

Understanding Design Thinking and People Centered Design
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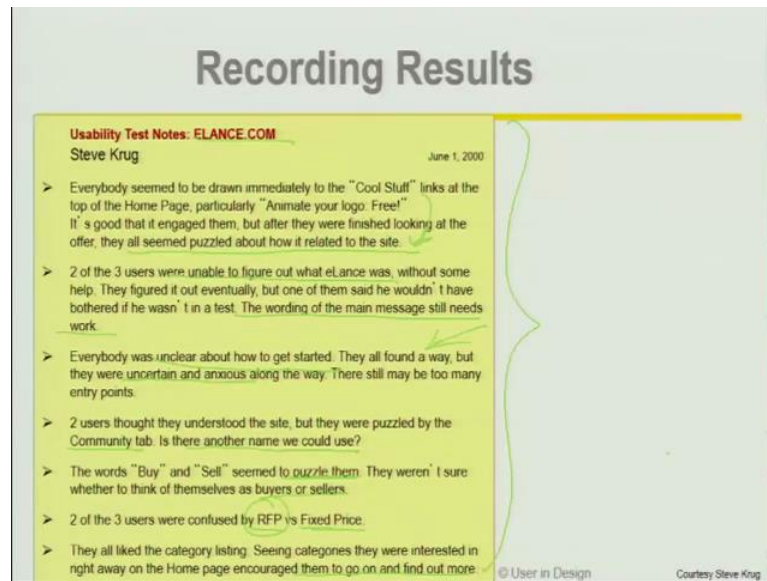
Lecture -19
Testing, Refining, Pitching Record Result,
Enhance, Retest and Refine Design

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So, we are going to now speak about recording results, enhancing, retesting and refining our design. Until now, you know we conducted the test, we did a lot of crap and tried to conceptualize who we should pick, how many users we bring in, how we should conduct the test, what we should tell them and all of these details. Now, we have actually done it. What do we do with those results? What do we do with, you know, everything that the users telling us? We have may be pages of notes, what do with it.

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So, I am going to read this to you. This is from Steve Krug's book. And, it is very nice insightful articulation of what happens at the end of a test.

So, let us say, you know, you are a team of like 5 again. Let us say a team of 5 working on project and someone has, one of you has conducted the test and all of you have so many thought about the design. Then, you know someone maybe in your team or outside of your team would have conducted the test. And, another point that I would like to add over here is that ideally if you can have someone else outside of your team test your design that can make a big difference; because you are too close to the design and you know you may not be able to be as objective as you would like to be. It is just natural. So, getting someone else outside of your team to test your design is a really good thing idea.

Next thing is never tell the user that is your design. If you are testing it do not tell the user that it is your design; because what happens if they know you have designed it and you have put in so much effort into it, it is less likely that they would criticize it. They may tell you all the nice things. So, I have often times, you know, when I am testing my design I tell users that this is created by someone else and I am trying to test it for them. Then, they can be more objective.

So, you as team of a 5 people are now sitting down and the other 4 or all 5 of you have been sitting and taking notes. You have been in the other room; you have taken lots of notes of the test and all. Now, you sit down and you say let us make sense of this. Now, when do you do that typically you would, let us say you test 5 people or 8 people in the day, you know you should use somebody every hour or something like that.

Always plan and keep time between two tests to do the deep brief. This deep briefing is the most important. Otherwise, you will have lost some of the information and you will have, you know, muddled and connected, had all kinds of cross connected between users if you try to do it at the end of the day. So, it is very very important that you deep brief, right after the testing that you have done.

And, does it as team very quickly; spend 10 minutes. If you schedule your participants, schedule them for an hour every hour and half. So, you have that half an hour. So, you have that half an hour gap between participants. And then, you can deep briefing. Then, what kind of deep briefing you should do? And, that is where this very nicely done. Let us just read through it. Everybody this was product called Elance.Com. So, this was the design called Elance.Com. And, let us read what they have to say. Everybody seems to be drawn immediately to the cool stuff links at the top of the home page. Particularly, animate your logo free.

So, you can, you know, quickly discuss and then make a one-page summary like this at the end of every use. It is good that you engage them, but after they were finished looking at the offer, they all seemed puzzled about how it related to the site. They could not. It was initially attractive, but then they could not connect to the site. Two of the three users were unable to figure out what Elance was. Remember, our think aloud video that we watched, where the user was trying so hard to find out what is this organization, who is this organization, what do they do and she could not figure it out.

So, similarly people come to a website with certain expectations and they cannot figure it out and then they go. So, two of the three users were unable to figure out what Elance was without some help. They figure it out eventually, but one of them said he would not have bothered if he was not in the test. So, this is what I was telling you people will be

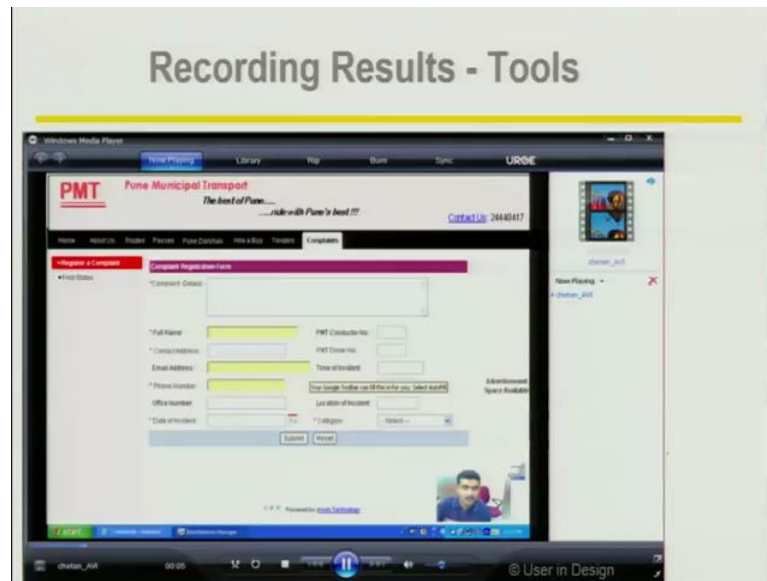
on much better behavior than they would be in the natural setting. And therefore, you know you need to be even more cognizant of this, unaware of this. The wording of the main message still needs work.

Next, everybody was unclear about this how to get started. So, this is an important, you know, point for you to notice. And also over here, what we notice that they all seem puzzled about how it related to the site, what is the connection between this and that. The wording of the main message still needs work, unable to figure out what Elance was, unclear about how to get started. They all found the way, but they are uncertain and anxious along the way. They still maybe too many entry points. If they are anxious about and uncomfortable along the way and uncertain in a test in a real situation, what might happen is what happens in today's world. You can click and just move away. It is very easy to now walk out the store, walk out of a site.

So, these things like uncertain and anxious are the things that you would need to be addressed. Two users thought that they understood the site, but they were puzzled by the community tab. Is there another name that we could use? The words “buy” and “sell” seems to puzzle them. They were not sure whether to think themselves as a buyer or seller. Two of three users were confused by RFP versus fixed price. The minute you have abbreviations, they can be very dangerous. So, two of the three users were confused by RFP verses fixed price. They all liked category listing. Seeing categories, they were interested in right away in the home page, encourage them on and find out more.

So, you can see that in the process of writing up this one page, which you would have done quick in a quick deep briefing as team at the end of it, you have found out so many things that you can improve. So, if Elance were now to revise their design and move on to the next revision, there are so many things that have been identified by the user that you have captured. If you did not do right after the test, a lot of these small things have gotten lost. You would have missed them later. This is one of the simplest and powerful ways of recording your result. So, when you have at the end of the day or the end of the week, you pull that together and say “OK now let us see how, what we need to do about our design”.

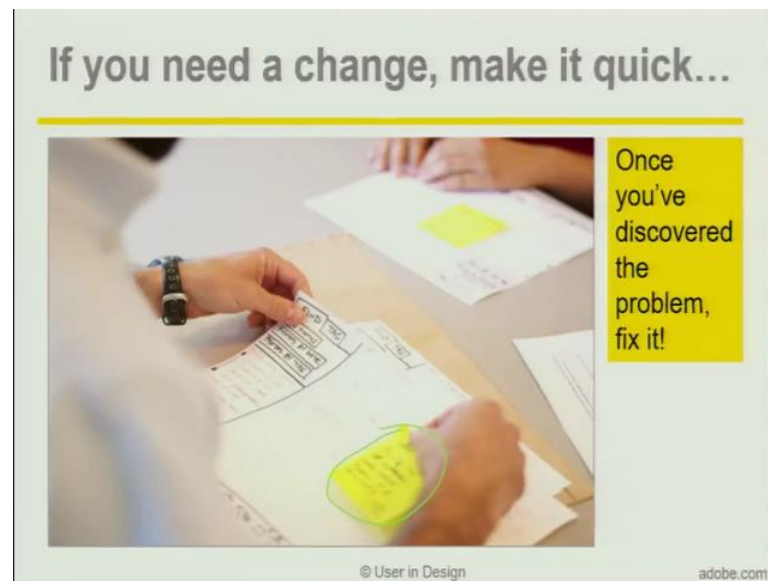
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But, do not postpone deep briefing till any after the, immediately after the test. Now, there are various tools that that allow you to do usability testing. This is the screen shot that I am showing you from (Refer Time: 08:55), which is one of tools that is for usability testing that we used for the corporation transport site. And, two things that you can see on here, this is showing the entire screen that the user is working on. And, in here you have a small window that shows you the user's face. And, a video feed of their expressions and what they are saying.

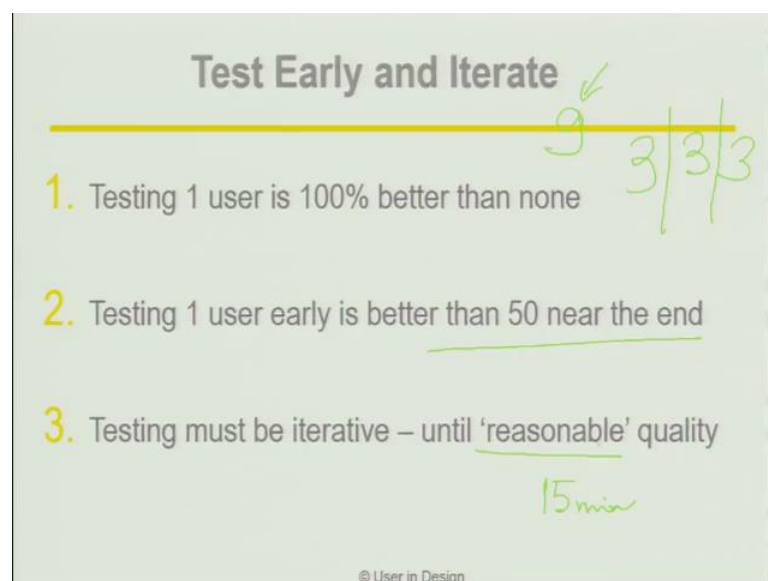
So, simultaneously you are seeing where there are going on the screen and at the same time, you are seeing their face. So this, what this tool does. And, there are of course more sophisticated tools available now. But, to do a good usability test you do not always need sophisticated tools. You know sometimes paper and pen and your empathy can get you some of the best results. Once you discover the problem, what do you do? Fix it as quickly as possible. If it is small little things, fix it before the next user comes.

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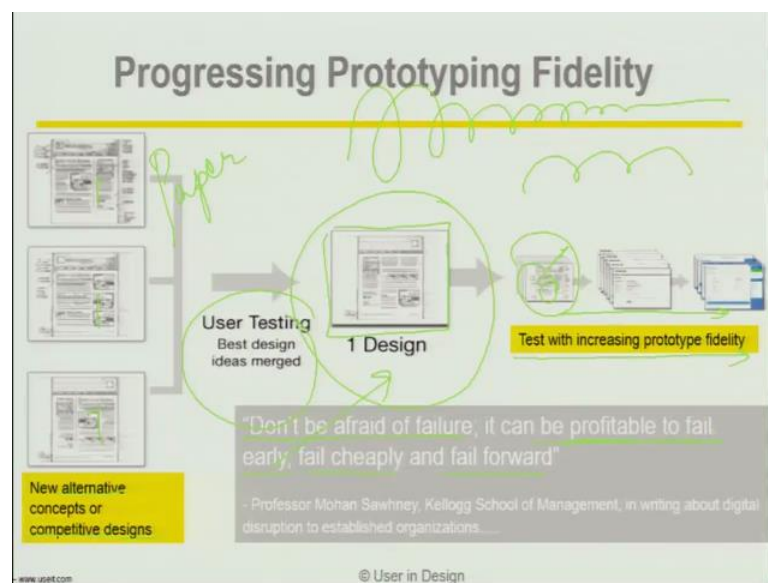
And, that is where you know posted notes and these kinds of little things that you do on prototypes are very helpful. So, you can; before the next user comes, you can replace this posted notes and put another. You can maybe shuffle around the couple of sheets, but with paper it makes it very very easy to do this. So, fix the problem as quickly as possible. So, if you need a change, make it quick.

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Test early and iterate; testing one user is hundred percent better than none. As I told you earlier, should you test anybody or nobody, test anybody? It is much better to get another human being look and you know at least maybe few things you will be able to discover that do not work. One user is better; hundred percent better than non-testing. One user early is better than 55 near the end. So, as I was telling, you know if you have time and budget to do nine users, do it not as one test, but in three tests. And, keep refining your design as go. Testing must be iterative, until reasonable quality. What is reasonable quality? Going back to the example that I shared with you, you know where we had set 15 minutes as the bench mark. You know if you got, if the product has to shift and you got in pretty close to that and then you can perhaps take call and say let us go forward with it. So, that would be reasonable quality. 35 minutes would not be reasonable quality, alright.

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Now, let us look at the prototyping fidelity. As I told, you know paper prototypes are the lowest fidelity. And therefore, they are the most flexible, the lowest cost and all of those things. They can, you know, be very very useful and powerful as we already know now. So, the ideal way to do it is you know take if you have alternative concept or comparative designs, you have these three and you do the testing with all the three and emerge with the best design, where you take the different features and collated into one

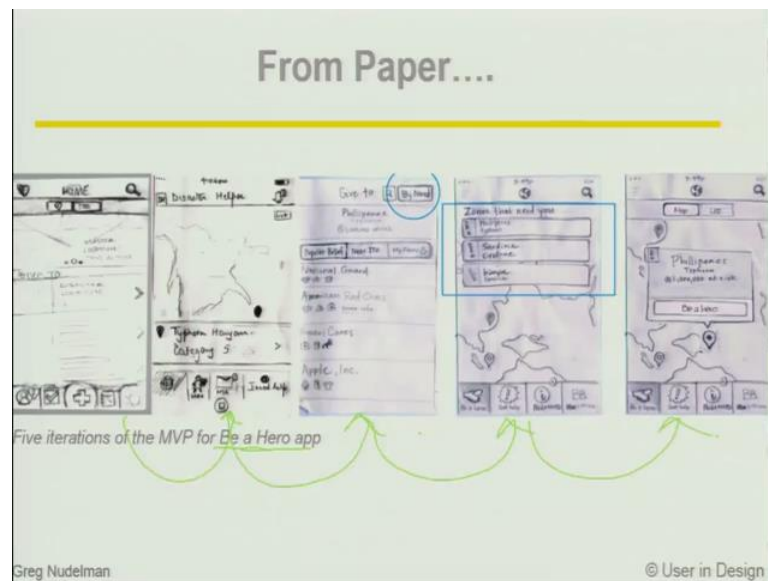
good concept. Remember, earlier in the section when I showed to the two usability testing that were done for that restaurant, sorry, that food service kind of application. And, they ran two designs simultaneously. I also showed you on the remote, you know two sides of the remote were basically two alternative designs. So, it is important to; especially, if you have two very closely competing designs.

So, test them all like this and then evolve your best design. And, keep doing all that with paper, while it is very easy to make the changes. Once you kind of frozen in a general approach of design, then you move to higher levels of fidelity. So, then you do a little more refining. You know, here you have done the core high level of the design. Here, perhaps you are going to do some more of the detailed level, the further levels of the design and then you move into wild frames, which would be the next level of the fidelity. And then, you move into more finished prototypes that look closer to the real thing. So, test with increasing prototyping fidelity.

So, this is a good overall approach to take for your design. Now, here is a quote by professor from Kellogg's school of management. Where he says, "Do not be afraid of failure, it can be profitable to fail early fail early, fail cheaply and fail forward". And this, kind of this quote or some version of it is becoming very popular today when people are talking about fail early, fail cheaply, fail forward; keep failing as you go forward. So, it is, you know, as I told you; as you go further, you get better and better.

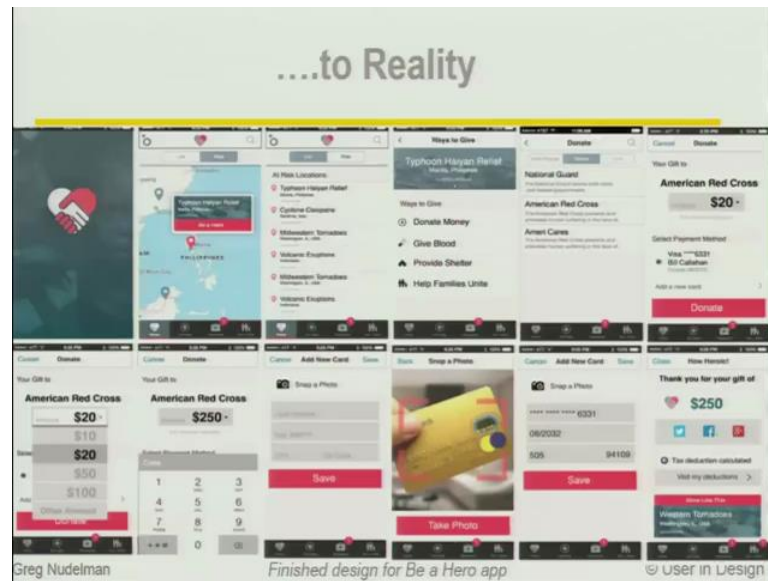
So, do not be afraid of failure. And, this is an interesting way to put it. It can be profitable to fail early. It is profitable because again you are reducing your risk.

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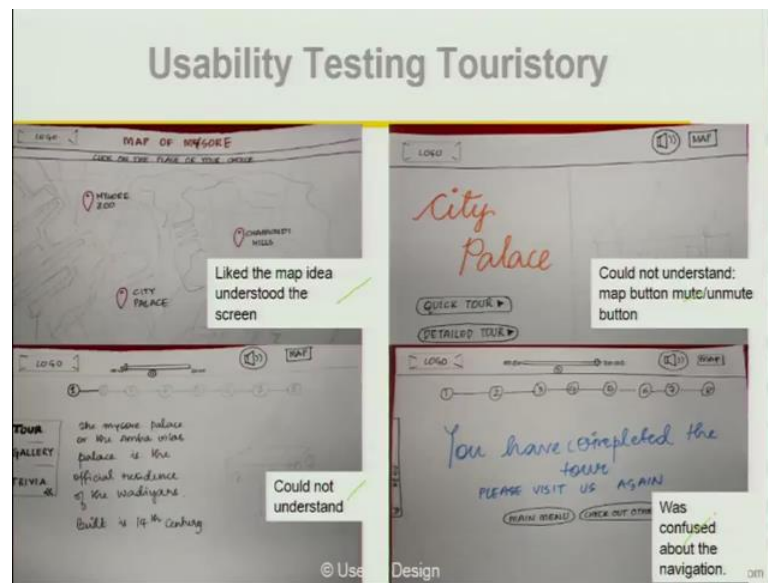
So, this is an example of a phone based application that shows how it moved across from paper. And then, I will show you what the final application look like. So, this was “Be a Hero” application, which was meant to for people who wanted to donate in times of disaster. There are these disasters around the world all the time. So, that time I want to donate to some cause, some disaster. So, this application; that is what it was being designed for. So, this was their first version. And, as you can see you know it is very very basic, simple. Then, they decided to put in a map and add some more details. Then, they decided that it became important for the person to know which agency, which are the agency they are donating to and then what are the locations and then you know it evolved like this; from this with testing, from this further testing to this further testing to this. So, iteratively they kept refining the product.

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And, this is how the reality, real final application looks like. And, you know there are various features, this is the entire thing of the different locations in which the different disaster that are happening, the different locations, the different organizations, how do you pay money, how do you donate; it is showing you with the map, etcetera, etcetera. So, it is a nice way for you to see how design moved from an initial to this version, which became fairly close to the real thing. If you look at this screen and you look at this screen you can see how closer they are.

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And, it has all been derived on paper, now the tourist story, the example that I gave you. And, I am going to show you very quick sort of prototyping that this team did and got just basic quick feedback. Over here, they say liked the map idea, understood the screen. And then when they went to the next thing, could not understand map button, could not understand mute or unmute button. These are little notes, annotations that the team is taking as they are testing with users. Then, this is a screen they could not understand at all. It did not make sense to them and was confused about the navigation, while this is too cryptic. It is very cryptic, but at least I wanted to put it forward to you for you to get an idea that after usability testing, how it can at least indicate to you where things are not going well.

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**Case Study Mobikwik:
Online portal for recharge**

- around 90% Indian mobile telecom users on prepaid
- people increasingly moving to Internet to buy tickets and bookings
- many people have credit cards or net banking accounts

So why couldn't phone recharge be done online?
WHY NOT?

- create more services around recharge to make it more convenient for people and
- design a simplistic and easy online experience

Using MobiKwik should be easier than walking across to the market to get a recharge card

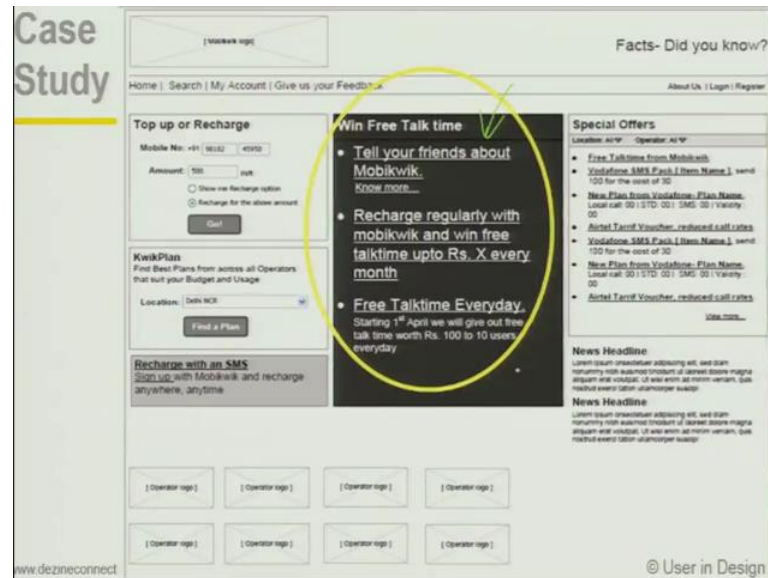
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Now, I would like to present to you this case study of Mobikwik, which was done several years ago. And, it is one of the examples that have documented the process that they went through. So, they were coming with an online portal for recharge. While it is very common place today, the time at which they were looking at it, this team, young team of designer and engineers, the notion of online recharge was very new. So, their thinking at that time was ninety percent telecom customers are on prepaid. Increasingly, people are moving into internet and all that. And, many have credit card and net banking accounts and all that, which was, you know, on the uptake at that point. It was not that common place yet. So, why could not phone recharge be done online? So, this is the challenge that they had set for themselves. The challenge that they are posing to themselves saying why could not, phone recharge be done online.

So, if you remember they are asking the question, “why not?” Provoking question, so then they embarked on this. Create more services around recharge to make it more convenient for people. So, let us say we do recharge online. And, what else can we do with it? Design a simplistic and easy online experience. This is what they set out to do. “Simplistic and online”; those are very nice words. But, what does it mean? How do you clarify? That means, you know everybody thinks that creating simplistic products, who thinks they are not. Everybody thinks designing is easy experience. So, this is how they

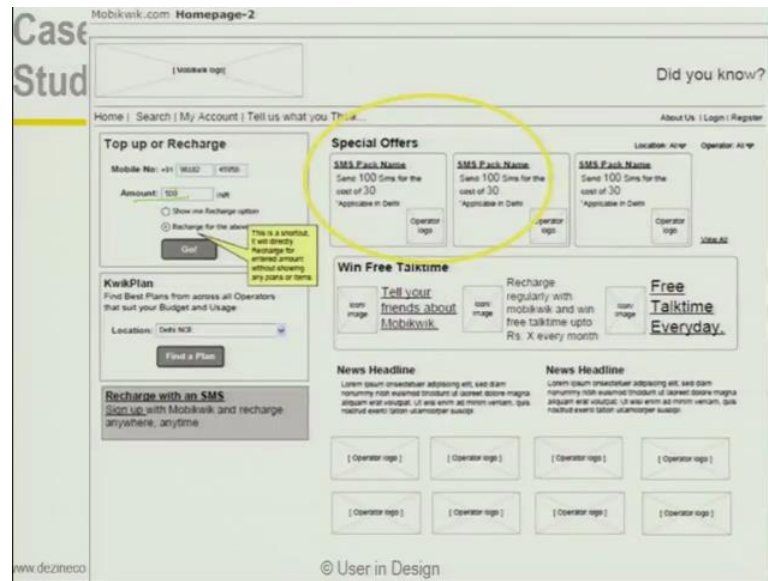
defined it. Using Mobikwik should be easier than walking across the market to get a recharge card. When you walk across the market, the time, the effort, the energy, whatever it takes, this is how easy it needs to be. So, they defined easy and then this also became their benchmark. How easy does it need to be?

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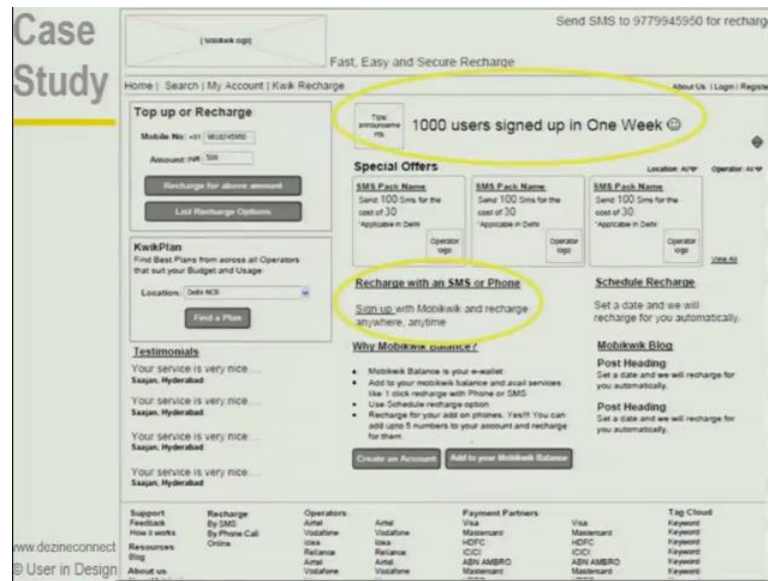
They went through this process of refining their design progressively. So, this was one of their early designs. When they felt that this was the most important thing, this is based on their understanding, their research. Before they started usability testing, they felt that winning free talk time was the most important thing; that would be the most important thing to people. And, so they gave it a lot more prominence.

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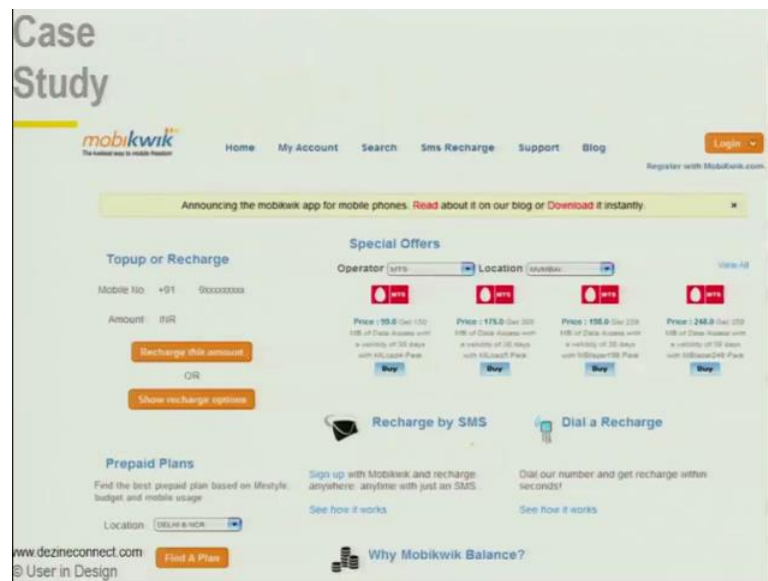
Then, they came to realize that a special offer was most important for people to know. So, then that moved and win free talk time was given lower priority. One of the other things that they also realized before that they have now implemented in this prototype. Earlier, they were not putting an amount over here. Then, they realized that a fixed amount; most people recharge for a fixed amount. So, if you already put that amount over there, you are making the job little easier for them, the user. That is what our goal needs to be. How can we make it easier and easier and easier? So, then in that successive prototypes they put a preset amount and you know it came as a default.

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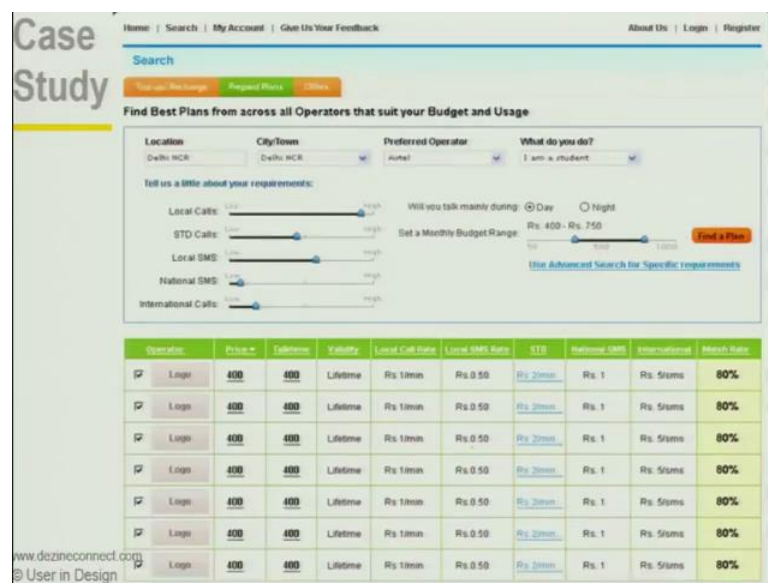
Then, after that they felt that this information, how many people have signed up. Remember, it was totally new service at that time. So, it was very important for them to be able to convey how many users have signed up. And, so this acquired even more prominence. And then, recharge with an SMS or phone. This also came in with the youth. And, everything that is being changed or being introduced is an outcome of usability testing.

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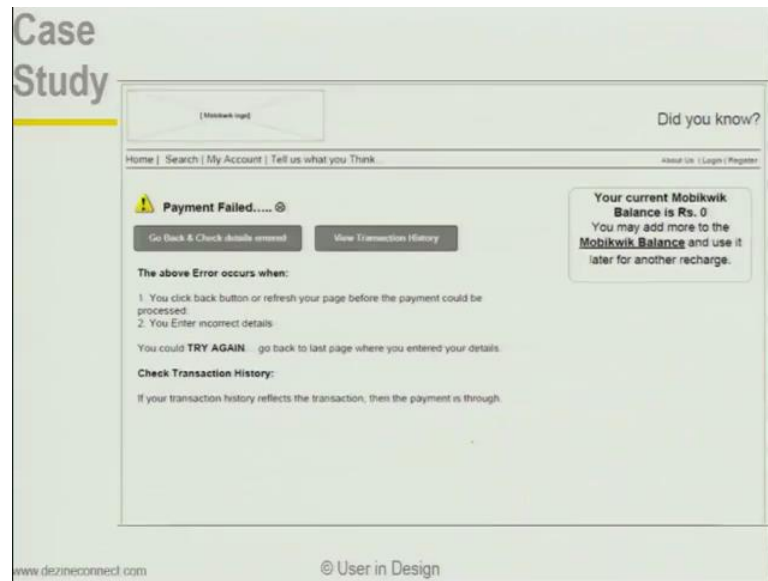
So, then the visual appearance came in. This was one version; this was another.

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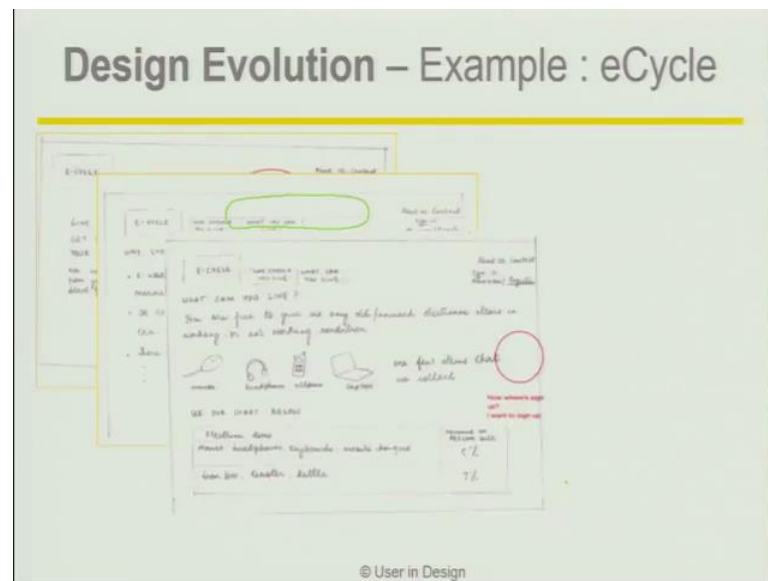
This was another.

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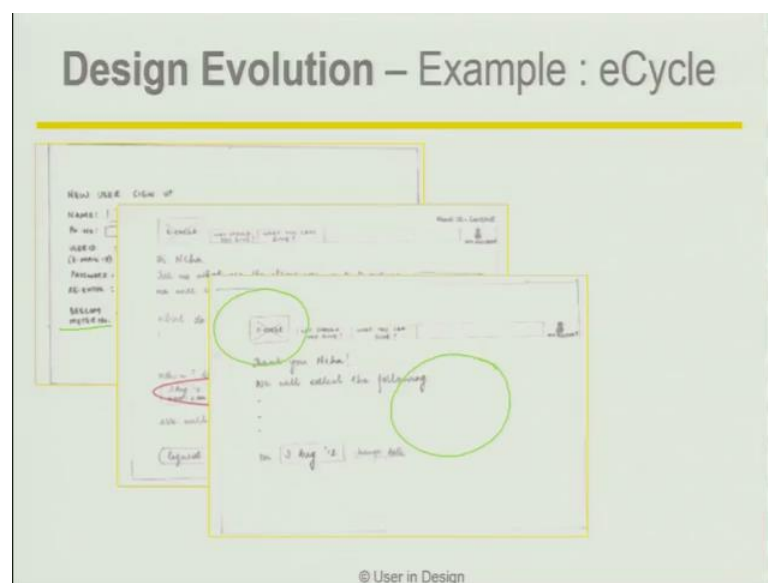
Then, this was how they presented the user an opportunity to compare the different services. And then, this was their work of how should error messages should be. Error messages are one of the most nasty things that a user encounters. And, one of the things that makes big difference in their ability to overcome that hurdle and carry on to their task, if there is a clear error message. So, they actually spent a lot of time in designing the error message. So, that is what the Mobikwik example was about, and, the progression of how through usability testing and iterations, they improve the design.

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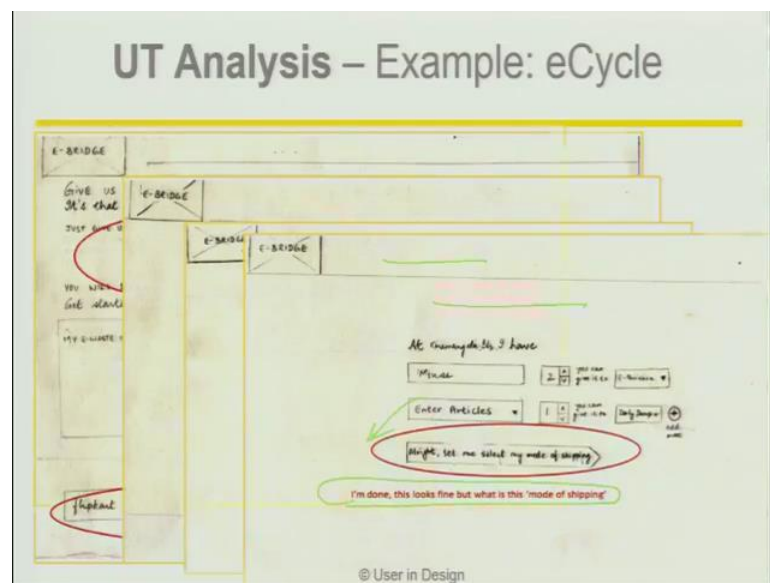
Now, I want to show you another example of eCycle. You know the electronic waste recycling. Now, this is one of the earliest prototypes that they have created. So, in red they have marked what the user said. Here, the user said I would like to know what you do with the e-waste. That was not the upfront. Now, where is the sign up? I want to sign up. Early on date, you know, they were still working out a lot of these details.

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So, here what the user is saying. This, selecting a date for, when the user needed to schedule a date for a pickup is when they were, what they were initially thinking. Oh! I have to select from some specific date, but I thought I can call you any time based on my convenience. This is what the user said. So, guess what? What does that mean? That is something that we have as an expectation from the user. So, we need to attend to it. So, you know this was the first version of the product. And the first initial visualization of what it needed to be.

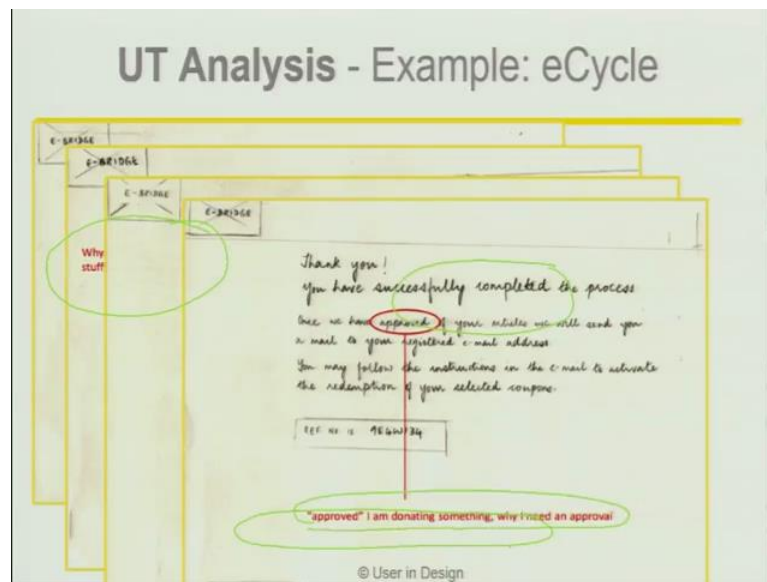
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Now, they went into the next level of detail. And, they started to put in more details and get more information. This saves too much text. The users were perhaps struggling to read everything or did not like it. I do not remember the details. They recognized these names. This caught their attention.

Now, over here it says select article and then there is a number. And, he says what if I want to add more. This was not clear to the user. Now when this was added, the user said, “This is what I was looking for. Now, when we say let me select my mode of shipping. Once I have decided how many things of what I have and picked the number and selected everything. Let me select my mode of shipping. I am done. This looks fine, but what is this mode of shipping? The user is asking what mode of shipping. What does that mean?

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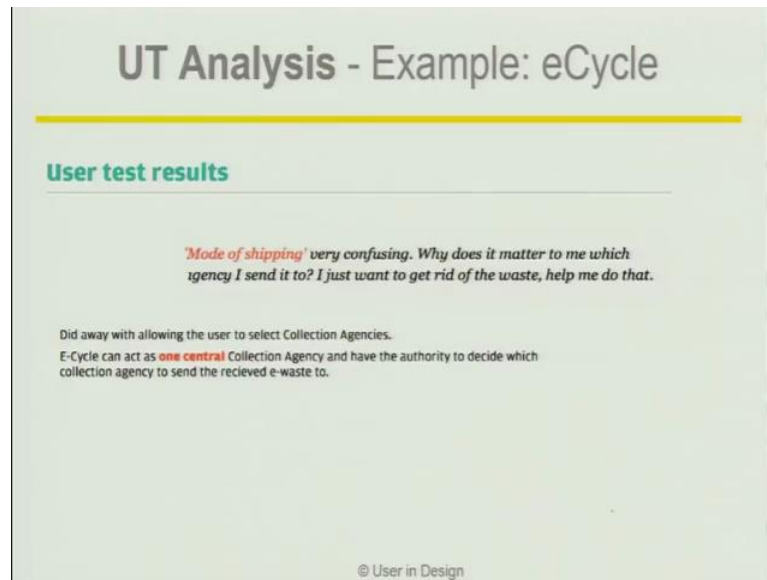


So, what is the team saying here? Mode of shipping should be called something else. Otherwise, it sounds like I am buying something. But, what you are doing is giving away eWaste. Now, here was another one, where it says I choose one of these. I request shipping for agency or I will go myself to the agency. So, the user is saying, “Why should I go and drop of my stuff?”. So, right away all of these things being taking into account, become opportunities to keep making the service better and better. Coupon section was not very clear; how and what to do. So, you know they were trying to think of whether this service could have some kind of co-marketing with some of these brands. If the coupon section is not clear, it says approved. Once we have approved of your article, we will send you mail to registered email address. And then, the user is saying,

“what? Approved means what? I am donating something; why do I need an approval.”

Very valid, very (Refer Time: 27:27). Why do I need an approval?

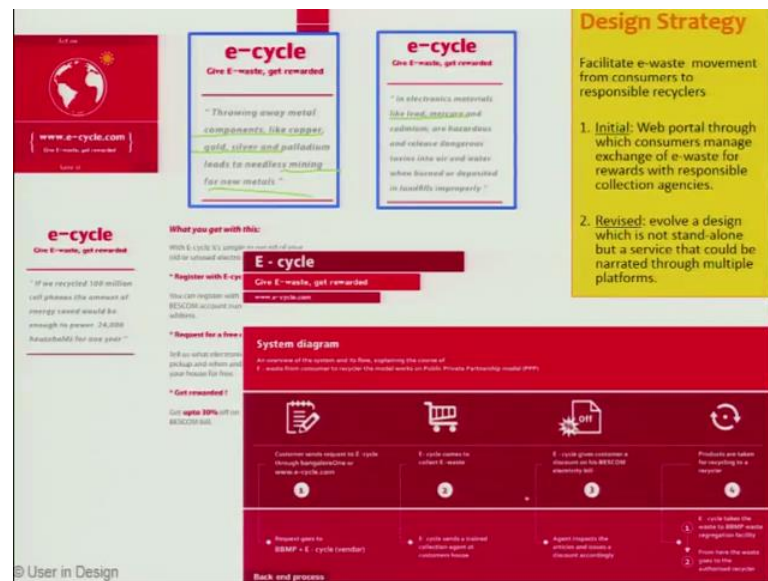
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The slide is titled "UT Analysis - Example: eCycle" in a large, bold, dark font. Below the title is a horizontal yellow line. Underneath the line, the text "User test results" is written in a smaller, bold, teal font. Below this, a quote in red and black text reads: *'Mode of shipping' very confusing. Why does it matter to me which agency I send it to? I just want to get rid of the waste, help me do that.* Further down, in a smaller black font, it says: "Did away with allowing the user to select Collection Agencies." and "E-Cycle can act as **one central** Collection Agency and have the authority to decide which collection agency to send the recieved e-waste to." At the bottom right, there is a small copyright notice: "© User in Design".

So this is, you know, from later report that said, “Mode of shipping was very confusing. I just want to get rid of the waste, help me do that”. So, what did they do? They did away with allowing the user to collect select collection agencies. And, eCycle can act as one central collection agency. So, instead of the user picking which collection agency they would get.

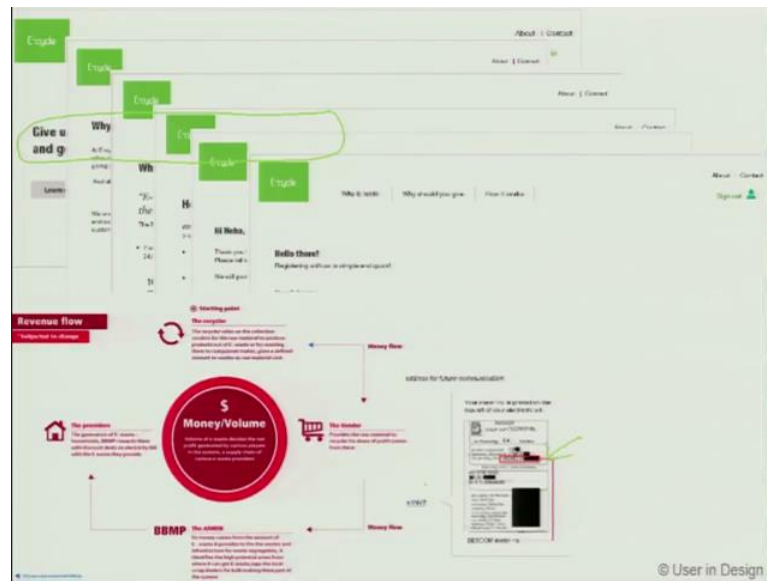
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And, this is how the service was envisioned. And, you know these were like posters and public services message that they also; this team design. And, you know explaining why it is important to cycle about the lead and the mercury. Throwing away metals like copper, gold, silver leads to needless mining for new metals. So, they took it upon themselves to detail out the underline. Based on the underline motivations and underlying sort of playing on people's sensibilities and their sense of responsibility about recycling.

So, they carefully crafted all these messages and plant them as public service messages. If you remember the design strategies statement that said, "We are designing a dash that does dash for dash". So, this was the initial statement. We are designing a web portal through which consumers manage exchange of e-waste regards with responsible collection agencies. And then, they revised it for. We will evolve the design, which is not stand-alone, but a service that could be narrated through multiple platform. And, this is the system diagram of the service that they designed. That I showed you earlier; which shows very clearly where, what the customer does and where the request goes to the front end over here and, the back end customer does this happens, customer does this this happens, customer does this this happens. There is a constantly a connection or a feedback showing you exactly how this works.

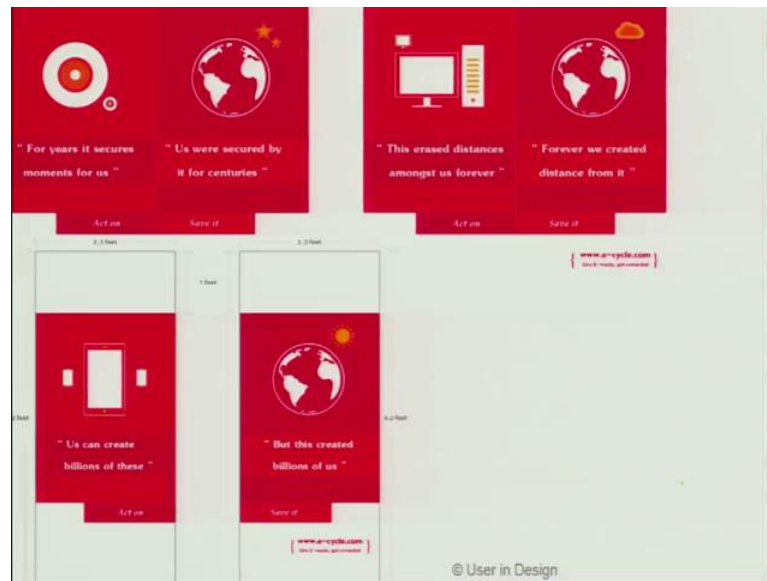
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So, I am going to quickly run through the final design of this service that was created and, based on all these feedback and multiple iterations and revisions that the team went through, in order to create this.

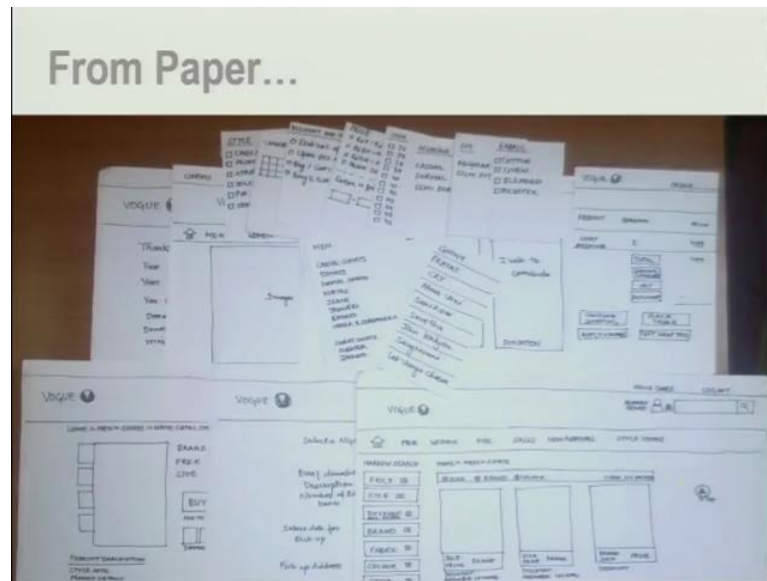
So, the most important message was given up front. Give us your old and unused electronic products and get up to 30 percent on your monthly Bescom bill. And then, you know why recycle; explain that some more. Why should you give? And, explaining that with some graphics and thing that would grab people's attention. And then, you know showing how it works and then the amount of discount that people might get. And then, if you wanted to schedule a pickup, explaining when. And, select a date. And that they will contact them. And then, explaining to them the Bescom meter number, where do you get back from your electricity bill; pointing it out to them. This is in your electricity bill. Well, at this point, this corner, take this number.

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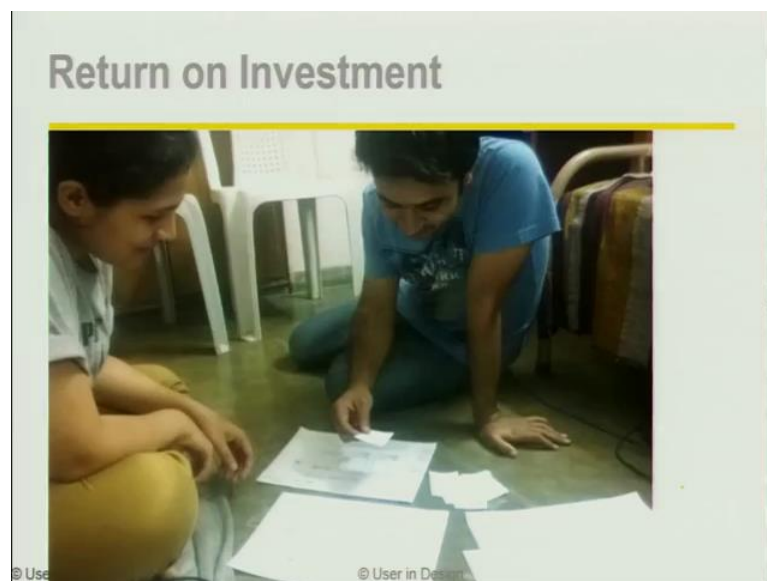
This is how you know the revenue model was designed. And, these are the messages that designed for the public buses at in Bangalore. So this could be put on the buses. And, so this was a nice interesting way that started with notion of ecycling and develop into a complete service through the process that we followed of the iterative, the paper prototyping and the iterative usability testing to keep refining the design. Finally, the design ended up with very different from what it started out to be, but very powerful, very compelling design.

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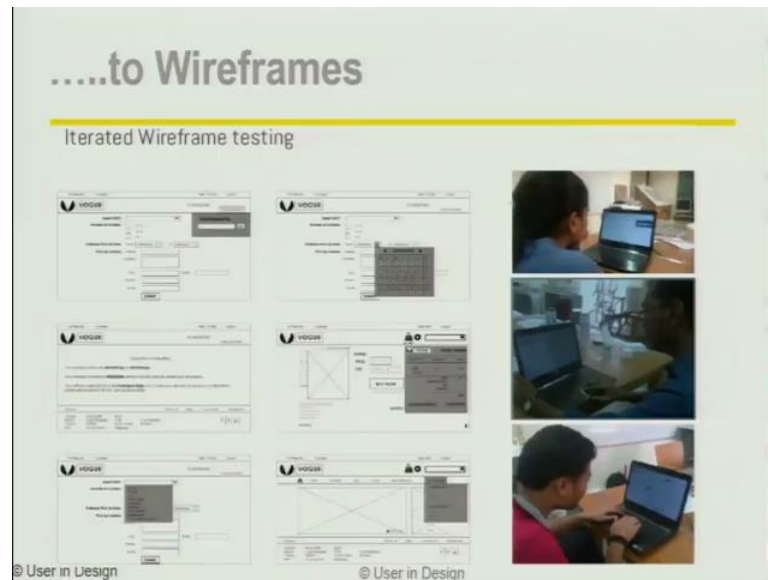
Here is another example of you know the design that I showed you that was the clothes shopping for the Indian context to buy gift and donate clothes. So, these were some of their early prototypes; lots of work on this paper.

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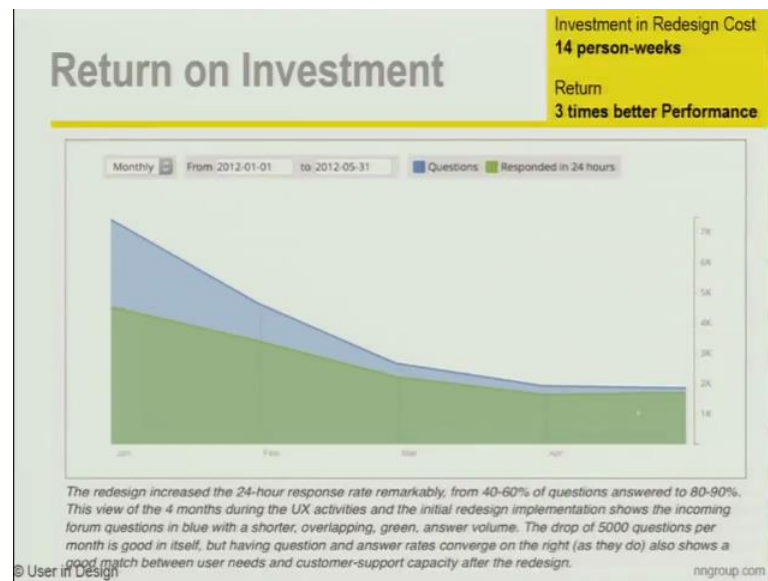
This is one of their early prototyping with the user. This is the moderator and this is the user and there is a testing in process.

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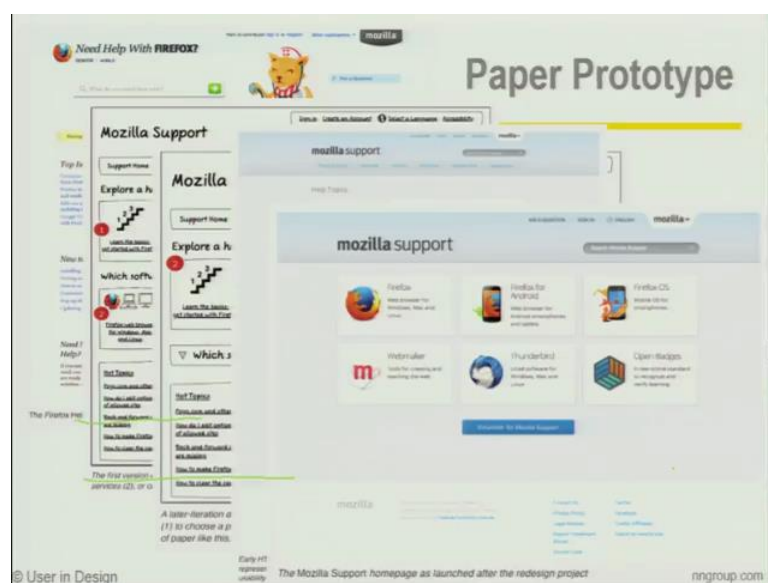
And then, they moved on to higher fidelity model. Once they were more comfortable with it, you can see the higher fidelity prototyping, user testing, usability testing, going on over here. And, this is what the screens that they; the user were seeing.

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If you remember this example of the Mozilla Firefox browser that was tested, that was redesigned and then how the performance improved with time and how the support calls the questions and answers, the needs for the questions and answers and all drop significantly. You remember that example.

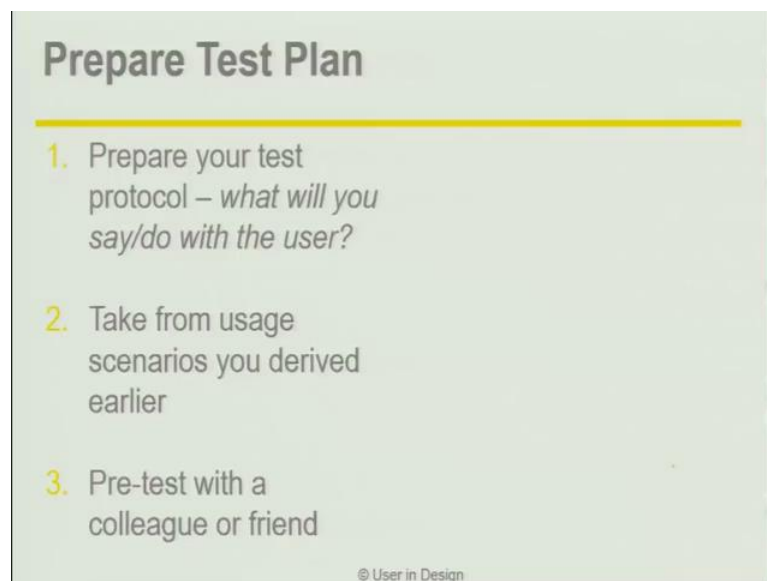
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I want to just show you with that what was the design that went through. This was the original design. This is how it looked. You can see it is a very busy design. And, this is what the people needed to, you know, (Refer Time: 33:17) through. So, this is the landing page before the redesign. This is the one of the early first version of the paper prototype.

So, this was the first version. And, you can see how it is much more white space, much cleaner, seems much easier, not as over whelming as this one. And then, this was one of the next revisions. Later iteration for the home page with some more details on each of these. And then, this was an early HTML design after where somewhat comfortable with the design and early design. And then, this is how the support page finally launched as it launched after the redesign. So, it gives you an idea of the progression that the design went through.

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To summarize this whole section about usability testing, first part is the preparation; prepare your test plan, prepare your protocol; what will you say or do with user. If you do not ever go into a usability testing with your empty hands, you may as well not do it.

Take from the usage scenarios you derived earlier. Remember, what you derived as the scenarios. And then, pre-test with a colleague or friend. Find someone because there will be bugs in your testing as well. How smoothly the message flows, whether your task have been described, whether your prototype kind of flows together, this the preparation work that you need to do.

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Test Your Design

1. Test your prototype with people you're designing for
2. Put it in their hands and ask them what they make of it
3. Get Feedback
4. Integrate feedback and Iterate
5. Once you've quickly built another prototype you'll do it all over again until it's just right

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Then, to test your design, test your prototype with people you are designing for, the people for whom it is intended. Put in the hands and ask them what they make out of it, ask them what does it mean to them. Get their feedback, integrate the feedback and iterate. Do that again and again and again. And, once you quickly built another prototype, you will do it all over again, until it is just right.