Towards an Ethical Digital Society: From Theory to Practice
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Lecture - 06
Data, Democracy and Justice

My name is Sakina. I work in an organization called Liberation Technology. In short, we call it LibTech, India. And I am based in Jharkhand. But I also work in other parts of the country Rajasthan, Andhra Pradesh.

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At LibTech what we do is a lot of action research work, where we try to work on social security programs at the grassroot levels with partner organizations, activists, local groups who have been there, who have been working on social security programs for years. And we try to support them in trying to see how these schemes can be delivered more effectively, how there can be more transparency of information and more accountability at local levels.

We also work with national campaign, state governments um to try to see how accountability can be you know how governments can be accountable through and through for delivering these public services more effectively. And a lot of our work has to do in the domain of how technology can be harnessed and used to actually do do this work.

So today, I am going to be talking a little bit about not so much data, but a little bit of the tech infrastructure behind all these government programs that are increasingly planned, monitored, and even implemented through you know digital means. And there is a craze of digitalization in the country. And what happens when these things when citizens interact with technology?

What happens and sometimes legal rights of people are infringed upon because of this interaction. So what happens in this scenario, what are the questions we can ask? This picture is from Jharkhand, in a post office in a city, and it is so common over there for the link to fail, when the biometric does not work, that they actually made a board called link fail, and they just put it up every time it does not work, so that people can just look at it and go away.

And they do not have to come and ask that I want to withdraw my money. So this is essentially the summary of my talk, link fail.

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I will start a little bit with the rights enshrined in the Indian Constitution. Constitution guarantees right to life, right to equality, right against exploitation, and constitutional remedies. And these are some of the rights that are relevant to today's topic. These are all the fundamental rights. So I have listed them out here.

Along with these rights in the Indian Constitution, there have been the Directive Principles of state policy, which uh, which are essentially the values that the state

must follow and imbibe, in order to enact these rights and these laws. And in the past say decade, over a decade or so say 20th century, there have been a lot of laws that have, laws that have been implemented to realize some of these rights.

So for instance, one of the Directive Principle says that the state shall within the limits of its economic capacity and development make effective provisioning for securing the right to work, to education and to public assistance in cases of unemployment. And some of these, this one particularly along with the right to life, has been realized in a program called the National Rural Employment Guarantee Act, which Rajesh spoke about a little while ago.

And I will come to that a bit later. But some of these are recent rights based registration legislations, the right to information, the right to education, MGNREGA as I mentioned, National Food Security Act, which came from the right to food. There was a very famous case in the Supreme Court the right to food case and post that over time, the mid-day meal scheme, the rations etc.

And these things have existed in the past, but this has become a sort of justiciable right for people. If they do not get it, they can actually go to court and say that my rights have been infringed upon. And like I mentioned that most of these programs now are being planned, implemented and monitored digitally. So what happens when rights and digitization actually interact?

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Some Questions to Consider

Tech systems don't exist in a silo and have to imbibe the right values to make democratic participation more meaningful

What happens when these technological systems subvert the legal rights of people, who is accountable when the technology fails?

How does technology, incorporate democratic values?

Has it been inclusive or has it exacerbated the existing inequities in society?

Technology alone can neither enhance participatory democracy nor reduce socio-economic inequalities.

Now in such a scenario, we have some questions to think about and consider because technology systems do not exist in a silo. They are also very political systems and, and by, and they have to imbibe the right values to make democratic participation more meaningful. What happens when tech system support legal rights of people. Who is accountable if a computer is not working or a link is failing, who is accountable?

How does, how do these tech designs incorporate democratic values? And if they do or do not is it inclusive or does it exacerbate existing power structures in society. And mostly, I am of the view that tech can neither enhance participatory democracy nor reduce socioeconomic inequalities in itself. It can be an enabler, it can help. But in itself, it is not a solution for any of these larger questions.

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Now coming back, so I am going to talk about some examples from my field experience and a little bit of excerpts from perhaps some books that are useful. The first bunch of examples have to do with the National Rural Employment Guarantee Act. Very briefly, it is a fusion of the right to life and right to work, the MGNREGA. And it provides up to 100 days of work in a given year to a rural household at demand.

So household can go to a local government body and say, okay I am in need of work. And they will be given manual labor or work to be done. On completion of the work,

they would be paid minimum wages. And right from when a worker goes to make that work demand to the time the work is done uh there is a GPS mapping that happens.

When when the work demand happens, there is a muster roll like an attendance sheet that is that is there and only if your name is on that, which is a auto generated thing. If your name is on that, then you get to work. Once you work, it is recorded. There is some GPS mapping and then once that stage of completion of work is done, then one lot of payment goes out to the worker for having completed the work.

And the entire payment system is also very digitized. A lot of work that I have done over the last few years has been on these payment systems. So once the worker has completed the work, the entry for the attendance is done that okay so and so worker has worked on this worksite for these many number of days. And they have to uh that payment is then that fund transfer order what is called an FTO is generated.

And they have they get the payment directly into their bank account from the central government. So all of this process is to be completed on a real time management information system. So as it happens, the entry has to subsequently happen within two days, five days. And it has three essential safeguards, the act, which are built in in the act. The first one is of the unemployment allowance.

So if you do not get work, because it is a guaranteed it is a right, you get an unemployment allowance. The state is unable to provide you a job or any labor work, you you are automatically entitled to get an unemployment allowance. The second is delay compensation. So if you have done the work, but your payment gets delayed, there is a clause to complete the payment within 50.

And the third sort of safeguard is the safeguard of a social audit, where the community can participate and audit what work has happened, how much fund has been allocated, who has been paid, who has not been paid. So there is some sort of local social accountability that is built in within the act. So it is a very progressive act in that sense.

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Management Information System (MIS)

Laboratory of using technology for transparency

Information is layered - Involves production of information, information presentation, information access, and information use

Knowledge gap hypothesis & the digital divide

Complexity of the MIS increases the digital divide

The computer has become an easy, powerful and silent ally for the baton of accountability to be passed on.

Now like I mentioned, everything is tracked and recorded on this management information system. Which is again one of, it is a feather in the cap of you know for transparency in the country, because it is the first time this level and this amount of information has been put out in the public domain by any government department. And the management information system, as the name goes, has been designed for the for administrative purposes.

So it has been there for them to manage the scheme, not so much for transparency, although one can get a whole lot of information on this MIS which is essentially a website that any of you can also track. One thing that I wanted to sort of highlight here about the management information system is that information is layered. It involves production, presentation, access and use.

Citizens and workers are actually participating definitely in the production of information, but not in any of the other steps. Very limited in access also. If you think of a rural citizen trying to access this website, it is very cumbersome, it is very complex, very difficult to actually find out what piece of information is where. And a lot of times, it is only in English. So it is also very difficult for people to access.

Even if it is in a local language it is just a plethora of information put in hundreds of different reports. So essentially, a worker whose information it is in the first place, is not really able to make sense of this whole website. And at this point, I sort of wanted to get in the concepts of this knowledge gap hypothesis and the digital divide.

The knowledge gap hypothesis basically says that people belonging to a higher socioeconomic group digest new information faster than weaker sections in society and therefore exacerbating uh the power structures and hindering their democratic participation. The way the MIS is currently designed, does exactly that. It creates this digital divide between people who have access to this website, who understand it, and those who cannot.

Particularly those who cannot are the ones whose information is out there on the website. Sorry you have a question? So the government says that it is it is for transparency purposes, and it is proactive disclosure of information. So it could essentially be anybody. I think tacitly it is the administration, because the administration has to access the MIS for every step of the process.

They have other reports, like where the payments are, like what has happened to the payment, etc. But it is, it is in 10 other different kinds of reports. If you want to piece together one person's work life cycle, you will actually have to go through a lot of different reports. And Rajesh must have some experience in, you know going through this whole website.

As a group collectively also a lot of there is no data dictionary, first of all. So it takes a lot of time to process what a particular thing means. It is actually how we learnt it is you know go on the field, do trial and error, see okay this date is, oh okay this is the date that saying, payment date. The payment date is actually nothing really.

On the field when you go and see neither has the payment been generated on that date, nor has the payment been made on that day. So then you have to kind of do a little bit of back and forth and make sense of what is on the website. And it is completely out of the, you know a worker cannot access it and understand it, for sure in most places. Yeah. There is multifold divide.

There is a divide between the administration and the workers. There is a divide between the workers, like computer operators on on the field who are able to understand and piece together this information and people who have worked who do

not understand this information. So there is a divide being created within a local system as well.

There are some people of the community who will have more access to internet facilities, etc., who will be able to look at this information and make more sense of it. And those who are vulnerable, would probably be left out in the way that this website is currently designed. Which is one of the things I will elaborate a little bit more with some examples. So it will get clearer.

So one so other than the MIS I think a lot of the designers of technology are very privileged people. A lot of times bureaucrats and Rajesh I think he put it really well in the beginning when he said that it is one, if you introduce one new technological intervention, it is one more promotion for you. So a lot of times uh there is this craze that if we, you know we bring in some cool tech uh it will make the whole scheme really fancy.

And they are not always thinking about who it is being designed for. It is one platform for everyone to use. For you and me as researchers to use, for workers to use, for administration to use, it is all one thing. So there is not that much thought being going into the design. And ultimately, what is happened is that this computer has become an ally to pass on the baton of accountability.

A very simple example is that when the fund transfer order is generated at the state level, uh the state computer operator or the block development officer or the program officer, whosoever is responsible says we have done our job. Now we do not know where your payment is. But that is not where the accountability should end. Till the time I do not get my money in my hand, you should be accountable.

The state should be accountable till the time I have received my payment in my hand. But now it is just like, the computers I have entered it on the computer, now I do not know what it is. And a lot of times, they really do not know where it is, what has happened to it.
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Delay Compensation & Rejected Payments in MGNREGA

Delays on the part of the central government are not calculated and are purposely hidden on the MIS - Stage 2 delays

On an average about 50 days of delay in Stage 2 of the payment process

No accountability of the centre in paying delay compensation

Kanku Devi of Rajasthan had payments worth Rs. 9661 rejected

She went from pillar to post for several months since May 2019

Kanku Devi dropped out of the NREGA program

So two particular cases of subversions of rights in MGNREGA I am going to discuss. One is delays on the part of the central government. Now as I mentioned that, what happens is that a fund transfer order is generated at the block level. And then it is just a digital message that goes uh to the central government. And the central government releases the fund and sends it into the worker's bank account directly.

There is no, there is no other middle intermediary in this whole thing. And this centralization of, you know fund transfers, essentially started happening in say 2013, 14. And by 15, almost all payments had been centralized. So that is the stage 1 where I enter all your details post you have done your work at the grassroot level, at the block level. And that is stage 1 of the payment.

Stage 2 is the time it takes for the transfer to happen from the center to the worker's account. Now MIS very slyly only calculates the stage 1 part of the delay. So it only checks the local level person's accountability; did I get the muster role on time? Did I do the entry on time? And did I generate the order? That is it. The stage 2 part of the payment is just not calculated.

And even if it is calculated, now it is being calculated, but it is not being shown in the public domain. Now why is that happening? Because delay compensation is to be paid on the Act. So the government does not want to pay that extra part. They are aware that delays are happening and massive delays are happening and then if they start paying delay compensation uh they will incur a lot of cost.

So they just hid the stage 1 uh stage 2 part and said for stage 1 we will pay delay compensation. That too state has to pay the delay compensation. Center has no accountability in this at all. And then, when we did a study, thanks to this MIS, we actually had access to about, you know all the transactions. And we did a study of about 9 million transactions in 10 states in the country.

And we found on an average that in just the stage 2 the center to the worker payment, there are 50 days of delays. When the payment is actually supposed to happen within 15 days the stage 2 is taking 50 days. And the center is not being accountable for any of these delays. And therefore not even calculating or paying the compensation. One of the things we did is take this to the Supreme Court and say that this is a violation of this right.

And then the Supreme Court passed very strict orders. Still, the center is not, they are calculating stage 2, but they are not paying compensation for stage 2. So that is another battle to fight. So that is the delay compensation part where you know the right to get your wage on time is violated. The second one is rejected payments. So suppose I am trying to make a payment to you and the transaction fails.

That is essentially what a rejected payment is. But if I am trying to make a payment to you and the payment fails, I try and figure out why it failed, and then correct that issue and then regenerate the payment. In India, these payments have been getting rejected ever since these online bank transfers have happened. And nobody has figured out what to do. They they merely regenerate the payment without correcting the problem.

So the payment is rejected again. And this is endemic to most parts of the country. But some states are completely leading the way. Like Rajasthan 13% of all of India's payments that are rejected are from Rajasthan. And 1 in 20 payments gets rejected like transaction gets rejected. So while a lot of times I get the argument that this is not a very significant number, it is just 1 in 20. But for that one person, it is it is the end of it.

So I am going to talk about Kanku Devi of Rajasthan. Now Kanku Devi is somebody I met some months ago when I was in Rajasthan. And then I have been meeting similar people in Jharkhand, Rajasthan, several other parts of the country now whose payments have been rejected. Kanku Devi had done work earlier this year for about 10,000 rupees worth of wages she should have got.

And the last date by when she should have got the wages were by May. So she did work from earlier this year. And from May up to now she has not received her wage because it is rejected. Now the online system, so when I met her, I had her name from the online system. So it was easy for me to locate her. And then when I met her, I asked her what has happened to your payment, she was clueless. She said, I went everywhere.

I went to my panchayat. They said, go to the block, we do not know. I went to the block, they said, go to the bank, we do not know. I went to the bank, the bank simply said that your payment has not come. And she has done this several several times, and spent a lot of money in doing this and going through this entire process. And she has no clue what has happened. She just said, I have done this work.

This is the money due to me, and I have not been paid, and nobody is answerable to me. So when she went to the block, the block computer operator told her that I have done my job. My job was computer entry. I do not know why it is rejected. I do not know what, he does not even know it is rejected. Finally, uh Kanku Devi decided that this is not working for me.

I have done so much work, I have put in so many days of my work, and I have not been paid. So she decided to drop out of the program. So she is not doing any more MGNREGA work now. And both these reasons, delay compensation and rejected payments they they cause you harassment. At that, at that time you have to spend money.

A lot of people, lot of middlemen come and say that, you know we will help you get the money give us this much, give us that much, and also cheat people in that way. And ultimately, nothing really happens. And therefore a lot of people have dropped

out of MGNREGA. In the last few years, there has been a trend of seeing that scheduled castes and scheduled tribes in the country, their participation in MGNREGA has significantly reduced.

Now this is going to hit the most vulnerable the most. Like Kanku Devi, she is a single lady. She is this is the only way that she was earning at the time. And she does other manual labor work in the village. So it is going to hit the people who are most vulnerable, the hardest.

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Now this delay, compensation and rejected payments these are more related to the digital payment infrastructure that has come about since 2014. And there has been this huge overhaul in the payment system itself where the government has wanted to migrate to Aadhaar based payments. It is very unclear why they wanted to do it.

Every time one asked the government why you wanted to migrate from a already decently working payment system to an Aadhaar based payment system, they kept coming up with different reasons. Even earlier payments used to happen to individual bank accounts. So there was no question of my money going into somebody else's bank account, because the names were matched.

But for variety of reasons the Aadhaar based payment systems were introduced. And we did a study. So we wanted to find out. So we got the workers' perspective, that they are really suffering, and they are fairly clueless about it. So we wanted to check

with the banks. So we did a study in Jharkhand last December and went to about 13 different banks to ask them, what is it that you understand in this payment infrastructure?

And if somebody comes up to you saying where is my payment what is it that you do? And they too, were really clueless. They did not even know a whole lot of things that were already available on their software. So when we interacted with senior bankers and people who design the software, we learned some things from them. And then we went on the ground to check if the people actually knew it.

They actually did not know a whole lot of it. In fact, simple things like consent forms to link your Aadhaar, when we asked them that do you have a consent form, they would search online consent form. And then you know say, okay, this is this is what we have. So they did not even have a consent form with them, let alone.

And they are not to blame in a sense, because rural bank branches like this one here in Rajasthan, on any given day has like hundreds of people and at most 3, 4, 5 staff members. So it is very difficult for them to keep up with the footfall. So if you want to sit and try to figure out why somebody's payment has been rejected, you are probably going to spend couple of days doing it.

You do not have that bandwidth in the rural bank branch. The other thing is that a lot of bankers express that the technological changes are too rapid for them to cope. A lot of bankers, especially in the state owned banks are people who have been working for years and years, who are not so savvy with technology and even those who are savvy with technology said it is the tech changes were too fast for them to cope up with, particularly in these Aadhaar related payments.

Now another thing I wanted to highlight about Aadhaar related payments was that when this system was rolled out, it was not ready. It was not fully developed. And they had not uh they had not checked for what could go wrong in that system. They just rolled it out in, in the whole country with a lot of pressure on these banks that you have to link every account to Aadhaar.

And you have to transfer all these payments via Aadhaar now. That made, so the government had to do a lot of back and forth. Suddenly in between, then they said, okay now too many mistakes have happened because we just link people's Aadhaar without checking whether we are linking the correct person's Aadhaar with the correct person's bank account.

ISB had done another study in Jharkhand which said about 38%, I think it is a bit of an over estimate, but 38% of payments went to the wrong person's account because of Aadhaar related issues. And one of the banker's told us, that the government has created this huge mess by introducing an untested system very coercively. So now the government wants to clean up the mess.

But instead of that, if they checked and tested the technology properly and then rolled it out things would have been perhaps better. I still have no uh, no proper answer from anybody why the Aadhaar based payment system was introduced uh in the entire country, including the people who designed it.

So one, one possible way to sort of circumvent this that we were thinking about is that before you uh you know introduce this kind of an overhaul in a technological system, obviously test it out and see where it works. But even testing will be limited. There will be cases where it would not work for sure. There will be people who will fall through the cracks. So there has to be an alternative system for them.

There cannot be only Aadhaar based payments, or only MIS based registration of work. There has to be an alternate system for people to fall back on when things do not work. The other very big missing thing that we found in our work is that there are no grievance redressal systems. So for Kanku Devi, there was just no way there was the traditional system like filing a letter to the block, etc.

But that also takes a lot from a rural woman to go and talk to a block officer and say, "mera shikayat darj kijiye" (please lodge my complain). Also takes a lot, a lot of courage from her end. So a good grievance redressal system, if that was in place, and if she could have accessed that maybe at a Panchayat level that would have perhaps

eased a little bit of the pain. Here she has no grievance redressal system, neither does she have, you know any alternative way to get her payment.

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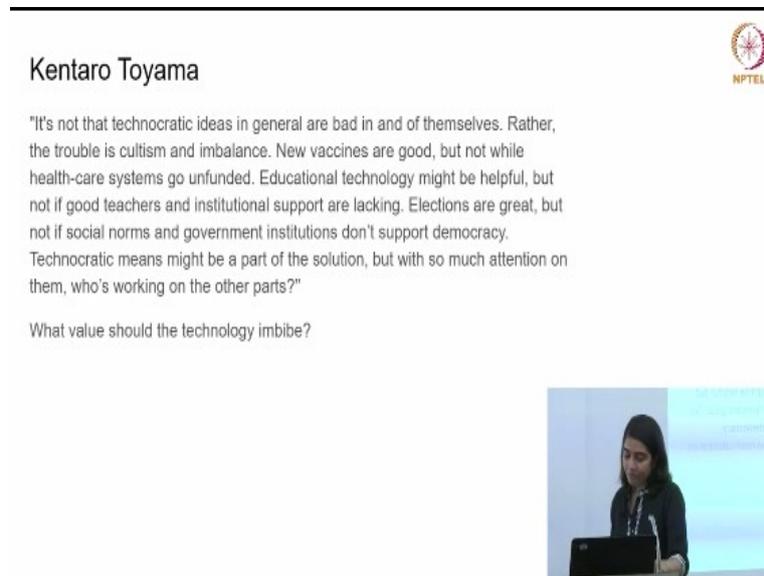
And this quote by Kentaro Toyama is something that I find is very relevant to quote at this point. "It is not that technocratic ideas in general are bad and in and in of themselves. Rather, the trouble is cultism and imbalance. New vaccines are good, but not while healthcare systems go unfunded. Educational technology might be helpful, but not if good teachers and institutional support are lacking. Elections are great, but not if social norms and government institutions do not support democracy. Technocratic means might be a part of the solution. But with so much attention on them who is working on the other parts."

So even in this case, I am not saying throw all technology out. But what values is that technology imbibing who is it being designed for, and who is designing it is is very, very important to ask.

Another very similar sort of thing is Abhay Bang he runs this organization called search in Gadchiroli. And he has written a lovely piece called, "Research by the people of the people and for the people". Do try to read it if you get a chance. He he talks about research and I have a similar view of technology also that he says that research should be done in consultation with people you want to research.

And their participation in that research is very important for it to be successful. Similarly, I think for tech, also technology should be designed and thought of along with the people who it is being designed for. So one, you have to be very clear. If you are doing an MIS for an administrative system, be clear that this is for administrative purposes and this is not for citizens.

The other is that when you do want to do proactive disclosure of information or design tech for people, and their participation in that I think is very critical.

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A lot of, so two examples like Kanku Devi's examples are very hard hitting examples. But a lot of these cases in MGNREGA actually violate a bunch of democratic values of people. And a lot of them then drop out of the whole workforce, which indirectly then affects their right to life and right to work.

The second thing I wanted to highlight here is that there is so much even in the government systems, when we approach them with problems, there is so much reliance on government data, that if it is in the computer, it must be correct. And if it is in the computer, it must exist. If it is not in the computer, it does not exist at all. But that data itself lacks a lot of credibility, like the stage 1 and stage 2 payments.

What it shows you online, so the payment is done. But in reality, the payment is not done. So the data itself lacks credibility. And I think one has to constantly question the veracity of data that we also analyze secondary data to and constantly engage with

people to see if this data is actually true, credible or not. More sort of harsher costs of digital tech solutions have been cases of starvation that is in Jharkhand that have been linked to Aadhaar failures.

I am not delving too much into it. There are also Aadhaar related failures when biometrics fail, and people did not get access to their rations. And as a consequence of that, a lot of people, they starve, and there were a series of deaths that have been happening for the last two years, at least being recorded for the last two years in Jharkhand, because of these failures.

Another quote that I borrowed, that I found would be useful here that "We can build or architect or code cyberspace to protect values that we believe are fundamental, or we can build or architect or code cyberspace to allow those values to disappear. There is no middle ground, code is never found. It is only ever made, and only ever made by us."

So again, to say that, you know once you implemented a technological solution, everything is going to be fine, is a bit of needs a little bit more nuance to that. Because behind all these codes are people who are thinking, sitting and writing these things. And it is very important, what their politics are, what the politics of the people who are designing these systems is.

One slightly more positive example of how technology has been used is the grievance redressal system in, MGNREGA grievance redressal system in Telangana. So they could call into a call center number, workers could call into a call center number and register their grievance on the toll free number. And only the essential details was sought from the person. So everything else was auto populated.

So the worker did not have to really give all the details of everything. She just had to provide, say her job card number, her name, etc. And the rest of the details will be populated on its own. So it became very easy for people who are filing the grievance to file it. And even the people who are calling in they did not have to furnish too much information.

It also became much easier for the administration to work on those grievances, because they had a lot of information already pre-populated that was being collected by on the MIS. And then they would give the worker a code. And they that would send the text message. Of course, one can argue that this is available to people only who have cell phones and can access phones.

But still better than you know not having it at all. That that code you could track your complaint. And you could call back and say this is my complaint code and you know as our popular customer service things work they had a similar grievance redressal system there. And that actually was one of the well, like it worked well. It was a good working project in Andhra, erstwhile, erstwhile Andhra.

And about five lakh worker's payments were made, or grievances rather were resolved using that system.

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Now the second part of my presentation, I wanted to talk a little bit about centralization of design. It is, first of all, it is violative of the federal structure of you know our country. When all systems are designed by NIC at Delhi with very little leeway for states to actually, you know change these systems on the ground, it violates the very nature. Even in MGNREGA of a lot of these centralized design systems do not allow states to bring in certain changes that they want. Like some states want to actually pay higher wages.

So they have to go through the center every single time they want to change something, and then tell the center, okay, these are the changes we need now please change them and then go through that entire process.

Whereas they could have done it, if the state were allowed to do it, then they could have been more context specific. One example there I wanted to give is from the Pradhan Mantri Matru Vandana Yojna which is the maternity benefit scheme under the National Food Security Act. Under this scheme, it is basically a conditional cash transfer for pregnant and nursing women.

And you get a sum of 5000 rupees in three installments. If you are pregnant, you you get the first installment during personal installments during your pregnancy. And the third one after your childbirth, if you meet a meet a certain number of conditions. Now meeting the conditions is not a problem, because it is just like registration of your you know pregnancy and things like that, which people generally meet.

But in Jharkhand, again this is something that we, this is what we found through an RTI. But we have also done a study recently, like this summer, and our results were similar. Merely 14% of women got all the installments. So and these are all the eligible women who have applied. I am not even talking about those who have not applied. Now why is that the rest of them did not get these things.

A lot of these women were put in something called the correction queue where there was some problem with their form. And they were put in this correction queue. Now this entire system is an online system. So once I apply, it has to be entered into an online portal, which is a central portal. It is same for all the states in the country. And once it is entered there, that is that is the that is the proof that you have applied.

If all details there are found to be correct, only then your payment gets processed. When details do not match, they put into a correction queue. There is some kind of a flag that is there within your application, you are put into a correction queue. You have to correct whatever is wrong with your application, and then reapply. One of the most common issues in Jharkhand was this case of kumari and devi.

So before the woman is married, her name is so and so kumari. After the marriage, the name changes to so and so devi. Most people have their Aadhaar cards in their earlier names, kumari names. But when they get married, they open bank accounts in their new you know where they are married the husband's village. And in the in the bank account, the name is devi. So the payments were not going through.

I mean, the form was not even getting accepted because of this kumari devi problem. And most of the people we met had this kumari and devi issue. So we told, we went up to the government and said this is something very trivial, you can correct it. You do not have to have devi and kumari matching. If you can introduce something within your code that sort of accepts it, they said no it is designed by the center, we cannot do anything about it.

So if software is designed centrally, the state cannot accommodate these context specific issues. There is just one example. But a lot of other similar examples from other schemes also show that if the state, there are state specific nuances. And if the state is allowed to do these kind of, you know changes develop their own technology, perhaps these things would not occur.
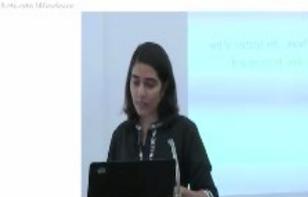
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And the third sort of important thing that I wanted to address is about the neutrality of technology. Melvin Kranzberg, evolved these series of truisms, which are actually called Kranzberg's laws, I have just picked two of them. The first one is "technology is neither good nor bad, nor is it neutral. And behind every machine, I see a face,

indeed many faces...The function of technology is its use by human beings, and sometimes alas its abuse and misuse."

So just going back to what I was saying earlier, that tech is not neutral in itself. In fact, it is, it is quite the opposite, it is quite political.

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There is another fantastic book called the Weapons of Math Destruction by Cathy O'Neill. Did you talk over, okay. I am sorry if I am being repetitive but is such a brilliantly written book. And I am going to just read out one excerpt about this technology called PredPol, which was designed to detect crime in some parts of America.

And what ended up happening is that a software that was being used to, which was absolutely neutral right, like according to its designers, it ended up being biased towards black and Hispanics. And I will just read out an excerpt from there, which will make more sense of what I am saying.

"Police Chief William Haim had to figure out how to get the same or better policing out of a smaller force. So in 2013, he invested in a crime prediction software made by PredPol, a big data startup based in Santa Cruz, California. The program processed historical crime data and calculated hour by hour where crimes were most likely to occur. The Redding policeman, the policeman of that area, that region was called

Redding. The Redding policeman could view the program's conclusions as a series of squares, each one just the size of two football fields. If they spent more time patrolling these squares, there was a good chance that they would discourage crime. And sure enough, a year later chief Haim announced that burglaries went down by 23%. Jeffrey Brantingham, the UCLA anthropology professor who founded PredPol, stressed to me that the model is blind to race and ethnicity. The key inputs are the type and the location of each crime and when it occurred. That seems fair enough. And if the cops spend more time in high risk zones, foiling burglars and car thieves, there is a good reason to believe that the community benefits. But most crimes are not serious as burglary and Grand Theft Auto. And that is where the serious problem emerges.

When the police set up their PredPol system, they have a choice. They can focus exclusively on the so called part one crimes. These are violent crimes including homicide, arson, assault, which are usually reported to them. But they can also broaden the focus and include part two crimes, including aggressive panhandling and selling and consuming small quantities of drugs.Many of these nuisance crimes would go unrecorded if the cop were not there to see them. These nuisance crimes are endemic to many impoverished neighborhoods. In some places police call them anti-social behavior or ASB. Unfortunately including them in the model threatens to skew the analysis. Once the nuisance data flows into the predictive model more police are drawn into those neighborhoods where they are more likely to arrest people, where they are likely to arrest more people. After all, even if their objective is to stop burglaries, murders and rape, they are bound to have slow periods. It is the nature of patrolling. And if a patrolling cop sees a couple of kids who look no older than 16, guzzling from a bottle in a brown bag, he stops them. These types of low level crimes populate their models with more and more dots, and model send cops back to the same neighborhood.This creates a pernicious feedback loop. The policing itself spawns new data which justifies more policing. And our prisons fill up with hundreds and thousands of people found guilty of victimless crimes. Most of them come from impoverished neighborhoods, and most are black or Hispanic. So even if the model is colorblind, the result of it is anything but in our largely segregated cities, geographies are highly effective proxy for race."

So PredPol essentially was supposed to be neutral, the technology, the race and ethnicity, but ended up being biased towards the black and Hispanics. Now one

counter example that I wanted to give some of the work we are doing in Andhra Pradesh right now is, say use machine learning to preempt exclusions. So we have got, there is a whole lot of data available out there, census data, MGNREGA data, maternity benefit data. Andhra Pradesh does its own pulse surveys.

So there is some data from them. Now all of this data, we tried to put into a system and design, we are still working on it, trying to design some kind of machine learning techniques to identify which families will be likely to be excluded or which people are likely to be more vulnerable and excluded from some of these programs using that data. That is a counter example of how you can use tech to actually identify vulnerable people.

Again tech even in this machine learning exercise, we are very clear that tech would not solve the problem of exclusion. And it would not replace current system of identifying exclusions like field base observation or community driven methods of saying you know so and so family is vulnerable, they need to receive this benefit. That is not going to replace any of those models, but this will just be an enabler in addition to what is already there.

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Yeah, another positive example of how technology has been an enabler is the Jan Soochna Portal of Rajasthan government. This is the first time it is being done in the country. Basically, this is an online portal. I have tried to get a screenshot, it is got

about 47 schemes across 23 departments, all the typical social security, health, etc., RTI is there.

But key land and mining records have also been proactively disclosed, including like, who has got the mining license? Who is mining where, what are they mining, what quantities, what kind of projects are running? Those are things that have not been disclosed in the past. The things that I wanted to highlight about the Jan Soochna Portal is that every scheme that that is here that is being displayed here, was actually the dashboard was designed with people and civil society organizations.

So it was not some bureaucrat or techie sitting somewhere who just sat and designed it, they actually had a really long process spanning two different governments in Rajasthan, that came up with this Jan Soochna Portal where people said this is the information about mining that is useful to me. And this is the information about rations that is useful to me and I want to see that.

Of course, there are problems when sometimes you do not have the information. But that is another battle to fight all together. When there was information in the public domain, or sometimes even behind local logins, the Rajasthan government was able to get and publish this information proactively.

Now this is not only available on the web, but it is also available on this information booth, which is like an ATM that they are planning to put in every panchayat. Of course, it is going to take time for this whole thing to work, for people to start using it. But there is an attempt to have this information out there to the people in a way that they understand it and what information that they want.

And there are young women from every panchayat who are trained to use this ATM like machine. It is actually quite simple, you can just click on one of these schemes that you want. And then it will just, you can insert in your own number, your own ration card number, own job card number and find details about your own self or about your village as well. And information is available at different levels of disaggregation.

But this was designed as the name goes, it is for Jan Soochna. It is for people, for people to get information. So they were very clear right from the beginning that this is for people. And we are going to find as many ways as we can, to reach make this more meaningful for citizens to use. This is what I meant by participatory planning and local inputs to tech design.

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Now the final part of my presentation is unless it is, it is in the computer, it is not true. And another example of how Aadhaar based and biometrics have created hassles for people. This is actually a friend who I am staying with right now in Bangalore, and I was talking to him about doing this presentation here. And he said, you know what, this happened to my mother, in the IT capital of the country.

So forget, and his mom told me that I am an 80-year-old educated woman, and it has happened to me here. I can only, you know imagine and feel for the people that you are working with that is going to be so difficult. So my friend's mom, her name is Lalitha and she she is an 80-year-old woman who is supposed to get her pension. She is supposed to get her pension.

And she gets two different pensions in two different bank accounts. One is a family pension and one is her employment, like her her own provident fund pension. So she had to prove every year she has to prove that she is alive so that the pension continues

and she has to provide a life certificate. So in one bank, it was pretty straightforward. She had to get some form signed and all of that and that was done.

The other one said, no you have do a biometric authentication. Now she is really old, her fingerprints do not work well. Her biometrics kept failing. So they sent her from one center to another center saying try there. She went there, she was not able to get a life certificate, the biometric just would not work. So then they said, now we do not know what to do. So she went back to the bank.

Now she is an 80-year-old lady who is using a stick. And she has to climb up a center, which has you know really thin staircase. So she was telling me that I was petrified that I am going to fall down and break break something and the pension amount that she was fighting for was only 1000 rupees. So it is not even like a really big amount. But irrespective of what the amount is she said I was, you know I had to make all these trips.

And normally something that would take me a day or so to get, like a life certificate, it took me 15 days and I finally had, like finally got it with a lot of tryst. Then they sent her to another place saying that, you know this is not working, you have to get it. So they said, okay now go and change your Aadhaar card. There is some problem with your biometrics in your Aadhaar.

So she went to the Aadhaar Enrollment Center, paid 50 Rs got her Aadhaar biometrics updated, changed. Again, she went to the bank, again, it did not work. Finally, she just gave up and she said, you know this is not working. And she, she sort of went back to that officer and said. So he said, okay, let us try an iris scan. And I am not so sure how and where it worked, but they got her iris scan, and that thankfully matched.

And she was able to prove that she is alive. So she was telling me very interestingly that, you know I was there in flesh and blood. But he was not ready to accept that I was alive until the time that biometrics said that I am alive. So if this is happening in Bangalore, you can only imagine what is happening in the rest of the country and this over reliance of technology, and that only technology is the right way to solve the problem is going to get us killed one day but I will be less morbid.

Little Prince by Antoine De Saint Exupery

"A Turkish astronomer discovered an asteroid. On making this discovery, the astronomer had presented it to the International Astronomical Congress in a great demonstration. But he was in Turkish costume and so nobody would believe what he said. Grown ups are like that..... Fortunately, however, for the reputation of Asteroid B-612, a Turkish dictator made a law that his subjects, under pain of death, should change to European costume. So in 1920, the astronomer gave his demonstration all over again, dressed with impressive style and elegance. And this time everybody accepted his report.

I am just going to probably end with this really nice book called, The Little Prince. It is somewhat of a children's book, but I think it is very relevant for adults. So I am going to read a few lines from that book for us to ponder about.

"A Turkish astronomer discovered an asteroid. On making this discovery the astronomer had had presented it to the International Astronomical Congress in a great demonstration. But he was in Turkish costume, so no one would believe what he said. Grown-ups are like that. Fortunately, however, for the reputation of asteroid B-612, a Turkish dictator made a law that his subjects under pain of death should change to European costume. So in 1920, the astronomer gave his demonstration all over again, dressed with an impressive dressed with impressive style and elegance. And this time, everybody accepted his report."

Little Prince by Antoine De Saint Exupery

If I have told you that these details about the asteroid, and made a note of its number for you, it is on account of the grown ups and their ways. When you tell them that you have made a new friend, they never ask you any questions about essential matters. They never say to you, "What does his voice sound like? What games does he love best? Does he collect butterflies? " Instead, they demand: "How old is he? How many brothers he has? How much does he weigh? How much money does his father make?" Only from these figures do they think they have learned anything about him. If you want to say to the grown ups: "I saw beautiful house made of rosy brick with geraniums in the windows and doves on the roof," they would not be able to get any idea of the house at all. You have to say to them: "I saw house that cost $20,000." Then they would exclaim: "Oh, what a pretty house that is!"

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Just so you might say to them. "The proof that the little prince existed is that he was charming, that he laughed, and that he was looking for a sheep. If anybody wants a sheep, that is proof that he exists." Thank you.