

Interaction Design
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Lecture - 07
The Research Phase in Goal Directed Design Process – Part 1

Hello in one of our earlier sessions we have seen briefly different stages of the goal directed design process. We have had an idea about different tools and techniques and methods which are being used by designers across the entire process. The focus of today's session is the first stage of that process, we call it the research stage.

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Goal Directed Design

- Qualitative | Understanding human behaviour
- nuances, variations, preferences, implicit and explicit emotions, actions, decisions

Research

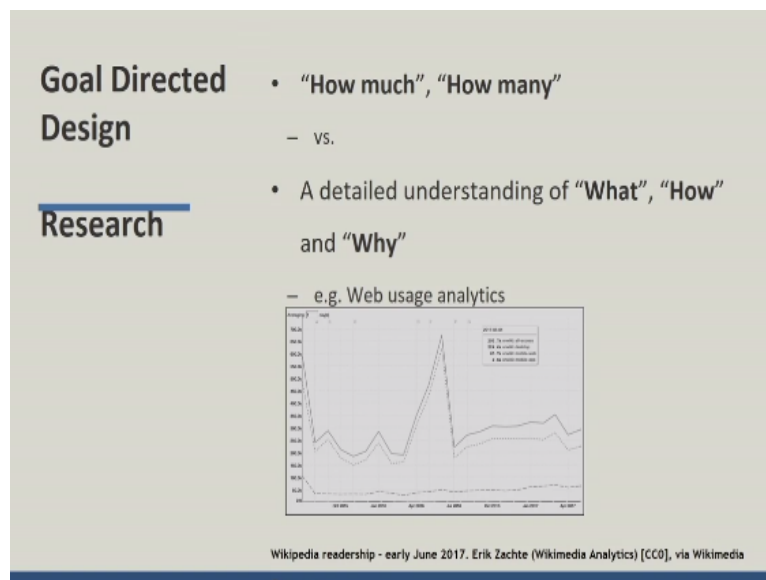
As you can see that we had already said that the research stage is the stage we have designers are trying together qualitative data. Why qualitative data, because we are studying or we are trying to understand human being and not really any other object. So human beings have very nuanced behaviour like their behaviour may change. There is a lot of variation in their behaviour.

There is a lot of preference in their behaviour and you know those variations and preferences are result of different implicit and explicit feelings that people are getting at different points of time and that is why the actions that human beings take and the decisions that they take are far more complex or far more you know difficult to understand and the objective of the design team member at this stage is to understand those behaviour, is to understand those differences, variations.

So that is why we are calling it a qualitative research stage, okay, essentially because we are using qualitative methods and techniques and we are gathering qualitative data, okay. So there is a lot to observe and there is a lot to ask. So they are times when users are not able to articulate their feelings and their opinions.

At that time maybe you should be observing them and also at times when they are on the work, they are on the go and also at times when they are doing a particular activity in the field that observation also comes as a very relevant exercise to do. At times when you can ask them when you can probe them further then definitely there are methods to do that. So as I was saying that we have gathering essentially the qualitative data.

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Now there is another category of data which is the quantitative data. So for example the age you know, the number of people in a particular group. So you have a number at the end of this question, how much or how many, but in terms of you know a detailed understanding of what, how and why we need to do qualitative study. So to give you an example please have a look at the screen.

What you are seeing on your screen is the web usage analytics, it is the Wikipedia readership recorded early June 2017. So you see that you know from October 2015 till April 2017 there is a huge variation in the graph. So this is a quantitative data because there are numbers which are responsible for showing you this curve, okay. So that you know we see that there is a peak arriving just before July 2016.

While it is a steep dive back to the bottom in July 2016. So we know you know in terms of number that you know people accessing Wikipedia numbers you know suddenly declined in July of 2016 and then its again is a kind of constant rise with the small decline again in April 2017. So it kind of gives you the number of people who are accessing Wikipedia readership, but why there is a sharp decline in that number in July 2018.

To kind of know that we have to do qualitative study. So then we will very precisely or we will kind of have a very good understanding of why people suddenly in July 2018 why that readership has declined. So you know by this example I hope that we have clear distinction between what is quantitative data and qualitative data and what is the relevance of qualitative data. So let us move to the next slide.

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The slide is titled "Goal Directed Design Research" and lists several advantages of qualitative research. The text is as follows:

- Advantages
 - Design decisions can be based on the outcomes of the research
 - Credibility and authority to the design team
 - Shared knowledge w.r.t. user concerns and domain issues
 - Could help correct presumptions* about the Interactive product and users

So there are advantages with qualitative data, and these advantages are very specifically relevant to the design team, the interaction design team. So for example the interaction design team has to take decisions about the design of the interactive product all throughout the process. So would not it be better if those decisions are based on you know real grounded data.

You know those decisions are based on grounded data, firmly routed in the user research, firmly routed in the qualitative data. So if the design decisions are based on the outcomes of the research the team has the opportunity to win credibility and authority in the process. So if

your design decisions are more specific they are based on a certain qualitative data then as a design team member you gain authority and credibility across different teams.

Now it also is an opportunity to kind of developer shared knowledge with respect to user concerns and domain issues. So if you remember in our earlier sessions we have seen that that this goal directed design process and the entire process of designing interactive artifact is a very collaborative process. So we have design team, we have engineering team, we have marketer's management okay.

So if you were to develop a shared understanding of user concerns and issues across these different teams then qualitative data helps you do that. You know and when it comes to shared understanding it is not just about you know it is an evolving understanding. So you might have started with certain presumptions about the user groups and when you are doing this qualitative research there were all times when those presumptions prove to be false.

So you also get a chance to rectify those presumptions, you know to kind of make them more appropriate to the design of the interactive products.

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Goal Directed Design

Research

- Activities
 - Literature review
 - Product/ prototype and competitive audits
 - Stakeholder interviews
 - Subject matter expert (SME) interviews
 - User and customer interviews
 - User observation/ ethnographic field studies

Handwritten diagram activities:
• Iterative Review
• Product/Prototype competitive Review
• User Observation
• Customer Interviews
• Stakeholder Interviews
• Ethnographic field studies
• SME Interview

So we had seen that there are couple of activities which a design team has to do in the research phase and what are these activities, literature review, product prototype and competitive audits, stakeholder interviews, subject matter experts interviews, user and customer interviews, user observation and ethnographic field studies. So you know like there are some 6 or 7 of them.

So just to help you, you know memorize them there is a slide that is a memory map just below the list. So you can see that and I hope that that would help you memorize these things, but as an activity let us try to understand them so then it becomes more natural for us to know them, okay.

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Research

Literature review

- An interactive product is often a domain specific design
 - e.g. an application which lets people monitor their shares and stocks in real time
 - Online share trade
 - Dynamic (economic) activity performed by people
 - Exchange of capital or value

So when it comes to literature review, essentially if you see an interactive product is often a domain specific design. So for example when it comes to like a hospital management system the domain is healthcare, okay and when it comes to let us say financial service management system, the domain is financial services, okay, so an interactive product is often a domain specific design.

Now I want you to consider one example throughout this section of literature review to understand different stages of the literature review that example is that you know please consider that you are a member of a design team, the task of the design team is to develop an application which lets people monitor their shares and stocks in real time. So you see that the domain is, you know these are the following domains possible.

Online share trade you know is one domain, then dynamic activity performed by people. So the people are doing you know activity in real time they are doing an economic activity in a real time sense, so that is another constituent. Then exchange of capital or values involved. So either you are investing or you are you know buying or trading basically shares and stocks. So there is an exchange of capital or value that involvement is also there.

So as a domain you see this particular application that you are set out to design as a member of the design team has 3 different you know domains which might vary in terms of the scope and granularity.

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Research

- Review internal documents
 - Product marketing plans
 - “How does the management or marketers imagine marketing the online share or stock monitoring application across a potential population (customers and users)?”

So let us move to the next part, that as in the literature review process again you also have to review internal documents, so what are they, so for example product marketing plans. So how does the management or marketers imagine marketing the online share or stock monitoring application across a potential population and when I say potential population I mean customers and users.

And we would soon see in the later-half of the session that customers and users might not be the same person okay. So product marketing plans there might be you know already provided product marketing plans which as I am saying which as we understand they could be that how does the management or marketers. Imagine marketing their online share or stock monitoring application across a potential population. So that constitutes the marketing plan.

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Research

Literature review

- Review internal documents
 - Brand strategy
- The producer of the application may have an established brand strategy.
- They might imagine the new application to belong to an existing product family which is following a specific brand strategy.

Now there could be some documents about brand strategy also because the producer of the application you know the people who are actually investing their money in terms of designing that application they may have a prior established brand strategy, it is quite possible right because a single producer may have 4 or 5 different products in the market and the next product that they are deciding or you know coming out they might have some preference about brand strategy of that product.

Because there is already a family of products that they think that the next product also belongs to that family. So that there is a consistency across the brand strategy or you know some preferences around the brand strategy might be there. So they might imagine a new application to belong to an existing product family which is following a specific brand strategy. So there might be documents available to you as a design team member.

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Research

Literature review

- Review internal documents
 - Market research studies, competitive research, customer support data
- The producer might have a separate team which is responsible for gathering data on market research, existing competition, or on customer base

There might also be documents about market research studies okay, competitive research and customer support data. So consider the same example of an application for share and stock trading, online sharing and stock trading. The producer in that particular case consider he might have a separate team which is responsible for gathering data on market research, existing competition or on customer base.

Why this is important you understand, because see most of the time there is an opportunity we designers to kind of also start their own design firms, okay, consultancy services, okay, so it is not necessarily a case all that time that you as a design team member or as a designer is involved in the product right from the very beginning. So there might be some work already been done which rest with your producer.

And when you get called in for the project you need to consider those documents. So market research studies maybe you know there maybe one such documents. There might be a separate team who has done a market research study or customer support document who has made the document. It is a good practice to consider those documents as well okay.

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Research

- Review internal documents
 - User surveys, usability studies
- The producer might have an earlier conducted user survey report, or some documentation of insights from usability studies

Literature review

Now there might also be a case when you have already available user surveys and usability studies. So for example one of the typical case when a design team is being called in consider there is an online E-Commerce platform. Now that E-Commerce platform after certain point of time producer realise that you know it is not really attracting that much of traffic and even if it is attracting traffic it is not really converting the traffic into business.

So he might get an insight from someone who is the usability specialist that you know there are usability issues. So he had given them a contract to do a usability study and then this team comes and do just the usability study and that is where they leave. Now you as a designer gets called in at this point of time. So you might already have a usability review in place. So it is a good practice to consider that document as well.

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Research

Literature review

- Review industry reports
 - “May be the traders’ union or a government regulatory body has some relevant documentation of best practices on the activity of share trading.”
 - Other accounts of similar business and technical interventions

You might also be required to review industry reports. So let us say consider the same example consistently throughout the literature review section of the online trading application, share and stock trading application. So here in this case may be the trader’s union or a government body regulating the entire business you know they may have some relevant documents.

They may have regulations; they may have an account of best practices on the activity of share trading. So you need to consider that as well. Now other accounts of similar businesses and technical interventions may also possibly be there. So in the literature review section you have to consider quite a lot. You have to consider internal documents which means there might be marketing documents, customer support data.

There might be earlier done usability studies and there might be internal documents in terms of you know product placement and the vision of the producer. So you have to consider those documents.

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Research

Literature review

- Review online documents from credible sources
 - There are always individuals and collectives who are writing 'informally' or 'formally' about the product domain or other relevant issues
 - Web forums, blogs and news items, community discussions

You would also be required to review online documents from credible sources that is very important. Credibility of the source is something that you must always verify. So there are always individuals and collectives who are writing informally or formally about the product domain or other relevant issues. Web forums blogs and news items you know community discussions, they all come under documents like this which is online documents which from credible sources okay.

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Research

Product/ prototype and competitive review

- Establishing the state-of-art in the chosen domain
 - e.g. How does similar other applications let their users monitor share or stock trades in real time through online methods?
 - What are our competitors doing?
 - e.g. If the online share or stock trade monitoring application is released, it will face competition from (...), (...), and (...).

So you are well past the literature review stage, now you are on to the next stage which is product or prototype and its competitive review. So why this is important? because it helps you establish the state of the art in the chosen domain and the same example how does similar other applications let their users monitor share or stock traders in real time through online methods.

So that is very helpful to know if you have depository or if you have created an archive of these different applications which perform almost a similar kind of task, is good to have a look at it more sincerely, look at that archive. It also helps you understand you know what your competitors are doing.

Again with the same example if the online share or stock trade monitoring application gets released you know it will face competition from so you should know from where all can it face competition you know. So you should know you know who are the potential competitors of the interactive product you are going to design.

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The slide is titled "Research" and "Product/prototype and competitive review". It contains a bulleted list of points regarding heuristic evaluation. At the bottom, there is a citation: "10 Usability Heuristics for User Interface Design. Nielsen, J. Accessed June 15, 2018. Retrieved https://www.nngroup.com/articles/ten-usability-heuristics/"

Research

**Product/
prototype and
competitive
review**

- Ideally,
 - Heuristic evaluation, or Heuristic review of the existing products or prototypes
- Usability evaluation method
- Applied early on in the research phase
- Experts weigh given designs against "heuristic" or "general rule of thumb"

10 Usability Heuristics for User Interface Design. Nielsen, J. Accessed June 15, 2018. Retrieved <https://www.nngroup.com/articles/ten-usability-heuristics/>

See when I said you know look in to the available application, similar application, similar prototypes. What I meant is that ideally if possible you should do something like heuristic evaluation or heuristic review of the existing products and prototypes. It might be a bit costly like it might cost you in terms of time and money, but the kind of results it can yield they might be very relevant for your design process.

So usability evaluation method basically heuristic evaluation or heuristic reviews of usability evaluation method. We will understand it and once again when we understanding the usability evaluation part. It can be applied early on in the research phase. So this is the earliest possible phase in the entire design process that you are seeing right. So in this particular phase also heuristic evaluation or heuristics review can be applied.

Now what happens here the experts judge given designs against a set of heuristics and you can understand them by you know general thumb of rule. So heuristic is not that design guideline, it is a general thumb of rule and we will see what those thumb of rules are; but experts you know 3 to 5 will review all the existing designs against these heuristics, so that is what we call heuristic evaluation or heuristic review.

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Research

**Product/
prototype and
competitive
review**

- Ideally,
 - Heuristic evaluation, or Heuristic review of the existing products or prototypes
- Experts with similar profiles
- Double experts are preferred- Usability as well as domain of application
- 3 to 5 experts
- May prove costly at times

10 Usability Heuristics for User Interface Design. Neilsen, J. Accessed June 15, 2018. Retrieved

It is good to have experts with similar profile; it just brings more consistent protocol. So if you are letting people review applications you should choose experts with similar profiles with similar profiles in terms of experience, in terms of domain and understanding of the interactive product design. So it is good to have somebody who has an expertise in usability as well as in the domain of application.

So if you are designing online share or stock trading application it is good to have somebody as a reviewer who has an experience in usability as well as an experience in online share trading or online trade or online financial services domain and as I was saying that it is good have 3 to 5 experts, that number is really sufficient, may prove costly at times, in terms of time and money it may prove costly and you have to account for that time and money when you are making estimates.

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Research

**Product/
prototype and
competitive
review**

- Heuristics
 1. Visibility of system status,
 2. Match between system and the real world,
 3. User control and freedom,
 4. Consistency and standards,
 5. Error prevention,
 6. Recognition rather than recall,
 7. Flexibility and efficiency of use,
 8. Aesthetic and minimalist design,
 9. Help users recognise, diagnose, and recover from errors,
 10. Help and documentation

10 Usability Heuristics for User Interface Design. Nielsen, J. Accessed June 15, 2018. Retrieved from

And these are the heuristics that we were talking about so Jacob Nielsen in 1995 he gave following 10 heuristics. So visibility of system status, I am going to read them out, so these are visibility of system status, match between system and the real world, user control and freedom, consistency and standards, error prevention, recognition rather than recall, flexibility and efficiency of use, aesthetic and minimalist design.

Help users recognise, diagnose and recover from errors and help and documentation. So these are 10 different heuristics which are used by the experts to review existing products or prototypes in the chosen domain.

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Research

**Product/
prototype and
competitive
review**

- Heuristic evaluation
 - Establish relevant insights w.r.t. interactions and visual designs
 - Strengths and limitations of the existing design solutions
 - Current scope of the design in terms of interactions, and other elements of user interface design

10 Usability Heuristics for User Interface Design. Nielsen, J. Accessed June 15, 2018. Retrieved from <https://www.nngroup.com/articles/10-usability-heuristics/>

So what are the advantages of doing that, it establishes relevant insights with respect to interactions and visual design. So as a design team member after you have done heuristics

evaluation you have a very good sense of interactions prevailing in the available applications or interactive products and also the user interface. How does the user interface look and what are the different elements of that interface.

And it also provides you strength and limitations of the existing design solutions. So that understanding is also crucial when you are designing interactive product. Current scope of the design as far as your own design is concerned it lets you decide current scope of the design in terms of its interaction and other elements of user interface design.

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Research

Stakeholder interviews

- Two things;
 - “ A stakeholder is anyone with authority and/or responsibility for the product being designed.”
 - Executives, managers, sales and market executives, design managers
 - A product must satisfy specific business goals (along with user goals)

Cooper, A., Reimann, R., Cronin, D., Noessel, C. About Face: The Essentials of Interaction Design. Wiley and Sons. 2014.

Now once you have done the prototype or product review, competitive review, you come to the next stage which is stakeholder interview okay. So there are 2 things to understand. The first one is you know what is the stakeholder or who is the stakeholder rather. A stakeholder is anyone with authority and/or responsibility for the product being designed okay. So these are the people who have commissioned the project.

So these are the people you know they may belong to marketing team, they may belong to management team, they may come from usability team, design team or from an organisation in general, but these are the people who have commissioned the project and they are the people who are responsible or have the authority for the product being designed. So executives, managers, sales and marketing executives, design managers and some of the people we have told earlier.

So a product must satisfy specific business goals along with user goals. One of the outcomes of the stakeholder interview is, is that you get a sense of what a stakeholder are imagining about the product and then you also get a sense of their idea of user group and then you have to kind of understand you know the nuances of their perspective.

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Research

Stakeholder interviews

- Ideally,
 - Should happen before approaching the users
 - help modify plans for user research
 - One-on-one interviews are preferred
 - Capture individual views
 - Can be timed accordingly
 - Can be followed further with more interviews

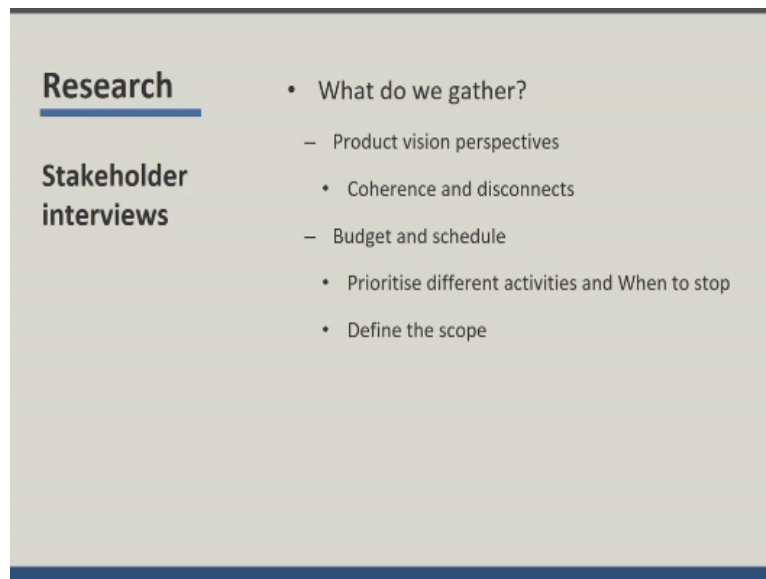
So ideally should happen before approaching the users so that you can modify your user research plan. So if you are planning to you know include a particular user group, but you think you know out of the stakeholder interviews you identify know there is other group also which is also very relevant, you need to include them also in your user research, it helps you do that and if you do the opposite the opportunity is lost.

So ideally it is good to do stakeholder interviews before approaching the users. So one-on-one interviews are preferred because why maybe across if you are doing it like a community like a conference session or something like that it might be the case that individual opinions or individual views are lost. So to capture those individual views one-on-one interviews are preferred. Now you could time those interview.

So depending on the time and other resources that you have typically your interview may last up to an hour and then you can time accordingly. If you have less time you can again shorten the interview. What is important is that after you have analysed these interviews, if you think that a particular stakeholder has very valuable insights or perspective you can also conduct a follow up interview.

So there is always a chance to do followup interview and you should also account some time for that in your timeline.

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So what do we gather. We gather product vision perspectives right. So different people, different managers of the team give you their vision of the product and it is good opportunity for designers to know where lies the coherence, you know what is the common mass in all of these perspectives and where is the disconnect. So it helps you identify you know sections where there is coherence and sections where there is a disconnect.

Now it also helps you in budgeting and scheduling you know priorities different activities and when to stop. It is also very important to know for a member of the design team to know when to stop in a particular activity. So for example you may not like to go on with literature review for a long time, okay. So you may want to keep it in a very specified duration of time and then successively you want to move to the next stage.

Now knowing when to stop is also very important in the design process. So if you have stakeholders and if you have known their priorities if you have a sense of coherence of their goals you can detail your schedules better, okay, so that also helps you do that.

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Research

Stakeholder interviews

- What do we gather?
 - Technical feasibility and opportunities
 - Business requirements
 - Resolve conflicts between business and user needs
 - Stakeholders' perception of their users
 - Who do they imagine as their users?

Technical feasibility and opportunities, so if you have interviewed engineering team you would come across details of technical feasibilities and opportunities. Business requirements other than engineering team if you have interviewed management or marketers team they would give you a sense of their business requirements and help resolve conflict between business and user needs.

So knowing the conflicts is important for you to resolve them. So it is good to know them early on in the design process and then you can do a user research and then you can think about resolving those conflicts if there are any, okay. Now stakeholder's perception of their users, what do they imagine their users are, okay, so that also you get a sense of that.

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Research

Stakeholder interviews

- Designers' intent
 - To evolve a common vision for the interactive product
 - Find coherence and disconnect
 - Restructure, if needed, the user research plan
 - Gather domain specific knowledge
 - Be aware of other aspects which may lie in others' expertise

Cooper, A., Reimann, R., Cronin, D., Noessel, C. About Face: The Essentials of Interaction Design. John Wiley and Sons. 2014.

Now what is the designer's intent here. He wants to evolve a common vision for the interactive product. So he has gathered different perspective, you know where the sections of coherence are and where the sections of disconnect. Now out of this he has to evolve a common product vision okay, and he has to restructure if needed the user research plan and gather domain specific knowledge that is very important and be aware of other aspects which may lie in others expertise okay.

So designers are experts in the process, but they may not be the experts in the domain. So it is good to know knowledge that lies in other domain but which is relevant for your designing process okay.

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Research

Subject matter expert (SME) interviews

- Caution
 - Designers are required to be an expert of the process, the design process, and not of the domain
 - Relying on guesswork w.r.t domain will be detrimental

So there is a word of caution, as we have already said that designers maybe expert of the process but may not be the domain. So if it is a very complex domain like healthcare, something where legalities involved you should always consider talking to different stakeholders okay, and relying on guess work with respect to the domain will be detrimental okay, so there is a word of caution at the end of subject.

After you have finished stakeholder interviews there comes subject matter interviews. Why do you need to do that because designers are required to be an expert of the process, that is the design process and not of the domain I mean there are times when you have no idea of the domain, okay? So if you are relying on guesswork it may lead to detrimental results. So your product may fail at the end of the design process. In order to safeguard against these failures, it is good to consider subject matter experts.

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Research

Subject matter expert (SME) interviews

- Separate domain experts or authorities in the domain must be interviewed
- Complexity of the domain in terms of technology, domain specific knowledge or matters with legal issues
- Help understand domain specific critical issues
 - Current state, regulations and best practices

Now separate domain experts or authorities in the domain must be interviewed. So who are these guys, these are subject matter experts. Complexity of the domain in terms of technology, domain specific knowledge or matters with legal issues. So help understand domain specific critical issues for example current state, regulations and best practices. So subject matter experts have a goodnight understanding of these issues.

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Research

Subject matter expert (SME) interviews

- Caution
 - SMEs can be expert users themselves
 - May tend towards expert users w.r.t proposed interactive product
 - Extract “causative problems leading to a proposed solution”
 - “If this problem occurs, I am inclined to solve it ..(in the following manner)..”

Again there is the word of caution, you know subject matter experts can be expert users themselves right. So they made tend to while they are giving you suggestions on the interactive products that has to be designed, their suggestions might tend to lie, their suggestion might tend to consider, expert’s user more than any other user. They may tend towards expert users with respect to the proposed interactive product.

Now also it is important as a design team member that out of the discussion that you had with subject matter experts you should focus on causative problems leading to a proposed solution, so what could that be, so you know statements like this, you know if this problem occurs I am inclined to solve it in the following manner. So in the following manner in what manner would a subject matter expert detail you to solve a particular problem is a matter of interest for the design team member.

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Research

Subject matter expert (SME) interviews

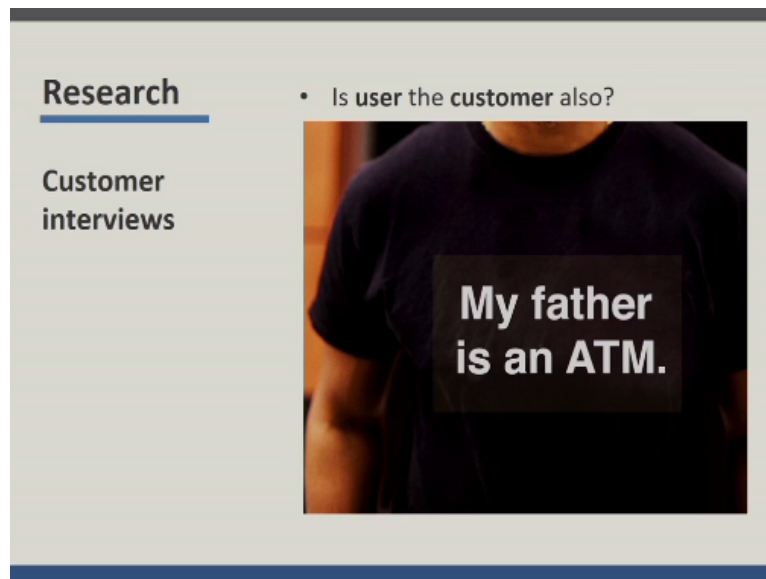
- Recommendation
 - Involve SMEs in a complex domain
 - Education, Healthcare, Security and defence, Finance, Enterprise management, Special needs-assessments and therapies, etc.
 - Involve them throughout the design process
 - Seek feedback, and verify benchmarks

And the recommendation is that you should involve subject matter experts for sure in a complex domain. Recommendation is that you should involve subject matter experts essentially when the domain is complex. So education, healthcare, security and defence, finance, enterprise management, special needs, so there might be cases when people are doing assessments and therapies.

So there also when there are special needs when their domain is complex, when the knowledge involved is complex you must involve subject matter experts. Now involve them throughout the design process. So it is good to get them early on in the design process and stay with them, take their feedback while you are designing the interactive product across the different stages.

So seek feedback and verify benchmarks across different stages. Now comes customer interviews. So is user the customer also that is an interesting question to ask. What do you think? Have you seen people putting up T-shirts with messages like that?

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Research

Customer interviews

- Is user the customer also?

My father is an ATM.

My father is an ATM. I think they might not intend to relate it with customer versus user discussion, but it is very relevant to our understanding. So we see that you know for example for products, interactive products which are used by the children their parents are the customers not the children right. So this particular message on the T-shirt is quite relevant in its sense right. It is the father or it is the mother who is buying or it is the guardian of the children who are buying for them.

So they are the customers and not the children themselves. Similarly, for an enterprise, okay, the people who are managing the enterprise are the customers. So they might ask you for a particular software which lets people schedule their day to day activities in an enterprise, now that software may be required for use by the employees not by themselves, okay. So they are the customers, they are seeing value of that product for used by a lot of people that they hire in their organisation.

So that is why customers and users they are often very different. Customers and users they often very different people.

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Research

Customer interviews

- Is user the customer also?
 - Often they are different
 - They may have their own needs and requirements
 - Safety vs. Speed of a vehicle
 - Experience vs. Maintenance support with computing machines

And customers have their own needs and requirements okay. Same example if your father is buying a vehicle for you, while you might be interested in speed, but your father might be interested in safety. So in that way users and customers have 2 different needs and requirements. In the same way for an enterprise you know experience versus maintenance support with computing machine.

So while the employees might demand for competing machines which give a better experience, the employer might be in need of competing machines which are good at maintaining, okay. So he may look for computing machines which either require lesser maintenance or in other case where the maintenance support is there all the time. So the point is that users and customers may have their own needs and requirements.

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Research

Customer interviews

- Customers
 - They may not be using the product at all
 - If ever they do, they may be using it completely in a different way

Now customers they might not be using the product at all. I mean that might also be possible but at times when they had to use it, they might use the same product in a completely different way, you know that might also be the case.

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Research

Customer interviews

- Designers' intent
 - Customer's goals in product purchase
 - Their frustration with an existing system (if any)
 - How do customers decide what to buy?
 - Are there missing links w.r.t. the domain in the Interactive product

So what is the designer's intent when it comes to interviewing customers okay. So we want to know customers goal in product purchase. Why they are purchasing that product? you know what is it that they are trying to satisfy by that particular purchase, their frustration with the existing product if they have any okay. So there are people who are interested in redesigned or the latest version of a software or the latest version of an interactive products you know.

So why they are looking for the latest version probably there are occasions when they are not really satisfied with the existing product okay. So their frustration with an existing product if any is also that particular knowledge is also important for the interaction designer. Now how do customers decide what to buy okay, whether it is a collective purchase or he is more motivated by himself as a customer.

How does he buy you know whether, so what are the conditions that are leading to the purchase of a particular interactive product also that knowledge is also important for the design team member. Now are there missing links with respect to the domain in the interactive product okay. So for example you know the out of customer interviews we might get insights about that you know there are several things which are missing as in terms of features, okay.

So an earlier released financial application, financial share and stock trade application might be missing certain features which are emerging to be more and more relevant in that particular domain. Now an earlier application might have missed those features, but the customers may want those features to figure in in the next version of the application. So that is where also your knowledge about customers and their needs and requirements is a crucial knowledge as far as the design of interactive product is concerned.

So today we have seen certain stages within the research stage, okay, we are still left with how to interview users and how to conduct field observations and we will consider these in the next session. Thank you.