

Innovation, Business Models and Entrepreneurship
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Lecture - 02
Innovation and Creativity: An introduction

Welcome back friends. So, we had our first session where we understand that what type of environment is there and why innovation is necessary for meeting out the challenges of those business environment. And we particularly focussed on Indian conditions that why particularly seeing the global environment, it is necessary for Indian organizations to innovate.

Now, in this second session of this course, we will discuss basics of innovation and creativity; so, to start the discussion on innovation and creativity. I am taking you to the one of the most popular author of management Peter F Drucker.

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Innovation & Creativity

Innovation is the specific **tool** of entrepreneurs, the means by which they **exploit change** as an opportunity for a different business or a different service.

Clean India → GST.
Corruption → IT Corp.

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And Peter F Drucker says that Innovation is the specific tool of entrepreneurs, the means by which the exploit change as an opportunity for a different business or a different service. Now, if you see this definition given by Drucker it means two-three important things.

And you see one is the exploit change. Innovation is a tool and tool of entrepreneurs. So, one important thing we need to understand that it is a tool and with the help of this tool we all understand I hope the meaning of tool. Tools are those things which enable us to do something. So, if I am an entrepreneur, I need certain tools and innovation is probably is one of the most important tool of the modern day. And what I do with the help of this tool of innovation?

I exploit change as an opportunity, whenever something happens in my environment; I consider it as an opportunity. For an example, let me take you to some of the changes which are happening. Now, in India, the prime minister is focusing on clean India. We know it as Swatch Bharath. Now, for large number of people those who are of that kind of mindset, this becomes a good business opportunity.

But, what type of solutions I can generate around this clean India mission. There is another problem in India that is corruption and we all know that those sitting in IT companies, they thought that this corruption is a very good opportunity for developing the business.

Because to eradicate corruption, we want to have more transparency and IT can provide that type of transparency. If you see the period of railway reservation before computerization a lot of corruption was there in railway reservation. Computerization happened and everything became transparent and all of a sudden it is complete removable of corruption from the railway reservation system.

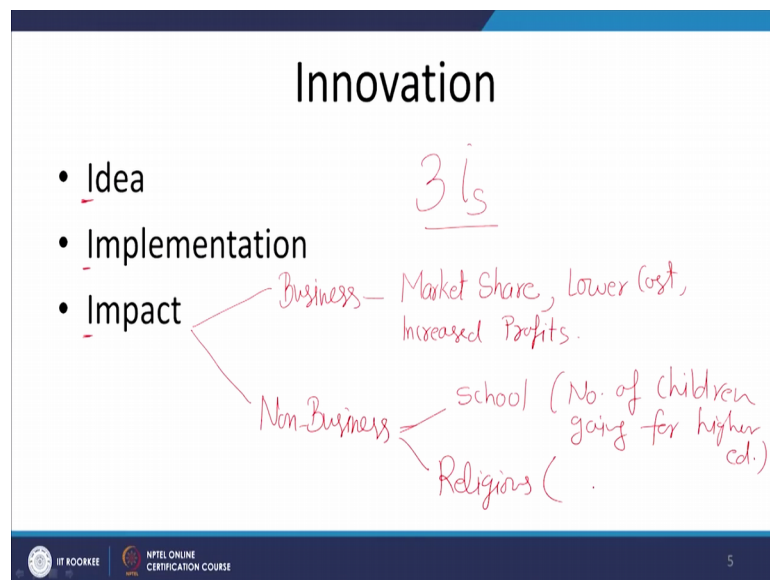
So, the problems or the changes, the very recent example, we all know that how in our country we moved from sales tax VAT to GST and the change this change of GST gave opportunity to many entrepreneurs to develop softwares, which can handle the GST calculations. Again, few months back, all most around 1 year back, we had another major decision of government of India that is demonetization and in that demonetization decision also, we had a sudden change and lot of companies which were involved in E-payment they use this as a good opportunity to sell their products.

So, innovation is a specific tool of entrepreneurs the means by which they exploit changes. So, whatever changes are happening you will find two types of people in the society. They are people who will curse all types of changes; they do not want to change anything.

And therefore, they will not be able to capitalize; they will not be able to leverage those changes. On the other hand, entrepreneurs they look for these changes because they think these changes can provide us opportunity for taking benefit of these changes.

So, that is what Drucker means with innovation that it is the specific tool of entrepreneurs the means by which they exploit change as an opportunity for a different business or a different service. So, they may start some new business, some new service to exploit or to fulfil the requirement of change in the form of an opportunity. Further to simplify this discussion of innovation that what do we mean by innovation; we have a very interesting concept of 3-I. and in that 3-I, first I is this Idea.

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Idea is our first I and in this Idea, we look forward that there should be a new Idea. Now, you will see that during the course of this complete discussion, we will find many new ideas; the only important thing is we need to keep our eyes, ears and brain open all the time.

If we are open all the time, you will see that large number of new ideas will come to you. But do not evaluate the idea initially; do not evaluate the idea initially, at the movement we are in search of ideas and we want more and more ideas to come to us. And therefore, idea is our first important I in the process of innovation; Now, we how the ideas will come that we will come to discuss later.

The second important I is Implementation, you have idea and then it is not only idea; but you need to implement that idea also. The idea might be executed and if you can execute the idea, if you can execute the idea; then it is known as implementation. So, execution is also very very important. Now, as far as innovation is concerned, it is possible at both these stages. You may have a new idea; all together a new idea.

So, that may lead to innovation. It is possible the idea may not be new; the idea is old; but you find a new way of implementing the idea that may also be innovation. For example, the idea of non-violence and which Father of Nation, Mahatma Gandhi popularized in our country.

This idea is very old. The idea of non violence is coming from Jain religion, from Buddhism; all those religions are favouring the idea of nonviolence. [FL] But, the implementation of that idea for the freedom movement of the country is the novelty of Mahatma Gandhi and therefore, we all co that man as Father of Nation.

So, idea may be new; obviously, it will be innovation. Idea may not be new; but the implementation the execution of that idea may be done in a novel fashion that is also innovation. The third important I is Impact. You have idea, you have executed that idea; but it must result in some kind of impact. If impact is not there, then it is not innovation. So, 3 I's; one I is of Idea, another I is of Implementation and another I is of Impact. These are the 3 I's and depending upon the nature of organization, you may have different types of impacts.

If it is a business organization, then the impact may be in terms of increased market share; it may be in terms of lower cost; it may be in terms of increased profits etcetera.

And if it is a non business organization, so here, the criteria of impact may be as per the nature of the organization. For example, if you are a school, your impact may be measured in terms of number of children going for higher education from your school. If you are a religious organization; so, may be your impact can be measured a number of people who left alcohol, who left drugs because of your influence. So, depending upon the type of organization, you may have different types of criteria to measure the impact.

But these 3 I's Idea, Implementation and Impact are very simple formula to evaluate whether a particular phenomena can be classified as innovation or cannot be classified as

innovation; because many a times we are confused with innovation and invention. And therefore, I have a specifically develop this idea that if you have one idea, you implemented that idea.

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The slide is titled "Innovation". It features a diagram where two bullet points, "Idea" and "Implementation", are connected by a bracket that points to the equation "Invention + Impact = Innovation". Below the diagram, there are two handwritten notes in red ink: "(1) opportunities arising from change" and "(2) concept of 3Is". The slide footer includes the logos for IIT ROORKEE and NPTEL ONLINE CERTIFICATION COURSE, along with the number 6.

So, these two I's make Invention and when you add Impact in this Invention, it is Innovation. So, Invention is let me put in a simple language; invention means something is up to the lab, something is at the experimental stage. So, you come with a new concept, you executed that concept in a controlled environment; you implemented that idea in a controlled environment and that is invention and when you take that invention to the commercialization stage, when you make some kind of impact out of your invention that becomes innovation.

So, it is quite possible that in our higher educational institutions, where we do MTech; where we do PhD; where we do MBA projects; there may be large number of project reports available, where invention element may be there; where invention element may be there. But because that remained within the files; that remained within the dissertation, it is not the part of market. Therefore, it is not innovation.

In some of you can search those reports in your colleges and take those reports make products make services, make some kind of processes out of those concepts which are mentioned in those reports and some kind of impact is done; then it becomes innovation.

So, it is very very important that we are clear about the terminologies; what is the boundary of invention and what is to be added in that boundary so that it becomes innovation. And I hope that now you can understand various examples where these are inventions, but not innovations and when those things are becoming popular in the market, those things become the part of your routine life, these things become innovation.

So, that is about the way we want to define innovation; one way is with the help of opportunities arising from change that is the concept of Peter F Drucker, where you capitalize the opportunities which are resulting from the changes which are happening in the environment. And in our session one, we already discuss that how different types of changes are coming in the society and those changes will help us in getting more and more opportunities.

And the second thing is the concept of 3 I's which also help us in differentiating between invention and innovation. So, after understanding that what is innovation, what is invention and the different ways of innovation, we move to another very important discussion which is very useful at this movement in the beginning of this course that is about myths of innovation.

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The slide is titled "Reality of Innovation" and contains the following content:

- Innovation begins with creativity. (Myth)
- Innovation begins with curiosity. ✓✓

Handwritten notes in red ink include "Why? , How?" and "What".

At the bottom of the slide, there are logos for IIT ROORKEE and NPTEL ONLINE CERTIFICATION COURSE, along with the number 8.

We have certain innovations; we have certain myth about innovation and one of the myth about innovation is that since I am not a creative person, I cannot innovate. People feel

like that I am not creative; I cannot innovate and that is my myth number one. People say that innovation begins with creativity; but it is not the case. The reality is innovation begins with curiosity. Innovation begins with creativity; it is Myth and innovation begins with curiosity; it is the Reality. So, we need to understand that what is curiosity? Curiosity is if you keep asking questions like why?

Keep asking questions like how, what, why this thing is happening in this particular fashion? Can it be done in a better way? Can I minimize the waste; can I minimize the time; can I minimize the efforts? If I keep asking these question, it means I am curious. and when I am curious; it means I am a fit case for innovation. So, first important we need to remove this myth from our minds that innovation begins from creativity. It begins with curiosity. If I am asking questions; if I am asking questions you see a small child in your family, 3 years old, 4 years old the child keeps asking so many questions and that is a good example of curiosity.

Child ask question about everything which he sees around him and we also need to ask large number of questions may be to somebody else or may be with our self only, but asking questions is very very important in the process of innovation. If you want to innovate you should develop this approach of curiosity.

Why is it like this way; why is it like this way; how can I improve the working of my office; how can I reduce my monthly electricity bill; how can reduce the wastage of water; how can I reduce the collection of garbage around my house? If we start asking these questions, you will see that large numbers of problems around us will automatically disappear. And therefore, innovation begins with curiosity is our first important answer to myth of innovation begins with creativity. The second myth is that innovation is a smooth linear process.

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Myths of Innovation

- Innovation begins with creativity.
- Innovation is a smooth linear process.

Idea → Implement → Impact

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We feel that first idea will come; we feel that there is idea. We will implement this idea and this will create some kind of impact. So, it looks like that is a simple linear process first you need to have a novel idea, you need to go to a lab, you need to go to a manufacturing set up to develop the prototype around that idea and then, go to market and start earning profit and that is a simple smooth linear process of innovation.

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Reality of Innovation

- Innovation begins with creativity.
- Innovation begins with curiosity.
- Innovation is a smooth linear process. (Myth)
- Innovation is iterative and the outcome of a series of experiments.

Idea → Implement → Impact

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But, I am sorry that this is not correct. In fact, you will see that innovation is iterative and the outcome of series of experiments. What do I mean by that? This is correct and this is

myth. Innovation is highly iterative; therefore, you need to have lot of patience; without that innovation is not possible. Now, what do I mean that innovation is iterative and the outcome if series of experiments when idea is here, you have this stage of implementation. In this case you have this type of loop also. You will implement; you will start executing your idea; you will not get favourable results, then you will modify your initial idea.

And it becomes a very iterative process. Then once you are able to execute correctly and you are now commercializing, you are taking this idea this product to market and when you are looking for some kind of impact, you will see that impact is not as per you expectations. The market is not responding what you expected and therefore, you may again come back to the implementation stage or even you may come to the idea stage also.

It is a very iterative process it is not a smooth linear process. You need to come back, do another experiments slightly change your idea and then again experiment, again go to market all these things are you need to do regularly. Therefore, it is not a smooth linear process.

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The slide is titled "Myths of Innovation" and lists three bullet points: "Innovation begins with creativity.", "Innovation is a smooth linear process.", and "Innovation is about risk-taking." The slide has a blue header and footer. The footer contains the IIT ROORKEE logo, the text "NPTEL ONLINE CERTIFICATION COURSE", and the number "11".

Myths of Innovation

- Innovation begins with creativity.
- Innovation is a smooth linear process.
- Innovation is about risk-taking.

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Then another myth is Innovation is about risk-taking.

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The slide is titled "Reality of Innovation" with a handwritten note "(Team Activity)" in red. It contains a list of six points, each with a handwritten mark: a red 'X' for incorrect statements and a red checkmark for correct ones. The second point, "Innovation begins with curiosity," is highlighted in yellow and has a handwritten note "Asking Questions" next to it. The bottom of the slide features logos for IIT ROORKEE and NPTEL ONLINE CERTIFICATION COURSE, along with the number 12.

Reality of Innovation *(Team Activity)*

- Innovation begins with creativity. *X*
- Innovation begins with curiosity. *✓✓ Asking Questions*
- Innovation is a smooth linear process. *X*
- Innovation is iterative and the outcome of a series of experiments. *✓✓*
- Innovation is about risk-taking. *X*
- Effective innovation involves risk taking, assessment and mitigation. *✓✓*

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Yes, it is. Innovation is about risk taking, but it is not purely risk taking; it is not like you are drinking alcohol and driving your motor bike on a hilly terrain at a speed of 100 kilometres per hour; it is not that type of risk taking. It is risk taking assessment and mitigation also. So, if you are driving your bike on a hilly terrain, you know that what type of mitigating measures I need to have; I need to wear helmet; my vehicle should have proper breaks; I should not drive over a particular speed limit; I should not consume any kind of toxic elements.

So, all these mitigating measures I take. So, obviously, it is a risk, but you also have some kind of counter elements, you also have some kind of mechanism to handle your risk which is involved in the innovation process. So, we see that innovation begins with curiosity; this is the reality. Innovation is iterative and the outcome of series of experiments; this is the reality. And effective innovation involves [vocalized- noise] risk taking, assessment of risk and mitigation of risk. So, these are our myth and these three are the reality of innovation.

So, it is very very important that right from the beginning you are clear that what is this process of innovation; how are we going to move in this and we need have patience, we need to know that we always should be surrounded by some kind of counter risk strategies so that we can minimize our risk.

So, this is very very important part in the process of innovation; otherwise if you take innovation as such there are lot of challenges are there. But, if we are clear, we know about the path of innovation and we understand that these different steps which are coming in the journey of innovation are bound to come these steps are not surprise element to us; then probably you are better prepared to handle those unexpected outcomes.

But if you feel that today I am starting a new venture and tomorrow I will start getting profit and if then profit is not coming; you feel depressed, you feel leaving your organization, leaving your enterprise probably it is because you are still living in those myths. So, in the beginning itself it is very much required that we should have a clear cut picture in our mind that what type of innovation activities and how you will travel the path of innovation and the most important thing which I will certainly like to highlight that is the innovation begins with curiosity.

If you keep asking question; So, here I am writing that we need to develop this approach of asking questions; keep asking questions and more you ask more innovative you will be. Because one more important thing is innovation is a team activity; it is a team activity, it is not individual activity. So, if I am asking question, it is not necessary that I know the answer also; but some of my friend who could not visualize that question, he or she may be having the answer of my question.

So, if I am asking the question, somebody else will give the answer of that question that becomes the idea; somebody else will give us proper tools proper facility so that we can experiment with that idea and somebody else will help us to create impact out of that idea. So, it is a team activity, but the starting point of this whole process is the person who asks question. So, keep starting, keep asking question and more you ask more questions, more ideas will come and who knows tomorrow you will also become a great innovator.

The second point of reality that innovation is iterative, this point focuses on the journey of innovation. This is that the path is not simple; this path is full of may iterations, may forward backward movements and therefore, many a times innovation takes huge amount of time. And third is when we are moving in the path of innovation, we also need to have some kind of mitigating strategies with us which will minimize; which will

minimize our loss because each iteration will increase our cost of innovation each iteration will delay our product of to deliver into the market.

So, you need to have some kind of safe guard measure so that you do not lose, you do not incur heavy expenditure, heavy losses because of iterative nature of innovation process. So, these are important thing that we understood that what are the myths and how can you handle those myth with reality.

So, thank you very much for this session and we will discuss different types of innovation in our coming sessions.

Thank you very much.