


Social Innovation in Industry 4.0
Professor J. Ramkumar
Professor Amandeep Singh
Department of Mechanical Engineering and Design
Indian Institute of Technology, Kanpur
Lecture 13
Value Creations from Social Innovations (Part-2)

Title Welcome to the next lecture on Value Creation from Social Innovation.

Validating Value Propositions



Importance of Validating Value Propositions in Social Innovations:

- Ensures relevance, effectiveness, and impact
Ex - health care → conducting survey & testing the innovation.
- Minimizes risks and maximizes chances of success
Ex - financial inclusion initiative by conducting market research to assess the potential demand & competition.
- Aligns with stakeholders' needs and aspirations
Ex - engaging social innovation in industry 4.0 new edu program.
- ★ Validating a value proposition is iterative and is refined on the basis of the feedback provided by potential customers.

Source: Roland Berger

So, the validating value propositions can happen through assessment in value propositions validation through market survey, through gathering user feedback, information and assessment. Here, assessment is in terms of usability, durability and desirability.

This is very important desire, usable and durable. The value proposition refinement can be done by creating multiple versions of prototyping. Multiple versions which allow iterative testing and refinement. So, prototyping does this role.

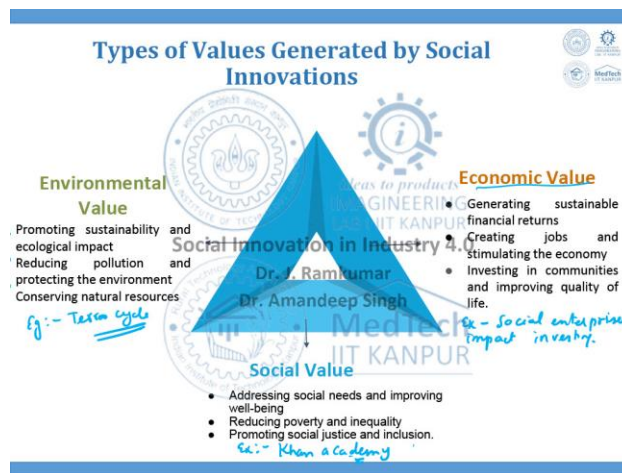
So, the value proposition refinement can always happen by making prototyping, make adjustments which is based on customer feedback, and it enhances value proposition based on user requirement.

By validating the value proposition Social Innovation can ensure that the offering is relevant, appealing and aligned to stakeholder aspirations. So, this is very very important,

these points are very important, because in innovation what happens, many a times we try to develop a novel solution without a customer.

And, here, the challenge in Social Innovation is, you are trying to always develop frugal solutions which are reliable, repeatable, scalable and relevant. All these things are very important in Social Innovation which many a times need not be there in other innovation.

This makes it very very difficult and here you have to have various stakeholders all in the same page such that you try to achieve whatever you want. And, there are several successful models which are already available in terms of products, process, service and government policies.



So, when we try to look at the Types of Value Generated by Social Innovation, Economical Value, then Environmental Value and Social Value.

In Economical Value, you try to create sustainable financial returns, you try to create jobs and stimulating the economy, then the investing in community and improving quality of life. For example, here we talk about social enterprises impact investing. This is, what is the Economical Value.

When we talk about Environmental Value it is promoting sustainability and ecological impact by reducing pollution and protecting the environment and conserving the natural resources. All these things are very important when you try to talk about Environmental Value.

Say for example, here we have Tetra-cycle, it is an example. So, the assignment is, you will try to look at what is this Tetra-cycle, and you will also try to look at Khan Academy what is the model, how do they sustain, why is it popular still. Then, the social values are going to be addressing social needs and improving well-being, reducing poverty and

inequality, promoting social justice and inclusion. Example here is going to be Khan Academy. So, the assignment for this lecture is going to be what is Tetra-cycle.

So, you will try to see what is Tetra-cycle, and you will also try to see what is Khan Academy, how is it a Social Innovation.

Examples of Value Creation from Social Innovations

Case Study 1: Grameen Bank and Microfinance: Empowering the Underserved

Grameen Bank - a pioneering microfinance institution

- Founded by Nobel Laureate Muhammad Yunus
- Bangladesh (1976)

Microfinance - small loans, savings, and other financial services to individuals who lack access to traditional banking services.

Key Features of Grameen Bank's Approach:

- Group-based lending
- No collateral requirements
- Focus on women empowerment

Handwritten notes: group acts as their guarantor. enabling access to credit for those without assets. prioritized women while lending.

Watermarks: Social Innovation in Industry, IMAGINING, BANK FOR THE POOR, GRAMEEN BANK, Dr. J. Ramkumar, Dr. Amanjeep Singh, MedTech, RANPUR.

Some of the examples of Value Creation from Social Innovation we will try to see one or two case studies as part of this lecture. So, case study one is Grameen Bank and Microfinance which I have already asked you to go through it and make assignments on it. So, you would have read many of the literatures on it. So, this Grameen Bank and Microfinance, it is empowering the underserved community of people.

The Grameen Bank is a pioneering microfinance institution which was founded by a noble laureate Muhammad Yunus at Bangladesh in 1976, almost before 50 years. Microfinance means it is a small loan, savings, and other financial services to individuals who lack access to traditional banking service. They try to give loans. For example, if there is a postmaster who comes to every house, who delivers letter and who knows who is residing in this house.

Now, the postmaster becomes an assertive source of information about the persons existence and his behavior. Now, if this postmaster tries to give a word saying that let us go, give him loan, or let us give him some x amount for the betterment and let him start doing some business. So, that is what is happening in Microfinance.

A group of people are identified, they are certified saying that they are good and then the bank comes ahead and gives them a loan. And, this is loan, not a freebie money, which they throw away, they give a loan, and using that loan, the community of people have to work together for a common cause, produce the output, make profit for them, and return back their loan.

So, Microfinance talks about small loans, savings, and other financial services to individuals who lack access to a traditional service. The key features of Grameen Bank approaches, it is a group-based lending where in which the group acts as each others guarantee.

Then, there is no collateral requirement. Here, they are enabling access to credit for those without assets. Then, it is especially focused on women groups because women groups generally their mobility is not very high. And, since they are the breadwinner for the family or they have a family attached, they are mostly reliable.

So, focus on women empowerment is prioritizing women while lending. So, you see here, you are trying to give a loan to a group of people, may be 10, and each one becomes the guarantee for the other.

And then, you try to give them a loan without any asset, just by looking at the proposal or whatever it is looking at their attitude, the way they go forcefully in establishing a business, or the way they go convince people in buying their products, they look at their capability, the groups capability.

And then, what they do is, they try to give this loan towards women folks. So, women folks because they do not move, they have a child, family, and they have a moral commitment to take care of the family. So, they are seen as a prime focus, which has been done, this is a very successful model. If you and I go to the bank, nobody will give us a loan without an asset.

But here, they trust the group and here, it is a social upliftment plus, it is also improving their well-being. This is a successful model which is a Social Innovation. Bank for poor, Grameen bank.

Examples of Value Creation from Social Innovations

Impact of Grameen Bank :

- Poverty alleviation : - enabled to start businesses & improve life.
- Women's empowerment : - finance & decision.
- Improved social indicators : - education, health care & life style.
- Economic growth and community development : - local economic activity, entrepreneurship & job creation.

Dr. J. Ramkumar
Dr. Amandeep Singh

MedTech
IIT KANPUR

The impact of Grameen bank is, the poverty alleviation has happened. So, it has enabled to start businesses and improve life. Next is women empowerment. So, by giving them access to finance and decision. So, women empowerment, they are given finance, and they are allowed to take decisions now.

Next is improved social indicator, it is related to education, healthcare and lifestyle, it has improved because of this Grameen banks. A Social Innovation, how it has impacted the society, you see.

Then, it is economic growth and community development, we have through local economic activities, entrepreneurship and job creation, it has happened. Let me tell you another example which has recently happened in my nearby village.

So, there was a lady who lost her husband during COVID, she had 3 kids to grow, she was becoming the breadwinner of the family. She was illiterate and looking for some job, very sincere lady, very capable lady, she was looking for some job where in which she can try to maintain her family, and give proper education and food, healthcare for her children.

So, she was struggling for some time, and then what she did was, she put her details on the Instagram or some social hangouts. So, she put and then what happened within 2 days time, several similar kinds of women joined together. They all found out there are 6, 7 people who all are having the same situation. They all joined together, they all thought for a while what is to be done, and then they realized that food industry is something which is going to be green.

Lot of people look for delicious food and that does not need a huge education. All they need is, to hone their skills properly whatever they already have. So, then they did some small online training by doing some courses. Now, they all have learned the skill.

Now, the women folks have divided their responsibilities. 2 of them will take care of breakfast, 2 of them will take care of lunch, 2 of them will take care of snacks and the 2 of them will take care of dinner. So, 8 people joined handedly, now they start a small Social Innovation, they start a small start-up and this start-up is used to produce food, depending upon the requirement of the customer and then they try to collect money into the kitty, at end of the month they divide the profit, such that everybody can get the same share, wonderful model, a social innovative model.

So, a community is now protected and they are able to take care of their family. So, now, what has happened, a new job creation has happened, and they have become entrepreneurs, and the economy of the money, whatever is there, is not getting moved, it is getting redistributed among themselves. Once you start doing Social Innovation, the money gets distributed within the community itself.

Examples of Value Creation from Social Innovations



Case Study 2: TOMS Shoes: The Buy-One-Give-One Business Model

TOMS Shoes is a socially conscious footwear company

- founded by Blake Mycoskie in 2006.

The Buy-One-Give-One Model: For every pair of shoes purchased, TOMS donates a pair of shoes to a child in need.

Key Features of TOMS Shoes' Approach:

- One-for-One giving
- Long-term partnerships
- Sustainable impact

Collaboration with organization of non profit to donate shoes + improve health & well-being.

** Ensuring a one-to-one match between customer & donate person.*

The next example is TOMS Shoes. The Buy-One-Give-One business model. TOMS Shoes is a socially conscious footwear company which was founded by Blake in the year 2006. This is how the logo of the Tom's company looks like. The Buy-One-Give-One model is for every pair of shoes you purchase, Tom's donate a pair of shoes to a child in need.

So, it is 1 + 1, you take, then it is given to a needy person. So, Tom's model. So, looking at the social model, Tom's was able to sell more shoes, more and more shoes he sells, more and more shoes he donates.

So, now, he has developed a model, where in which people feel that buying a shoe and giving one shoe to a needy is much more thanksgiving to the society. So, they buy the shoe, and the company does it religiously, and then it goes.

Today, there is also technology used in it. So, what they do is, they try to integrate an RFID tag with the shoe, if the person wants to know to whom the shoe has been given and whether he is using the shoe, all these things can be noted down by the RFID tag, if somebody is interested.

There are many people who say I do not want to know, so, that is ok, but the RFID is also getting integrated, not in this particular company, there is another product where they do so, and they also have a QR code. So, here it is the model is, you Buy-One and Give-One. The key feature of Tom's shoe approach is bought one shoe.

So, this buys one shoe ensuring a one-to-one match between a customer and a donate person. It ensures one-to-one match between a customer who buys it and the company who donates it to a person.

The next one, it talks about collaboration organizations and non-profits to distribute donated shoes, long term partnership. They would like to have association with several NGOs. The company produces, there is a sponsor to give the shoe. They tie up with NGOs, the NGO comes and takes the shoe from the company and distributes to a needy person.

So, now, there is a long-term partnership between the NGO and the company. So, that is a key feature, then this sustainable impact is, moment people start wearing shoes it improves their health, it also tries to push them for well-being. So, these are sustainable impacts because of the social model which the TOMS Shoes approach does.

Examples of Value Creation from Social Innovations

Impact and Benefits:

- Access to footwear :- provide millions of pairs of shoes to children in need
- Education and empowerment - regularly attend their education oppor - function
- Community development - local economies & fostering a sense of pride & dignity

Social Innovation in Industry 4.0

Dr. J. Ramkumar
Dr. Amandeep Singh

IMAGINEERING
FOR THE FUTURE

MedTech
IIT KANPUR

Access of footwear provides millions of pairs of shoes to children in need so that their health is taken care, well-being is done, Then, it educates and empowers.

See, what happens is, in a study they have also found out that the needy person, moment he has been provided with a shoe he starts going to a school, moment he starts going to a school, he starts well-being, moment he gets educated, now he becomes empowered, it is all linked.

Then, the community development is, moment he starts going to school, he starts educating, he starts contributing in a job. So, once he starts making or he starts going for a job he gets money. So, here the community development happens, moment he earns money he puts it back into the community. So, the local economies and fostering sense of pride and dignity comes. So, these are the impacts and benefits of this particular case study of Tom shoes being given one-on-one.

Examples of Value Creation from Social Innovations

Case Study 3: Fairphone: Ethical and Sustainable Smartphone Production

- Fairphone- Dutch social enterprise founded in 2013
- Mission- To create a fairer and more sustainable electronics industry by producing ethical smartphones.

Ethical and Sustainable Practices:

- Supply chain transparency
- Conflict-free minerals
- Fair wages and working conditions

Modular Design and Repairability:

- Modular design
 - Reduction of e-waste
- designed in a way that allows easy replacement & repair of component*

Then, the third case study is Fairphone. The Fairphone is an ethical and a sustainable smartphone production. The Fairphone is a Dutch social entrepreneurship found in 2013. The theme of Social Innovation is going like a forest fire after 2000.

The mission is to create a fairer and more sustainable electronic industry by producing ethical smartphones. What are these ethical smartphones and what are their practices? Their practices are the ethical and a sustainable practice followed here is supply chain transparency.

So, what is supply chain transparency? It tries to ensure suppliers are committed to responsible practices. Supply chain transparency. You buy it from me and I am producing some part, I am following the energy efficiency and sustainable processes.

Then, conflict-free minerals, now what they do is, they try to say, the source minerals from conflict-free regions it has to happen. It has to come from a place where the people look or take care of the mining engineers or the society which is around the mines.

Then, fair wages and working conditions are there. So, ethical and sustainable practices are, they try to look at supply chain transparency, they try to look at conflict-free minerals, they also look at fair wages and working conditions.

Now, when we talk about ISO 9000, QS 9000, all these things are trying to include these fair wages and working conditions, sustainable solutions and supply chain transparency. If you get an ISO certificate for your facility, now they try to ask, what is the operation it does, where is the material coming from, what is the authentication of that material and if that material has been extracted or manufactured in a sustainable way.

The modular design and repairability is also thought about it. So, here we are trying to talk about designing, designed in a way that allows easy replacement and repair. So, that

means, to say they have introduced modular concept repair of components. So, you are supposed to have a freedom of changing or interfacing new things into it, then reducing the e-waste by making it reusable. Of course, the phones whatever comes through that cannot be compared with the best smartphones whatever you have.

This tries to serve the functional purpose and it also does its work whatever it is, but here the social causes trying to integrate modularity and reduced e-waste.

Examples of Value Creation from Social Innovations

Social and Environmental Impact:

- Worker welfare - *fair wages & better working conditions.*
- Reduction of environmental footprint - *easy repair & replacement*
- Fairphone actively engages with stakeholders, industry players, and consumers to drive change and promote ethical practices in the electronics industry.

Social Innovation in Industry 4.0

Dr. J. Ramkumar
Dr. Amandeep Singh
MedTech
IIT KANPUR

So, the social and the environmental impact is the worker welfare. Here we talk about fair wages and better working conditions. Next reduced environmental footprint is easy repair and replacement. And, the fair phone actively engages with stakeholders, industrial players, customers to drive change and promote ethical practice in the electronic industry.

Electronic industry does lot of e-waste, plus while processing they consume lot of energy, they consume lot of water. This water has to be preserved. So, that is what the Fairphone actively engages with various stakeholders, industry partners and customers to drive and promote ethical practices.

Examples of Value Creation from Social Innovations



Case Study 4: Solar Sister: Empowering Women Through Solar Entrepreneurship

- Solar Sister is a social enterprise founded in 2010 (Africa)
- Mission- to empower women through clean energy entrepreneurship

Empowering Women Entrepreneurs:

- Women-focused network
- Income generation

Recruit & train women for distribution of solar products



The last case study for the discussion in this lecture is going to be Solar Sister, which I have also asked you to look into as an assignment.

Solar Sister, this is empowering women through solar entrepreneurship, this was started in 2010 in Africa. So, the mission is to empower women, they are interested in solar, but their prime interest is to empower women.

Second thing is to do in the area of clean energy, such that they can claim or they do fall into the umbrella of Social Innovation. So, to empower women through clean energy entrepreneurship is the mission of this start-up Solar Sister.

So, here they used women in developing solar products, such that they can have their livelihood and also have a clean and a sustainable environment. So, here empowering women entrepreneurs is women focused network, where in which they recruit and train women, they educate them about a solar panel, they try to educate them how to assemble a solar panel, then integrating the solar panel into a product such that it can have a sale value.

So, the company also gives them the basic parts, the women do assembly, and then they try to add some value to it, then they try to sell it in the market. They are also being taught for maintenance, if that all the product fails in the market, it comes back to them, they start working on the product and improving the product, or they try to maintain the product by doing assembly and maintenance they have a livelihood.

So, here women focused network is recruit and train women for distribution of solar products, and generate income by selling and maintaining, this is their model.

Examples of Value Creation from Social Innovations

Social and Economic Benefits:

- Improved livelihoods - *access to energy, education, increased working hours*
- Women's empowerment

economic opportunity & leadership roles

Social Innovation in Industry 4.0

Dr. J. Ramkumar

Dr. Amandeep Singh

MedTech
IIT KANPUR

So, here the improved livelihood is going to be access to energy, to education, then increased working hours, improved livelihood.

So, it is directly proportion, they work more hours, they try to make more money, but it is not that they work 24 hours, within the allowable limits they try to work. Here it provides economic opportunity and leadership load, this is the biggest advantage of this solar system.

Entrepreneurship and Social Innovation

★ Entrepreneurial Mindset in Social Innovation:

- Combining creativity, risk-taking, & innovation
- problem-solving approach
- Thinking outside the box

★ Identifying Opportunities and Change

through Social Entrepreneurship

- Recognizing unmet social needs and gaps
- Developing innovative solutions with social impact
- Empowering individuals and communities through entrepreneurship

Going ahead with entrepreneurship and Social Innovation together, the entrepreneurship mindset in Social Innovation it is combining creativity, risk taking and innovation. The entrepreneurial mindset should be very clear, you should have a combination of creativity, risk taking and innovation, you have to have a problem-solving approach, looking at the problem you should not run away.

You should have a problem-solving approach; you should always think out of the box to come up with creative and innovative solutions. When we are trying to identify

opportunities and changes through social entrepreneurship, we recognize first the unmet social needs and the gaps this is very very important.

So, this is where the entrepreneurship and Social Innovation comes together. Developing innovative solutions with social impact, for example, solar energy. So, developing innovative solutions with social impact, then empowering individuals and community through entrepreneurship, for example, Grameen Bank. So, if you look at it, the Social Innovation leads to entrepreneurship, this entrepreneurship, it is nothing, but scalability of the solution.

Entrepreneurship and Social Innovation

★ Challenges in Scaling Social Innovations:

- Limited resources and funding constraints
- Regulatory and legal barriers
- Balancing sustainability and growth

for non-profit or governmental or only - stage
→ hindering the scalability & impact

★ Strategies for Scaling Social Innovations

- Securing diverse funding sources and investment
- Building strategic partnerships and collaborations
- Advocating for supportive policies and regulations

Cloud funding
CSR grant
Govt Put

What are all the challenges which we face in scaling Social Innovation? Limited resources and funding constraints. So, especially for non-profit organizations, funding becomes a challenge or at early stage of any start-up, of any venture. The next one is regulatory body and legal barriers. So, hindering the scalability and impact is very important. Then, balancing sustainability and growth, these are the big challenges in scaling.

Then, strategizing for scaling Social Innovation is securing diverse funding resources and investment. So, look for government, look for private, look for CSR grant etcetera. So, securing diverse funding sources and investment, and then looking for crowd funding etcetera.

Then, building strategy partnership and collaboration. So, these are the strategies to be followed and advocating for supportive policies and regulation, talking to government and requesting them to give a small space.

For example, all those products which are developed under the heading of Social Innovation should be given a tax waiver or a loan should be given at a lower interest. These are advocating for supporting policies and regulation.

Summary

Social innovation is a powerful force for

- addressing complex societal challenges
- creating positive change

Through case studies like

- Grameen Bank
- TOMS Shoes
- Fairphone
- Solar Sister

we have witnessed the transformative impact of social enterprises.

By embracing,

- innovative approaches
- collaboration
- focus on value creation

we can collectively shape a more inclusive and sustainable future.



The slide features a collage of logos and text. At the top right, there are several small circular logos. In the center, there is a gear icon with an 'i' inside, labeled 'ideas to products IMAGINEERING LAB | IIT KANPUR'. Below this, it says 'Social Innovation in Industry 4.0'. At the bottom, there is a logo for 'MedTech IIT KANPUR' and the name 'Dr. Amandeep Singh'.

To conclude this lecture, we have gone through Social Innovation is a very powerful force for addressing complex societal challenges and creating positive change. Several case studies were dealt here, Grameen Bank, TOMS Shoes, Fairphones, Solar Sister, all the four things have been discussed in very very brief, because it is a limited level lectures.

So, you cannot go deeper, I have given you the glimpse of it. Now, you can go back and do lot of digging. Then, we have witnessed the transformative impact which has created by these examples under the social entrepreneurship. By embracing innovative approach, collaboration and focus on value creation, we can collectively shape a more inclusive and sustainable future. So, the assignments have been already given. One is you have to start work on Khan Academy, what is Khan Academy, how does it work, what is their social model.

And, the next one is Teach for All. Please go through this, there are available in the websites, read that, make a small brief about it as an assignment. So, this will try to give you more and more insights, how are the Social Innovation impacting the society and how does it sustain.

Thank you very much.