Digital Workplace Team – Usability

Contents

What is Usability?

Usability is the measurement we use to gauge how easy it is to use a site or application is to an ordinary end user.

When gauging a new site or application one of the early questions needs to be, does this site or application provide the features people need? Once you've established that key parameter usability gets added into the equation so that utility plus usability determines usefulness.

How do you measure usability?

According to Jakob Neilsen there are five measurable components to usability:

- Learnability: how easy it for first time user to do tasks?
- Efficiency: once a user has learned it, how quickly can they perform tasks?
- Memorability: when a user returns to use the site, how quickly can they reestablish proficiency?
- Errors: how many, how severe and how easily recoverable are user errors?
- Satisfaction: how pleasant was the site/application to use?

Usability studies or tests help determine those five factors and help drive reasoned, thoughtful changes to a site or application prior to launch.

Usability is effectively 90% science and 10% art.

Why do Usability Studies?

Usability studies work as benchmarks and indicators as to the success of a project. They perform critical insights that can save time, money and resources.

When working on a project, the team will know all the ins and outs. They will know what the vernacular is, what the intent is and how to navigate it without needing a manual. However that does mean that the end user will know it as easily.

A usability study will also help prevent the team from falling into the trap of “I feel that…” or “I get that easily…”. Often times these kinds of subjective feelings will result in large changes being made, work to be redone or the project taking additional time to accommodate team members’ feelings. A successful study or studies will present actual data (quantative and qualative) about how the end user will use the site or application.

When this is done, data from a sampling of targeted end users will drive focused decisions.

It is about the end user, not the team.

When to start conducting usability studies

The initial usability study revolves around measuring utility. You can do a sampling of utility early in the process via focus groups or user surveys. If a project is set to do an upgrade of an existing application or site, watching users interact with the existing site or application is a way of finding all the pain points. All of this data will go into the Requirements Document.

The next key time to conduct a study will be after wireframes or light prototypes have been constructed. This way you can verify the requirements and make any changes based on feedback early in the project. These studies can be done with paper print outs, an interactive PDF or even access to the prototype.

Another key time to conduct a study is when the site or application has approached a beta version. A beta version has some of the key functionality or content ready for review. The application or site may be incomplete but it works enough to let people get a feel for where things are and how they should work. Conducting a study at this point, allows for any major concerns to be addressed and worked on while they are still in development.

A final pre-flight benchmark for usability should be conducted when the site or application is about 90% complete. This way any last minute issues can be handled without impacting deadlines. Even if you run only one usability study, this is the key one as it will allow for adjustments to be made before the site or application deadline.

After the application or site has been published, a user survey could be sent out to see how the application or site is functioning. Any feedback from this will have the effect of strengthening the initial studies or find improvements that can be made for an upgrade or redesign. If anything has been flagged as a major error, the team will want to address this immediately and make any adjustments.

Depending on time and budget, you may do all of these studies or you may be able to do only one or two. Even one usability study being done during the course of the project will help shape a more successful project.

Getting Started

When we think of usability studies, people tend to think only of sitting down and watching someone play with the new site or application. That is only one form of a usability study. Usability starts at the beginning of the project and carries all way through it. Each different type of study or project consideration feed into the key five metrics of what usability is.

The baseline formula for a project is:

utility + usability = usefulness

Identify Site/Application Goals and Objectives

The earliest usability work will be done via requirements gathering. The goal of this part of the process is to identify the utility of such a project. This will allow for the project to have a focus, which will ultimately save time and money.

Ask the business partner questions like:

- Has this problem been addressed before? What was learned from that?
- Do you have samplings of user feedback or metrics of how often this issue is being brought up?
- What is the top problem we are looking to solve?

If the business partner does not have key information about these areas, it is recommended to do an interview of a few targeted end users. You can do this via surveys, concept meetings or focus groups. These are best done in smaller groups of no more than 6 people.

When you have your base information about the utility of the project, the initial ground work can begin.

Requirements Document

The Requirements Document provides the overview of what utility end users hope to gain from the application or site. This will also help move the project along and give the team direction as to what they are planning to achieve. You may not have to write the Requirements Document, but it should be a familiar subject to anyone in web or application development.

The Requirements Document can include but are not limited to:

- Project Overview – A roughly two to three sentence summary of what the project is and what role it will fill.
- Key considerations – A set of points that helped determine the requirements
- How Requirements were gathered – a short summary detailing out the process of gathering requirements. This could be anything from meeting notes, to when and how focus groups were conducted.
- Functional Requirements – What does the application or site need to do and what issues is it addressing? These should be broken up into two sections, Primary (absolute must be done) and Secondary (features that would be considered “nice to have” or may become part of the next round of upgrades or versions). Do not forget American with Disabilities Act (ADA) requirements.

- Technological Requirements – What platform or development coding will be required to meet the needs of the site or application? These should also be broken up into Primary and Secondary objectives
- Time Frames – List out the key benchmark items with approximate dates for completion.
- Project Constraints – Time, budget, scope and resources should be noted as this part of the document will let the stakeholders know what kinds of limitations frame the overall project.

As the usability person you will likely contribute to the “How requirements were gathered” and “Functional Requirements”. After this point, the utility of the project is understood and more in depth usability studies can be carried out.

Prototypes and Wireframes

As the usability person, you will not likely create these wireframes or prototypes. Instead it is your goal to make sure that they are meeting the utility of the project. These items will be a key tool you will need in conducting a usability study.

A wireframe is generally a static image or series of images that show the bare bones of what the application or the site can/will do. There are no heavy graphical treatments and they do not have any functional capabilities other than showing the process of what the site or application does. A wireframe can be constructed with post it notes and markers or tools such as Photoshop.

A prototype is a lightweight version of the application or site that can perform a basic overview of an action. These can be anything from a fully interactive PDF to a small site built with prototype tools, such as Axure.

It does not matter which version you have for when you conduct your usability study but they should be representative of what the site or application was designed.

Preparing for the Usability Study

Your first usability study will feel a little overwhelming but careful preparations will alleviate this. At this phase you should have a Requirements Document and a wireframe or prototype. If you do not have either of these, you'll find your usability study will be difficult

Writing Tasks

Using the requirements document, find roughly a dozen or so areas to have the user concentrate on. These should be the most pressing issues/goals of the website or application.

If the goal of a website is to access certain information, you will want your tasks to be set up around finding that information. The tasks should have a goal and a feeling question written for each one.

Example:

1. Show me where you would go to find Management training. How did you feel about finding it?
2. Navigate to health care benefits. Did that path feel clear to you?

Finding and Engaging Candidates

Candidates are usually chosen based off of targeted personas. Personas are the most likely user profiles that the application or web site will cater to. If there are not any personas written up, use your best judgement to find candidates from a diverse group.

In a setting like Northwestern Mutual you can go through an org chart and find people in the department the site or application is intended to be heavily used in. If it's a general application for the entire company, go through different department org charts and find people from different positions; such as people leaders or traditional worker bees.

When you have a list of around 10 - 15 people, send out emails asking them to give you some of their time to help with this application or web site development. You will only want about 6 – 8 people to do this study on, so asking a few more people is always advised.

A sample email:

> Good afternoon:
>
> My name is _______________ and I am part of the team responsible for working on _____________. This project will offer some exciting capabilities to bring a better experience as part of Northwestern Mutual.
>
> *Discuss some of the high points of the project here. Keep this brief no more than 5 points.*
>
> I would like to have an hour of your time to go over this application in its beta stage. You will get to test drive this application, perform a few tasks and give your thoughts and feelings on your experience. Your input will be greatly appreciated and vital to making this application work better for you.
>
> If you are able to help, I will happily schedule a meeting.

Conducting the Usability Study

Usability studies are conducting via a one on one session. These session can have additional observers but the test needs to be done with only the usability consultant and the subject.

Most usability studies can be accomplished in an hour or less.

Your Role

The process itself has one requirement, observation. During the study you will observe and notate a few things.

- Users eye movements
- Click paths
- Time taken to accomplish a task
- Users feedback and thought processes

End User's Role

They have only one key function, provide feedback about the wireframe or prototype. This feedback should be honest and mainly directed towards the tasks. Their actions on using the site or application will provide the basis for the usability study report out.

At times a user decides to make additional remarks, record those as well, sometimes they are hidden gems of ideas to make the site or application better.

What to bring to the study

You will need the following:

- A quiet room
- Wireframe or prototype
- List of tasks for the end user to perform
- Print outs or computer with wireframe or prototype
- Notepad and pen

Additional tools that can be used include:

- Audio recorder
- Screen capture software

Usability Study Process

Begin the session by stating a few things about the process:

- Ask them to talk about themselves, how long they have been at Northwestern Mutual, their job function and how tech savvy do they think they are. You will use this information later, when writing results.
- There are no right or wrong answers
- This is only a wireframe or prototype and may not have full content or functionality
- Ask them to speak out loud as they make decisions
- Ask them if they have any additional questions

The goal of these statements is to put the test subject at ease, letting them know that this is a test they cannot fail. Also remember to express your gratitude in their willingness to spend their precious time helping the project.

For each task, the following format is advised:

- Read aloud each question and give the person the slip of paper with the question on it. Let them ask any questions and absorb the task at hand.
- Using a duplicate question page, write down your notes. Writing down your notes is preferred as typing can be distracting for both you and the participant.
- While they are working through the task, say nothing and do nothing more than write notes. You may want to picture a piece of duct tape over your mouth. Your only goal is to observe.
- Repeat this process until you have gone through all of the tasks.
- When it is complete, ask a generalized question about what they thought of using the application. Here you may hear ideas about how to improve it, a feature that wasn't thought of or discover that certain phrases don't hold the same meanings. There is absolutely nothing wrong with letting the participant take a few moments to give over all feedback.

Don't forget to thank them for their time and ask if they would be interested in testing the application or web site again as it's more developed. This will help you in determining next candidates and also allow the previous candidates demonstrate if the application is easy to remember and learnable.

Writing Results

Now that you have your testing done, it's time to write up your results. When you write up your results think of it more like writing a research paper, it should be fairly clinical in tone and approach. This way the results are better received. As the tester you can add in the notes on their feelings within each task or as a general write up at the end.

Individual Summary Document

Example

> *General Overview of Participant: Norma Weston is a search and find it type of web user. Meaning that when looking for information she will use search to find it, quicker, rather than reading through lots of content or jumping around a navigation hoping to find it. This means for this type of user, one of the most critical parts of a good site is its ability to search itself. I did*

notice that when she found a page that contains what she looked for, she reads it carefully and thoughtfully. With a user like Norma it's important that when the content is found it needs to be compelling, quick to read and targeted to the information.

For the study she used my laptop to freely navigate around the site, where I gave directions to her and monitored her eye movements, thought processes (she was asked to speak aloud what she was thinking as we progressed) and click trails.

Site Overview: This part is based on the quick glance at the homepage, while determining how she views the site, she was not allowed to move away from the page.

Norma would like less introduction text but did like heading language. She thought the site overall looked good.

SITE/APPLICATION NAME:

1. *Where would you go if you were trying to identify X?*
    a. *X and she used the link provided in the content of the homepage (about 5 seconds to find).*
2. *Where would you locate information about how to best accomplish Y task?*
    a. *Norma would send the employee to the site and encourage the employee to explore it for themselves. What this means is that though there wasn't any direct click path to a particular page, the site was considered comprehensive enough that the majority, if not all of it, is worth the time to go through it.*
3. *Please locate this piece of information.*
    a. *Norma clicked on ABC (about 5 seconds). She thought GHI was more different in meaning then the team viewed the words as. She would have liked the words "GHI" to be a link on the ABC page.*
    From the MNO page, she did not use the ABC link in the left navigation
    When we got to the X (minor prompting) she clicked the ABC button right away and liked how easy it made the list sort. She also would use the drop down sort as it reminded her of Excel.
4. *Please walk through how you would accomplish W task. When was the last offering W?*
    a. *First, Norma read the page (about 20 seconds), she liked the format and clean information. After her initial assessment she found the register button (about 3 seconds). She prefers the button on top so that she didn't have to scroll. However she also believed that the register button would also do Y, not the bottom of the page, but did think their placement at the bottom made sense.*
5. *Walk me through where you would go to find out how to accomplish D task*
    a. *From the homepage, used the link in the content, about 5 seconds. She thought the wording was clear and made it easy to find.*
6. *Where would you go to find the steps to create OPQ*
    a. *From the homepage she clicked on "SDF?", about 3 seconds. From there she went back to the homepage and clicked on OTQ, she did state that it was oddly titled and that maybe OPQ might be clearer. This, to her, sounded more like requesting a chair or something.*
7. *Where would you encourage your employee to go to learn more about ADE?*

    a. *XYZ (10 seconds) as XYZ was more akin to networking.*
       The next click was EPO but she wasn't clear on exactly what that meant. She found the ADE heading in about 3 seconds from finding the page.
8. *Where would you guide your employee (or yourself) to access information about TRP?*
    a. *From the Homepage, about 15 seconds.*
       Thinking aloud she thought GHO was a good candidate and used the link from there.
       On the GHO page, she'd like a bit more clarity on what the links are.
9. *Where would you go to find ABC ideas?*
    a. *ABC (3 seconds)*
10. *Where would you direct your employee to go to get tips JIY?*
    a. *GHI (5 seconds)*
       JIY (5 seconds)
11. *Where can I find information about FCD?*
    a. *Found this on homepage content (about 5 seconds)*
       The page should have DHFO, JOKW and in depth ideas about EFEW.
12. *What information did you not see that you would like to see on these sites? Where would you expect to find it on this site?*
    a. *She likes the HDFE but would like to add ABC and XYZ to the list*
       FCD should be changeable per events and give class registration reminders.
       BHI should have information articles and change frequently to accommodate new/hot topics in the workplace. As an example, women in the workplace.
       Likes the YMR
       Liked that the navigation changes colors to show what is active
       She would like that any time a separate site is linked to, it should open up in a new tab.

You will need to write a results document for each participant. For ease of working with the team, you will want to put all these results into one generalized document. Use the same questions and format as the individual usability write ups but focus on the group as a whole.

Group Summary Document

For quick scanning using color codes to indicate very positive results and negative results, this allows even the busiest of team members a chance to see the positives and the pain points.

Example:

Site Overview: This part is based on the quick glance at the homepage, while determining how they view the site, they were not allowed to move away from the page.

- *2 of the participants thought there was too much introduction text.*
- *3 participants thought the site looked well organized.*
- *2 participants liked the website appearance.*
- *2 participants liked the related links.*

APPLICATION:

1. *Where would you go if you were trying to ABC?*
    a. ***4 of the participants used the link in the content as the first click***
    b. ***All 5 found it within 5 seconds.***
2. *Where would you locate information about how to best accomplish Y task?*
    a. *3 of the participants used the link in the content and the average times was 8 seconds to find.*
    b. *2 of the participants would send their employees to the site overall and use the site as a tool for starting discussions*
3. *Please locate this piece of information.*
    a. *2 participants used ABC as their first link*
    b. *2 participants found the X after trying different links (CDR and XYZ were mentioned as places to have links to ABC)*
    c. ***All 5 participants used the graphic to sort the classes with remarks about its ease.***
4. *Please walk through how you would accomplish W task. When was the last offering W?*
    a. ***All 5 found the register button within an average of 3 seconds.***
    b. ***All 5 found the dates within 5 seconds***
    c. *2 noted that hesitation on its placements*
5. *Walk me through where you would go to find out how to accomplish D task*
    a. *3 used the content on the homepage to find this with an average of 4 seconds*
    b. *2 used the navigation to find the page via FGH*
6. *Where would you go to find the steps to create OPQ*
    a. *3 participants used JKE as their first click*
    b. *2 participants thought OPQ was akin to ordering furniture*
7. *Where would you encourage your employee to go to learn more about ADE?*
    a. *2 of the participants had difficulties with this and average time to find the information was about 45 seconds.*
    b. *3 participants had no idea what EPS meant*
8. *Where would you guide your employee (or yourself) to access information about TRP?*
    a. ***4 participants found it under Related Links within 3 seconds***
    b. *3 participants thought that a link or more information about TRP would be under ABC*
9. *Where would you go to find ABC ideas?*
    a. *None of the participants had common lines of thinking along with this task*
10. *Where would you direct your employee to go to get tips JIY?*
    a. *3 participants had difficulties with this, with 2 stating they would just give up and use search*
    b. *3 participants did not think DGY would have information about this, but would only go to EDT*
    c. *2 participants found it within 5 seconds off the homepage*
11. *Where can I find information about FCD?*
    a. ***4 found this within the content on the homepage, about 5 seconds on average***
12. *What information did you not see that you would like to see on these sites? Where would you expect to find it on this site?*
    a. *The only commonality as to the site was 3 participants like the Related Links boxes on each page.*

b. *Outside of that each participant had different ideas on what the site should have or they focused on more specifics. I've copied their impressions here to give general ideas, I've removed names to focus on the ideas*
    i. *Wishes that there wasn't much scrolling and she would like a related link to SSS.*

    ii. *She clicked around form FWF, RESD and FWD. Thought everything DEPT could want is here. Under ASD she would like links and information about WEQ and LGH programs.*

    iii. *RYL was nicely set up.*
    Had no idea what ABC means.
    Likes the use of Related Links and quick Reads
    Separate the ESFE information as it's not clear that it would be there under ABC.
    Didn't like the DEX information on the homepage, perhaps condescending?
    Ambivalent to DFHS, "it might be clever".
    YUI kind of makes sense but not definitive, perhaps more word smiting.
    YUI and ABC seem redundant,
    ERHO seemed more like the place to go to prepare for JKH.

    iv. *Likes the Related links but would like to add CGH and NSI to the list*
    ABC should be changeable per events and give WDE reminders.
    DEDFS should have information articles and change frequently to accommodate new/hot topics in the workplace.
    Likes the YRG
    Liked that the navigation changes colors to show what is active
    She would like that any time a separate site (including SFE) is linked to, it should open up in a new tab.

    v. *She really didn't like ABC, her expectation was that this would go straight to the DFWE, not to another site. She wanted this as its own site as finding a DFWE isn't part of ABC, it's the result of ABC. She recommended SEFHEO or FES or something clearer.*
    She liked the Related Links boxes
    She also liked being able to go back and forth between ABC and XYZ and vice versa, as to her it made sense.
    For CDE she thought it should have a link to a VVV that also teaches the same thing. She would like to see more pages have links to VVV that would be relevant to what they were about.
    She would also use this site more and recommend it more often because it was cleaner and clearer in what information it has.

These documents can take a while to write up and you will want to do it while the test is still fresh in your mind. It is a recommended practice that you schedule your test for at least two hours. The first hour will be for the testing, the second hour is so you can write up the results.

Identifying and Sorting Problems

With all the testing done and the results documentation written up; we now have the availability to identify and sort any problems. By clearly identifying the problems and sorting them into hierarchies of importance; we can help move the project along by not focusing on problems that may not be real problems.

Identifying the Problem

The color coded summary document should give you a snap shot of the most common problems. Any problem that impact 75% or more of the participants should be written down on a sticky note. Any problem that impacts 50% to 74% of the participants, should be written down on a different colored sticky note. Everything under 50% or listed in an individual results document should be on a third color sticky note.

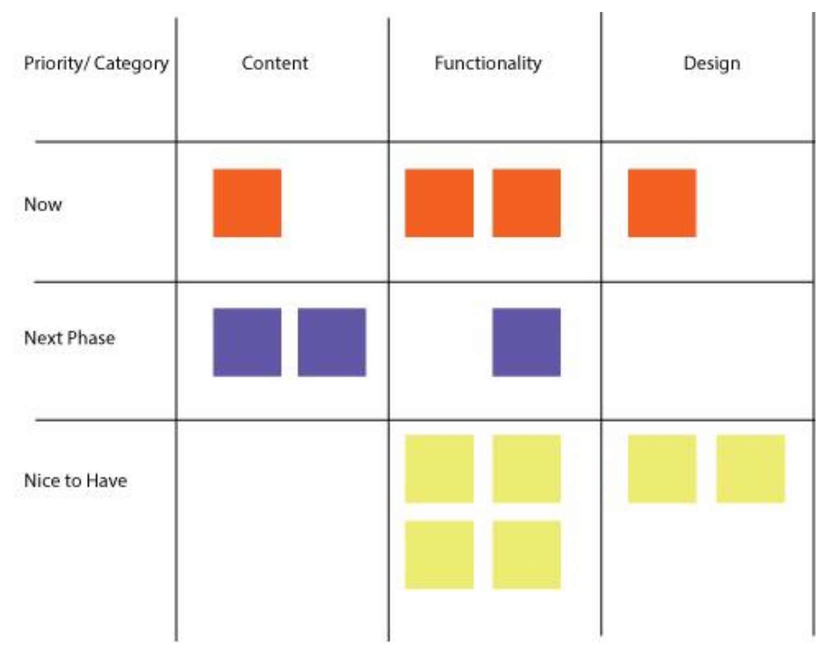
This should easily allow you to visually see the problems and their importance.

When you review the sticky notes, look for common themes. This can explain larger issues that may impact the project in a later step. This can be anything like, muddled words, navigation not complete and so on. This way you can group and analyze the problems on a more broad scale.

Sorting Problems

Once all the problems have been identified it is now time to sort them into a categorical hierarchy. This will allow you to easily see what must be acted upon now and what can be reviewed in a later step. It will keep the project moving forward and not place all the demands all at once.

A grid example may look like:



From this example we can see that the Functionality group has the most amount of critical demands and nice to haves. Because of this knowledge the team can re-evaluate the Functionality of the program and make adjustments during the project instead of needing to make sweeping changes after the application/web site has been finalized.

You will want to save this grid for later so that issues can be added, removed or even rearranged. It will also help shape the discussion for running another usability study.

Another Usability Study

Running another usability study at another phase in the project is ideal. This way you can verify that problems have been corrected and also gain a new metric to learn from, memorability.

For the next usability test, try for a mixture of previous participants and some first time users. This nice mix will help give a more well-rounded approach to how far along and in which direction the project is heading. It is also advised that your task list includes a couple of the problematic ones from the first round and some new ones.

A second, third or more usability study should be treated as a project benchmark and with the success of the first one, should be easier to gain approval to run.

Conclusion

Running a usability study can feel like an overwhelming process, but the insight and value of it can and will save the team time, energy and project dollars. The end user will receive a much better product; which is the absolute goal of user experience.