

**Innovation, Business Models and Entrepreneurship**  
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**Lecture – 04**  
**Types of Innovation**

Welcome back, in our last few sessions. We introduced the concept of innovation; we introduced the myth related to innovation the various challenges related to innovation. And in our last session we discussed about interesting similarity between 2 major valances in the journey of innovation, which are prediction disability and resistance to change, and we made a similarity of these 2 valances with rider elephant conflict. And we finally, concluded that we need to have a good rider elephant harmony relation for process of innovation to take place. If that harmony is there, then probably you will have a very successful innovation journey.

Now, moving ahead in this process of innovation it is important to see some important classifications of innovation. This, a scheme of classification of innovation is not a very structured kind of a scheme. If you go to Google, if you read different books on innovation, if you go to different research papers on innovation so, different authors have defined different a schemes of classification of innovation.

So, in this session we have summarized we have taken from different sources the different schemes of classification of innovation. So, now, the first type of innovation, which is very very popular in north India this world and this is a Hindi word, which is known as Jugaad.

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The slide is titled "Types of innovation". It lists two types: "Jugaad (Ad-hoc)" and "Systematic (Structured)". Next to "Jugaad" is handwritten text "3I / opportunities from change". Next to "Systematic" is handwritten text "(Structured) — IP creation". Below "IP creation" is a downward arrow pointing to "IPRs", and below "IPRs" is a leftward arrow pointing to "T.T.". At the bottom left of the slide are logos for "IIT ROORKEE" and "NTEL ONLINE CERTIFICATION COURSE". At the bottom right is the number "2".

Now, this Jugaad the nearest English translation of this Jugaad is some ad hoc arrangement.

So, people do some kind of ad hoc arrangement at the local level, but if you go back to our definition of 3 I or the definition of Peter F Drucker, where opportunities from change, you will see that Jugaad is not a sustainable innovation example. Contrary to Jugaad you have another scheme of innovation, which is systematic innovation or other name is a structured innovation.

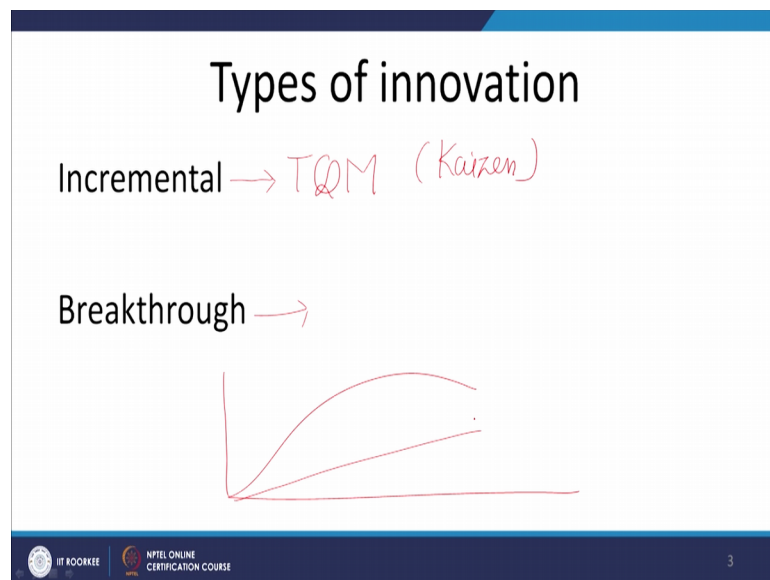
So, you can have a structured innovation you can have Jugaad innovation. The structured or systematic innovation takes place in one kind of enabling environment, like nowadays in our higher educational institutes we like to promote this systematic innovation the structured innovation. So that, your innovation can leads to intellectual property creation, IP creation. So, that you can get intellectual property rights and which can be converted into technology transfer or some kind of commercialization.

So, that all is possible only through a structured innovation and more and more organizations have understood the importance of structured innovation. So, they try to create some kind of enabling environment, in which people employees students faculty members researchers can go for some kind of innovative output of their work.

So, this is one scheme of classification that you want to have a permanent type of innovation or you want to have a ad hoc innovation, but sometime you must have seen that for your immediate requirement, you have some problem and for your immediate solution of that problem this Ad-hoc innovation this Jugaad innovation also works very well.

So, the, but from the point of view of sustainability if I say the sustainability of ad hoc innovation is not very high. And you need to go for a structured innovation, if you want to have long term sustainability of your innovation. The other way of classification of innovation is on the basis of process of developing the innovation.

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Now, one is such innovation is known as incremental innovation and another innovation is known as breakthrough innovation.

Now, incremental innovation is mostly affected by Japanese quality system particularly TQM the quality management principle the total quality management principle is one important dimension of this incremental innovation. Where we talk of terms like kaizen and in this kaizen kind of aspects we continuously look for improvement in our activities we look for how can we improve our processes? How can we reduce our wastage?

How can we reduce our scrap? How can we reduce our rework? And for that purpose we keep doing a small small innovations, and those a small innovations which are soul

which are philosophy of kaizen these are incremental innovation. Because unless until you change the way you are working these things will not happen the waste will not reduce, you will not be able to implement 6 sigma, you will not be able to implement (Refer Time: 07:33), you will not be able to implement 5 S, and for all that purpose you need to do some a small small changes at different fields of your organization.

So, the Japanese quality management principles are basically the guiding tools for this incremental innovation. The other type of innovation is breakthrough innovation. Breakthrough innovation is something which is like, if you see the development of different types of technology, different types of products over a period of time. So, there will be some kind of linear or cyclic processes. In some cases technology also gets developed like a product life cycle.

Sometime the technology gets developed in this linear fashion, when we see only a small period of this overall technology life cycle, we may able to see this a straight linear line that this is the way technology is developing. In our mobile phones we have 2 G, then 3 G comes, then 4 G is there and maybe in few years' time will have 5 G 6 G 7 G.

So, that is the evolution of technology which is happening continuously, but moving from landline phones to mobile phones the example of 2 G to 3, G to 4, G to 5 G is a kind of incremental innovation, which is happening because of newer and newer technologies are coming, but moving from landline phones to mobile phones is an example of breakthrough innovation. Some of the very important breakthrough innovation in the history of mankind is like fire, wheel, these are known to be most important breakthrough innovation in the life of mankind; the development of a steam engine, which is the key of whole industrialization process.

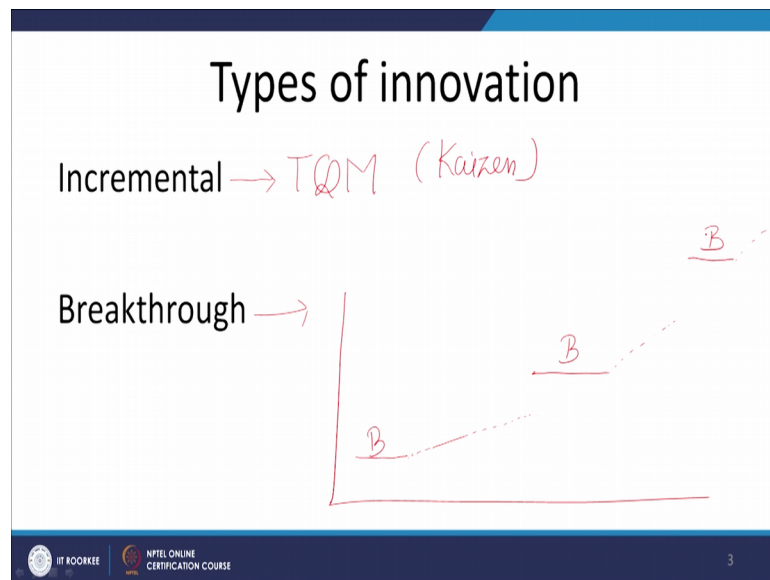
So, these are some of the examples of breakthrough innovations, but large number of activities are happening under incremental innovations only yes there is a point, because incremental innovations remain within the boundaries of an organization. So, as an outsider many a times we are not very much aware about the happenings which can be classified under incremental innovation, if some organization has done some improvement in it is processing.

So, they may report it in some of their internal brochures in their internal newsletters, which may not be known to us as an outsider, but; obviously, breakthrough innovations if

you develop a medicine for a problem like Aids, if you develop a new medicine for problem like Cancer. Obviously, it is known to everybody it will become one breakthrough innovation, but when you are doing something within the organization it is incremental innovation because you are taking a small steps.

Now, it is a debatable issue, but whether incremental innovation or breakthrough innovation, which is more useful to the society. So, both these innovations are supporting each other. Some breakthrough innovation takes place and after that in that a series of incremental innovations take place. Then another breakthrough innovation take place and then again series of innovations, which are related to this incremental innovation take place.

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Like, you can understand this way this is one breakthrough innovation and after that you keep on improving this with the help of incremental innovation. Then another breakthrough innovation will change all of a sudden your level of working and then another incremental innovation will improve this innovation.

Then another breakthrough innovation will happen and then incremental innovations will take it to next higher level. So, these are breakthrough innovations and then making those breakthrough innovations suitable to the society to the particular requirements that is the job of incremental innovation. So, we cannot say that which one is more useful for some of us, it looks that breakthrough innovations are real innovations, but it is

incremental innovations, which make breakthrough innovations suitable for individual's requirement.

So, I think these are supplement to each other if only breakthrough innovations are there, then probably it is not possible for getting airlines for individual customers then it is not possible for getting. So, many equipments we use around us for individual use it would only remain in the laboratories or in the experimental halls. To bring those breakthrough innovations for the help of mankind this is the part of this is the duty of incremental innovation. So, that is another important set of classification on types of innovation.

The next is another very popular term with respect to innovation is this frugal innovation. This is another very popular term which is there and many articles many Google results are available on frugal innovations, you must have seen many books on frugal innovation.

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**Frugal innovation** (Social Innovation)  
(Co-Creation)

- one that sees resource constraints not as a liability but as an opportunity —
- and one that favors agility over efficiency.
- Frugal organizations don't seek to wow customers with technically sophisticated products, but instead strive to create good-quality solutions that deliver the greatest value to customers at the lowest cost.

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So, what is this frugal innovation which is a very very important particularly for developing economies, because of value which is the main idea of frugal innovation that how you can increase, the value offered by a product to the end user, that is the core idea of the frugal innovation.

So, one that sees resource constraints not as a liability, but as an opportunity because the developing economies cannot a spend too much on luxury with this assumption we feel

that this is again an opportunity for entrepreneurs. So, some product is there and now in that product I am removing those features, which are not required for a particular group of customers in my developing economies and I am improving the value of my product for those customers, that is frugal innovation.

So, these customers the frugal organizations, they do not look for more technical sophistication rather their focus is more on how you are providing good quality solutions, and to deliver more and more value to the customer and obviously, since I am talking of developing economies the cost also becomes a very important parameter.

So, how I can provide more value to the customer at the minimum possible cost and this is the idea of a frugal innovation and a lot of activities are there. I certainly not looking for diluting the quality, I am not looking for reducing the quality of my product rather I am focusing more on improving the value of the product.

Now, it is a very important call that whether I understand the meaning of value what is expected to my customer. If I am providing that value then it is ok, but many a times we know because of marketing myopia type of concepts, we do not know that what value customer is looking for? And we provide Y product we provide Z product and customer is looking for X product and here lies the success of frugal innovation. If customer is looking for X product provide only X product, do not provide even the least features of Y and Z products.

Obviously, when you are providing the just suitable product to that customer, then customer will be happy the customer will get value and your cost will also reduce. The success of frugal innovation lies in your ability to understand your customer properly, because then only you can deliver value to your customer. Otherwise unfortunately many people feel that, if you want to reduce the cost of the product make inferior quality products give maximum features, but give inferior quality products. And, you will see that most of those products are failure story, because you are providing all those things in both product which are not required by that customer and customer is not satisfied because of your inferior quality.

So, you need to be very very selective, that what type of values a customer is looking for and if you can only think concentrate on that it means you are doing the frugal innovation. So, it is again a very good opportunity probably many good quality low cost

solutions can be categorized as frugal innovations. So, here it is also important to say that some of us can also link the issue of frugal innovation with the social innovation, though we will discuss in our coming session that literature we may say there are certain differences between frugal innovation and social innovation, but to some extent you can link frugal innovation with social innovation because, you are only thinking the value which is desired from the customer.

And, you can also call another very popular name which is available in the marketing literature. The tool for frugal innovation can be co creation, because you need to understand what type of value customer is expecting? And for that purpose co creation can be a very good tool to create frugal innovation. So, in our coming sessions we will be talking more about social innovation and co creation.

Next is the classification of innovation, which is normally used in our industry. And according to industry system, the innovation can be classified into 4 categories.

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The slide is titled "Types of Innovation" and lists four categories with handwritten notes in red ink:

- Product — Visible
- Process — Invisible to outsiders. (Internal Circulated)
- Customer Experience —
- Business Model — What is target? What are you offering? What is the source of revenue?

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The Product innovation, the Process innovation, the Customers Experience innovation and Business Model innovation; now is developing a new product, which gives new types of expectations which gives new types of output that is product innovation.

And product innovation is a very popular type of innovation, because whenever a new product comes we all use that product and we are very much aware about that product.



So, whether you say that I phones, I pads, these are some of the most popular names of product innovation. When you see a new type of motorbike, when you see new types of shoes, when you see a smart watches, when you see the smart glasses all these are the examples of product innovation.

So, product innovation is the visible form of innovation. Where even a common man can say; yes it is something new it is an innovative kind of product. Then another type of innovation is process innovation. The process innovation comparable to the incremental innovation, it is improving the processes, it is basically that quality management principle it is kaizen.

So, that your waste is minimized, your losses are minimized, how can you have better systems in your organization, more efficient systems, more agile systems. So, that is like implementation of 6 sigma, the example of process innovation can be the implementation of 6 sigma. This is one simple example, which is process innovation more complicated lean 6 sigma, how can you have lean 6 sigma in your organization? The implementation of that itself is process innovation, implementing TQM, implementing Kaizak, implementing Kanban, in your inventory management these are simple examples of process innovation.

But, as we discussed in case of incremental innovation these are invisible; invisible to outsiders. The impact of this process innovation is normally internal circulated; you do not know that what type of process innovations Maruti is doing? What type of process innovation Hyundai motors is doing? What type of process innovation Tata motors is doing? Sometime they may publish some cases study in public domain, but most of the time these process innovation histories remain within the boundaries of the organization.

The third type of innovation is customer experience innovation. And, that customer experience innovation is again very interesting. We want to have a better experience with the use of this product this service, this facility. So, what you can innovate in that we used to have post office and when we use to post a letter earlier. So, when the letter was received by the receiver and that receiver calls or replies back, then only you come to know that letter is being delivered.

But, nowadays when you wake some speed post you get a tracking number and online you can track that letter has reached to xyz location, now it is moving from xyz to abc

and from abc to def and finally, it is delivered on that particular day. So, this service is same, but it has enhanced your experience of sending the letter through post office; when you go for making a new passport, when you go for getting visa.

Nowadays, you can track online the status of your Visa; you can track online the status of your passport, etcetera etcetera. So, that is customer experience innovation, where you get to know the online mode of a status of your various requirements. More complex environment will be and it is expected, it is desired from companies that companies need to continuously innovate with respect to this customer experience dimension also.

Because, when you are using Gmail, when you are using Facebook? You must have observed that now Facebook regularly wishes you when your anniversaries are there, when your birthdays are there. So, just to give you when you have some important photographs and there is a particular interval of 1 year 2 years 3 years 4 years, they will remind you this is one your old photo will you like to reshare that photo now. So, all these are the things to improve the customer experience of using your product.

So, a lot of innovations are happening in this dimension also which are customer experience dimension, how can you have a better experience of using my product? And then finally, a very encompassing innovation is business model innovation, basically business model deals with you are a stream of revenues. What are you going to offer to your target market? What is the target? What are you offering? And, what is the source of revenue? Like in our first session we discussed about Google, we discussed about Facebook, we discussed about LinkedIn.

So, you are continuously using their services, but you are not paying them anything. So, they must be getting some revenue from somebody, there must be some source of revenue only then they can maintain huge servers, they can provide you the kind of services you are expecting. Now, you need to continuously think about newer business models. So, what are the different types of new business models, which are available that is the question and even in those it is very interesting that in most of the products nowadays. The basic service of the product is offered free of cost. And the supplier the service provider charges for the add on services.

So, you need to see that what is your core service, what is your add on services? And so, that you can have a good balance of your revenue streams, otherwise if you are having

too much of your core services and your value added services are very limited, it will be difficult for you to survive. And you will not be able to generate enough revenue. And, if you have very limited core services and everything comes in to the value added services, then also you will not have enough customers who will give you those value added services.

So, therefore, it is very important that you know that how to balance those things? So, that you have enough customers for the core services. And, enough customers for your value added services so, that you can have a healthy source of revenue. So, we continuously need to innovate in the business models also. A very good example of business model innovation can be IPL in India, we all love cricket, but cricket was played as a test match or as a one day matches. Based on European experience of soccer in India also cricket was played under the franchises system. And in this franchises system the governing body of cricket in India BCCI and different franchises started earning huge money.

And; obviously, the little bit change in the product was also done, match was reduced to 20 20 overs, and processes was also changed some new rules, for playing the game was introduced and to have a better customer experience, lot of entertainment activities were also linked with the IPL matches.

So, therefore, I said that business model innovation is a very encompassing activity, it takes care of product process and customer experience all 3 types of innovation. And during the course of this discussion, you will see that sometime it becomes difficult for us to say that whether this innovation is a clear example of product innovation or customer experience innovation or business model innovation.

So, it will be interesting for all of you to keep analyzing different types of innovation. And, during our forum discussions you keep raising such type of questions, where you mention different types of experiences, with respect to different products, different models and let us discuss in more detail on those our forums. That what do you feel and what is my take with respect to those examples, which you come across. So, with this we complete the discussion of types of innovations.

Thank you very much.