Usability Engineering
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Lecture - 24
Mapping Experiences

So, after discussing persona, we will now discuss about the other ways through which we can map experiences. Now, by the word Mapping Experiences I mean see the data that you have gathered during your qualitative research or qualitative methods or during quantitative methods they all talk about behaviors they all talk about attitudes as in these are the two types of data points that we are actually gathering in order to interpret the experiential data right.

So, attitudes and behaviors provide us with key insights about the experience of our target customers or audiences or our actual users. Now, consider this we are in a situation where there are many people we have also discussed this earlier while we discuss about persona, many people mean the team has persons from multiple backgrounds.

And we want to arrive at a common platform or a common point where we consider that this is our person and this is how he behaves, and this is what he experiences, this is how he conceives his task, this is how he completes his task, this is a what are the experiential points that we need to be addressed.

And in order to do that it is important that we create, we come up with a map, with certain maps that provides us with these insights and we will discuss about creating these maps in detail in this part of the lecture.

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UX Mapping Methods

- Designing and developing a product often involves a large team of people with different backgrounds and experiences who must be on the same page about the project goals, the user needs and behaviors, and even the component processes involved. This common understanding is often built with visualizations (commonly referred to as mappings). Mappings make sense of and describe various aspects and processes associated with a product.

When we talk about UX mapping methods, we talk about the situation which I just referred now, where people from different backgrounds and experiences. In your design team you can have people who are marketing people, you can have your colleagues who come from computer science background, you come you can you have people who come from ethnography you have people who would come from design backgrounds.

So it's a accumulation of people from multiple backgrounds and for all of them to be at the same page and to start feeling or in another word we can say in order to empathize with the user, the goals of the project, the needs of the users and their behaviors, their experiential data must be defined clearly.

And this common understanding is often we build them using visualization techniques and these visualization techniques are often referred to as mappings. So, mappings make sense of and describe various aspects and processes associated with a product.

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UX Mapping Methods - Focus

- **Physical:** artifacts, tools, devices
- **Behavioral:** actions, activities, tasks
- **Cognitive:** thoughts, views, opinions
- **Emotional:** feelings, desires, state of mind
- **Needs:** goals, outcomes, jobs to be done
- **Challenges:** pain points, constraints, barriers
- **Context:** setting, environment, location
- **Culture:** beliefs, values, philosophy
- **Events:** triggers, moments of truth, points of failure

Elements that describe the organization can include:

- **Touchpoints:** mediums, devices, information
- **Offering:** products, services, features
- **Processes:** activities, workflow
- **Challenges:** problems, issues, breakdowns

- **Operations:** roles, departments, reporting structures
- **Metrics:** traffic, financials, statistics
- **Evaluation:** strengths, weaknesses, learnings
- **Opportunities:** gaps, weaknesses, redundancies
- **Goals:** revenue, savings, reputation
- **Strategy:** policy, design making, principles

So, when we talk about mapping methods we must first realize that the focus of these methods lies on key variables or key factors. And these are as you can see in this slide physical factors: like artifacts, tools and devices. Behavioral: actions, activities, tasks of your users. There cognitive processes: that means, thoughts, views and opinions of your users.

There emotional aspects: feelings, desire state of mind of the users. What are the needs and how we define needs? We define needs by goals, outcomes, jobs to be done; most importantly what their challenges are, their pain points, their constraints, their barriers and these are all related to their needs. The context: an important element here, the setting, the environment and the location in which these people are working or our users are working.

Their beliefs, values, philosophy which we term as culture and most importantly events: that means, triggers of those needs, moments of truth, points of failure. These are the factors that are crucial to what we term as the users, the focal point of our discussion, right. Now when many users work together in a group they are called an organization.

So, from the perspective of organization the factors that are of prime focus touchpoints: mediums, devices and information through which the tasks are being carried out. What are the kind of offerings that these companies or organizations have: that in the products, the services, the features. The processes: various activities, various workflows. Challenges for the organization: these are all related to organization, their problems, issues and breakdowns.

Day to day operations: roles of the users or the workers working there, departments, reporting structure. Matrices used to measure traffic, financial, statistics; evaluation: strengths, weakness, and learnings. Opportunities: gaps, weakness and redundancies; goals for the organization: revenue, savings, reputation. And finally, strategy that explains the policy, design making, and principles.

Now, these all are related to organization. Now, you might be wondering why we are discussing about this. See we are discussing about all these factors because we are currently trying to understand the focal point of defining or creating these visualizations, which we are referring to as UX mappings. And in order to create these visualizations, it is important that we understand the focus on the basis of which these visualizations would be created.

That means the datum, the principal point of view from the perspective of which these mappings can be created and what you can see from this structure is that these mappings are created particularly based on two principal components. And these are at the individual level it is the user, which has these many factors, the physical, the behavioral, the cognitive, emotional, needs, challenges, context, culture and events.

So, a user can be looked upon all these factors and his experiential data can be defined or visualized. Similarly, at a higher level we can look at the organization which is a collection of so many people working in that group. And the factors for an organization would be touchpoints, offerings, processes, challenges, operation, matrices metrics, evaluation, opportunities, goals, and strategy right.

And this would tell you the distinction between the focus of observation when it when something is focused at an individual level versus something when it is focused at the organizational level right.

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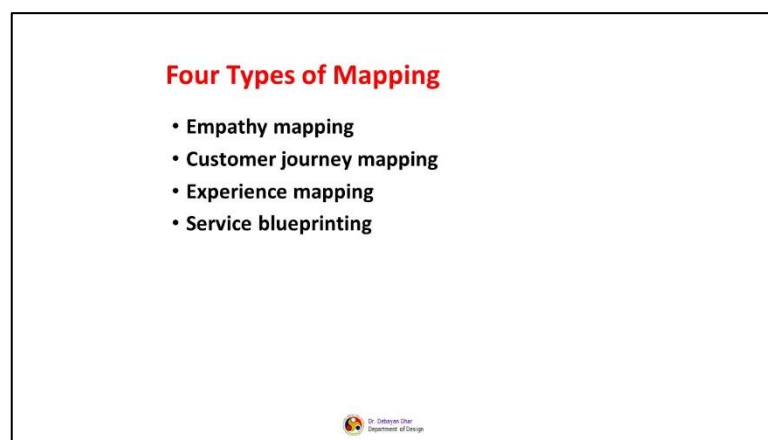
With these we must also understand what are the different types of mapping. Now based on the various focus points that we have discussed just now you would realize you would realize that there are four different types of mapping techniques or visualization techniques that are created by designers. And these are empathy mapping, customer journey mapping, experience mapping and service blueprinting. We will discuss about each one of them in detail.

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But before we discuss about each of these types of techniques, let us understand the decision framework which is used in order to create these mappings. So, before any visualization or mapping effort is used or created, be it a empathy customer journey mapping experiential mapping or service or any other three decisions must be made. And these are current; that means, the state of affairs currently, future that needs to be hypothesis versus research, low-fidelity versus high-fidelity.

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So, what do we mean by when we say current versus future to be. Now, the decision involves action and states depicted in the visualization. So, when we see a visualization what does it depict? Do they reflect the current state of the world or do they reflect desired state.

So, when we talk about current state, we are referring to the as it is, the current practice while the desired state is what we consider as the future situation scenario, current scenario versus the future scenario right.

So, current mappings are based on an actual today state of what you are mapping. This approach is ideal when the mapping goal is to identify and document existing problems and pain points. So, if you are focused on identifying the pain points, the frustrations the issues that is currently existing in the work practice you must go for mapping or collecting data that tells about the current state of affairs.

Future mappings are based on an ideal state these are all anticipated states; future mapping is an anticipated state for any user type. So, future state maps help reinvent and conceive how a user experience would feel in future, use future state maps to set a benchmark or goal for the ideal platform of your product or service, here what you need to understand is your future map must be based on what is current.

So, you visualize the future based on the constraints that your present state offers that is very important for us to understand. And therefore, in order to envisage a future that addresses current pain points, current issues we must have an appraisal of the existing state right.

So, therefore, your visualization should be always be focused on identifying issues, negative emotional state, negative experiential state breakdowns, pain points frustrations which as a designer we must intend to address them during our future mappings.

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Decision Framework

2. **Hypothesis vs. research**

• Hypothesis mappings are based on an accumulation of existing understanding within a team or organization. This approach is a great way to merge multiple existing team views, create a research plan (based on the gaps that emerge from your hypothesis map), and make a first step towards a higher-fidelity, research-based map.

• Research mapping is based on data gathered specifically for building the map. This approach is best when there are time and resources dedicated to create a research plan. Regardless of where you start, your maps should be iterative and constantly updated with new findings.

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The next one is hypothesis versus research. Now hypothesis mappings are based on an accumulation of existing understanding within a team or organization. This approach is a great way to merge multiple existing team views, create a research plan that is based on the gaps that emerge from your hypothesis map and make a first step towards a higher-fidelity, research-based map.

What in short it tells about hypothesis mapping is that it is based on assumptions and your assumptions are based on past data; that means, you must understand the state of the art the situation that is happening currently, in order to hypothesize in order to assume that identifies or that addresses a gap that exists.

A research mapping is based on data gathered specifically for building the map. Now, this is specifically based on existing data while the hypothesis that we are speaking about is an assumption while research map is based on current existential data. This approach is best when there are time and resources dedicated to create a research plan regardless of where you start, your map should be iterative and constantly updated with new findings.

In situation when you focus on creating a research map it is an iterative activity as you know it constantly gets updated you have your research team gathered the data and keep on updating the scenario. It can be classified as a store that is constantly delivering what product it has through the software application.

You have a huge network of people who works behind to ensure that things, logistical things that are in the warehouse are being displayed accurately and perfectly through the web interface. That is an example of what we trend to do in a research map while a hypothesis map is more of an assumption which is based on research data, existing data.

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Decision Framework

3. Low-fidelity vs. high-fidelity

This decision pertains to the quality of the final map visualization.

• Low-fidelity maps are unpolished and often created with sticky notes in a flexible, unrefined manner. Use sticky notes (physically on the wall or digitally with tools like Mural.co) or collaborative excel sheets.

• High-fidelity maps are polished, created digitally, and look final. These maps are often created digitally, then dispersed.

And finally, low-fidelity versus high-fidelity. Now, this decision pertains to the quality of the final map. How do you visualize your final map? A low fidelity map are unpolished quickly made and often created with sticky notes you might have seen, how designers create them its very flexible, unrefined manner and use you can use sticky notes or you can use collaborative excel sheets many time people use that.

While high fidelity are highly decorated graphical products, these are polished, these are created digitally requires an extensive amount of time to be created and then they look realistic and look so nice when you present them. And these maps are often created digitally and then they are dispersed; that means, shown to the team. With this we will now start discussing about the maps that we have the four different types of UX mapping methods that we have talked about.

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Empathy Mapping

• **Empathy maps** help team members understand the user's mindset.

• **Definition:** An empathy map is a tool used to articulate what we know about a particular type of user. It externalizes user knowledge in order to 1) create a shared understanding, and 2) aid in decision making.

Let us start first with empathy mapping. So, what is empathy maps? Empathy maps help team members understand the user's mindset. An empathy map is a tool used to articulate what we know about a particular type of user. It externalizes user's knowledge in order to create a shared understanding and aid in Decision making.

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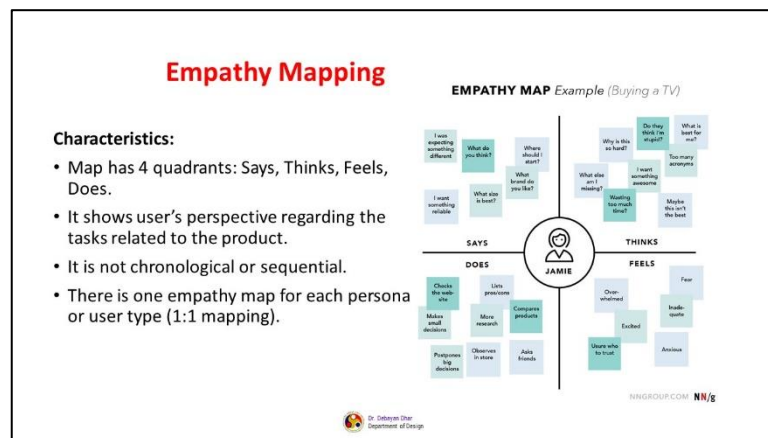
Let us see an empathy map. What you see in this slide is an example of an empathy map of a person named Jamie buying a TV. You always see that the empathy map is created based on an activity or task and a user who is performing the task. This nice example that I have collected from the Norman Nielsen group which is presented here.

Now, the characteristics of an empathy map are these, the map has 4 quadrants and these 4 quadrants are: the says quadrant, the thinks quadrant, the does quadrant and the feels quadrant and this is our persona. I am sure and now you know what do we mean by persona.

So, our map has 4 quadrants, it shows users perspective regarding the task related to the product. It is not chronological or sequential and there is one empathy map for each persona or user type right.

So, for each user type there is one empathy map; that means, when you create one persona you know for buying a TV you have observed few people, you know these you have three four types of users some users maybe adults, some may be children, some maybe people who stay in the home, some people who might be buying for someone else. So, each of them is your user types. Now, you focus on one user type, go to 10-20 people who are that specific user type collect data that is a persona.

And whatever they say, whatever they think, whatever they feel and whatever they do based on your interviews, whatever you can collect this data you plot them accordingly in these quadrants right. For example, you can see here in the says quadrant it says, I was expecting something different, I want something reliable, what brand do you like, where should I start, these are some of the verbalizations that is being reported here for the persona.

Similarly, in the thinks quadrant you can see what else am I missing, why is this so hard wasting too much time, I want something awesome. Similarly, in does quadrant you see checks the website, lists pros and cons, observing stores so on and so forth. Similarly, in feels quadrant: you will see overwhelmed, fear, excited, anxious.

These are all what the person who has observed, the researcher the designer the team member who has observed him has created this empathy map in order to have a visualization of the persona and the issues, and the experiential aspect of that persona based on these four qualities says, thinks, feels and does.

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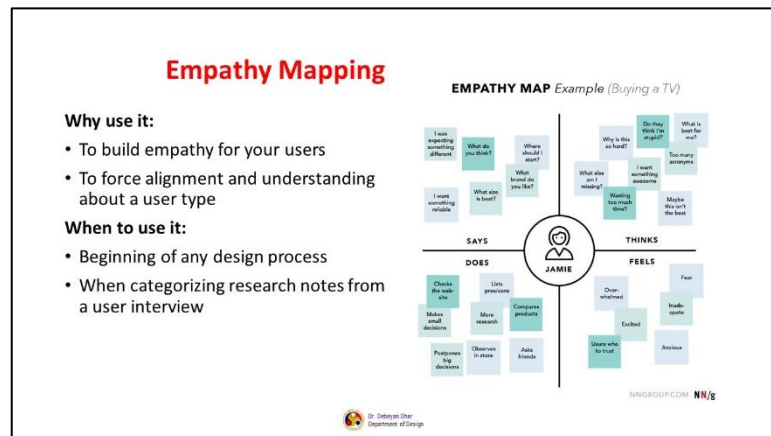
So, why do you use an empathy map? The word itself tells you the story right the focus of any human center design approach or a user center design approach is to build empathy for users and in order to ensure that you empathize with your users you address their problems and it is not a self-centered design you create these empathy maps and these empathy maps would guide you during your conceptualization stage.

To force alignment and understanding, see this is very crucial for us to force alignment and understanding with whom? Among the team members that this is what our persona

looks like and this is how he acts, she thinks, she feels. And when do you use it? You use at the beginning of any design process, at the initial stage of your user study when you have some data being collected.

When categorizing research notes from a user interview you create this empathy map right and you put these dominant characteristics here. There are two ways of creating this empathy map, you can create one empathy map for each user and then you club them, you identify the dominant patterns and create one for that entire user type for that entire persona that is one way ok.

And if you are good at skipping, not if you do not want to create an empathy map for each of the user, what you do? You make a note of all the data, see what are the most emergent and dominant characteristics that are being displayed or provided by your user in terms of what they say, what they think, what they feel, and what they do; club them put them together and create a persona. Empathy map that includes the persona, these are the ways through which you can create your empathy map.

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The next one is the customer journey mapping. Now, customer journey maps focus on specific customers interaction with a product or a service right. It is a visualization technique of the processes that a person goes through in order to accomplish a goal, it is tied to a specific goal or a product. The tasks are tied to a specific business or a product, these are the tasks right.

So, in its most basic form journey mapping starts by compiling a series of user goals and actions into a timeline skeleton. You would see the skeleton next in the next slide. After

that the skeleton is fleshed out with user thoughts and emotions in order to create a narrative. And finally, that narrative is condensed into a visualization used to communicate insights that will inform design processes.
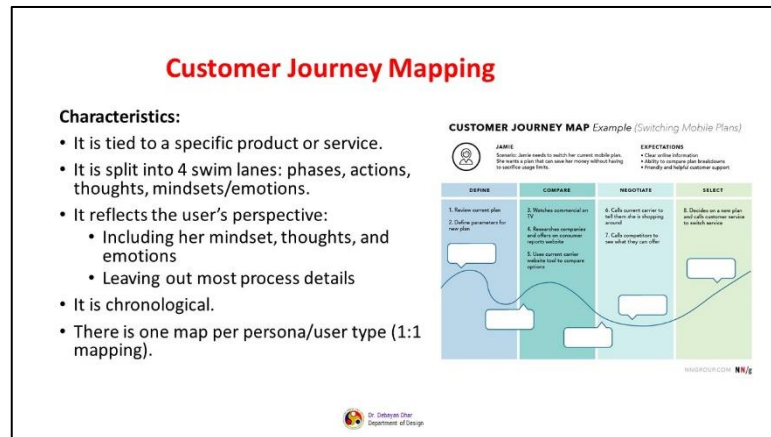
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So, what do you see in this slide is a nicely presented visualization of the customer journey map. You see that the characteristics of a customer journey map is that it is tied to a specific product or a service. It is split into 4 swim lanes; that means, these are the lanes different colors that you see are being classified as 4 swim lanes and these are phases, actions, thoughts, mindsets or emotions.

It reflects the user's perspective: including her mindset, thoughts, and emotions; leaving out most process details. It is chronological in nature, remember in empathy map it was not chronological in nature, but here it has a process centric flow its chronological in user and there is one map persona per user type.

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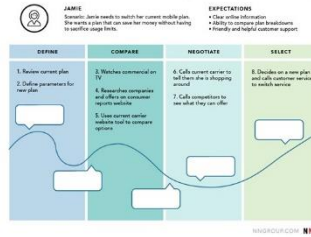So, why do you use a customer journey map? You use a customer journey map to pinpoint specific customer journey touchpoints that cause pain or delight. To break down silos to create one shared, organization-wide understanding of the customer journey and to assign ownership of key touch points in the journey to internal departments. And when do you use it? You use it at any point in the design process, as a reference among point amongst a team throughout a product design cycle.

What you see here is the 4 swim lanes: the define lane, the compare lane, the negotiate lane, and the select lane. Now, these names will change based on the business service of the product that your user is being attached with.

In this case the example that is being presented here, you would see the customer is trying to switch mobile plans. So, he or she is trying to Jamie who, the scenario is this; Jamie needs to switch her current mobile plan and she wants a plan that can save her money without having to sacrifice usage limits.

What are the expectations? She is she has clear online she has clear online information; that means, she is expecting that the service of the product of the business organization must have clear online information. It must have the ability to compare plans in terms of breakdown plans in terms of benefits and the interface should be the system should be friendly and it should have a good customer support.

Now, these are some of the expectations of Jamie which are persona. Now the journey towards switching a mobile plan has been observed by the designer as such. The first phase which is the defined phase, the current plan is reviewed, parameters defined parameters for new plan, new plan parameters are defined. Then it goes the second phase compare:

where these comparisons are drawn across various plan, watches TV commercial, researches use current career website tools.

So, from multiple mediums our persona is drawing data in order to understand which plan is better, which plan is not favorable in terms of her requirements. Then is the third phase that is the negotiate phase: where our persona calls current carrier to tell them she is shopping around, calls competitors to see what they can offer.

So, this is the phase where she is trying to negotiate and see what is better for her and which one she would opt for and finally, she decides and go for one which is the select phase.

Now, be informed that whatever product or service you are looking at it will not have only 4 phase or it will not have the phases like define, compare, negotiate, select; no. You have to define these phases based on your observation, based on the task that you are observing, your activities will be different.

So, therefore, this is just an example to show that a customer journey map is a relationship between the persona and the activity or the goal that the person is having; that means, the product is here switching mobile plans.

It is a relationship between the persona and that product. So, whatever activity happens is broken down into the series of those activities in order to highlight the individual progress of how the persona experienced the journey from first to the last the end of the activity. We would now move on to the next one which we call as the experience mapping.

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Experience Mapping

- **Experience maps** generalize the concept of customer-journey maps across user types and products.
- **Definition:** An experience map is a visualization of an entire end-to-end experience that a "generic" person goes through in order to accomplish a goal. This experience is agnostic of a specific business or product. It's used for understanding a general human behavior (as opposed to a customer journey map, which is more specific and focused on related to a specific business).

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Now, experience maps generalize the concept of customer journey maps across user types and products. So, an experience map is a visualization of an entire end to end experience that a "generic" person goes through in order to accomplish a goal. This experience is agnostic of a specific business or product. It is used for understanding a general human behavior as opposed to a customer journey map which is more specific and focused on related to specific business.

So, this is where the differentiation lies right, experience map is not related to a product or a service per se which we have seen in the customer journey map it is focused on the behavior, on the human behavior in general.

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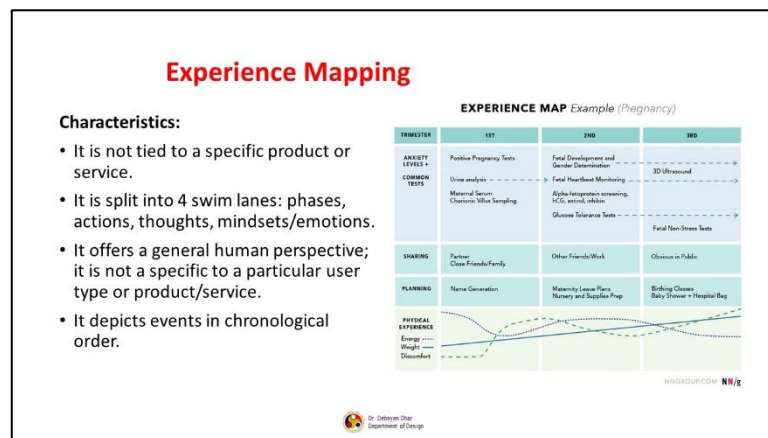
Let us see here. What you see in this slide is an example of the of the experience map. And its characteristics are: it is not tied to a specific product unlike a customer journey map. It is again split into 4 swim lanes: phases, actions, thoughts, mindsets and emotions.

It offers a general human perspective, it is not a specific to a particular user type or product service, it depicts events in chronological order. These are important touchpoints for an experience map, what you see here is the experience map of a pregnant of the entire period of pregnancy, the phases are being termed as first tri-semester; trimester, second-trimester and third-trimester.

What you see here are the various levels, anxiety levels, plus common tests that are associated with the first-trimester, the second-trimester and third. Then sharing what are the issues that are being related to the closed circles, like partners, friends works, and

things that are more obvious in public. So, in the third-trimester it is more obvious the situation is more obvious and it is known to the public.

Planning: the first-trimester the focus is on name generation, the second one is the maternity leave plans nursery and supplies preparation, the third-trimester is more on birthing classes, baby shower, hospital bag so on and so forth.

And this is a visualization of the physical experience which is a combination of energy weight and discomfort planned as a referential idea of the journey of the person across the three trimesters. Now, what you see here are the various swim lanes, the first of all is the phases of actions thoughts mindsets and emotions right.

Now, these the first one what you see is the anxiety levels and you would see the anxiety levels that are associated with the first-trimester and the second one and third one. So, you would see more these experience by more in terms of how do the variations emerge, in terms of human behavior based because of particular situation.

The same thing can be planned for voting also, the same thing can be planned for the entire experiments, map of somebody who is ill or somebody who is suffering from a particular disease the entire can be planned out so on and so forth.

And you can map out these behavioral activities in this way. So, anxiety levels, sharing, planning and physical experience. So, these are broken down into 4 phases and being planned out. So, what anxieties are you know, anxiety levels are the various thoughts and mindsets, physical experience, the exertions and then sharing and planning both are related to activities that are being performed.

So, these are some of the ways through which your experience map allows us to understand how the behavior has evolved over a period of time. For designer what is important here is that if your focus is on identify a gap, if the focus is on identify a situation which you want to address you can use this experience map and target which is the situation, which is the scenario which you want to focus on for delivering a solution.

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Now, why use it you use an experience map to understand a general human behavior as such we have talked about. If you see in empathy map and in customer journey map there is a goal you know, this buying TV, switching plans. Here it is generic, it is a behavior around a particular situation and here the situation is pregnancy, to create a baseline understanding of an experience.

This is important so that you understand the experiential references across a particular situation, you know. When to use it? Before a customer journey map in order to gain understanding for a general human behavior, when covering multiple experiences, tool and specific user. Agnostic not associated with products and services and into one visualization these are being used.

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Our next one is the service blueprinting. Now, service blueprints are counter parts to customer journey maps and focused on employees. It visualizes the relationships between different service components like people, properties, physical or digital evidences and processes that are directly tied to touch points in a specific journey map.

So, think of service blueprints as a part to its a second version of the customer journey maps. Blueprints are instrumental in complex scenarios spanning many service related offerings. It is an ideal approach to experiences that are omnichannel involve multiple touchpoints, or require a cross functional effort that is, coordination of multiple departments.

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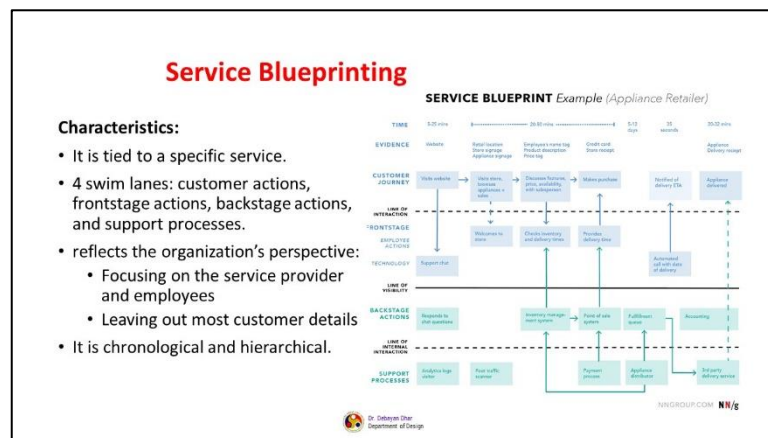
This is an example, what you have seen in this slide is an example of a service blueprint. Its characteristics are it is tied to a specific service. It has 4 swim lanes: like customer actions, front stage actions, backstage actions, and support processes. Reflects the organizations perspective: focusing on the service provider and employees, leaving out most customer details.

And again, it is chronological and hierarchical remember this is important about service blueprinting. So, what do you see is in this slide is the documentation of the customer journey. From visiting the website till the appliance's whatever product, he is buying is delivered, the customer journey is visualized here and now what is happening inside the organization has also been mapped together.

For example, if you see the line of interaction, the front stage, employees actions, technology, line of visibility, backstage actions, line of internal interaction, support

processes all the departments that are associated in order to ensure that the customer journey reaches to the desired goal is being displayed.

And where at from where point at from where these interactions are happening when the customer is directly making an interaction with the organization, internal to the organization which are the interactions happening.

How the responses are being mapped and finally, how the product is delivered everything is mapped together along with evidence and time that is used as a scale here right. So, remember a service blueprinting is hierarchical and chronological, both are important in service blueprinting.

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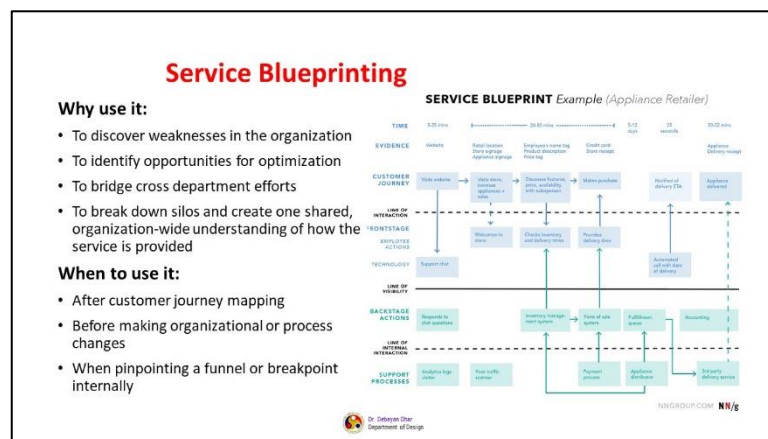
So, why do you use it? You use it to discover weaknesses in the organization, to identify opportunities for optimization, to bridge cross department efforts, to break down silos and create one shared, organization wide understanding of how the service is provided.

And, when do you use it? You use it to ensure that the entire structure of the function of the organization and in coordination with the task completion is achieved and therefore, it is being used after you create the customer journey map. Before making organization or process changes and when pinpointing a funnel or breakpoint internally you choose to come up with a service blueprint.