



Research Methods

Team 1

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Agenda



We will cover the methodology & importance, needs & benefits, and project implementation for the following research methods:

- **Search-log analysis (Namita & Manthan)**
- **Field study (Kriya & Siddharth)**
- **Survey (Rishabh & Shubhang)**



Search-Log Analysis

Search-log Analysis: Methodology



What is search log analysis?

- Logs are nothing but records of people visiting a site/ site visits.
- The search engine helps a company to understand the human behavior, their lifestyle, demographics and in turn helps the company to make improvements/growth.
- A search log analysis methodology is outlined consisting of three stages (i.e., collection, preparation, and analysis).

Examples include:

1. the content viewed in web browsers or e-readers
2. browsing patterns and purchases on e-commerce sites
3. content generated and shared via social media

Search-log Analysis: Importance



Why log analysis?

Through web-based applications we can collect lots of data very quickly and very easily. Analyzing large amounts of log data allows us to see phenomena that were previously unobservable. There are many types of information that could potentially be logged. One type of information is the user interaction information, including queries, clicks, URL visits, system interactions. In addition to using interaction information one can also collect context log information, including web pages shown, ads, etc.

However, certain issues are simple to resolve, and these problems are also visible in the logs.

Search data can impact:

- Target audiences
- Navigation design
- Search-engine optimization (SEO)
- Website architecture

Search-log Analysis: Needs



- A website's target demographic, content, incoming traffic, navigation, and advertising can all be significantly impacted by search data. Search-log analysis reveals the causes of people's difficulties in finding what they're seeking for
- It directly addresses research questions such as:
 - How many people searched for a particular term?
 - Frequency of a user using the search bar?
 - Session length of each user
- To perform further analysis such as Transaction-log analysis which is used to address issues of system performance, information structure and user interactions.
- In order for the stakeholders to decide whether it is needed to improve search results so that people can succeed with fewer searches, it is necessary to analyze the quality of search keywords.

Search-log Analysis: Benefits



- Easy to collect data on millions of interactions.
- Inexpensive. The only associated costs are software and storage.
- It aids in isolating trends and identifying interactions between the user and the system.
- It overcomes the shortcomings of other analytical techniques such as transactional log analysis.
- Allows stakeholders to act on their findings such as provide new features, improved content, enhanced security. This benefits the user in terms of user experience.

Search-Log Analysis: Project Implementation



- We can track search terms on a monthly basis and identify terms that are quite similar and are probably going to produce the same outcomes. For instance, if a user writes "jawa" instead of "java" while searching, the website should still provide results for the original term. This can assist us in enhancing our website's SEO. **Poor SEO drives away audience.**
- If any article on our website may be improved by changing the content or the keywords, we can do so by comparing logs.
- Get the longest query list. These search words, which frequently consist of whole sentences, can provide light on some of the one-word terms utilized in the most popular requests. While some of the questions will be unnecessary, others may be quite pertinent and instructive.



Field Study

Field Study : Overview



- Field studies are **Research activities that take place in the user's context rather than in the office or lab.**
- Following are the examples for Field Study:
 1. Flexible User Tests in the Field
 2. Customer Visit
 3. Direct Observation
 4. Ethnographic Research
 5. Contextual Inquiry
- We have done field research with following goals in mind:
 1. Gather task information.
 2. Understood people's needs.
 3. Obtain data for personas, use cases and user stories.
 4. Test systems under realistic conditions.

Field Study : Flexible User Tests in the Field

- Many times, when a client wants to do a usability testing evaluation of a currently in-service environment/application, they are looking for a traditional summative test: A smallish set of rigid tasks geared toward measuring key performance indicators (success rate, task completion time, and errors) with the goals of 1) discovering issues and 2) providing evidence to support investment in fixing those issues.
- There are two benefits to this:
 - Decreased pressure on the moderator/planner to create the perfect tasks right out of the gate: Tasks that we agree will be tested and changed if necessary are a lot easier to create.
 - Decreased pressure on the client: Often times, members of the client team have never observed a real usability test, so to ask them to come up with or approve a definitive list of tasks and expecting it to be thorough is silly; they simply don't know what they don't know. Once they start observing testing, the task ideas start flowing

For Example:

	Summative Testing	Flexible Testing
Design Strategy	✓	✓
Identify good characteristics of existing site	✓	
Navigation	✓	

Field Study : Direct Observation

- Go to Offices, School, or wherever people do the type of activity the project aims to support. Play the proverbial fly on the wall: observe what people do in real life.
- While on the field study, remember the key methodology lessons:
 - Stay quiet so that you don't bias the users.
 - Don't trust what people say; watch what they *do*.

For Example : We went to observe students in Library, and watch students using geeksforgeeks on the daily basis. We found out following conclusions after our observation:

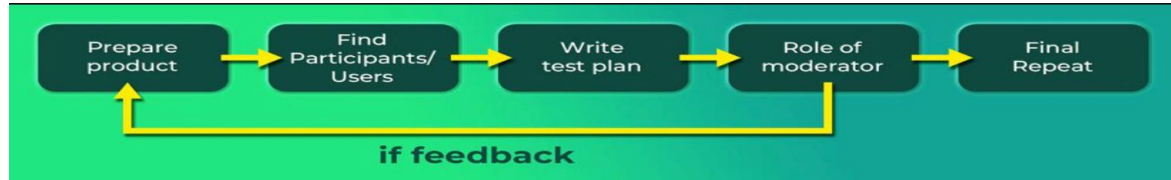
1. People used it to found out specific company related content such as interview questions.
2. Some People used it to practice their everyday coding questions.
3. People also uses this for Webinars by Industry Experts, Internship opportunities and Job Opportunities.

Field Study : Contextual Inquiry

- Contextual inquiry is a semi-structured interview method to obtain information about the context of use, where users are first asked a set of standard questions and then observed and questioned while they work in their own environments.
- The four principles of contextual inquiry are:
 1. **Focus** - Plan for the inquiry, based on a clear understanding of your purpose
 2. **Context** - Go to the customer's workplace and watch them do their own work
 3. **Partnership** - Talk to customers about their work and engage them in uncovering unarticulated aspects of work
 4. **Interpretation** - Develop a shared understanding with the customer about the aspects of work that matter
- For Example: we created set of questions which can help us to redesign geeksforgeeks.
 1. Is Sign-up or Login is smooth?
 2. If navigation is as good as it should be? Any Suggestions?
 3. Are you able to contact recruiters easily?
 4. Is webinar streaming good?

Field Study : Customer Visit

- It helps us understand usability issues that arise in a particular industry or business contexts.
- Usability Testing in software testing is a type of testing, that is done from an end user's perspective to determine if the system is easily usable. Usability testing is generally the practice of testing how easy a design is to use on a group of representative users.



Pros and cons for usability testing

- Gives excellent features and functionalities to the product
- Improves user satisfaction and fulfills requirements based on user's feedback
- The product becomes more efficient and effective
- The biggest cons of usability testing are the cost and time. The more usability testing is performed, the more cost and time is being used.

Field Study : Ethnographic Research

- Placing oneself in the context of the users as a group member broadly defines ethnographic research. Group research allows you to gain insight into mental models and social situations that can help products and services fit into people's lives. This type of research is particularly helpful when your target audience lives in a culture different from yours
- Although ethnography could be applied to learn how to make a product better, it's more commonly used to decide what product to build in the first place. In the earliest stages of a product's development, researchers use ethnography to explore concepts for new products, find business opportunities, and discover what sorts of tech products people might want
- There are two main phases of conducting an ethnographic field study: the preliminary planning period and the part that involves working with participants
 - Preliminary planning period
 - Working with participants

Methods for ethnographic research

- ❖ Direct observation
- ❖ Active participation
- ❖ Ethnographic research questions
- ❖ Recruiting and sampling for ethnographic research
- ❖ In the field



Surveys

Surveys: Introduction



- The user research survey is the ground on which user experience testing starts. It is the first step towards understanding user behavior
- It can be carried on wide array of projects
- Helps user experience designers find preferences, interests & requirements

Surveys: Needs & Benefits



- Surveys collect user feedback
- Surveys help to gather both qualitative and quantitative data
- Surveys are cost-effective
- Surveys help in scaling up user research
- Survey results can be analyzed quickly
- Survey results can be used for marketing research
- Surveys can validate your hypothesis and boost confidence
- Help your design team to make information-driven decisions
- Helps identify the user needs and preferences
- Can be used to track user satisfaction over time

Surveys: Implementation



- Set and Define the Goal of Your Survey Clearly
- Decide on Who to Target
- Identify and Note Down Your Target Users
- Collect Data on User Habits
- Think of the Best Design Format That Fits User Needs
- Ask Relevant Questions
- Use a Tool for Preparing Your Survey
- Allow User Research Surveys To Be Filled Out on Mobile
- Make User Research Surveys Scannable
- Use Large Clickable Buttons for Users to Answer the Questionnaire
- Test Your User Research Surveys
- Award or Give Some Rewards to the Users Who Took Part in Your Survey
- Record the Findings and Share With the Design Team

Best Practices



1. **Avoid bias and leading question;** eg How much did you enjoy using our product?
2. **Ask the right questions;** eg What is the one thing you would change about this page?
3. **Make it quick, keep it relevant**
4. **Sample continuously and share your findings**

Surveys: Conclusion



- Can provide in-depth insights into customer and product interaction
- Strengthens the design process
- Simplifies user experience design processes and user experiences
- Helps assess the satisfaction level of your current users
- Helps gain deeper understanding of your target audience

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