

System Design for Sustainability
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Week - 07
Lecture – 02
Sustainable Product-Service System Design – Methods and Tools

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Welcome to today's lecture. So, we will continue with our strategic analysis - when no stakeholder can be identified as the primary stakeholder that is the multi head stakeholder's system that we learned about in our previous lecture the socio-economic ecosystem.

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SEE

Process	Sub-process	Result	Tools
1. Project Socio-economic ecosystem analysis	Preparatory questionnaire for socio-economic ecosystems ✓	Identification of actors and aspects of their activity	Awesome Actors Tool
	Infrastructure analysis ✓	Identification of existing infrastructure and required transformations	KFPS Knowledge Mining Tool
	Project Actor Analysis	Need analysis of the actors	Empathy Mapping AEIOU Mapping Value Opportunity Analysis SWOT PESTLE System Map

So, in our previous lecture, we covered how to do project socio-economic ecosystem analysis. So, we saw how to do prepare preparatory questionnaire for socio-economy ecosystem, the infrastructure analysis. Today we will start discussing on how to do project actor analysis. So, once you have completed the infrastructure analysis and the preparatory questionnaire for socio-economic ecosystems from the local visionary or the administrator you already have a list of all the possible types of actors.

So, for doing this project actor analysis, we will go to each type of actor. Say for example, weaver was one of the actor. So, we will go to different types of weavers. When we meet one person, the first person we how do we get you know touch with that. Usually it is little bit more tough that you go to a person completely, and introduced in such context, because if you are a complete stranger, people might be skeptical to your presence in their locality.

So, a better option is get introduced to some of your actors through your local administrator or local visionary, and then from these actors. So, say your visionary introduces you to weaver one. So, the weaver one can then take you to other weavers. The advantage of this method is because to all the weavers that you will go, because you are getting introduced by somebody who belongs to that particular place trust factor will be much higher. So, it will be easier for you to get information.

But the downside of this kind of an approach is so this weaver will take you to other weavers who are like him or her or like or are in his or her friend circle. As a result you might come up cross only similar type of viewpoints, similar type of ways of doing things. So, under such circumstances what you can do is ask your local visionary or local administrator to introduce you to different types of weavers.

And from each type of weaver when you go into their circle of other weavers, which are their friends, you will come to know about many more different aspects many way more different ways of thinking, ways of doing things different kinds of circumstances and so on. So, how do we do this project actor analysis. So, all these charts that you can see so, the empathy mapping, AEIOU mapping a something, which we used mostly to gather information from our actors.

Then we do an analysis by using the value opportunity analysis SWOT, PESTLE, and we create the systems map. It will be also very beneficial that after I have worked on the value opportunity analysis, SWOT, PESTLE and system map, I again go back to my actors to verify whether my analysis is correct or not. I might also try to do the analysis sitting with the actors in case that is possible. Many a times actors might have the time to do for it; other times they might not having.

Say for example, the weavers they are paid on the basis of the length of cloth, and the amount number of design elements that the weave. So, in those particular context if you want the weaver to come into you or you go to the weaver, and you want the weaver to spend time with you, answering your questions or doing helping you in some analysis, you are actually asking him or her to compromise on the money earned.

So, in certain in such context it might be more helpful that if you can compensate the actor for the amount of money lost, because the actor participated in talking to you. You might also try to see, if you can talk to the actor outside his or her work time, so that there is no wastage of time. So, you should always ask what works best for that particular weaver.

In case of our weavers, because they were employed by the entrepreneur, so it was not very appropriate for us to go, and directly talk to the weaver, and take their time. So, rather we spoke to the entrepreneurs and then with their permission we took the weavers, and we compensated the weavers for the loss of time. We did not compensate the

entrepreneur, because for him that amount of money was way much more lesser as compared to what it means for the weaver. For the helpers and for the realers, because when we met them, they were not actually engaged in doing certain kind of activities.

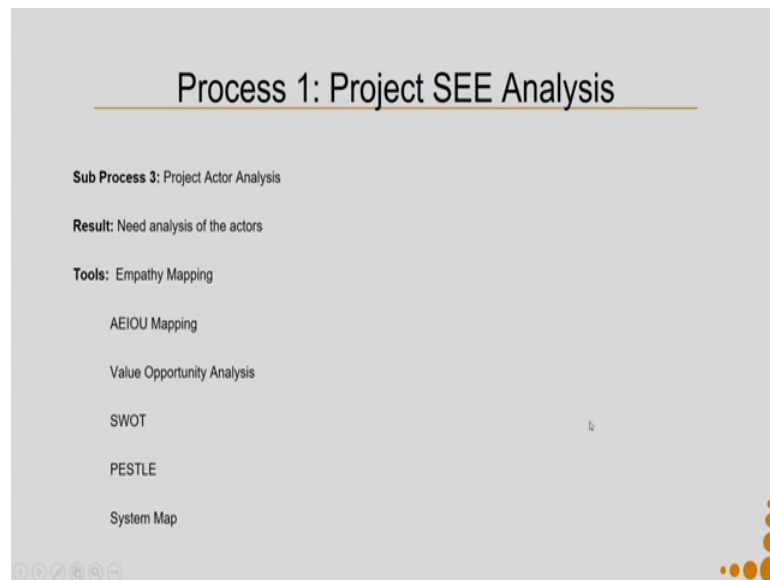
So, for as it was not very mandatory that we compensators, but now they will be a situation that I am compensating weaver, but not the helper and the realer, which might create a kind of uncomfortable situation. So, you have to take a proper judgment on how do you pay. You should also take care that you do not an engage in so when we are doing an interview, we will be making of audio recording, a video recording we will be taking photographs. So, you should also inform your participants that where all you going to use it.

Either you take written consent form, where you have written all the media of recording that you are going to use, and where all you are going to use the content that you have gathered from them their photographs and so on. Either you write down that this is how it will be used, and get a signature from them or in other cases it might be also a better idea that on a video.

So, you start the video you tell inform the person about what you are going to record, how you are going to produce it in different media to in front of whom are you going to produce it. And then you ask do you agree with this kind of a situation, and the your actor tells in to you yes I agree with it, so that as a record should be always preserved.

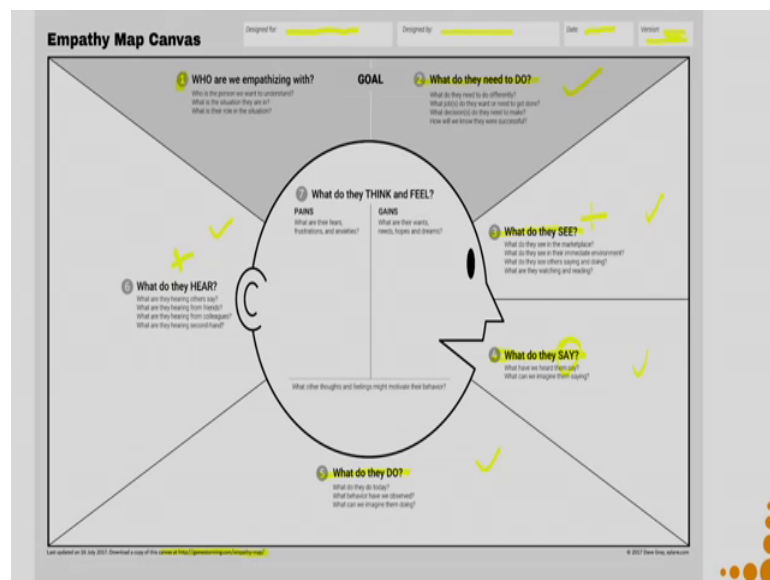
In cases if the actor does not agree with you taking video, you must avoid taking video. If the actor says it is to take the video, but I should not be my face should not be made visible. So, in that particular case you say that I will not make your face visible. And when in all documents, and wherever you presented, you always blur that persons photograph. And this kind of consent should be also recorded on a media. So, let us see how to do this actor analysis.

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So, the what we are the aim of the actor analysis. First process the aim of the sub process actor analysis is to identify the needs of the actors.

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So, our first tool is empathy map canvas. So, what this canvas tells you. So, first you write it designed for name of the actor. You can write down your name, say you are doing this research in a team. So, who is going, and asking the question it might be important to write that person's name. Then the date when you take took it, and the kind of vision. The vision statements says what you wanted to know from the actor. Say for

example, if I say my aim was to know, how the life of a weaver goes around, how he is compensated in the system is the weaver happy enough, so that can become my vision statement for this particular empathy map.

Now, coming to the questions so, what is map helps you is when you go to a field, it will be beneficial that if you print this particular map, this map you can download from this particular website. So, you print it on an A3 sheet and you carry couple of them. And you use them to make your pointers. So, you do a video recording which you will analyze later, but you also, so there are 2 people or 3 people who going together, and you also make notes on there. So, the question 1 over here is WHO are we empathizing with?

So, who is the person we want to understand, what is the situation they are in, what is their role in the situation? So, who are we emphasizing with, of course we know that the weaver. So, now, what kind of weaver this person is. Is this person waves for himself or is this person weaves for an entrepreneur, does this person weave Muga, does this person wave Tussar. So, you can define the waver, is this person who is regarded as an expert weaver, is this person are no ways weavers. So, there can be many ways of defining these particular weavers.

So, in the first context we are trying to understand who is this person, that we want to understand. What is the situation they are in, what is their role in this particular situation? Next comes our second step, what do they need to do? So, what do they need to do differently say for example, in our previous question we already know what do they need to do.

They want need to be a weaver, but they might also be having some idea in their mind what do they need to do differently, so that they are to be successful more than other weavers or what do they do want to have to do differently from their community from which they belong or from their family that they belong. So, anything in any respect what do they need to do differently? What jobs do they want or need to get done? What decisions do they need to make? How will we know they are successful?

So, when you ask them how will we know they are successful is first you try to get their vision like how do they define success. Only when somebody says that I am successful in doing, what I am doing they are happy with what they are doing. So, you ask them to define those terms.

Then comes 3, what do they see? What do they see in the marketplace? What do they see in their immediate neighbor immediate environment? What do they see other saying and doing? What are they are watching and reading? This gives you an idea about their surroundings, because it is the surroundings which help a person in defining what do they want? What do the aspire to have? Then comes what do they say? What have we heard them say? What can we imagine them saying?

5th, what do they do? So, what do they do today? What behavior have we observed? What can we imagine them doing? So, when I, so when I am in my 1st and 2nd, what I am trying to do is more like ask some questions. When I come into the 3rd, it is or the 4th and more, when I come to 5th and the 6th, I do ask them questions, but I am also trying do an interpretation.

So, what do they do today, what behavior have we observed, what can we imagine them doing. So as soon as you, so what say what can we imagine them doing. You have to formulate your questions accordingly. So, say for example, I present before this weaver couple of scenarios. The answers to that scenarios helps me in answering what can we imagine them doing. Then what do they hear? What are they hearing other say? What are they hearing from friends? What are they hearing from colleagues? What are they hearing second hand? So, what is the difference between SEE and HEAR.

In this particular context what it means more is when you see something it is like a direct experience. Whereas, when you are hearing something it is something, which is coming from a another person. And what do they say in case of say is a combination of SEE and HEAR. And as a result this person will make certain interpretations, and that is what they will be saying.

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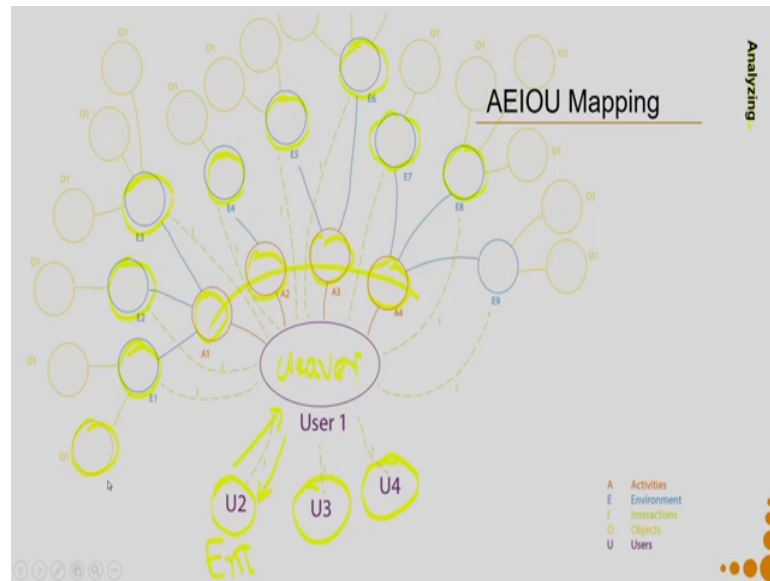
AEIOU Mapping

Activities:	Environment:	Interactions:	Objects:	Users:
goal driven or directed set of actions	Space/location/features where activities take place	between a person and someone or something else	key elements used	consumers or people who provide the behavior
Activity 1	E1.. E2...	Between User 1 and user 2	O1, O2	U1,U2
Activity 2		Between User 1 and Entity 2		
Activity 3				

Next one is AEIOU mapping it is also done for the conducting face. What it consist of so A stands for Activities E for Environment I for Interactions O for Objects, and U for Users. So, this particular tool is used for mapping the activities environment interactions objects, and users.

So, say for example, the users so, although this is like AEIOU in this direction, but we start from the users. So, who is my user? A consumer or people who provide the behavior so, say in the case when I am trying to say weaver. So, weaver is my user one. Who is the main user in this particular AEIOU mapping the weave so, I will show you the next slide.

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So, you can see when I am doing an AEIOU mapping of a particular user. Say in this case my weaver is the user one. I put that I am doing it specifically for this person. So, I put the weaver as a main person. And I put all the activities environment interactions objects for this particular weaver. And in the process the user 1 interacts with which all user 2, user 3, and user 4. Say my user 2 is the entrepreneur.

In another AEIOU mapping where I will be doing the AEIOU mapping for an entrepreneur, entrepreneur will go to the user 1 side and I will elaborate on its activities and so on. And in that case my weaver will come to user 2 group. So, I have my users; users are all the consumers or people who provide the particular behavior in that system. Objects are key elements used. So, after I have done users my next task is to identify all the activities that my user does.

So, activities are goal driven or directed set of actions. So, all goal driven or directed set of actions will fall under the category of activities. Say for example, for a weaver weaving is an activity weaving is a major activity. Another activity can be. So, if a particular thread breaks down, that person has to also join that particular thread. So, joining broken threads is another activity, but it is a minor activity. And it takes much lesser amount of time in the whole time frame. Now, say when you are diff talking about waving, in weaving also I can divide the activity into two activities.

Say weaving plain cloth, and weave plain weaving, and weaving for designs, and weaving for designs with Meena. It is our choice whether we want to do this distinction or not. The advantage of bifurcating it into lots of activities is for each and every activity I will. So, my environment interactions and object analysis is done on the basis of activities.

So, in case when I make one umbrella activity, which is very big activity. I might miss on to identifying the environments interactions and objects properly, but in case I divided into micro activities in one macro activity. I might be able to not miss any of those environments interactions and objects, but the problem is you have a way much the time taken for doing this will increase subsequently, But, I would always suggest that you divide the activities into as many sub activities as possible.

You get a better picture, while you are trying to understand what the weaver does. So, when you are trying to conduct this particular research AEIOU mapping. So, when you are talking to the weaver, he will try to identify all the activities that they do. So, you will identify all the activities over here. So, again you will take A 3 sheets to do this particular activity, and it will be more. So, you have more space, and when you are talking to this person, you can identify all the activities. Then in with what kind of environment these activities are done.

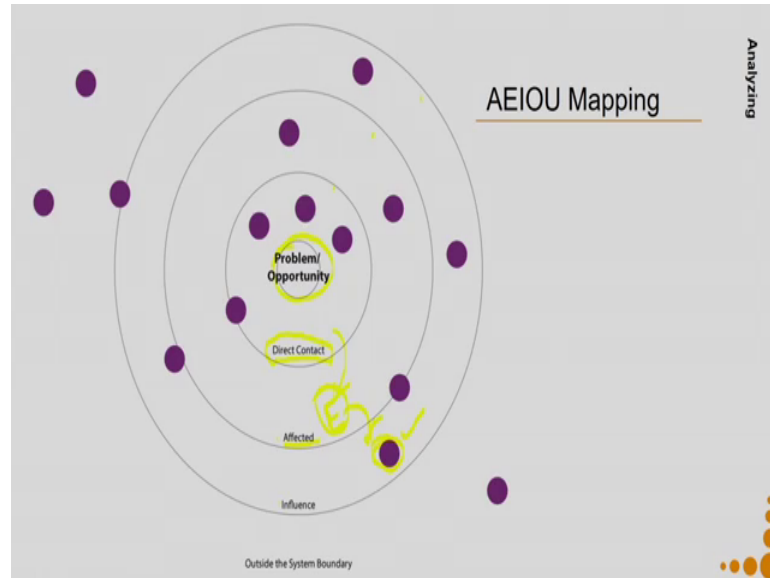
There are times at which it might be way much better that if you fill up this part with photographs, so here you can see I have written analyzing. So, you will use this particular tool while you are doing you are conducting the research also while you are analyzing. So, while analyzing if it will be better that, if you put pictures of the environment also in that case when you get into the design activity, it helps you better hm. See the image of how the environment

Then in that environment what are the objects use. Say for an activity of weaving which is happening at an entrepreneurs location the objects used or the loom, the thread, the flying shuttle, the bamboo peddles, say the thread for making the Meena or the thread for making the design motives or in case some bodies owning the machine small hand machine, which I showed you last time used for making the design motive faster.

If somebody is owning, that that is another object. So, people also put a cotton towel on top of the woven garment, so that is another object. So, those will be identifying per

environment you will identify many of these objects. When I have gather the data for all the users, I will get into analyzing.

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When I am doing the analysis, my first step is identify. So, I will have identified many problems and opportunities while I am doing this particular research. So, for each problem or opportunity, so you will write the problem on opportunity in the center. Then you will make these 3 circles, so 1, 2 and 3, three circles. So, in the first circle you will have users who are in direct contact.

So, say for example, you took the problem space that you have to redesign the working environment. The shop floor in which they are going to work, because you identify that as a problem area, so in that case who are the direct contact users, the weaver is the direct contact user. And the helpers are direct contact user in that particular context. I can also say that the entrepreneur is direct contact user, because setup.

So, they are supposed to do whatever they have to do. So, first I identify all the direct contact. Then I will try to identify all those users or the actors, who are affected by it. So, you can see a person who is in direct contact, because of the way this circles I made. So, a person who is indirect contact is also affected is also a person who influences the system, whereas a person whom you are going to put an affected. They are affected they also influence the system, but they are not in direct contact with the system.

Say for example, you want to get a kind of say for example, a consumer if me as a consumer, I want my garments in a produced in a human manner. So, how do I know whether my garment is being produced in a human manner, I might want to see some kind of a certification on my product, which says this garment has been produced in conditions in which the weavers were had very comfortable working environment.

So, this consumer, because of his or her demand of owning a product which is produced in a very nice working condition comfortable working condition for the weavers. This consumer is in the influence category, because they are not in direct contact with the workplace. They are not also affected by the workplace, but they are influencing the workplace. So, they demand for a certification, and they say I am ready it is like to fair price products. The consumer is ready to pay higher prices for better working conditions better payment in a structure for the producers of the product, so in that case my consumer is a influence level user.

Now, let us say who is going to be affected user. So, affected user does influence and is also affected by themselves say for example, in case I know that my entrepreneur is not someone who is in direct contact, but this particular entrepreneur. So, what kind of entrepreneur this guy can be, say for example this guy is a entrepreneur who owns a wholesale distribution for certain kind of silk products. So, now this particular entrepreneur is not in direct contact with the working environment, but this entrepreneur is one of those who sells this conscious consumer the product.

So, say for example, Fab India is this entrepreneur. So, they are because their whole brand is about selling products through fair trade. So, they are not in direct contact with the working area, but the work area affects their business. Only if the work area follows the fair trade principles, they are able to procure from them. And select to my conscious consumer, so in that particular case Fab India is an influencer and is also affected by it. So, I will put this particular person in affected so.

So, this is, because this is my analysis phase after I have done this for one particular problem or opportunity area that I think in the good area to work on. I will come to this particular map. And I will try to do that particular map for all the users I have identified in that particular chart from my previous slide. This will slowly give you an idea which are the problems which are worth solving, which are the opportunities worth perusing.

And in order to pursue them what kind of changes have to be brought into the environment objects interactions, and the activities. Now, comes value opportunity analysis. So, once the empathy map has been created AEIOU map has been completed.

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(adopted from Hanington)

Value Opportunity Analysis

What are the needs of the actors?		Actor 1	Actor 2	Eg: Designer
Emotion ✓	Adventure	WALKY	EMOTE	✓
	Independence			
	Security			
	Sensuality			
	Confidence			
	Power			
Aesthetics ✓	Visual			
	Auditory			
	Tactile			
	Olfactory			
	Taste			
Identity ✓	Point in Time			
	Sense of Place			
	Personality			
Impact ✓	Social			
	Environmental			

We get into doing a value opportunity analysis. What it helps is as you, remember we started that the purpose of this project actor analysis is to identify their needs. Now, needs can be classified into different types of needs. So, here this is a chart which has been adapted from Hanington. According to Hanington there are couple of kinds of needs that you can identify emotional needs, aesthetic related needs, identity related needs, impact related needs, ergonomics core technology and quality. And within each of these there are sub needs.

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(adopted from Hanington)

What are the needs of the actors?		Actor 1	Actor 2	Eg: Designer
Ergonomics ✓	Comfort			
	Safety			
	Ease of Use			
Core Tech ✓	Reliable			
	Enabling			
Quality ✓	Craftsmanship			
	Durability			

So, according to Hanington in emotion, you can classify them as need for adventure, need for independence, need for security, sensuality confidence, power. Similarly, in a aesthetics it is visual auditory olifactory, tactile taste related maybe not all of them are applicable. Say for example, in the context of silk taste does not matter. Then identity point in times sense of place. So, you can have an identity, because of a point in time.

So, also, because of a sense of place, and because of your own personality. Then impact on the social and the environmental side of it. Ergonomics related to comfort, safety, ease of use then core technology, which are related to reliability and enabling power to some to the actors.

Then quality which is related to craftsmanship and durability in this particular context which we are talking about the socio-economic contest quality related to craftsmanship is a very very important aspect, because many on these people their entire source of a pleasure is in that craftsmanship. So, what we do is we try to write down our first actor say our first actor is weaver. And say our second actor is an entrepreneur who is the owner of the looms. My third actor is a designer now, for each of these I will try to identify.

So, in this case, in case you are in doubt. Whether there is some adventure kind of a requirement whether some independence kind of requirement what it is, then you can again ask your actors or you can use your existing data to write down what according to

you is the value is the need for that particular actor. Once this chart is complete it is preferable that you go back to your actors to verify it.

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SEE

Process	Sub-process	Result	Tools
2. Defining intervention context	Clarifying design goals	S.PSS problem statement, design brief, unit of satisfaction	Co-design using "Clarify Your Goal" section of Frog Collective Action Toolkit
	Competitor analysis	Competition space knowledge	Competitor analysis on form, category, generic, budget level Porter 5 forces analysis if applicable

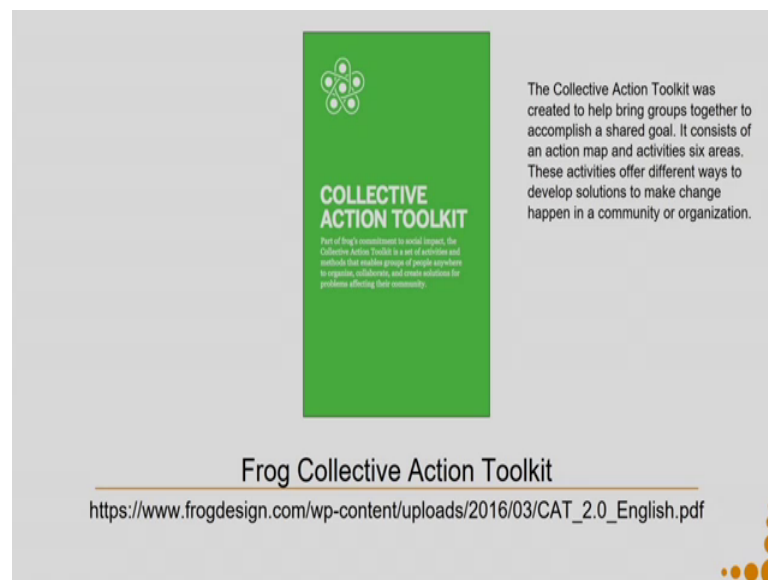
Now, let us come to the second process. So, the second process is. So, in my first process I got an understanding of my actors of the infrastructure existing as well as where we want to go. I know, now what my actors need, what are their current problems and so on. Now, my task comes to define the intervention context. So, because in the socio-economic context most of the time pre defined intervention context does not lie or there are too many predefined intervention context. But we need to define over here some doable intervention context as well as may be a series, but in a time gather that how are we going to reach to that goal.

So, defining intervention context first step is we clarify the design goals. And then once my design goals are clarified I will do a competitor analysis. So, let us see how do we clarify the design goals. Like I told you these are context which are multi stakeholder. You cannot do it is never advisable that you do this clarification of design goals without the actors. Then you might come up with very interesting design goals, but they might not be acceptable to your actors. It might be also situation, because me a designer coming from outside I am not very well acquainted with that system I did research only for a couple of days.

So, I might give very naive design directions, which the actors know that either they might have already tried or they have reasons why it is not going to succeed. I might also bring in design intervention which the actors might be totally not interested to do it. So, it is always better that you try to do this clarifying design goals sitting with the actors. Not necessarily you have to bring all the actors together in one place. Practically that is usually not possible and also if you have a huge crowd coming up, then conducting a session for this activity becomes very difficult.

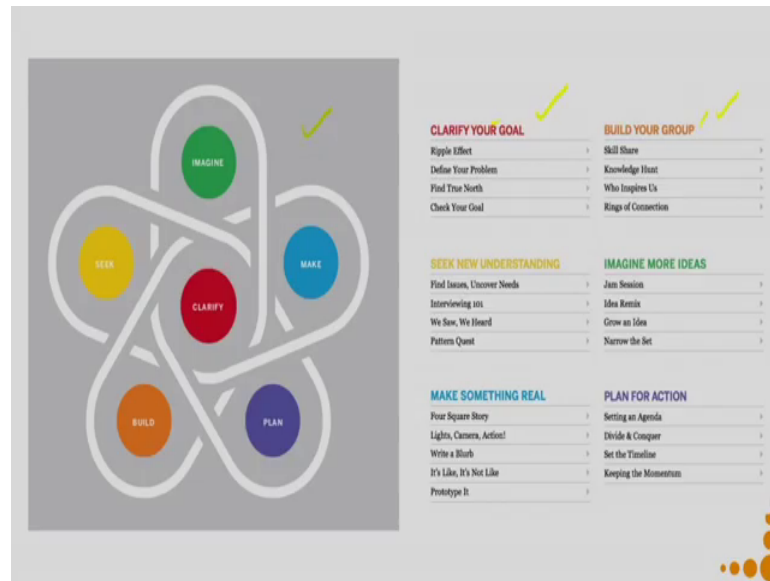
So, maybe you can conduct couple of those sessions where in each of these sessions you get around 10 to 12 of these actors. In case that is also not feasible you can also do this activity sitting with a couple of actors together say 5 of the weavers and you sit together, and do it only with the weavers. It always try to do with the actors. So, what we try to do over here the result is the S.PSS problem statement design brief and identification of the unit of satisfaction. So, we will use something called as clarify your goal tool which is drawn from the Frog collective action Tool kit. So, let us go and see what is a frog collective action toolkit.

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So, you can download this particular toolkit it has been designed by Frog. The collective action toolkit was created to help bring groups together to accomplish a shared goal. It consists of an action map, and activities in six areas these activities of a different ways to develop solutions to make change happen in a community or organization.

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So, what it consists of is, so the first step is you clarify your goal. All the you can see that I have written clarify your goal as the first step. And the second step as build your group. There might not be situations in which you follow the same order so that is why this particular chart also does not have much like one starting point one end point. You can start anywhere, but it will be usually beneficial if at the end of each and every stage, you try to clarify your goal.

Check whether you are still in that particular goal or see if you need to change your goal, so the first step is clarifying your goal. Second step all though as I told you they can be done, iteratively they can be done in any particular order depending on your situation. We will in this lecture take a linear sequence.

So, then you build your group, then you try to seek new understanding from the issues and uncover needs, then you can imagine more ideas, then you make something real which is like up making a prototype, and do you do a plan for action. So, in our context in clarifying the design goals we necessarily do not need to involve all these state steps.

Our first step which is clarify your goal is a good enough a process to do, because build your group is very important to clarify your goal. So, most likely you might need to follow only the step 1 and the step 2, but I was still discuss all the 6 steps, and you can take a decision in using some of these other steps also for doing the strategic analysis. And then the next steps of this MSD method.

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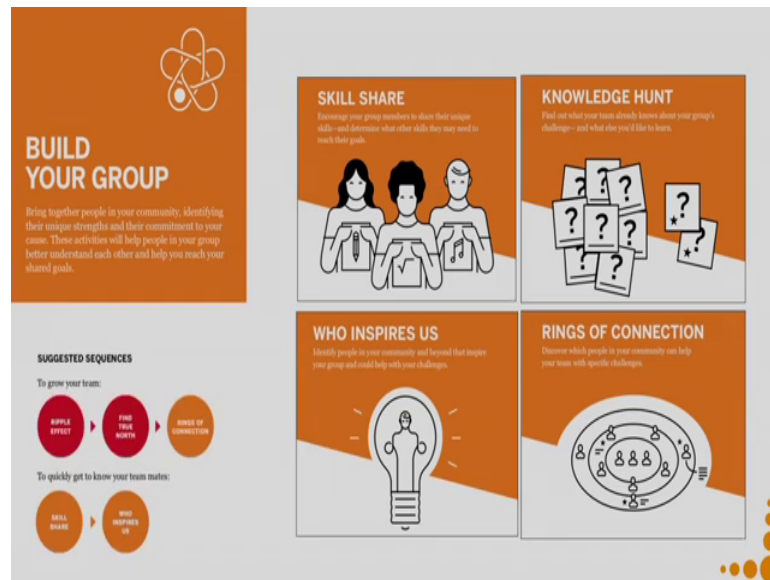
So, clarifying your goal so, you agree on the problem. You are trying to solve, and what goals you want to achieve. This activity area is critical to your group success, as your goals may change depending on what you learn here. So, I use a technique called as ripple effect. So, decide what kind of impact you want your group to have from improving people's lives in your community to changing your country or the world. So, you do it at an individual level community level in the community becomes bigger to say village or town a country and so on.

So, as a result of this you define your problems. So, define the problem your group wants to tackle and establish key questions to answer along the way. Then after many problems have been define the group has to mutually agree on one particular area to concentrate on. So, find the true north then you check your goal, see if anything has changed from your groups goals and make adjustments. So, the suggested sequence over here is do a ripple effect and then try to find the true north. So, we keep on repeating this process. So, say I gather a group of weavers or I gatherer a group of weavers and entrepreneurs. I ask them to note down or define all the problems that they are facing.

Once they have noted down all the problems that they are facing then I ask them try to identify, what kind of impact you want to create, where all you want to make changes. Once that has been done the changes can be awaked at individual level at the whole Sualkuchi level, at the level of the entire silk industry. So, I give the these queues to the

group, and the group brainstorms once all these brainstorming is done. The group can together find out can give weightages to the different problems to the different impacts that they want. As a result of giving these weightages there can identify the true north. And they that is how you get to your goal that you want to pursue.

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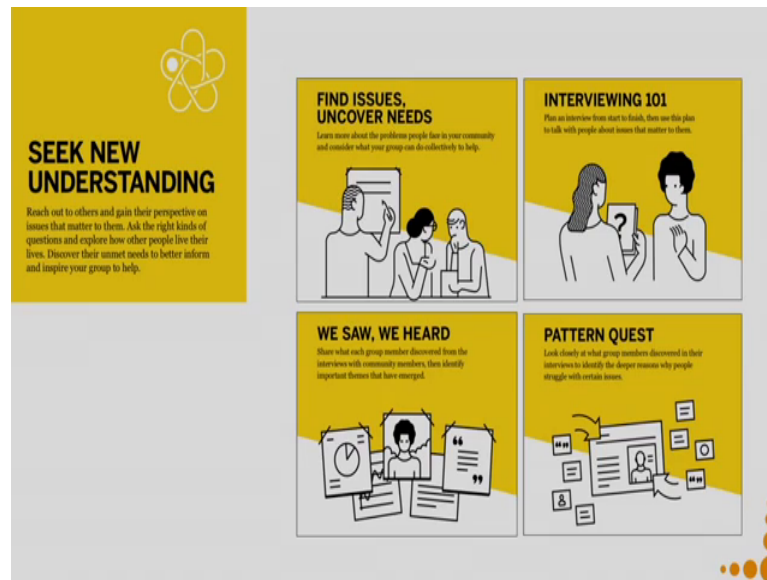
Now, the question how do you build your group, so this building of the group can happen twice. Once before you start on to clarifying your goal, because you need to bring a group to do that so, you can do it once before that and you can do it once after it also. So, like you identified a particular problem to be solved. You identified a particular goal for your project. Now, to do that achieve that, you need to bring in some more stakeholders. So, again there is a chance of building a new group.

So, say for example, you identify certain number of actors to whom you can use. So, you bring them on board you can also go and individually talk to them where you ask them please share your skills. As a result of which you know which actor will be good for which stages of the project. Then you do knowledge hunting with them, because they have certain skills, so, they will be able to they also have certain knowledge.

So, how is it going to be helpful. Then you ask them who inspires us. This is more important topic to be dealt with in case you are dealing with the project, which is like you are trying to solve the problem with a community, where you really want to identify who inspires us. All these steps are not mandatory. You can follow the steps the ones that

you are is required for your particular project. Then you identify the rings of connection so, in the group that you have identified. You can tell each one of them to identify others, whom they can bring in and will be helpful for this particular project.

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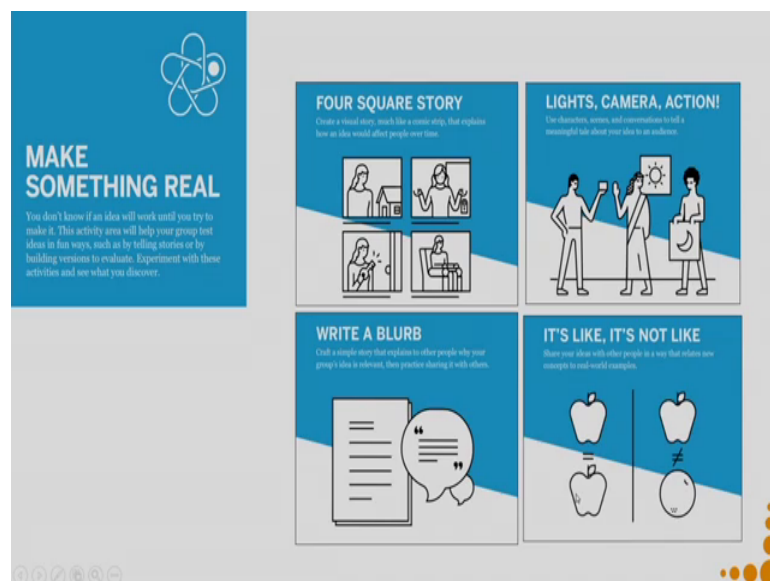
Then we need to seek new understanding. So, reach out to others, and gain their perspective on issues that matter to them. Ask the right kinds of questions, and explore how other people live their lives. Discover the unmet needs to better inform inspire group to help. So, simply you do a brainstorming session to identify all issues, and uncover needs. You can use the interviewing one on one technique, where plan and interview from start to finish. Then use this plan to talk with people about issues that matter to them. We use the we saw, we heard technique which is something similar to what our empathy map was trying to cover. Then you try to identify a pattern.

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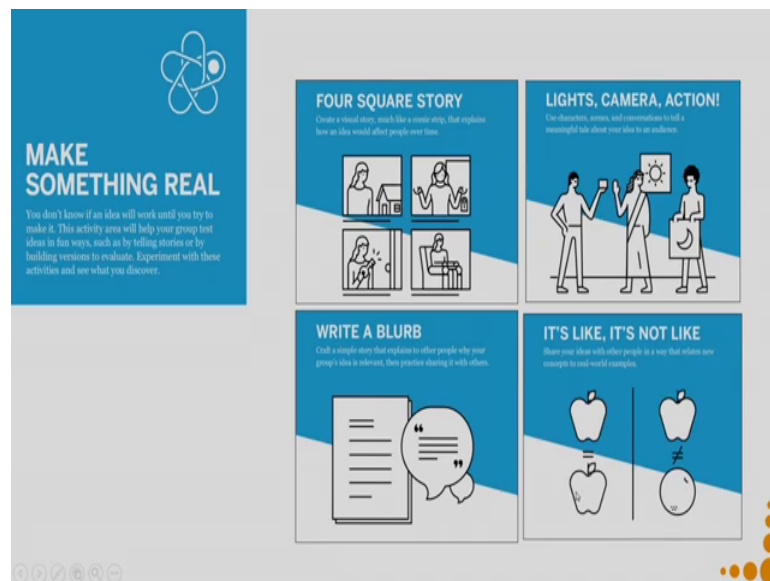
Next, we can try to do imagination of imagining new ideas along with the group. So, this is not a process. This is a process called as participatory design where you design along with the actors, along with the users, so where, so you have a jamming session, where everybody brings on their idea like what can be done. And how it can be done, then you remix each other's ideas buildup on each other's ideas. And then narrow down the set an identify these are good ideas. Not necessarily the designer has to pick up the idea, but the whole process can be also done to get better understanding of the actors.

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Then after this process is done you can make something real, so whatever has been told we can make a quick prototype of this whole process. The prototyping not necessarily needs to be a physical prototype. It can be also like an acting session which is design. So, in which the actors act and try to identify what can be the possible problems in the process.

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Then you finally end with plan for action. So, setting an agenda how do you achieve it divide and conquer. So, like you assign task to different sets of people, you set the timeline, and keeping the momentum on so. How do you motivate your team to keep moving forward, and communicate clearly about who is doing what.

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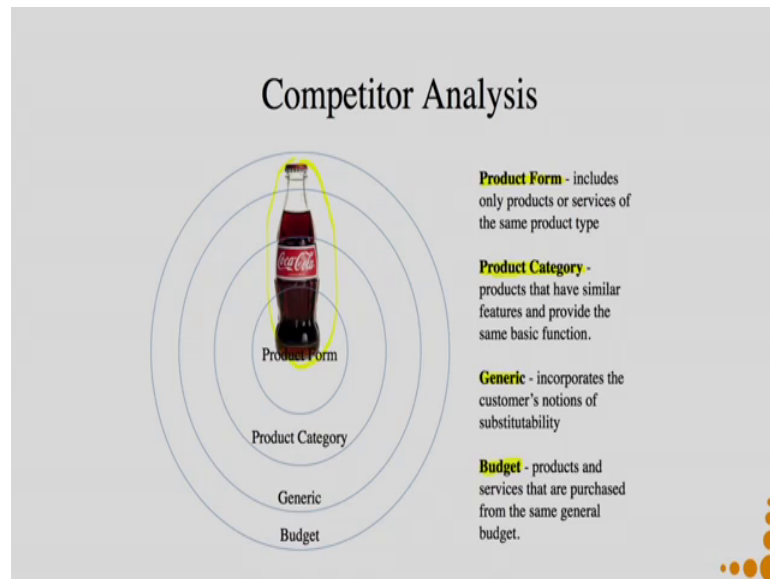
SEE

Process	Sub-process	Result	Tools
2. Defining intervention context	Clarifying design goals	S.PSS problem statement, design brief, unit of satisfaction	Co-design using "Clarify Your Goal" section of Frog Collective Action Toolkit
	Competitor analysis	Competition space knowledge	Competitor analysis on form, category, generic, budget level Porter 5 forces analysis if applicable

So, for our achievement of strategic analysis only the first two steps can clarify design goals, and build your team where supposed to be used. The other steps can be used in case you want to use it for doing some design for a community. Now, comes the next step which is competitor analysis. So, you saw of our previous context, where a project promoter was identified for the context of fresh who which was the water purifier manufacturing company.

We did competitor analysis by using porter 5 forces, but many a times in the context of socio-economic ecosystems. Porter 5 forces are not applicable. If they are applicable, then you can do it. If they are not applicable, then a better process is something which we call as competitor analysis on form category generic and budget level.

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How does it look like? See for example, I take a particular product. So, I take a particular soft drink product. So, who are the product formed competitors. So, includes only products or services of the same product type. So, say I took Coca Cola, maybe Thumbs Up, may be Pepsi. All those products which have provide the same type of products. So, all products and services, which provide you the same product they are at the form level.

So, say for example, in case of Sualkuchi silk, what is the product form level competitor maybe Banarasi silk, maybe Kanchivaram silk, because they are also producing silk sarees, so that becomes a same product type. Then I try to identify product category level competitors. So, products that have similar features and provide the same basic function. Say for example, a silk saree, and a cotton saree or a polyester saree. They provide the same features, and the same basic function. So, either of them should be possible. So, in this case they provide the same basic function it is a saree, and it is a garment.

So, then I call them as product category level competitors. Then there are generic competitors incorporates the customer's notions of substituting substitute ability. These can be alternate ways of dressing; this can be also say a power loom machine. So, they incorporate customer's notions of sustain substitutability everything that you can substitute your silk saree with. As the term sounds it can be a very very big picture.

So, we have to consider the picture which is manageable for our context. Then comes budget. So, the products and services that are purchased from the same general budget. Say for example, a Muga silk saree the starting price might be around 40,000 rupees. So,

you can easily buy a Muga saree which is cost say around 2 lakh rupees. Now, that budget can also be used for buying a particular piece of jewelry a gold jewelry, which is again in the same society is a price item so, there will be struggling for the same level of budgets.

So, products and services that are purchased from the same general budget. Again this can be a large number of products. And you have to confine yourself. You have to see what all will you include, and what all will you not include. Say for example, does it make sense to include say a car which costs around 3 lakh rupees in the same budget level maybe not, because this silk saree and the car might not be competing at the budget level in the same sense. And it might not bring you any benefit doing that comparison in the ecosystem.

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	Form competitor		Category competitor		Generic		Budget	
	Competitor name	Value offering	Competitor name	Value offering	Competitor name	Value offering	Competitor name	Value offering
Local-Ecosystem's main value proposition	Sivasagar handloom cluster	✓	Banarasi Silk	✓	Polyester silk, Powerloom garments		Gold	
Eg: Sualkuchi handloom silk								
Design intervention goal:								
Eg: Yarn Bank								

So, again you can use this particular chart that we have. So, I have my form level competitor category competitor, generic competitor, and budget competitor. Now, I will use 2 columns over here. First one is local ecosystems main value proposition. So, my local ecosystems main value proposition over here was Sualkuchi handloom silk that was a main value proposition. Then another one I have that design intervention goal. So, I will do all my competition analysis on these two aspects. One is the local ecosystems main value proposition and the design interventions goal that we setup. So, say for

example, we setup intervention context which is like setting up a yarn bank, so for that what are the other competitors.

So, now, when I take this particular local ecosystems main value proposition, which is Sualkuchi handloom silk. At form competition I have Sivasagar handloom cluster, because it again use the same kind of products it is from the same state. So, at a form level they are competing. Now, after you write down the competitors name you try to identify what is that unique value, which is offered by Sivasagar handloom cluster, which is not offered by Sualkuchi handloom silk because of which sivasagar handloom cluster might succeed more than sualkuchi. Then and the category level let us say I can have Banarasi silk saree. This is in context of Sualkuchi handloom silk. Again I tried to identify the value offering over here which is not offered by our local ecosystems main offering.

Generic, so say substitution can happen with polyester which looks with the given look of a silk saree or maybe power loom garments and then the value offering by each of them. Budget level say gold and what is the value offering over here, and not by Sualkuchi handloom silk. Then in the same we repeat with the design intervention context. So, for the yarn bank what are the competitors, if any they are might be times, when you do not have one of these competitors available, so in that case you can also leave this space blank.

So, once these two steps are completed we are done with the parts which are different. So, in the 2 types so, the promoter based, the economy. And the promoter based stakeholder context and the socio-economic based stakeholder context, we are have a difference only in the step 1 and 2.

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Process	Sub-process	Result	Tools
3. System carrying structure analysis	General macro-trends analysis	Report on (social, economic and technological) macro-trends and their influence on the reference context.	
4. Analysis of cases of excellence for sustainability	Identification and analysis of cases of excellence	Summary of cases of excellence analysis describing <ul style="list-style-type: none">- offer composition and interaction with the user- Actors who produce and deliver the offer- Sustainability characteristics	Interaction table (storyboard) Animatic System map SDO toolkit – checklist best practices
5. Analysis sustainability and determine priorities for the design intervention in view of sustainability	Existing context analysis from an environmental, socio-ethical and economic point of view Defining the design priorities	Summary of the existing system analysis Definition of design priorities for each dimension of sustainability	SDO toolkit – checklist existing system

From step 3, 4 and 5 we follow the same things why, so because in step 3 we are doing a general system carrying structure analysis, which is report on socio-economic technological macro trends and their influence on the reference context. So, it is a same process. Then we do analysis of cases of excellence for sustainability again the same process for both the context. And then we do analysis of sustainability and determine priorities for the design intervention in view of sustainability.

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Content
<ul style="list-style-type: none">• MSDS Stage 2 - Exploring Opportunities• MSDS Stage 3 - Designing System Concepts

So, in the next lecture, we will start with how to do exploration of opportunities. So, since strategic analysis is complete. We know what is our design goal. So, now, we need to explore opportunities, so that will be the content for the next lecture as well as designing system concepts. So, the difference between the two processes is in exploring opportunities and trying to create ideas and in designing system concepts. I try to bring those ideas together to design a system.

Thank you.