness to pay that incremental, is can rightly be a measure of, the value proposition that gets delivered. So, that is an understanding, that has to be embedded, before we proceed further. And, this is the broad framework, that is very popularly called the, Value Chain Model. And, any firm or organisation, you can do this. And, we will see examples, of that also.

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Primary Activities

- Inbound logistics – receiving, storing, inventory control
- Operations – Machining, assembly, maintenance, testing, all i/p to o/p related activities
- Outbound logistics – transportation, warehousing, scheduling, distribution, etc
- Marketing & Sales – Buyer's issues – promotion, advertisement, pricing, retail management, etc
- Service – Maintenance and enhancement of product value, installation, training, spare-parts, upgrading, etc



The primary activities, as I said before, starts with inbound logistics. Those, that form the inputs that get into the making of the output. Those activities, that deal with inputs. The activities, that receive the raw material, that store the raw material, that make sure that the raw material arrives, just at the time that we need it. Or, the Inventory Control Mechanisms. Now, all these activities, that relate to the acquisition, and use of input, form the inbound logistics.

The next would be the operations, which is the process, that converts the input into the finish good, the output. So, that is typically your shop floor, if you are a manufacturing firm. Or, even for different types of firms, you will have different sets of operations, that converts one form of input, to a usable end form, that gets processed later, or just gets transferred to a different entity, before it reaches an end-user. But, all firms and organisations, will have a defined process.

And, that is, those set of activities, that come under the heading, operations. Broadly, all that converts input to output. And, all activities that are related, within this period, is the operation. Then, once it is available in the finish good format, it has to be sent outside. So, which includes activities, that relate to transportation, gets stored in a warehouse. And, following a particular conception pattern, that defines the scheduling, gets distributed to a retailer, before it reaches an end-user.

So, till that point, is the outbound logistics. And, after that, some activities, that have to generate the interest level, amongst the potential end-user, are the ones that get categorised as, marketing and sales. And, these are more end-user related issues, which includes the promotional activities, the advertising campaigns, the various pricing tools, shelf space management, retail management. So, these are issues, which are coming under the marketing and sales.

It is more distribution related, retail related. And, after it reaches the end-user, some firms and organisations also need to have certain set of activities, especially if there is intensive after sales service that is required. Which means, you need to have a good maintenance team. Or, if there are product updates, we need to update, those that have already been used, by an end-user.

Or, after it is being sold to an end-user, if it needs installation by the firm. Then, training to be provided by the end-user. Or, spare parts to be given, later. So, these are issues, that are coming under the category of service. Now, assume that, we did not know, about this Value Chain Model. Then, these are things, that we would easily dismiss them, saying that, these are activities that are very much, in all firms, in all organisations.

But, the beauty of this model is to characterise and identify, identical activities, and classify them under different headings. These five headings, as primary activities. The reason, that we are doing is, because that we can have a clarity, in identifying key activities, that can generate value. And, some activities will be important for certain set of industries. Some activities will not be as important, as it is for a different set of industries. We will talk about that, later.

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Support Activities

- Infrastructure – General management, legal, accounts, support facilities, etc. – University book store
- Human Resource – Recruitment, training, retention, compensation, etc. – HCL “Employees First, Customers Second”
- Technology Development – R&D, Automation, Design, etc. Not necessarily to be related to end product – Intel
- Procurement – Purchasing, servicing, supplies, etc. Not to be confused as only for raw material used in product -



Now, just as we had something that was primary to, the conversion of input to output, to sales and after sales. Within the organisation, there are a set of activities, that support these primary activities. As the name suggests, these are the support activities, which has got to do with the firm's own infrastructure, the corporate affairs, the general management, the legal team, the accounts, the support facilities like a canteen, and all this. Now, these are the support activities.

Examples could be, google provides, play area, recreation area. Or, a university bookstore for student, is a big support activity. So, these are the firm's infrastructure, which is also a good source of generating value. Or, the human resource, which has got to deal with the way in which, people get recruited, they are trained, various retention strategies, the pay package. Now, these are all unique set of activities, which has some intrinsic, inherent, value creating propensity.

And, if you are able to create value out of that, and that is an additional value. A classic example would be, the HCL's employees first, customer second. That is a very good human resource. That was in fact, it took the entire corporate world by storm. Because, it was something, that was very radical. But, the organisation felt that, it is generating some value out of it. Likewise, Technology Development, which is internal. Let us say, there is an in-house R&D. Or, we are able to change some of the process, using some technology development, design new products.

And, some need not necessarily, relate to the end product itself. Technology Development, R&D


does not come under, the input to output primary activities chain. It is something, that is external to it. But, definitely a critical input, in the making of the product. You have technology intense firms like, Intel or an IBM. Or, the procurement, which is the support activity, that deals with various activities, that are required to procure raw materials, or deploy service personal, or make supplies to the in-firms infrastructure.

So, this need not be, necessarily confused. This need not be confused, as though it is for, only those that are related to the raw material. The Japanese manufacturing companies, they revolutionised the procurement part of the support activities. So, just as we have a set of activities that are primary, we also have a set of activities that are, support activities to the firm. But, what we need to understand is that, all these activities have some significant value, that is embedded inside them.

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**Significance of value activities
differ across industries**

- Distribution – Inbound & Outbound
- Retail & Banking – Operations
- FMCG – Sales & Mktg
- Electronics – After sales service
- But all value activities are relevant but differ in their weight
- Value concentration - Value expectation



And, this could be significant, for a certain set of industries. And, insignificant, because the industry characteristic is that way. For example, the distribution industry. The activities, where we feel that, more value can be created, would naturally be the, inbound and outbound logistics. Because, we are talking about distribution. So, you need a good warehouse. You need, good raw material control, inventory control mechanisms.

You need good transportation. You need good shelf space management. So, in a distribution

business, you will have to make sure that, you are able to create value as much as possible, in the inbound and outbound activities. In a retail or a banking industry, it is the operations, that is key. How the teller is able to transact, a banking service. Operations, hold the key. In fast-moving consumables, though distribution is also important, but you find that, the sales and marketing is so intense.

So, sales and marketing as a value creating proposition, is very intense, if you are talking about FMCG. Likewise, if we are talking about, domestic electronics, or the appliances that we use at home, after sales services is. Of course, I am not saying that, the other activities are not important. But, we find that, there is a possibility to deliver that incremental value, if we are able to concentrate our resources on, certain set of value activities, which are key to that particular industry.

So, if for domestic appliances, an after sales service is definitely, a critical part. And hence, if you are able to provide some extra value on that, then we are able to deliver, that uniqueness to the end-user. So, as I said before, I am not saying that, other values are not important. They are all relevant and important. But, the weightage, that we give to each of the values, will differ across industries. So, we need to concentrate, on those set of activities, where we think, that the end-user also expects, that the value will be delivered from those set of activities.

There is no point in concentrating on, inbound and outbound logistics, when we are dealing with health care equipment, where for every time that we use the health care equipment, we need somebody to assess the usage. And, this is very typical in a surgical health care equipment, where we need somebody qualified from the firm, to assess the health care professionals, in the use of the equipment.


And, if you are able to deliver, some value in that after sales service, then that is perceived to be more unique. Then, the fact that, you have good inbound and outbound logistics in place. Because, that is very insignificant. Because, the healthcare industry is characterised, in this particular fashion. So, all values are important. But, the weightage of the relevance, and the importance, differs across industries.

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And, as I said before, since all of these activities are linked to each other, though each of them

Value Chain Linkages

- Value activities are not isolated
- Linked – both primary & support
- Linkage can also be external
- Cost advantage of one activity may affect other(s)



can be viewed in isolation, there is a tremendous reinforcement that is possible. That the value, that we derive from a particular activity, can be input. That can also generate some value to, a different set of activities. And, this could be across, the primary activities, or could move between, primary and support activities.

So, this linkage, if we are able to synergise, then we are delivering, more and more of such incremental value units. And, which aggregated together, is that huge margin that we think, an end user will perceive, to be having more value. So, there is a chance that, all of these value activities, can be linked to generate, a comprehensive value. And hence, need not be viewed in isolation.

Because, the cost advantage, that you get out of doing a particular activity in a particular way, if it gets transferred to another set of activities leading to further cost advantages, then there is a strong linkage across all these value activities. And, it need not necessarily be within the firm. It can also be, external to the firm. I will explain that, how.

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Other Value Chain Analysis

- Study interrelationship of SBUs – strategic sourcing
- Outsourcing value chain activities
- A firm may or may not do all the value activities
- Extent of outsourcing depends on the extent of integration
- Cost, Core-competence, Product risk



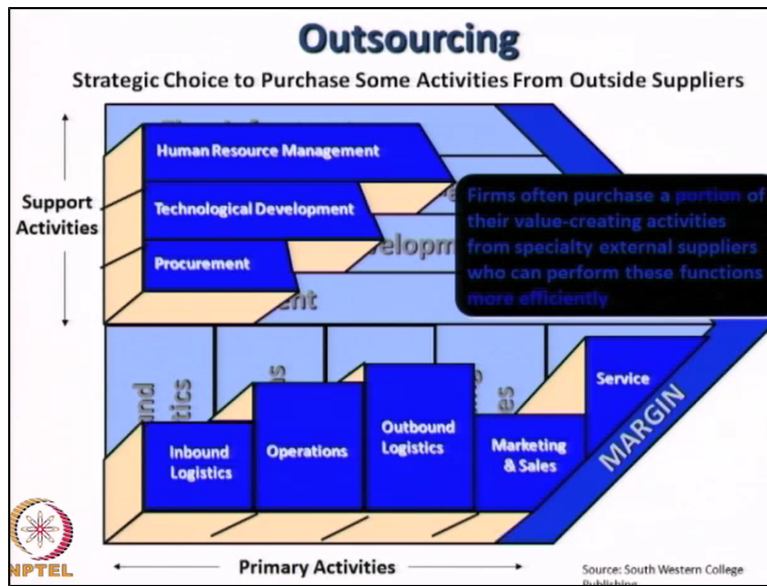
A Value Chain Analysis also used by, firms to understand, the inter-relationship of some strategic business units. And, this is true especially, when we are talking about, inbound logistics, or procurement. Suppose, we are a conglomerate. And, we purchase certain set of raw materials, that is used by various strategic business units. Then, you can understand, what I am trying to say.

We need to study, the inter-relationship of these strategic business unit, so that, we are able to generate more value. Because, from the procurement perspective, because if you are able to have a centralised procurement in place, then we are able to get more price benefits, which can be passed to various of these SBU's. Or, if we find that, there are some set of activities, which would be better if somebody else, does it than the firm itself, then we are talking about outsourcing.

And, this we can find if we are able to isolate this activities, and say that we are not really adding value by doing it ourselves. And, this is the way which, practitioners manage and practitioners do a Value Chain Analysis, to decide what is the core to the firm, to see whether we are doing it in a cost-effective way. And, at times, we are also mitigating some of the product associated with it. In fact, if somebody else does it than the firm itself, if it can change the quality of the product, it is better to get it outsourced.

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So, that is why, if you are able to a Value Chain Analysis, you will understand that, by



outsourcing we mean that, we just identify a set of activities, and this value activity. And, that portion, if somebody else is able to do on behalf of the firm. And, if they are able to do it efficiently, then we outsource that. And, then embedded within our firm. And, we find that, that generates more value, than the firm doing it, all by itself. So, that is also a possibility, which we identified only after we broke down all of these activities, into such fine elements, and put them into this Value Chain perspective.

Otherwise, we would have missed, seeing that. And, if at all we had seen that, it could have been a sheer coincidence or luck. But, the idea is, this structured way of putting these value activities, in this Value Chain model, is one very important tool, that many use to also decide, on their outsourcing strategies. Of course, there are other strategic imperatives to it. I am not saying that, it is only Value Chain that is used, as a tool to decide on outsourcing. But definitely, an important tool.

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Integration of Value Chains

- Customer's Value Chain
- Firm's Value Chain
- Channel's Value Chain
- Buyer's Value Chain

- More integration – Scope for better coordination for upstream and downstream activities – Example: Auto Industry



And, in the previous slide, I was saying that, there are external linkages, that is possible. Now, a Value Chain is not just something that is, applicable only for the firm. It can extend forward, to include the Customer's Value Chain. It can extend backward, to include the Vendor's Value Chain, a Dealer's Value Chain. So, if we are able to integrate, all these Value Chains, remember I told you before that, at the end of the day the end-user, pays for all the profit margins, of all the entities across the Value Chain delivery system, right from the vendor, up to the retailer.

And, if we are able to look at the bird's eye view, that captures the Value Chain of all the stakeholders, then we are able to appreciate this concept better. And, probably also end up giving more value to the end-user, instead of just viewing the firm's value in isolation now, just as we are not isolating each of the activities within the firm, and that we are trying to look for linkages of activities within the firm, this is just the bigger picture of it, where we are looking at, linkages of not just activities within the firm, but linkages of the Value Chain of entities, that are outside the firm.

Because, it is this integration of such value chains, that can be a tool for delivering more value. So, we can always look out, and let us say, study our vendor's Value Chain. And, probably tell the vendors, if you are able to do this differently, you still able to generate value. Or, look at the Distribution Channel's Value Chain, and tell them, if you are able to do this, we are able to increase your market share. At the end of the day, it benefits the firm also. So, a Value Chain can

also be looked from the perspective, of integrating it beyond the firm itself, and include entities, that are external to the firm.

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Create own Value Chain

- Distribute a summary of the value chain model.
- Create functional process lists.
- Transfer lists to color-coded labels.
- "Pin the process" on a large VC diagram.
- Identify appropriate processes as:
 - cost advantage
 - perceived differentiation

New service

New product

New distribution systems – Dell, Amazon –

Disruption by internet

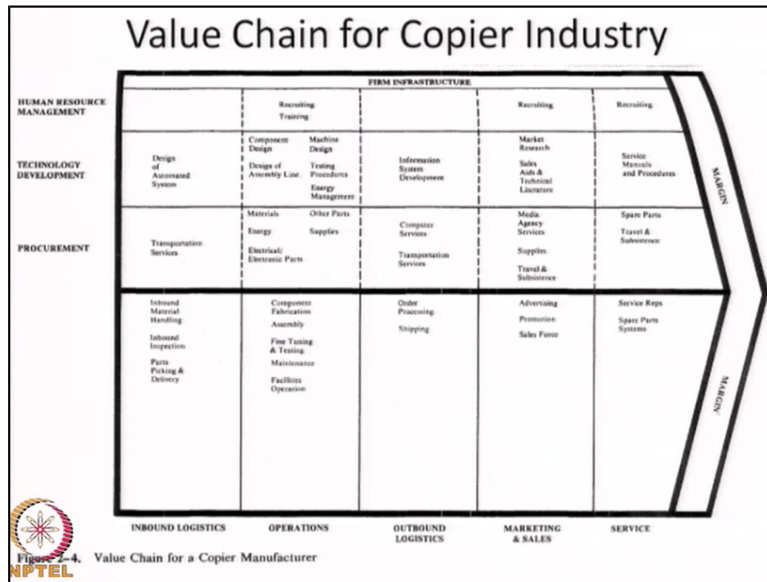
And, we can create these Value Chains, ourselves. Because, what we need to do is, we know that, there is something called a Value Chain. And, this is how, it has to be mapped. And, we know that, every firm has its own discrete set of activities. And, all we have to do is, caption all these functional activities, under these process lists, and label them. I am just trying to tell you, how we actually do it. And then, you pin them across this Value Chain diagram.

And, look at each of these activities to see, whether you can do it at a lesser cost, or you are able to do it better, if we are able to differentiate. And, in the process, you will end up delivering a new service, or a new product. Or, in some cases, the biggest example is the new distribution system, that Dell or Amazon. Because, you know the disruptions that was created by internet, in the early 2000. That is when, the E-commerce as a business proposition, both business to business, or business to consumer, took the entire Value Chain.

It changed the way in which, we viewed this Value Chain. And, this disruption, remodel Value Chains of big entities. Dell is a classic example, above which, I will be talking later. But, what I am trying to say is, you can create your own Value Chain, this way. In the process, come out with, a new service deliverable, or a new product deliverable, or a new distribution system,

which is intertwined with the service.

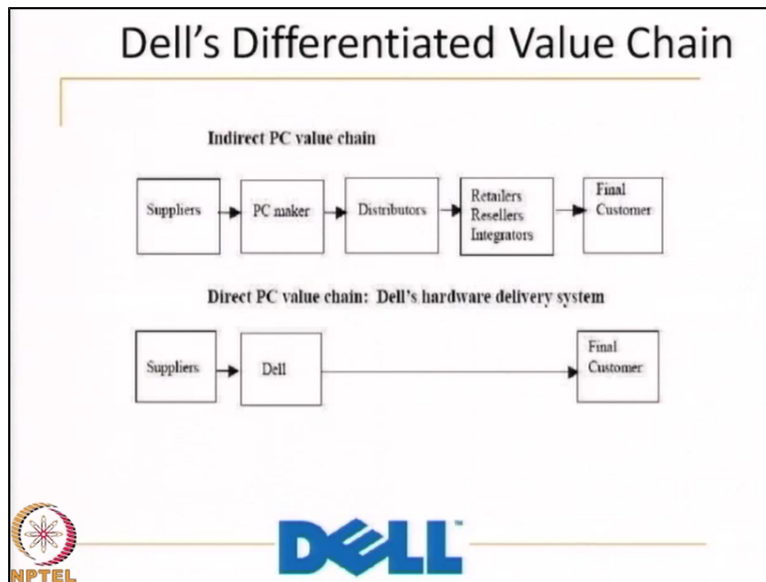
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And, for example, you did this process for a Copier Industry. And, this is how you will end up, coming out with a Value Chain for the, Copier Industry. It will have the human resource management, that enrolls. It is as simple as the recruitment training. Then, the Technology Development, which is internal, where a lot of R&D happens. Then, various procurement activities. But, in this inbound is your, raw material receiving, inspection, and then sending it to the operations, that is where the components gets fabricated. Outbound is your order processing, and you ship it.

Marketing and Sales, as I said, has the advertising, promotion, and the salesforce trying to sell the product after sales. So, this is just a typical Value Chain for a, Copier Industry. The reason, I am just putting this before you is, in the previous slide, I said that, how to do it. And, if you are able to just choose one industry, and try to do it, you will end up doing it, this way. So, this is for a Copier Industry. Likewise, you can create a Value Chain for, an Automobile Industry, or an Aircraft Industry, or whatever be the industry, or for your own firm, this is how things will get seated, in different pockets, in this Value Chain.

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Now, I said before that, the disruption that was created by internet, change the Value Chains of different entities. A classic example is, how Dell change the way in which, it did business. Because, if you look at the Personal Computer Value Chain traditionally, and in many cases, even nowadays, this is how it happens. So, you have a supplier, who supplies components to the original equipment manufacturer. In this case, the PC maker.

And then, the personal computer manufacturer, just ships all the computers to a distributor, who later then gets, all the species populated in a retail store, or through a reseller. And, then a final customer buys it through the reseller. Dell change the way in which, things are happening now. I do not know, how many of you have experiences of buying, a Dell Laptop. Now, sitting at home, using internet, I can order, any configuration of a Dell PC, or a Dell Laptop.

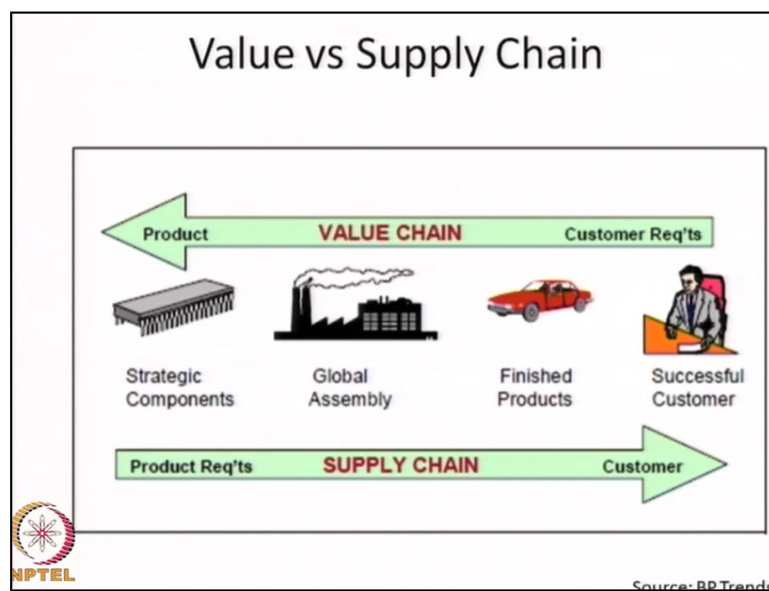
And, it is only after the order is placed, then the Dell further interacts with, different of it suppliers. Each of them get sourced. Finally, gets assembled, and gets delivered at home. And, it is not that, I go to a retail store. Choose a product, that are already available out of the shelf. I can even create, my own configuration, of a Dell. I am talking about branded PC's. And then, have it delivered. And, I consider this as an extremely, significant value proposition.

And, this changed the way in which, Dell was doing business. And, in fact, it was one of the key success factors for, the growth of Dell, with the advent of internet. So, this disruption that was

created, was positively channelized, in building a very different Value Chain, where the value proposition to the end-user is that, I can make my own computer, a branded computer, through an internet, and get it delivered at home.

And, this is the value proposition. So, you can understand, what I am talking about. The feeling that, you can have this done through the internet, as customised as possible itself, is a big value proposition. And, we are ready to pay more. Because, you find that, this value proposition is very, very unique. And, that is one of the key success factors, for Dell's success story.

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And, I find that invariably, there is this confusion between, a Value Chain, and a Supply Chain. There is a plenty of literature, that differentiates between a Value Chain, and Supply Chain. But, the core to this is, the flow of value, is from the customer. Remember, I said in the beginning of the class, that all these value activities, are relevant from the customers, or the end-user's point of view.

So, it is the customer's requirement, the end-user's requirement, which is calculated backwards to see how, this can be embedded into all these activities, with the hope that, it can deliver a value that is perceived to be valuable by the end-user. As against a Supply Chain where, the flow is from the organisation to the customer. It is a little subtle, difference between. There are a lot of similarities between, Value Chain and Supply Chain, also

But then, what we need to understand is that, both are not the same. There are similarities. But, that does not make them same. They are two entirely different concepts. And, I am trying to caution you, do not get mixed with Supply Chain and Value Chain. Both are not the same. So, if somebody says that, if we are talking about Value Chain, and that they already know Supply Chain. It means, they still do not know Value Chain. And, both of these are, two different entities.

So, a Value Chain Analysis, at the end of the day, for any firm or organisation, provides a structured thinking through which, we are able to identify set of activities, that are characterised under different heads. And, each of them, being able to be done in a different way. Or, each of them, could be done at a reduced cost. Since, we are interested in providing, either cost competitiveness, or a differentiation. Because, these two are the important elements, in building a sustainable competitive advantage.

And, in the absence of this Value Chain Analysis, we cannot be doing a wild goose chase, and saying that, look can we identify this activity, this activity, this activity, this activity. But, at the end of the day, we do a Value Chain Analysis. We also finally choose activities. But, it is not a wild goose chase. We know that, we have not missed activities. Because, we have structured them in a standard framework. Because, we followed this Value Chain. And remember, for any firm, any organisation, whether it delivers a product, or whether it provides a service, a Value Chain can be created.

And, I would encourage you, to just take any example, and come out with a Value Chain. You can create a Value Chain, for an Educational Institution. You can create a Value Chain, for a Consulting Business. You can create a Value Chain, for any business. And, it is possible. And, if you look through the lens of a Value Chain, you will definitely find activities, which otherwise would have missed. That is the key, to do an analysis, using this Porter's Value Chain.

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Video on Coke & Unilever

Thank You



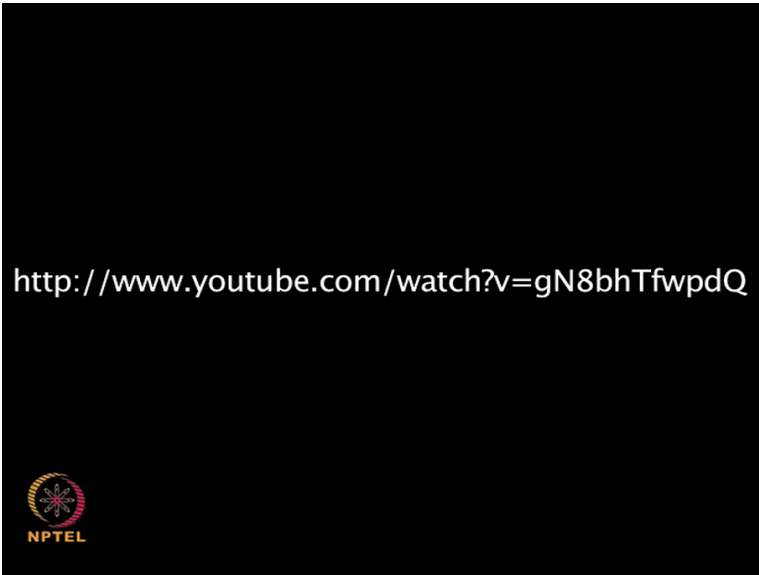
Now, before I end this lecture, I would like to just show you, two videos. Videos of Coke and Unilever, the examples that I used in my presentation, through which you can understand, the Value Chain of Coke. And, you will understand that, three important activities, form a significant value in Cokes. The Inbound Logistics, the Outbound Logistics, and Sales and Marketing. These three are the important, value generating activities, if you look at the Value Chain of Coke.

And, if you look at the Value Chain of Unilever, from a different perspective, of course, Unilever is also being an FMCG, the sales and marketing is very important. But, the video that I am going to show you, it talks about the WOW value factor, that I mention, those three sources of value. It talks about a set of activities, that are not related with the firm's Value Chain, but something that is exterior to the firm. It talks about the environmental impact, that the product after its use, creates.

And, how Unilever, tries to reduce that environmental impact. And, that as a value proposition, how it ensures, that its end-user realise that, even after its product is being used, the way in which it gets disposed of, creates a value proposition. That is the idea of, showing that video. And, I am sure, if you are able to see this video, and appreciate the concept of value generation, through these two different perspectives.

Then, you will understand, that for any activity, there is an inherent value to it. Which can be

generated either by, trying to see if we can reduce the cost at which, we are going to perform this activity. Or, if we can do this activity in a different way, and still generate value. Remember, value is the willingness of the end-user, to pay more. And, end-user will be paying more, only if he or she is able to appreciate, that this value is something, that the end-user perceives to be



really valuable. Thank you.

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