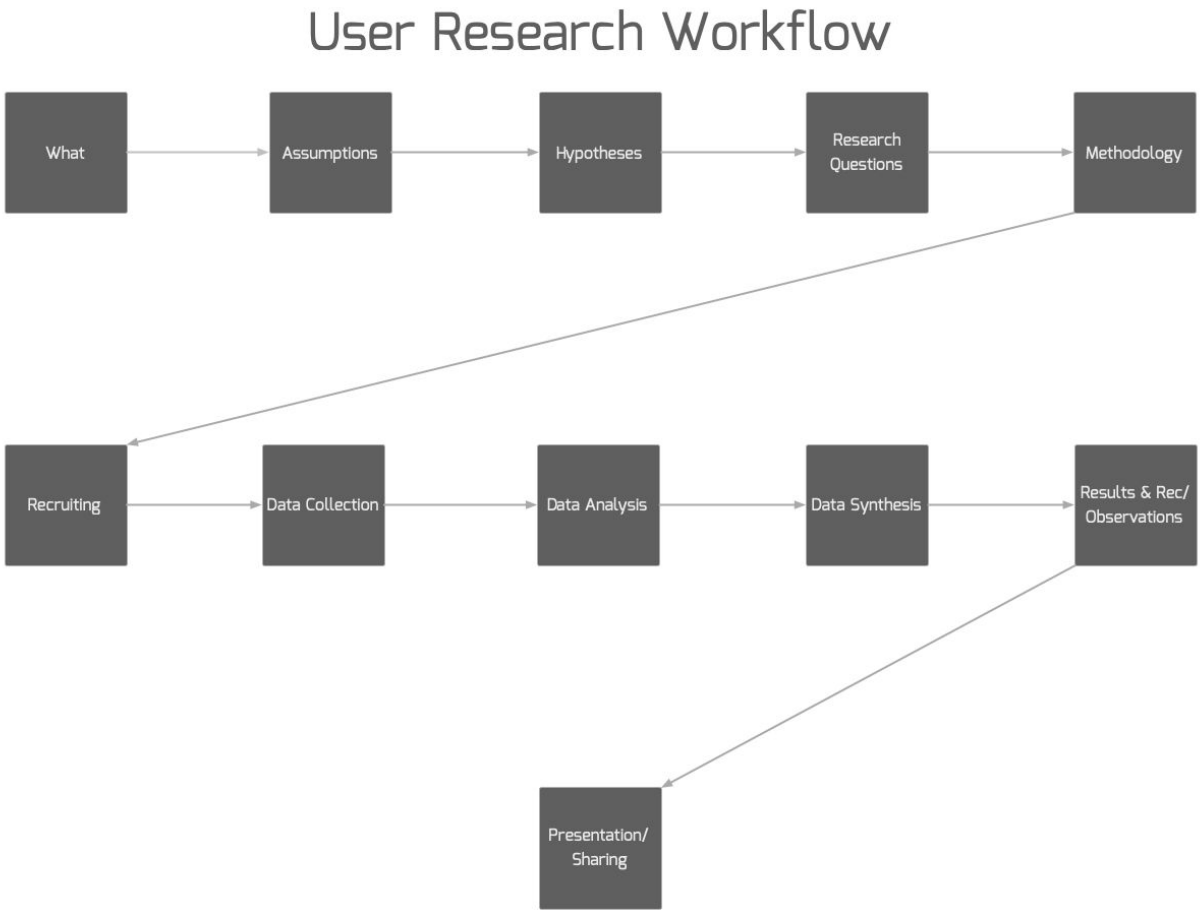
Using the User Research Workflow

Boxes 1-7

This document is a research primer that will go over the first 7 boxes of the User Research Workflow and provide you with tips and tricks to help you define the necessary information you need to create your **Group Research Plan**. It will also define a lot of terminology for this class, so it is important to read through all of it.



History of the User Research Workflow:

I created the **User Research Workflow** to teach my team of researchers at IBM how to take a stakeholder request and turn it into something we could use to plan for and conduct user research. More often than not we would receive research requests from stakeholders that had

little to no effort put into them. I devised a workflow as a means to help a stakeholder and the research team better understand what the research ask was and why it existed to begin with.

How to use the workflow:

To better illustrate how to use this workflow, I've put together a hypothetical scenario below. This is not a real research project. It was created for an example only. Using this example and going through this workflow for your class project will help you to wrap your head around what you need to create your Group Research Plan and Semi-Structured Interview Script.

Box 1: What

Having a clearly defined "What" makes all the difference when attempting to plan a research study.

Here are a few clarifying questions:
What is the problem? / What do you think might be the problem? What is the reason or purpose for asking research to be done? What are the research objectives?
What are the implications to be considered?
For each answer, I label them W1-Wx

What Example:
W1: The problem is that people want an easy way to make a great cup of coffee, but they don't understand what it takes to do so or feel it takes too much effort and time to get it right. So they'd either rather pay someone else to do it even if that is substantially more expensive and/or they try to make do with bad homebrew coffee by adding things to it such as creamers and flavors that contribute a lot of unnecessary calories and potentially harmful additives to mask the

poor flavor. (this becomes a good candidate for a problem statement - or at least will help inform a problem statement)

W2: Conducting research on how people come to drink coffee, develop their preferences for how they drink it, and learn how to make their own will help us understand how to help them improve their coffee experience themselves giving them the skills they need to do it at home. All they will then need is materials to make it happen.

W3: We have a lack of understanding of our target audience. There are potentially other opportunities a homebrew coffee service could take advantage of if we understood our audience better.

W4: The objectives of this research will be to inform us of how to create a master class on how to help people become a homebrew coffee connoisseur and master the ability to create their very own perfect cup of coffee in their own home without the need to travel to their local corner coffee shop.

W5: Implications for this research will result in a way for us to monetize what we know about crafting the perfect cup of coffee in such a way that people will find it useful, valuable, and worth paying for. As a result of learning how to do this and realizing how much cheaper it can be, they will also subscribe to our coffee connoisseur club where they will receive a monthly coffee box filled with their favorite coffee and acutremont along with seasonal tips and tricks to up their coffee game.

Box 2: Assumptions

My favorite part of this workflow is the assumptions exercise. This helps couch assumptions as exactly what they are and what they are not (i.e not facts).

To help guide people ask:
Why do you think this is the problem? What do you think you already know about it?
List all knowledge you have that isn't immediately verifiable via data [1st or 2nd sources].
Relate the assumptions to the What.

For each assumption, I label them A1-Ax but in parenthesis relate them back to their What (W1-Wx).

Assumptions Example:
A1 (W1/W2): If people knew how to make a good cup of coffee at home, they would not leave their home just to buy one especially if they are not currently needing to leave their home for any other reason to begin with.

A2 (W1/W4): People don't like to make their own coffee because they can't get it to taste the way it does when they buy it at their local coffee shop. If they learned how though, they'd be more likely to want to do it themselves, especially if it was cheaper and they didn't have to leave to get it.

A2a (W4): People would be willing to learn to homebrew if it was made fun and easy to do and was cost effective.

A3 (W1): People who do resort to making coffee at home when they are used to buying it to go tend to have less than healthy home coffee consumption habits because they utilize additives that contribute a unnecessary calories and sugar to help their coffee taste better because they don't have the knowledge of how to make coffee correctly to begin with. By providing better homebrew methods and product choices, we can help people have healthier coffee consumption habits and that matters to people.

A4 (W3): We don't know what we don't know. There are potentially a lot of other opportunities here that we could take advantage of if we dug a little deeper.

Box 3: Hypotheses

Ask the following:
What are some hypotheses to test/validate for possible reasons why the problem exists?
What are the high level solutions being considered?
Relate the Hypotheses to the Assumptions.

For each hypothesis I label them H1-Hx but in parenthesis relate them back to their Assumptions (A1-Ax).

Hypothesis Example:
H1 (A2/A2a): There is a market out there for a fun and easy to take coffee course + subscription box that is largely untapped because these people have not previously been the kind who make their own coffee at home due to the fact it was just easier to buy one at their local coffee shop on their way everyday. Thus now they don't know how or where to start when it comes to good homebrew.

H2 (A3): Given our current world situation, people are less likely to go out to buy a cup of coffee because they are not leaving their house and are instead suffering through a less than optimal coffee experience because they are trying to make due with what they have access to, including unhealthy coffee additives, and don't know where to start to make it better.

H3 (A1): Providing people with the opportunity to learn how to make a great cup of coffee and having the materials to do so delivered straight to them so they never have to leave their home is something a lot of people would take advantage of now given our current world situation and is something that they may not have had the time or opportunity to do so before thus it has unrealized potential.

H4 (A4): There are likely other opportunities that exist in this space that a homebrew coffee service could help take advantage of if we knew what they were.

Box 4: Research Questions

What are the major research questions to be answered to test the hypotheses? Relate all RQs to the Hypothesis to which they belong.

For each question, I label them RQ1-RQx but in parenthesis relate them back to their Hypotheses (H1-Hx).

Research Questions Example:
RQ1(H1): Do people prefer to buy a specialty or complicated cup of coffee (or coffee related products) because they don't know how to make it at home and/or can't be bothered to do so because of the time and effort involved?

RQ1a (H1): Are there other reasons why people prefer to buy a cup of coffee (or coffee related options) rather than make it at home that could be capitalized upon to help them shift to homebrew?

RQ1b (H1): Have people's coffee purchasing habits changed since this time last year? If so, why and how and how could a coffee subscription service take advantage of this?

RQ2 (H3): Would people find it useful to take a course on making coffee?

RQ2a (H3): Do people who enjoy particularly good or unique coffee experiences have any interest in subscribing to a coffee subscription box to improve their coffee experience?

RQ2b (H3): Does making it possible to get specialized or unique coffee/coffee related options delivered to one's home on a monthly basis provide enough of a benefit to support a subscription service?

RQ2c (H4): What other value could this homebrew service provide that would make it worthwhile and keep people subscribing? Why would people not find this a worthwhile investment and what could be done, if anything, to change that?

RQ3 (H2): Are people concerned with how healthy their current homebrew coffee is? If so, why and what would they think of a service that helped them have more flavorful coffee options without the additives? Would they see any benefit to that?

So let's look at question RQ2. We can relate that back to Hypothesis 3, which relates back to Assumption 1, and that relates back to What 2, & 4. You can draw a line all the way back to see how you got here. Keep that in mind as we move on to methodology.

Boxes 5 & 6: Methodology & Recruiting

Though the workflow is linear and it makes sense to understand first what methodology you are going to use in order to be able to recruit the right type of participants for it, these two steps work together and you may flesh them out in tandem.

Choosing the best methodology to understand the problem space:
When it comes to selecting a methodology, you can clearly see it has taken us going through all of the previous steps to get to where we can choose one over another. What you want to avoid is a stakeholder coming to you and telling you what methodology to choose before you or they fully understand the problem space. Having encountered this myself on multiple occasions, this is why I have created this workflow. By taking a stakeholder through the beginning stages of this process and developing a research plan along the way, you will have helped them understand

what you need to know before you can even begin talking to people. This helps avoid unnecessary research and makes sure that you and your stakeholders are on the same page and start off on the right track.

Methodologies to choose from:
There are a lot of methodologies to choose from when it comes to user research. You will most often hear terms like qualitative or quantitative, generative or evaluative, and even formative or summative. The two broadest and most often used categories are qualitative and quantitative. In the simplest terms, qualitative research focuses on obtaining high quality data from relatively few sources and quantitative research focuses on the quantities in the data obtained from a large number of sources. There is not one method that is better or worse than another generally speaking. The chosen method should be the one that is most likely to get you the data you need at that particular point in your research. As I mentioned before, a research plan can change over time. While one particular method may be good to start with, other methods may be best to pull in at later stages.

I've set up this particular scenario as one that is currently well suited for generative/discovery research. Generative research, also referred to as discovery or exploratory research, is conducted to dive deep and learn more about a particular topic and usually falls into the qualitative category. For this project, our first chosen methodology will be to conduct a set of discovery interviews with a particular target population who will help us understand the problem space a lot better. I call this going problem finding and I specify this as a particular step you should always take before you begin problem solving. All too often opportunities for truly helping people and for innovating with them are missed because those working on a project start trying to come up with a solution from the very beginning before they've taken the time to understand the problem they are trying to solve.

Using additional methodologies:
There are several ways you can incorporate multiple methodologies into your research. The first way is to use different methods to triangulate your data to ensure its validity. We will explore this more in about 2 weeks. As a basic explanation, consider an approach where you first do discovery research using interviews. After you have analyzed and synthesized that data you realize there are gaps in your data and there are a few data points that need to be validated with a larger population. To do this, you create a survey based on what you need to fill these gaps and validate your previous findings.
In this example, we have moved from qualitative to quantitative and are utilizing two different methods to saturate our data to make it as useful as possible.

If we were even further along and had already designed a data driven product or service, we want to use evaluative research to test it out with users. If it was early in the design process, it would be considered formative evaluative research as we would use the data we collect at that point to quickly iterate and make changes on the designs to test again. Depending on the way we choose to test it, it could be qualitative and moderated such as a cognitive walkthrough, or

qualitative and unmoderated such as a scripted talk-aloud exercise (Usertesting.com is useful for this), or quantitative such as an online survey (Qualtrix or Survey Monkey are just a couple of tools in this category), or a recorded behind the scenes user session (Fullstory for example) where we see what a user is doing and perhaps getting caught on, but don't necessarily understand why (thus providing researchers an opportunity for a deep dive if it is found to be repetitive behavior amongst several users).

If the design is ready to be released, evaluative research at this stage is referred to as summative. It tests the pending release against a set of acceptance criteria and is generally carried out alongside quality assurance (QA) testing. Where QA might focus more on the engineering side, summative evaluative testing will focus on the user side. The acceptance criteria from the user side should be considered as a part of the user story. We will get to that later as well.

The point here is that there are a multitude of methods to consider and they all have their time and place to be used. It is up to you to decide what is the best tool to use for gathering the data you need to answer the questions you have. There is no one answer fits all solution and that's why utilizing this workflow is helpful.

Discovery Research:
As we will be conducting discovery research utilizing semi-structured interviews, we will need to ask interview questions that will help us answer our research questions that will help us test our hypotheses we created based on our assumptions around our problem statement. As you may have guessed, we will do the same linking strategy here that we have employed thus far. However, first we should consider our recruitment process as it works in conjunction with our interview.

When you read the **Writing Good Interview Questions** document, you will see a list of dos and don'ts. One way to get around some of the don'ts, like loaded questions, is to make sure that you have screened for the appropriate target population and recruited participants that are a good fit for your study.

Target Populations, Recruiting and Sampling Research Participants:
For our homebrew coffee case, who do we want to target? What type of questions should we consider to help narrow down the larger population to those who would potentially be target users of our products and services?

Note: These recruitment scenarios are for example only. As our class is short and targets user research methods as a whole, we will not delve too deeply into this particular topic. But you should be aware it is a lot more in depth than what is being presented here and it can definitely affect your research outcomes if it is done poorly.

Considering our topic, here are short list of qualities we should probably look for:

1. Coffee drinkers, but maybe we don't want to restrict it to just coffee? Perhaps we simply say "brewed drinks" such as coffee, so that we can be more inclusive of the espresso or tea drinkers of the world without having to narrowly define a particular thing that might exclude a lot of people for no reason. [behavioral]
2. People who regularly buy brewed drinks (or at least did or would if they could). [behavioral]
3. People who would be interested in learning more about anything via an online course [psychographic]
4. People who are familiar with and perhaps have engaged in subscription services and/or home delivery services [behavioral/psychographic]

Notice we have listed behavioral (what people do) and psychographic (what people are interested in) qualities, but left out demographic (who they are - age, education, etc) and geographic (where they are from) qualities. If we wanted to get even more specific, we might add elements of those here. However, as we are in a generative/discovery phase of research, it is best to start out as broad as possible and then narrow it down as needed.

If we wanted to be very formal about this. We might have a recruitment company utilize a screener we created based on these qualities.

Consider this short list of screener questions:

1. Prior to recent dining restrictions being put in place around the U.S., how often did you purchase brewed drinks such as coffee or related products?
    a. Daily (select)
    b. One to two times a week (select)
    c. Once or twice a month (borderline)
    d. Less than once a month (don't select)
    e. Never (don't select)
2. What do you think of online or video based master courses?
    a. I have taken one and I liked it (select)
    b. I have taken one and I didn't like it (borderline)
    c. I haven't taken any, but I might be interested in doing so if I found the right one (select)
    d. I haven't taken any and have no interest in doing so (don't select)
3. What do you think of home delivery or monthly subscription services?
    a. I find have used them and found them useful (select)
    b. I have used them but didn't find them useful (borderline)
    c. I haven't used them but can see how they would be useful (select)
    d. I haven't used them and wouldn't find them useful (don't select)

Guerrilla Research:
While utilizing a recruitment company and screener questionnaire is a rather formal way of recruiting a sample of your target population, that is not the only way to do so. Many researchers utilize tactics that fall into the 'guerrilla research' category, usually due to lack of time and money.

For example, were it possible today, you could sit outside a Starbucks and/or other corner coffee shops in different types of neighborhoods at different times of day and recruit people to participate in your homebrew research study by offering qualifying participants a $5 or $10 gift card for 20 minutes of their time to answer a few questions in what is called an intercept interview. *Note: If you do decide to conduct intercept interviews, the date and time as well as contextual data on the location and interviewee would be important to document and should be a part of your data set.*

Given your chosen location, you already know most people you would meet match at least some of your required criteria for your target population. You could then further qualify them by asking them a variation of these screener questions or even a few more specific ones. *Note: When recruiting people from your target population, you should also consider how diverse they are from other participants you've already talked to or think you may be able to have easy access to in the future. Even if you believe (assume!) a particular criteria has no specific bearing on your research, conducting research with people who have diverse backgrounds and abilities can provide insights that you might not get if your sample is very homogenous in one way or another.*

Given our limitations of time, money, and the current world environment, doing something like this is not a likely scenario that we can engage in for this project. However, it is something that may be feasible for other such projects down the road. So keep it in mind.

Convenience Sampling:
Another way to recruit a sample from your target population is to conduct a convenience sampling exercise. This is where you recruit from people you know or have easy access to (in business think of known customers, internal users, or coworkers working in different departments) who fall into at least one or two of these target population qualifiers. If they don't end up qualifying or don't wish to participate, you can ask them to recommend 2 to 3 others who they know also fall into the target population and they think might be willing and able to participate. The thing to watch out for when convenience sampling is having an overly homogenous (same demographic/geographic/psychographic traits) sample.

Diversity in Research Participants:
To reiterate my previous point on diversity in research, this means if you would like to have a diverse audience find your product or service attractive (and who wouldn't want as many people as possible using their product or service), then you should target as diverse a population as possible that also meets your qualifiers for your research. The more diverse your research pool

is, the better chance you'll be able to meet the needs of a broader population. This includes everything from income to age, from skill to geographic location, from neurodiverse people to those who are non-binary and more. While these qualities may have no direct bearing on your product or service, it is likely that people from such diverse backgrounds will view your products or services in different ways for different reasons.

The point is that it pays to put effort upfront into understanding who your target population is and what makes them unique, how different recruitment methods can be used to find reliable and useful research participants within your target population, and why diverse sampling from potential participant pools matters when it comes to being inclusive in the design your product or service.

Box 7: Data Collection

For our course work, we will be conducting a Semi-Structured Interview as our first data collection method. I highly recommend reviewing the **Writing Good Interview Questions** document before you continue so that you can understand what type of questions to ask and why you should ask them as I will only be providing examples here. And yes, while interviews are used for various research methods, they are also considered a tool for data collection. That is how we will be approaching them here.

Semi-Structured Interviews:
As is implied by the name, these are interviews that are structured, but not completely so. This means the interview script should be thought of as a tool to guide a conversation rather than a fixed set of questions that all need to be asked in a particular order. This is important because, say for example, your interviewee answers questions one and two at the same time. If that is the case, then there is no reason to ask question two since it was already answered. Additionally, if it makes more sense to skip to question 6 because that's the direction the

interviewee is already going, then follow them there. You can always come back to questions as needed. This requires knowing your research instrument (interview script) very well and having tested it before you attempt to use it.

Developing your Interview Script:
As you go through and develop the interview script with your team, you will want to utilize the same linking strategy we used before where we link each interview question with the research question it is to help answer.

That said, we first want to make sure that we get the necessities covered at the beginning of the interview. You can do this by including some notes at the top of your interview script. Consider the following examples in the form of pre-interview and beginning interview checklists.

Pre-Interview Checklist
Are your devices charged/plugged in?
Have you tested your hardware/software and data collection tool?
Did you provide a backup way of contacting you and did you get one from them?

Beginning Interview Checklist

1) Make sure this is a good time for your participant
2) Tell them how long it should take to complete the process
3) Review the informed consent document and ensure they have signed it
4) Remind them their information and any data they provide will be kept confidential
5) Remind that they can terminate it at any time
6) If there is an incentive that needs to be handed over to them, now is the time to do that
7) Verify their consent to being recorded, then begin the recording
8) Establish Rapport before you launch into the interview questions
    a) Feel free to start off the conversation using some get to know you questions. Make sure you are actively listening and probing as it makes sense to do. Look for a transition to get started on the interview. Try to make this as natural as possible to keep the conversation flowing.

Now you can start asking the script questions!

For each question, label them IQ1-IQx but in parenthesis relate them back to their Research Questions (RQ1-RQx).

Note: Qualitative research specifically helps us learn more about people's understandings, knowledge, behaviors, ideas, thoughts, and beliefs. This is the type of data you should be targeting with your interview questions. Secondly, the interviewee should be made to feel like they are the most interesting person in the world right now, because - if for no other reason - for the purpose of this research they are. Be sensitive to their verbal and nonverbal cues. Pay attention to everything they do. The more they feel their information is valued, the more

information they will willingly provide you. Though you may not immediately see value in everything they say, every single piece of data should be considered extremely so. You never know what will surface in patterns later on when reviewing all interviews together.

Interview Questions Examples:

Note: These are just a few examples. When you are actually putting a script together you want to make sure you ask enough questions to get the data you need to answer your Research Questions.

IQ1 (RQ1): Thinking back to any time before lockdowns began, tell me about your average morning routine as you got up and got your day started. You don't have to go into minute details, just the highlights of the most important things you accomplished before you began your day and started on your way.

- Probe as needed to get them to tell you about either homebrewing coffee related drinks or buying them on their commute. Don't lead them. Look for openings and opportunities to direct them to this particular topic.
    - Probe: How often if ever did you ever stop on your way to [work/school etc] to pick up anything on the way in?
        - (if applicable) What would prompt you to stop? What did you usually purchase? Why?
            - Tell me about the place(s) you stopped at? Why did you choose them? Why did you go back (or not)?
    - Probe: (if applicable) You mentioned making a cup of coffee (or related beverage) before you left. Please tell me more about that.
        - Probe for particulars regarding the type of coffee they drink and how they came about choosing it over others. What do they do if their store runs out? What other kinds have they considered trying? If none, why not?

IQ2 (RQ1): Given the world we live in today, how has your routine changed? Why?

- If they have specifically mentioned their coffee/coffee related habits have changed, have them go into details about those, how they have changed and why.

IQ3 (RQ2): Given the current world situation, there has been an increase in opportunities to learn new things from home. How do you feel about that?

- What would entice you to take a class and why? If nothing, why?

Now you should have enough background knowledge to be able to create your first Group Research Plan!

This document has covered a lot of ground as far as user research goes, but all of it was necessary to give you the background information required for developing your Group Research Plan. We will pick up with the Data Analysis and Data Synthesis steps in a couple of weeks. Until then, please feel free to reach out if you have any questions. This document has been created just for this class in order to teach this in an asynchronous way as it is normally given in a live lecture. So, it may need to be adjusted and updated and iterated on as you all start to use it.

You are my users! I am happy to do whatever I can to make it easier for you to use.

TO BE CONTINUED...