Disaster Recovery and Build Back Better
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Lecture – 18
The Role of Social Networks in Disaster Preparedness

Hello everyone, welcome to the lecture series on disaster recovery and build back better, I was talking about disaster preparedness and recovery and role of informations in previous lecture. In this lecture, I will focus on what is the role of social networks to collect information that is necessary for disaster preparedness. So, what is the role of social networks to collect, to obtain critical information for making disaster preparedness decisions that would be our focus.

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For that, I would depend little on the previous lecture in order to get the case study idea, I hope you remember the Bangladesh one, so in Bangladesh we said that this is a beautiful country, they are battling with drinking water risk. The reason is that they cannot drink arsenic water, groundwater because it is arsenic contaminated, on the other hand, they have a problem of water salinity that is surface water they cannot drink.
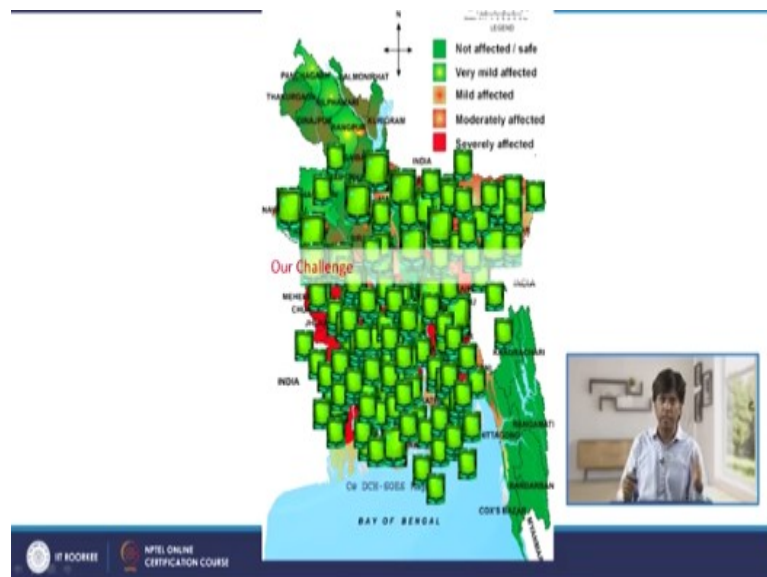
Because they are salty, they get waterborne health diseases, dysentery, diarrhoea, cholera and many other problems so, they have plenty of water in the coastal areas of Bangladesh, they do not have any problem of water but problem is that they cannot drink, it is not a portable

water, okay and so our challenge one way is to collect one possible potential idea, technology, innovation is that we can collect rainwater.

We can collect the rainwater at the domestic level at the household level and that from the rooftop and that and preserve it in a tank and that tank of 5000 litre can easily provide a family of 5 members drinking water for 6 months dry season okay, so small innovative idea but that we need to promote in Bangladesh that is our challenge as a planner as a disaster manager as the authority.

So, what we should do; we need to promote this one not only 1, not only 3 but a huge number; enormous number okay, gigantic, one after one other.
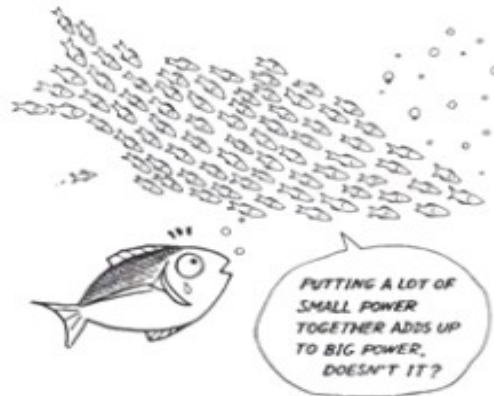
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So, millions of people; thousands and thousands of people should use; should install this rainwater tank that is our challenge that we already discussed about.

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Diffusion of Innovation is inevitable for sustainable climate change adaptation

PUTTING A LOT OF SMALL POWER TOGETHER ADDS UP TO BIG POWER, DOESN'T IT?

So, putting a lot of small power together adds that the big power that is our motivation.
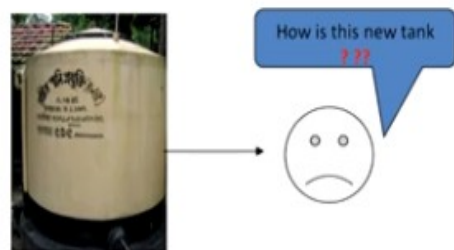
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Research Problem

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Innovation (Disaster Preventive Technology) is new / innovative to the community, so it is risky to make decision.

I don't know the advantages and disadvantages of the tank

Its risky to make decision

Now, we discussed already also that our research problem is that if when we are asking people to adopt, install this kind of small innovative idea like rainwater tank.

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How is this new tank ? ??
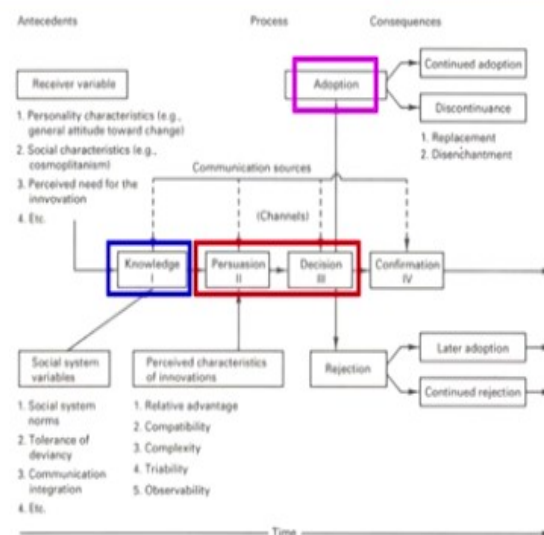
The idea in the new message contains Uncertainty

individuals always tries to overcome these risks or uncertainties by collecting and gaining KNOWLEDGE about the innovation.

People do not want to make decisions because they do not know about this one, this is an innovative idea, this is the new, so people want to get information about this one.

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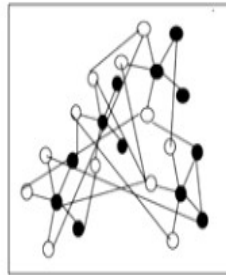
What kind of Information , Do I need ??

They need 3 kind of informations, one to develop their own knowledge, hardware and software knowledge from hearing and observation, another one is the discussions knowledge, someone's subjective knowledge that we already discussed that what one's subjective opinion, personal opinion about this kind of innovations so, they also need this one.

Types of Information and Social Network

- Hearing
- Observation
- Discussion

So, 3 kind of information, activities they can involve, one is hearing that is hearing about the tank or innovations and to collect its software knowledge like it's function, it's utilities, it's effectiveness, another one is observations activity like collecting hardware information, what is the shape, size and structure of that tank. So, hearing an observation will give this knowledge to the person.

But as I said that it cannot lead to the adoption, people also want to know the subjective perspective, personal interpretations of the data, of the situation of the context so, how this tank would help them, they also need to know some discussions with their fellow partners, so this is we called discussions informations, type of informations and network.

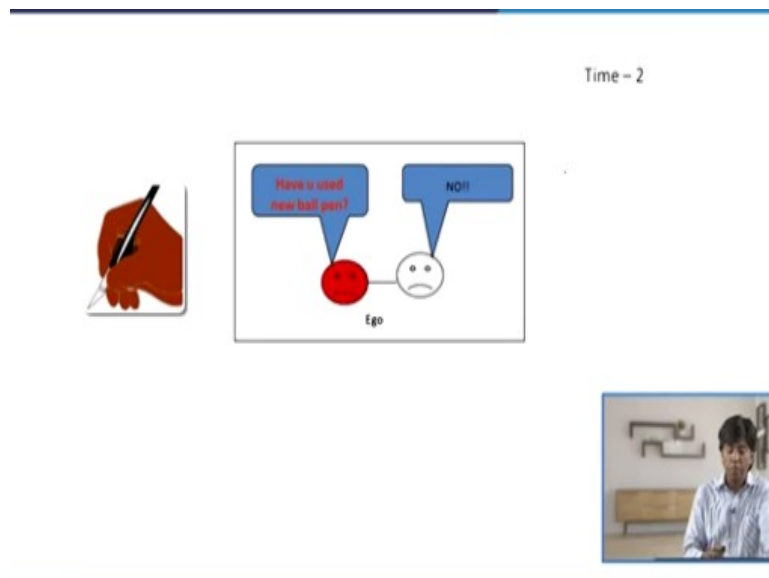**(Refer Slide Time: 05:34)**

What do I do ?

Now, what do they do, how they would collect these informations, and why do they need social networks?
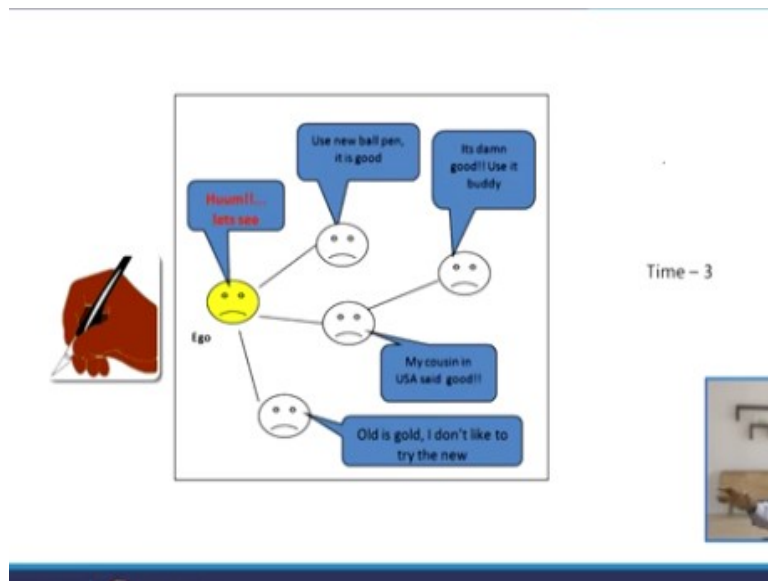
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Now, imagine then I ask you to buy a ball pen okay, I ask you to buy a ball pen but you do not know about this ball pen, what do you do, how do you make a decision about this ball pen, is it difficult; it is very difficult to make a decision about this ball pen because I really do not know.
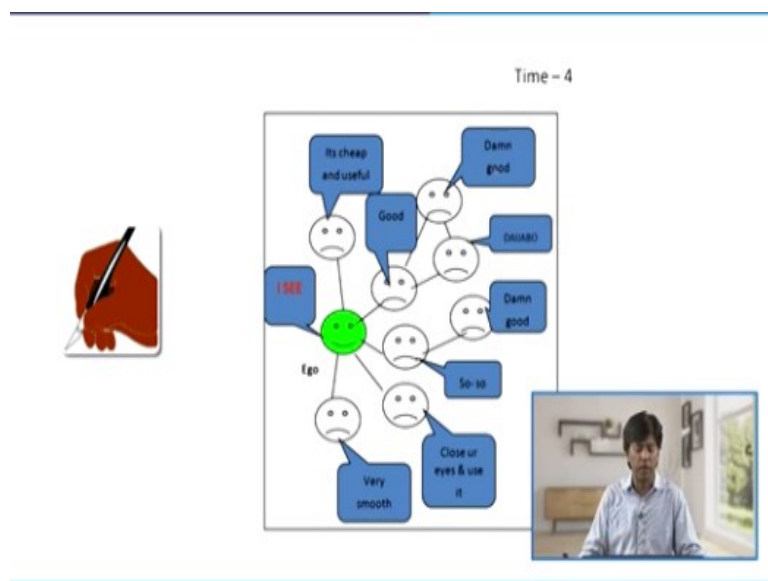
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So, maybe in time 2, I asked one of my friend, hey, do you know about this ball pen, any idea, have you ever used this ball pen. Because this is a new came from America or somewhere else, this is not available in my place. He said hey, I have no idea man, I do not know.

Then in time 3, he expanded his network okay, he asked somebody they said use new ball pen, it is really good, then someone is saying that okay, it is damn good use it buddy, other one is saying my cousin in USA said good so, please, another one is old is gold, I do not like to try the new so, it is now discouraging okay.

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So, in time 4, maybe he has more and more and more networks, more and more informations, asking more and more people so, he then collecting more informations either good or bad about this so, in this case, most of the people give a better review, a positive review, okay. They are very smooth, close your eyes and use it, so some say damn good, some says it is damn good, good and it is cheap and useful.

So, many people actually encouraging so, with these informations; what are their colour, how they look like, how it works.

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The degree of uncertainty can be reduced by an individual by obtaining information.

He is getting informations to his network that really helped him to adapt and buy this one so, he reduces his degree of uncertainty through using it, through collecting informations and now he is using it so, he really reduced uncertainty whether this will work or not, the social networks can help this way. As a result, when we promote this kind of innovative ideas, technologies to reduce disasters, we call these preventive technologies, risk preventive measures, countermeasures.

People share informations with each other either through hearing, either through watching, either through discussions, either through phone calls, either through mass media, giving dialogue or speech so, innovation; the diffusion of innovation, dissemination of technologies is therefore is called information seeking and information processing development or activity, information processing and information-seeking development or activity, okay.

So, but the question is; I need 3 kind of things, activities to be involved to collect information; one is hearing, observation and discussions. Now, who will be my source of information, where should I go for collecting informations? My neighbour, my co-workers, my relatives, my friends, those I do not know, my competitors, whom should I go., if I want to buy this ball pen; simple ball pen, whom should I rely?

My friends; here is a look generally, like Valentin is saying that it is the direct and the personal relationships like friends, I have face to face interaction with them, my relationship is direct personally connected or maybe like neighbours, they are also my personal connector, people depends on them for collecting informations, according to his finding.
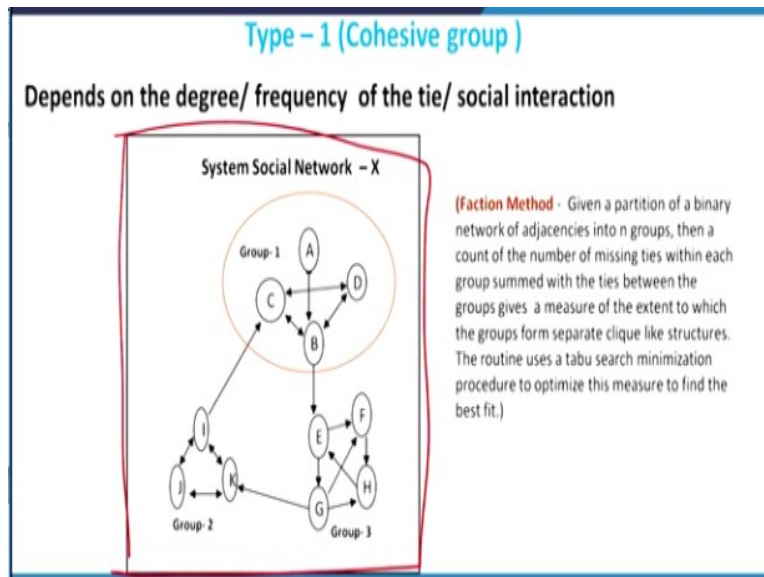
Granovetter; he is saying no actually, a direct networks they do not really work much, this actually give you redundant informations, same informations again and again because you are not expanding your networks, unless you expand your networks how you can get new ideas, new evaluation, new reviews because you are always in the same one so, you need to actually collect, use your weak networks, indirect networks.

You do not know your friends, friends, friends, friend maybe, you are at IIT Roorkee and you are collecting informations from IIT Madras that is more useful than only collecting informations from IIT Roorkee, right? so, which informations I should get and from where so, either it is personal, it could be indirect.

Another one is the Bard; he is saying that similar position in structure that means co-workers and co-students. That means it is not necessarily to be direct relationship, but people generally collect information with whom they have competitions, they have a same kind of positions you know, they tally, the check; cross-check this is okay, oh he did not have this iPhone, I should have this iPhone, he did not have this disaster preventive technology, I should have to raise my status or a kind of competition so, I watch him.

Or the spatial dimensions like neighbourhood, this is also important, if someone is at my close to me especially, it can help.

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Type – 1 (Cohesive group)

Depends on the degree/ frequency of the tie/ social interaction

System Social Network – X

(Faction Method - Given a partition of a binary network of adjacencies into n groups, then a count of the number of missing ties within each group summed with the ties between the groups gives a measure of the extent to which the groups form separate clique like structures. The routine uses a tabu search minimization procedure to optimize this measure to find the best fit.)

Here, we consider 3 kind of group or the source of information for people, one is the cohesive groups that depends on the degree and frequency of the tie or interactions okay so given, so how do you decide the cohesive groups; it is just a matter of that how frequently the individuals within a group is connecting. Let us imagine that this is a community okay, this is a society, this in entirely a one community.

People living here and they have different networks now, if we look into here, we can see that ABCD they have direct and reciprocal interconnections between each other, the arrows are ties okay and then so, this is a group one because they are most densely so, C belongs to ABD because he has more network here although, he has some indirect or one way direction connections with I but he does not belong to there.

Like the same way, we can have group 2 and group 3 because they within their own circle is more connected than other.

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Role of Cohesive Group -

- Opportunities and social obligation

  (Ibarra and Andrews, 1993; Shaw, 1998)

- Faster information sharing

  (Ibarra and Andrew, 1993; Levine and Moreland, 1990)

- Prohibits new ideas , provides only redundant information

  (Granovetter, 1983)

So, what is the role of cohesive networks, with whom I have direct connections, every day I am meeting, talking face to face personal relationship like my friends, some are saying that it provides you the opportunity and social obligation, it is kind of, it also help you to collect that if I know something from outside or from any from televisions or mass media, I immediately pass the informations to my direct network partners like my friends, my neighbours, my co-workers with whom I am very intimate, it is cohesive.

So, it actually helps to provide faster information, sharing not only that is not only working as the learning, social learning through passing the information very fast but also it provides a kind of obligations, pressure, social pressure, if 5 of my friends are using the rainwater harvesting tank or an earthquake-resistant building, it becomes my moral duty or social pressure I feel that I should have also the same.

Otherwise, I cannot be member of them, member of their group, I feel isolated not easy, so deviant behaviour it could be considered so, I should follow that one so, social obligation is very important in case of a social, a cohesive group case but it provides another constraint of this one that you cannot grab the new idea, it is the information is actually in the same group so, you have the same kind of gossip you know the same information is coming and going coming and going.

Because you have a very tight network and this network is closed, unless you open this network how come you get the informations of course, you can get through mass media or other sources but human network is not expanding so, somebody as saying that it provides