Understanding Design Thinking and People Centered Design
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Lecture - 14
**Concepting and Building**
Scenarios and Storyboards

We are now starting on with sub part four scenarios and storyboards, so basically the whole notion of story boarding of our concept.

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Under the section called concepting and building, so remember we are now trying to create concepts and then actually we are going to build them because, until we do that it is not reality. Until now we have spoken about generating ideas, big volume of ideas then taking all of them bundling them and everything. Now we need to put them in a form that makes it possible to put in front of someone that makes it possible to share amongst ourselves as a team so that we are all on the same page, all with the same understanding about what we mean about our concept and then also to share it beyond the design team, beyond the immediate product team that is working on it. So, that everyone starts to understand what it that we are talking about is scenarios and storyboards.
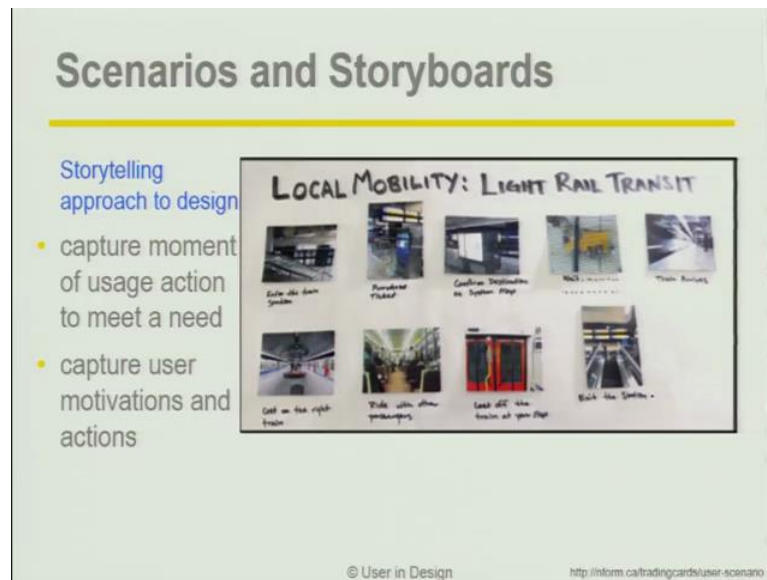
Now, this is a storytelling approach to design I think you are all by now familiar because storytelling has gotten a lot of attention these days. How important it is and how powerful it is as a way of communicating and conveying and making an idea much more powerful regardless of what the context is. So, rather than you know functionally saying that this happens, you know if you were to say for example, in a library I am not sure whether we spoke about this example earlier, but instead of saying you know in a library we need to get better computers more because there is more processing power and you know what we have is not the latest and all that and people you know it slows people down and everything.

If we were to build that as a story saying this child who is 14 years old and she does not have access to computer so she comes to the library to access the computer and you know she needs to do her homework sometimes, she accesses the internet and all that so for this child for example, it was very important for you know for such an example when you say this as a story that for her she is the reason we need to upgrade all our computers. So, when you say like this it sounds lot more compelling, it makes more sense.

So, story generally is something that makes a lot of sense to people, so that is the concept, that is the idea, that is the understanding about how people like to hear thoughts, like to or connect better is the basis on which this technique, this tool has been

developed. So, it is a storytelling approach to design where we are telling the story about our design. So, what we do is we capture the moment of usage action to meet a need there is a particular need a user need.

Now you understand very well what; that means and we are capturing the moment of usage. The moment of usage is where, we as the design team come in; we have designed that moment of usage good bad or ugly, we have designed it. So, it is capturing that moment what happens when the user meets the product; when the user is standing in front of microwave oven and staring it and saying now what do I do, it also is used to capture the users motivations and actions. We at the back of our minds you know through our research now our insights are at the back of our minds, they should be at the back of our minds. So, we have a strong clarity about what are the user's motivations; what are the kind of actions they are likely to take so this storyboard would capture precisely this.

So, just a quick example to show you; this is you know capturing the journey of a person as they walk through the light rail transit system. So, she enters the train station she purchases the ticket then she confirms the information on the map where, she wants to go and then she is waiting and waiting and then the train is arriving and then she goes to the right train, she rides with other passengers and then she gets off the train at the right stop and exits the station. So, if you see this is the story that is showing what the person, the steps they are taking to get through this. So, of course this is capturing a story in the present, what do we do with storyboards.

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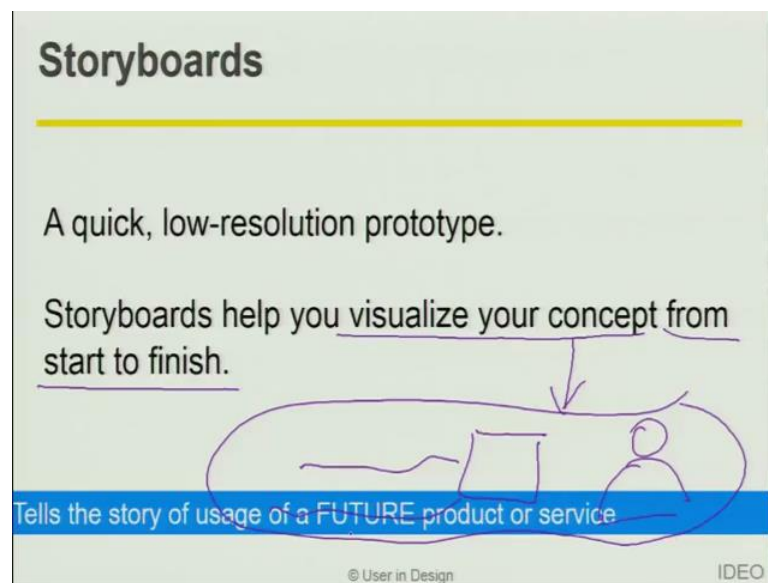
A storyboard is a quick low resolution prototype, storyboards help you visualize your concept; it helps you visualize your concept from start to finish you may not do it in one storyboard you may do several storyboards for it. So, you may allocate certain parts of the design to certain storyboards, but essentially what are they doing they helping you visualize your concept from start to finish and what does concept mean? It is not just your product or your service, it is how the product and the service and the person work together, how they all interact together that is the purpose of the storyboard.

So, it is the story of usage of product or service and it is in the future, it does not exist today and you are going to convey that through a storyboard.

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So, storyboards help us to articulate our thoughts about how the product will be, how it will be in the lives of our users. Remember we are taking moving from existing situations to preferred ones right, so how the product will be in the lives of our users we articulate that. We have a shared understanding among everyone on the team before we start building the product. Before we jump into building the product, we build the entire story around how it fits into the users lives and then you know we can look at that and say how does this make sense or this is a good idea, let us take this further things like that. So, storyboards help to fully think through your concept, it helps you elaborate on the entire thing and say now what will the user do and now what should we present to the user things like that.

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You saw this example yesterday where it is represented in a very quick way about troubleshooting for the network problems. Now in a storyboard the point I want to make over here is you do not necessarily have to be fancy, there are various fidelities and methods and approaches to creating a storyboard. As you can see this is a very simple way to do it right, so it helps us to think, it helps others to understand and it helps others to communicate their experience. So, everyone is able to pull their thoughts together even if, you were to show this to during usability testing which we will cover in the next section, but if you were to in the testing say look at this story and then the user perhaps responds to it and tells you whether you make sense to them or not alright.

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So let us look at some scenarios as I told you the Pune corporation site we created these different personas and we spoke about this one yesterday as a scenario and they want to know if, they can start a similar program in their own locality through the Pune municipal corporation site this is the goal of the user, this is what the user wants to do.

Now, this is Aniruddha Dey he is a finance manager, so his career he is from Ranchi and he is come to Pune 4 years ago, he has a very busy schedule but in his leisure he likes to explore the city and this is a new city for him. So, familiarity with the computers medium and he can access internet at home, so that is the initial parts of the persona we created.

Let us look at his scenario his sort of background motivation and goal to connect with the Pune municipal corporation site or how would that site live in his life, Aniruddha has recently purchased a new flat and wants to get his name transferred, due to his hectic schedule he can only do this on weekends. He came to know that PMC has an official website; he decides to complete his residence transfer formalities online, he also decides to get information on the Pune festival coming up in 15 days.

So, you can see that this is leading you slowly to what are the things the user, would do not just do on the product or the service that we are creating, but how do they connect with it, how does this thing that we are creating live in the life of this user.

Let us look at another person right, another persona these were three of the; there were few personas that were created I believe five or so, this was one of them. So, Pravin Mhatre he is a businessman; a hotelier and he has his own hotel. He has done his twelfth standard plus 1 year of college, he has tried his hand at various small business ventures like a printing press, sharing brokerage and has finally settled into running a middle sized restaurant in Pune since the last 8 years. He is well versed with the formalities required to run such a business, he does not access the internet frequently, but he is willing to use it when required. What is his scenario; Pravin realizes that the validity of his license to run the restaurant will expire next week he needs to get the renewal from PMC. He notices that PMC has an official website and he wonders if he can apply for renewal online or at least get information about it he decides to access the PMC site.

So, where do you think all these things have come from, they have come from your user research, they have come from you know remember the visit to PMC then successive interviews with people trying to understand how people think about government information. How do they feel, what do they expect of it, what do they think that it is going to give them right all of those things and then we have now created scenarios, personas first and then scenarios around that.

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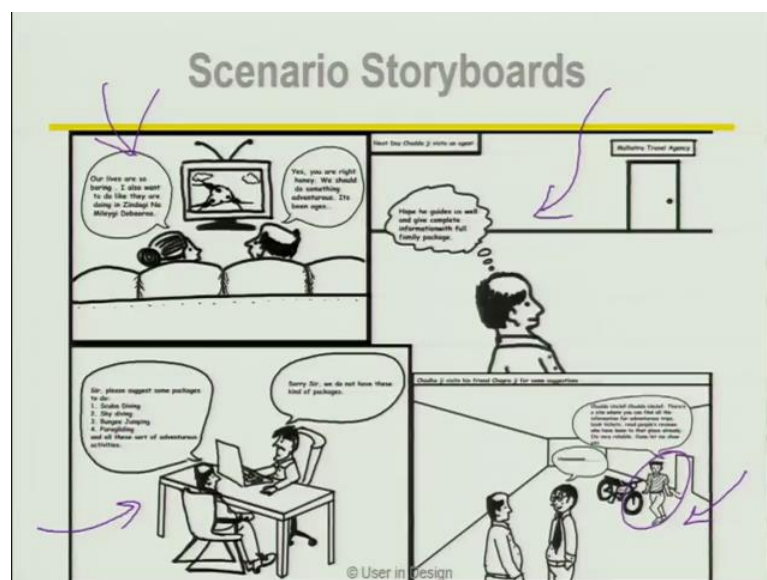
Here is another example and again this was remember, the adventure travel site I showed you, the insights that we had gathered from the adventure travel site. So, this is a

storyboard in the future trying to project what the setting might be. So, there is this couple and it is coming from one the last persona that we had on this, he is a middle aged man family man. So, she says our lives are so boring I also want to do what they did in [FL] I wanted to try some new adventures and he says yes you are right honey we should do something adventurous it is been so ages. So, next day he visits an agent and he says hope he guides us well and gives complete information with full family package and he is going to this agency.

So, he says please sir suggest some packages to do scuba diving, sky diving, bungee jumping, paragliding etcetera and all these sort of adventurous activities. So, what does the travel agent say sorry sir we do not have these kinds of packages. So, he this person Chaddha Ji visit is his friend Chopra Ji for some suggestions and there is this young man who says uncle there is a site where you can find all the information for adventurous trips book tickets, road trip, read peoples reviews who have been to that place already, it is very reliable come let me show it to you.

So, with this I think you have gotten a picture of what this is, what is the motivation behind the need for such a service what is the be the next step the action, what is the rationale for existence or the need for it and how it perhaps is a gap in the market or a gap in the market of the existing websites and then how might hear about it. So, it is one storyboard, one scenario that gives you again in the future.

Now nothing exists at this point right the product service nothing exists, but you have tried to envision how it might go out in the world right and this thing might you know show you certain gaps and say what are the different ways in which this mister Chaddha Ji could hear about this right this was one of them what are the other ways. So, the as a team you might start thinking about this talking about this and discussing various avenues. So, that is the purpose of this it has put something on paper in order to give everyone a feel a general look of how this is going to work in the real world and as well in this one. I am showing you just the written scenario this could very well, could be put into a pictorial format like this alright.
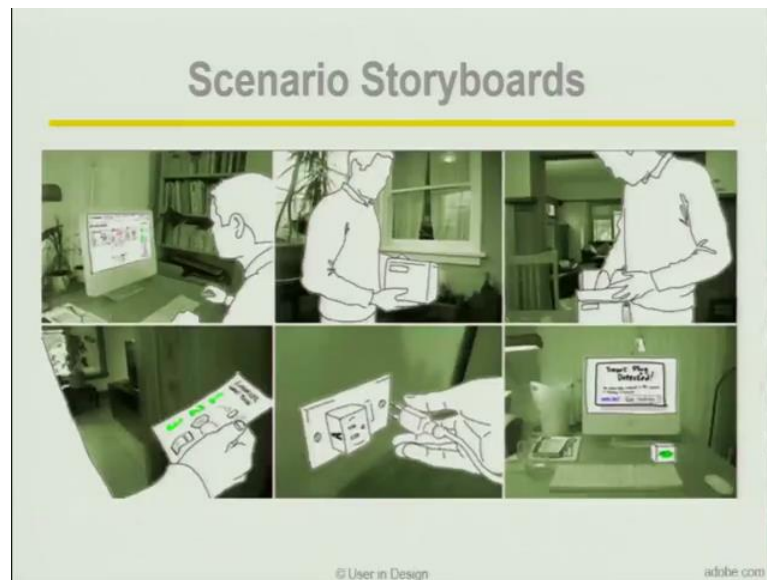
Again there is probably many of you thinking, but I cannot draw I do not think this is such a fancy drawing, but nevertheless with the computer I am sorry the phone networking problem I showed you how with a very, very simple drawing you can still convey the concept. So, I would encourage you all to not be shy of drawing, to not be afraid of drawing it is not that difficult it is a very powerful visual way to convey even if I draw this you know it is a person, I put a tie and you know it is someone in the office, I put a cap and you know it is a chef.

So, anyways, those of you who are saying I cannot draw here is another technique to do quite effectively, so you know you can take photographs. So, you can see that this is a really quick way to do, it you take photographs and then overlay things on the photographs right overlay certain photographs certain drawings on the photographs and very quickly through this combination of photo as well as your quick sketches, it starts to look like a real thing, it adds richness to your storyboard and it feels like it belongs in a real setting.
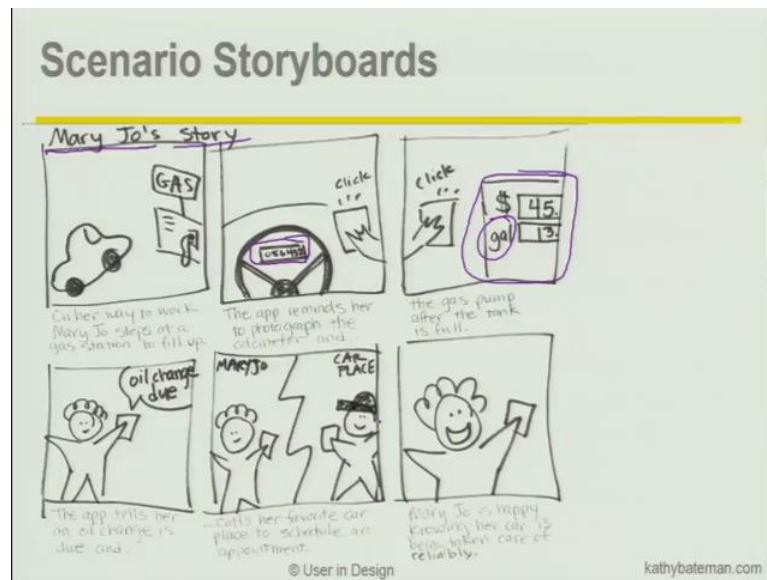
Let us look at it some more this was from a concept a product that was being worked on for vehicle maintenance and vehicle related logging ideas right an app that was being designed for that purpose. So, they went through the exercise and then they came up with these two personas Mary Jo and the next one I believe is roger. So, we have Mary Jo over here, let us look at her story and again take a look at how simple the drawings are. So, she is on her way to work Mary Jo stops at a gas station to fill up. So, she is at the petrol pump and she is trying to fill up her car the app reminds her to photograph the odometer, so this is telling her what the mileage on her right is.

So, the app reminds her, so she quickly clicks a photograph then the gas pump after the tank is full you know what how much has how many gallons has she filled or liters or whatever it is and how much has she paid. So, she takes a photograph of that and then when she takes two photographs, the app tells her that an oil change is due. So, this is taking care of her not having to worry when I have to change the oil in my car right.

So, then Mary Jo calls her favorite car place to schedule an appointment and she is happy knowing that her car is being taken care of reliably. So, as you can see we have gone through a story, I told you a little story in pictures about Mary Joe and what she is doing and how this particular concept of the app fits into her life and through these very simple diagrams and annotations. So, the other thing I would like to point out to you is you know sometimes it is showing the product and the object sometimes you know a part of

the person's body and sometimes it is showing the emotion and sometimes it is showing the relation or the connection that two people are having and then again it is showing the emotion.

So, as you can see these are even though it is such a simple drawing it has captured very powerfully so many aspects and it is a good way for you to understand what this means.

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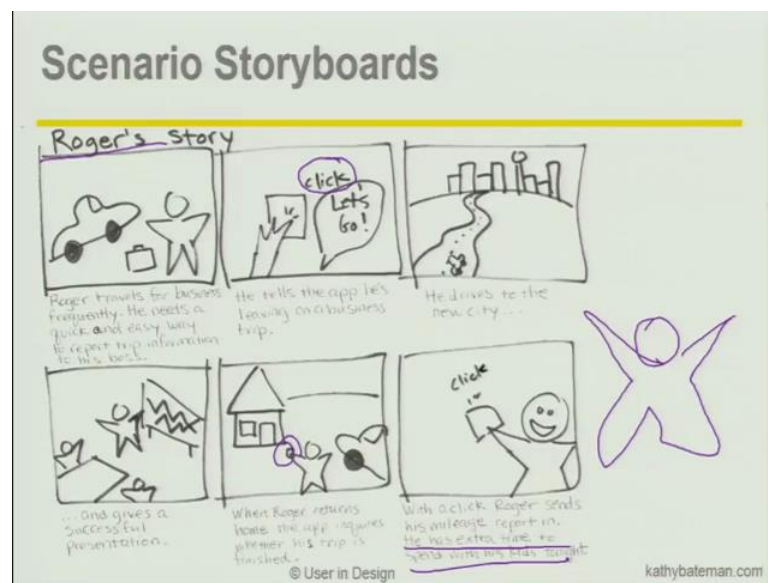
Now for the same product let us look at Rogers's story alright. Now roger travels for business frequently, he needs a quick and easy way to report trip information to his boss. So, every time think of a salesperson a salesman who is on the road all the time, now every day or every so often he needs to claim the money for all the mileage he is putting on his vehicle. So, how does he do that, it is kind of a tedious process for him he has to look at the odometer this that and whatever method he uses. So, there he is roger with his salesman bag and there is his car and he is ready to go, he tells the app he is leaving on a business trip.

So, this is showing you the product, it is showing you the interaction in terms of the instruction that the user is giving it and it is also showing click, he clicks on this right he tells the app that he is leaving on a business trip then what happens he goes and rides to the new city, he goes wherever he goes he gives a successful presentation. So, it is telling you what he does and all that because he is at ease right and then, when roger returns home there is his car there is his home and he has come back with the phone in his hand

and you can see how nicely they have drawn this person just through this like a star right. So, when Roger returns home the app inquires whether his trip is finished, when he returns home he logs on and he with a click roger sends his mileage reporting and he has extra time to send with his kids tonight.

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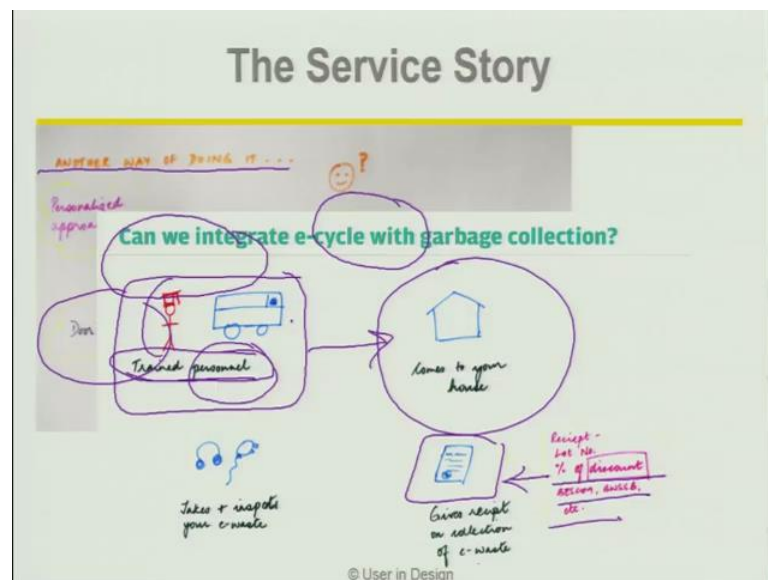
So, that is the point you know it is telling you in a quick story and again through very simple drawings, how this product or service that we have envisioned is going to be used and going to live in people's lives, so this is how a scenario storyboard works.

Now, let us look at the example that I showed you yesterday of the E-waste, so here is another way of doing it as you know another way for the service not for the storyboard that the team exploring at this point which was through traditional garbage collection system looking at whether, E-waste can be sent out and can be collected by the traditional the standard garbage collection agency through the daily garbage collection and the other thing that they were exploring is the Bangalore one which, I believe is a service that helps you pay your bills and things like that and this is the Bangalore municipal, the electricity bill related.

So, anyways, these were the thoughts they were going through that here the technology does not become a hurdle the person can come and collect your service door to door anyway the point is not this. The point that I want to make to you is can we integrate E-cycle with garbage collection and look at the way it is shown, if this is the trained

personnel right this is the it is the reason to highlight this is a that person to collect e waste they need to be trained further.

So, they would be trained and then they come with their garbage collection truck then they come to your doorstep, they come to your house and then they take all your pieces as your headphone there is your something with a wire, takes it and inspects it, he takes it and inspects it through whatever system they have to accept it or reject it he gives a receipt on collection of your e waste, so this is the receipt that he is giving and this is telling you also this is the receipt lot number and the percentage of discount you would get.

So, one of the concepts that was being explored in this is if, you give your e waste then perhaps the corporation could give you a discount on your electricity bill. So, that is the important concept that was being explored, so the percentage of discount immediately, if you look at it from the user's perspective, I give my e waste and I immediately come to know how much discount I will get, that is the way it should be from users perspective.

So, this helps us think through that once he gives the receipt then what happens, why do not we just tell him right away what discount he gets that is the motivation. So, that is going to motivate him again and again and again to have his E-waste collected. So, again I would like to point out to you in this one what a little simple diagram has conveyed the story of how this service might work.

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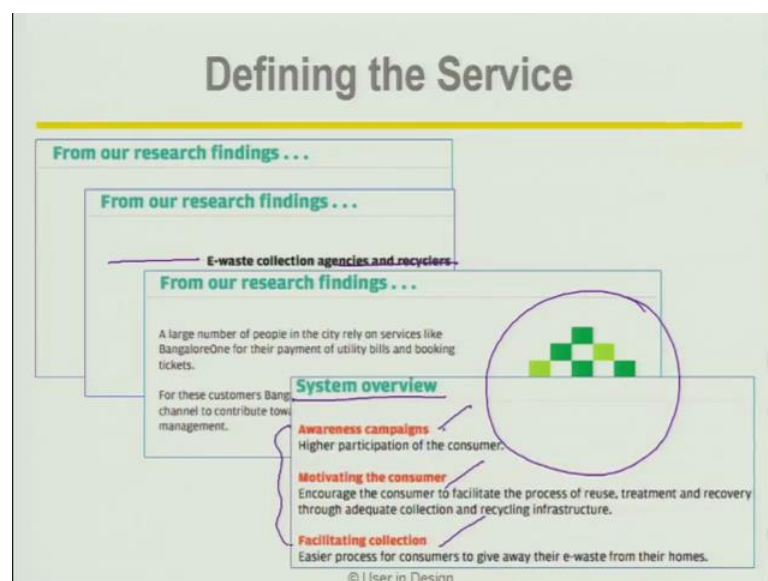
Further on in this to show you another representation, in the same project you know from the research findings, if you remember we had the aware guy and the not aware guy and then you know this not aware guy has limited reach due to the agencies have limited reach because the consumer is not aware and does not have information available etcetera. So, then large number of people relies on this Bangalore one which is the service for the payment of utility bills and booking tickets etcetera, Bangalore one provides an effective channel. So, this is what the team was exploring and then the overall system overview that they thought it would be through awareness campaigns through motivating the customers and through facilitating the collection, so these were the key aspects of the service.

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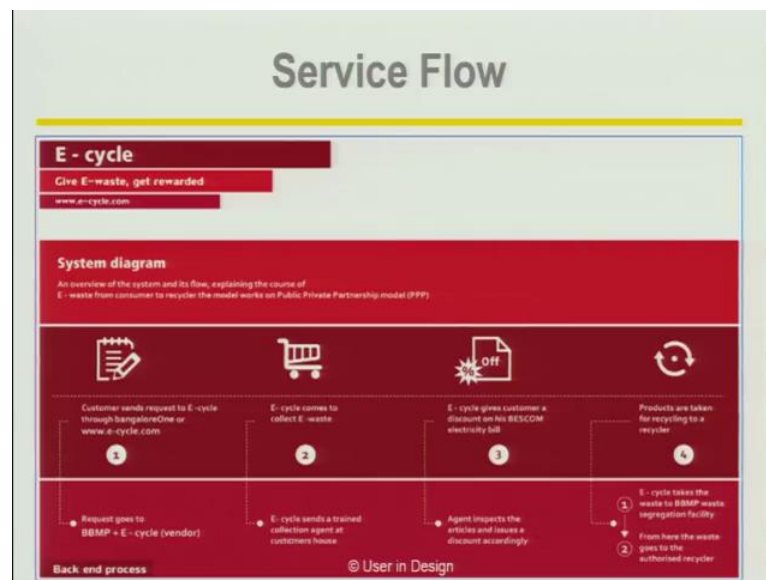
Now, let us look at how it was defined, this was how the service flow was defined. So, give e waste get rewarded that was the tag line and then, this is the system diagram that was created explaining the course of e waste from consumer to recyclers, the model works on public private partnership etcetera.

So, look at this where you know this is the back end process this is what happens at the backside and this is what happens at the customer end. So, the customer sends the request to E-cycle through Bangalore one and then E-cycle comes to collect waste they send the trained personnel and then E-cycle gives a discount and again inspects the articles and the products are taken for recycling to a recycler E-cycle takes, up the waste

for segregation from here the waste goes to the authorized recycler and over here agent inspects e cycles etcetera. So, the point that I want to make to you is remember that simple quick diagram that was done, this that same essential thought, the same essential idea has now been plotted on to a bigger more finished diagram.

So, again to reiterate the point that I made yesterday when you think of something first, do it on paper, first do it on paper get your thoughts articulated you know the point at which you may have thought that perhaps you know he gives the waste and then he issues the token number and then three days later he takes the token, number and calls them and they tell him how much discount he will get from the users perspective that is too long. So, from the user's perspective this is how we should design and therefore, that got reflected in a more refined representation of the same thing.

So, storyboards they help us to articulate our thoughts about how the product will be in the lives of users will be and it gives us the shared understanding that shared understanding. I would emphasize this again and again and again remember one of the important tenets of design thinking is to be collaborative in a diverse team. So, shared understanding among everyone, on the team before we start building the product, what have we lost in this a piece of paper what is the cost been practically 0. So, before you start building and investing too much in the product, it is a wonderful way to make sure we were building the right thing, the right design.

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Let us now, look at a nice example that step by step sort of that builds for you how you create storyboards. So, first is determine what part of your idea you want to storyboard, you may want to do the whole thing, you may want to do a part of it, you may want to do it via personas. However, it makes sense right, so may be a component of your idea like an interaction of how the customer finds out about your product, both of these we covered like this, one was covered in the adventure travel and then component of an idea was in the Mary Jo and the Roger example right. Spend 30 minutes drawing on how your idea works very quickly, remember the quick sketches that we saw using comic book style frames to spotlight key moments and build a short narrative and I will show you a template about how this can work. Now act out the storyboard to your team for feedback, so take your storyboard and then perhaps explain one or two people which will help you flesh out your ideas, it will help you perhaps refine some things that are not. So, great, storyboards again help to fully think through your concept.

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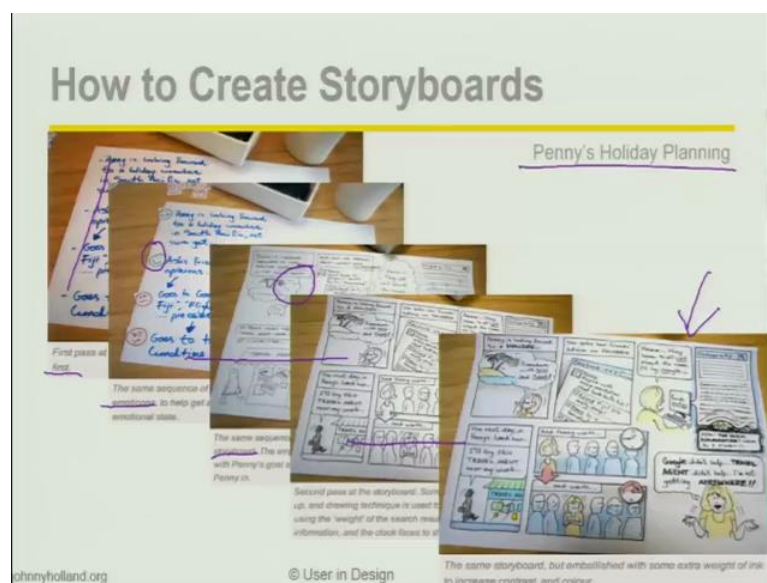
So, let us look now how do you create storyboards this is an example of Penny's holiday planning right. So, this is the first pass just writing out the sequence of moments first penny is looking forward to holiday somewhere in the south pacific not sure yet. She asks friends different opinions may be Fiji, may be some other place then she goes to Google, flights to Fiji, flights to Venezuela I believe this is and then what she gets is very piecemeal information. So, then she goes to a travel agent at lunch time there is a long

wait she is waiting in line for the travel agent, now penny has not really narrowed her options yet she feels like she is not getting anywhere .

Next what happens, we add emotions to it; today we have such a variety of emoticons at our disposal. The minute you put the little emoticons on there; it tells you how it is working for Penny even in the experience diagram that, I showed you the example, you know you saw how powerfully those emotions of the user were explaining to you how the service is working or not which parts are working which parts are not. So, this is purely based on how the user feels about the experience, so on the same things you have overlaid these emoticons.

Now, what you do is roughly translated as frames in a storyboard, the same thing it is in a form of a picture and a text annotation a picture and a text annotation and the text annotation may be either a thought bubble or a visual of what the product looks like or you know a place that the person is visiting. So, the emphasis at this point is just telling the story starting with Penny's goal and ending with the state that the situation has left penny in right. So, you are overlaying or combining the text and the visuals and then, this is the second part of the storyboard, some of the text has been tightened up you figure out better ways to express it more crisp ways to express it, and using the weight of the search results to emphasize the volume of information and the clock faces you know clock faces have been added here to show how time is passing and how it is you know time is going by, but she is not getting anywhere and then you add some annotation to it here you can see and even over here you know arrows have been added to show which leads to what and then just little bit of color to highlight it.

So, from just a little simple write up like this you have ended up with a storyboard that is very it is pretty powerful I think it really tells a nice story. So, the important thing to remember is do not try to start over here, you will get kind of lost in the mechanics of trying to present it beautifully which is not the purpose right now, the first purpose is to get that mental model of the story you have in your head of the users mental model out on the paper right to capture it first then start annotating.

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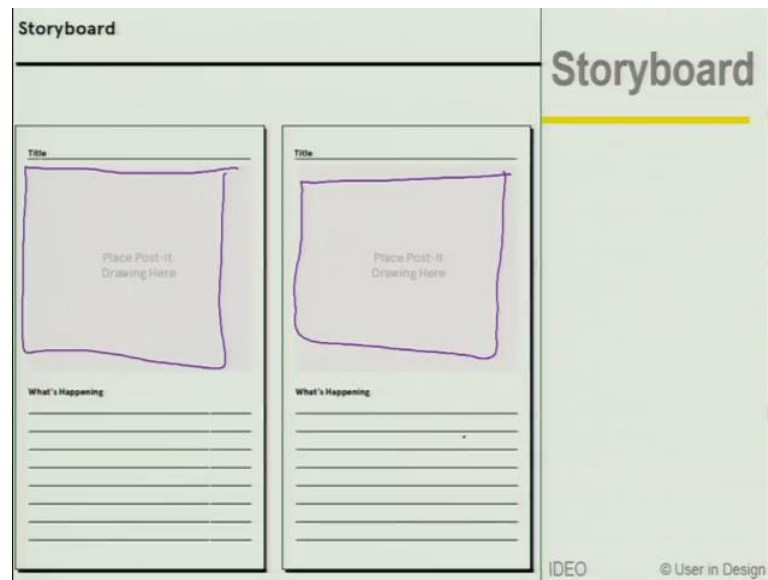
So this is a template of a storyboard that we will share with you and it is a very simple template, it is got place for a picture and it is got place to write. So, this is you know a nice post it size, so you can even draw your post it on here. So, then you can quickly if you want to replace it something take it out and put something else right and then your story is written over here.

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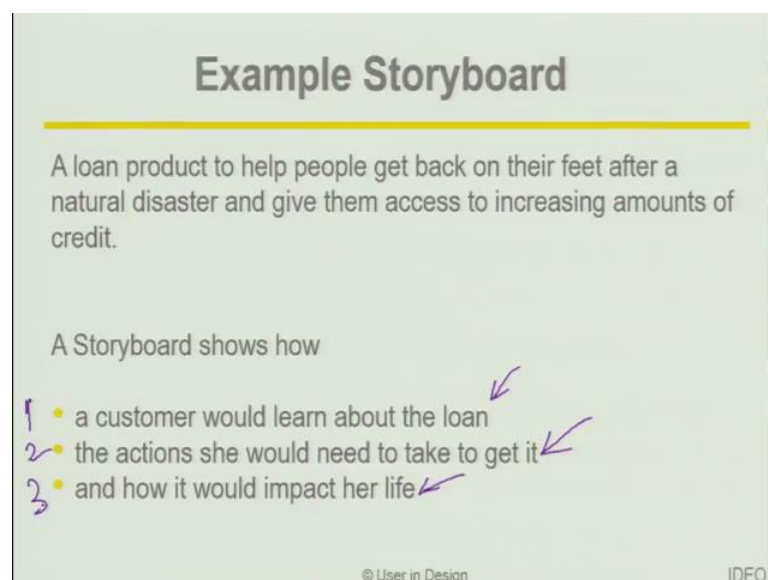
Let us look at this as an example, so this was an example that was done in the Philippines and it is essentially a loan product that helps people get back on their feet after a natural

disaster. So, let us say there has been a cyclone or a flood or something after the natural disaster people lives are in shambles, how can this service provide a quick loan to help them rebuild their life quickly. So, a storyboard in this example will show you how the customer will learn about the loan. So, first the awareness then the actions you would need to take to get it you know the actual interaction with the product and then how it impacts her life what does it do to her life.

So, this is a nice way to show the three things that you know a storyboard could show the initial connect and realization about the service then is actually working with the service and then afterwards you know happy smile why, because the service has worked well.

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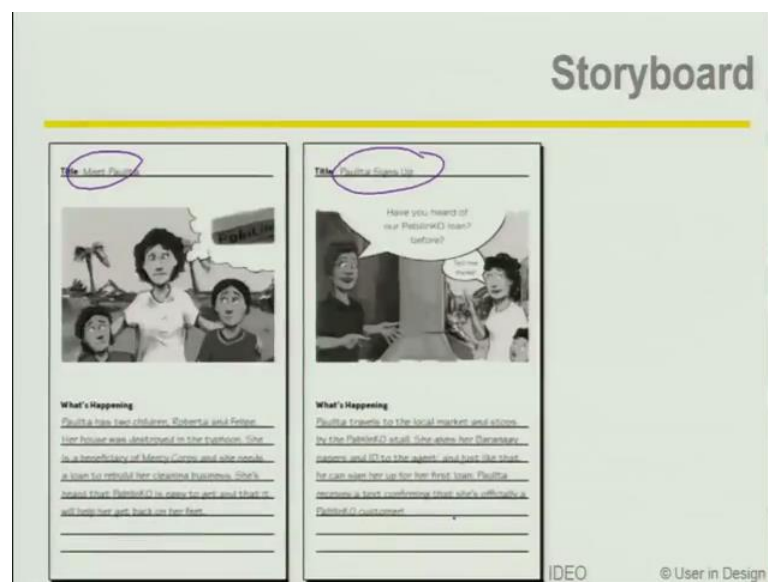
So, let us look at this using that same template. So, this is Pauletta; Paulette has two children Robert and Felipe Robert and Felipe her house was destroyed in the typhoon and she is the beneficiary of the mercy cops and she needs a loan to rebuild her cleaning business. So, she is a woman who goes around cleaning peoples house and that is how she earns her living and then it has all gotten destroyed she needs to rebuild it, she has heard about this service and that it is easy to get and that it will help her get back on her feet that it will help get her a loan.

So, what happens she travels to the local market and she stops by the stall of this particular service? So, this person is telling asking her at there have you heard about our loan before and she says no tell me more or yes tell me more or whatever it is. So, she

stops there and then she gives in all her papers and her idea and everything to the agent and, so that he can sign her up for the loan.

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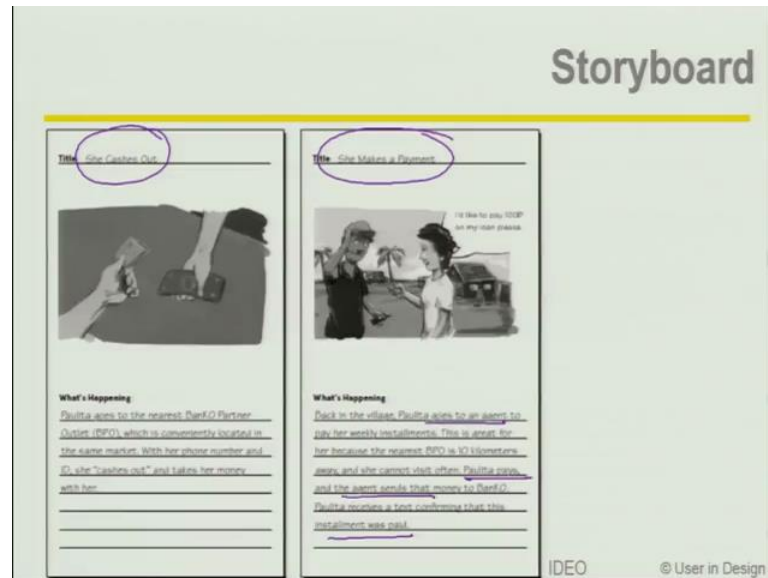
And then Pauletta as she is standing over there she immediately gets a text confirming that she is officially a customer right that she has gotten approved as a customer and immediately she has gotten this text on her SMS on her phone and then. So, here Pauletta is signing up right here you come to know about who she is then, she is signing up then she cashes this is where she actually gets the loan. She goes to the nearest bank partner outlet which is conveniently located in the same market. So, this service and the bank is located next to each other and with her phone number and her ID she cashes out and takes her money with her.

So, it was that simple she got an SMS on her phone she goes there and she gets her money and then now she has to repay the loan successively right. So, back in the village Pauletta goes to an agent to pay her weekly installment again she is not going somewhere far away this is great for her, because the nearest BPO is 10 kilometers away. So, she does not have to go 10 kilometers away she is right there and; obviously, it is difficult to visit 10 kilometers away. So, she pays the agent and he sends that money to the bank Paulette receives the text confirming that this installation was paid.

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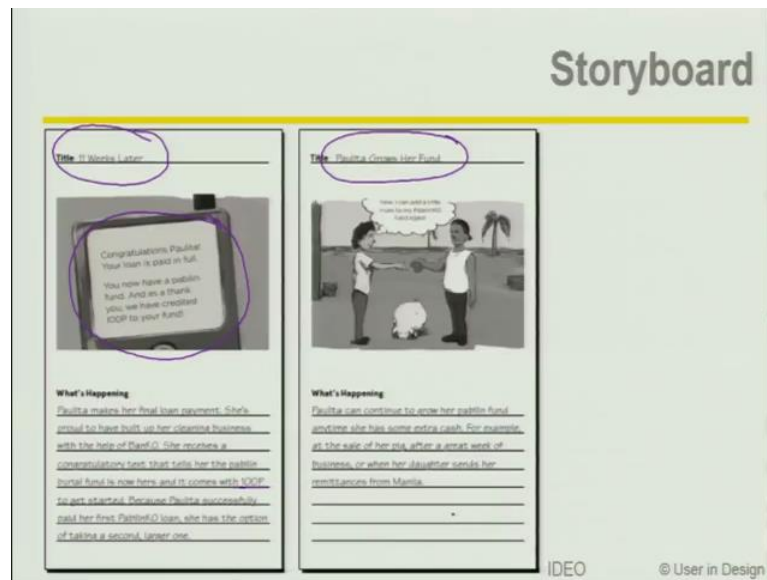
So, she receives you can see all the interaction points that she pays, she goes to an agent and then agent sends the money etcetera. Each of this are interactions with the service and then what happens 11 weeks later right she makes her final loan payment and she is proud to build up her cleaning business all over again with the help of the bank and she also receives the congratulatory text that tells her, that they are also giving her a burial fund that is now hers and it comes with a hundred p whatever the currency is to get started.

So, the burial fund is perhaps something that she is saving up for when she when she is going to get buried. So, they are helping her to save money as well for that fund because she successfully paid her loan she has the option of taking a second loan as well and then, this is showing what the message that Pauletta gets; congratulations Paulette your loan is paid in full you now have a fund and as a thank you we have credited hundred p to your fund clean and clear.

Then Pauletta grows her fund she can continue to grow her fund anytime she has some extra cash. So, if she sells some goods she is able to put it in that fund, if her daughter sends her money from Manila she is able to put in the fund and so on and so forth. So, as you can see through these only 6 frames and some simple pictures which covered you know here people here is the interaction people to people interaction. Here is the transaction interaction here is again what is happening between the people, here is the

interaction with the device or the service and then this again is showing how it is benefiting in her life. So, if you look back the storyboard showed us how she would learn about the loan, the actions she would need to get it and how it would impact her life.

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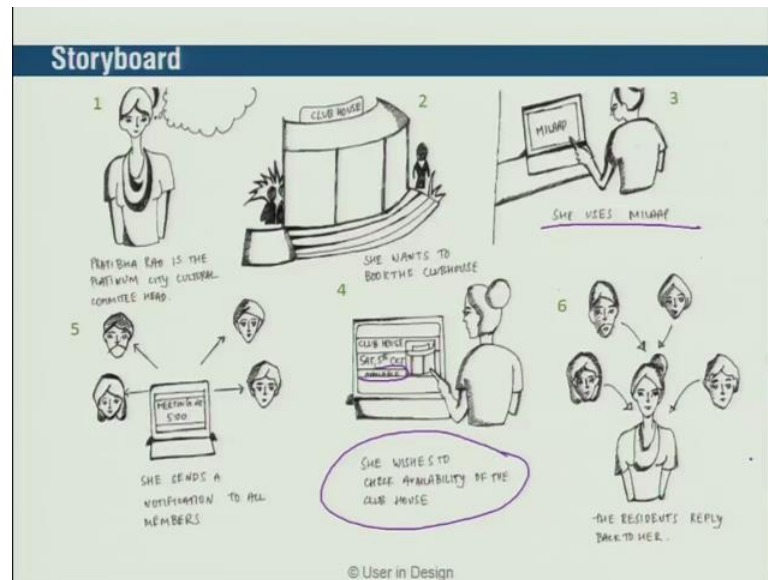
Let us look at this other example we looked at this example of the service that was being proposed for this very large apartment complex. So, here is Pratibha Rao again who is the platinum city cultural committee head she wants to book the club house this is what she wants to do, so she uses Milaap, which is the app that has been conceptualized it does not exist today it has been conceptualized right and then, she wishes to check availability of the club house. So, she goes there and then she finds it is available on the, date she sends the notification to all the members on this and then the residents start replying to her.
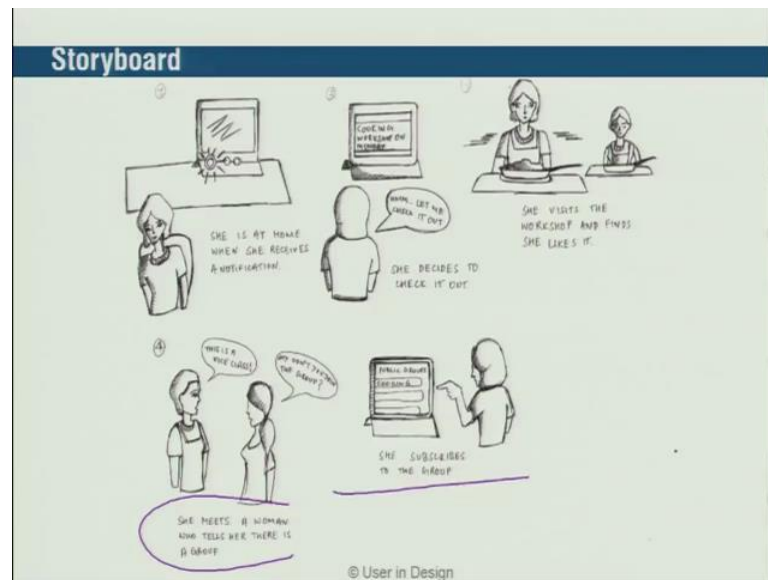
Let us look some more another scenario where she is at home when she receives a notification and it says there is a cooking workshop on Monday, she says let me check it out she decides to check it out she goes for the cooking workshop and finds out that she likes it and then she is discussing with another person, another participant in the workshop and she says this is a nice class and then why do not you join the group she meets a woman who tells her that there is a group and then, she subscribes to the group. So, this is now telling you a story totally in pictures simple pictures again that is telling you know how this service would live in people lives.

So, we have just covered this section on scenarios and storyboards and just to recap you know scenarios and storyboards the storyboards that, you build out of scenarios you have created is meant to you know give a visual representation, it is a low cost prototyping tool that gives a visual representation of how the product or service lives in the users lives and how they might interact with it. What it does for them, how it improves their life etcetera and it helps to clarify our own understanding as a team to have a common shared understanding as well as if you were to take it and communicate it with your client for example and say you know this is how this is going to work it is very powerful, so that was scenarios and storyboards.