

Here Technologies Open Location Platform Usability Study Report



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Table of Contents

Table of Contents	1
Executive Summary	4
Overview	4
Participants and Methodology	4
Findings Highlights	4
Lack of pricing information on Plans section	4
Unclear purpose of section pages	5
Lack of detailed content on section pages	5
Lack of sample data on website	5
Insufficient information about real client stories	5
Introduction	5
Here Technologies and Open Location Platform	5
About Here Technologies	5
Open Location Platform	5
Interaction Map	6
Usability Study Goals	9
Research Questions	9
Methodology	9
Participants	9
Logistics & Set-up	10
Test Protocol	10
Tasks and Questions	11
Warm-up	11
First Impressions	11
Understanding and Expectations	12
Workspace	12
Marketplace	13
Data	13
Plans	13
Value Proposition	14
Post-test Questionnaire	14
AttrakDiff	15
Data Analysis	17

Competitive Analysis	17
TomTom Maps	17
Factual Engine	18
Place IQ Solutions	19
Findings and Recommendations	21
Severity Rankings	21
First Impressions	22
Comments on Visual Design	22
Comments on Website Content	22
Understanding and Expectations	23
Issue #1: Lack of pricing information on Plans section	23
Issue #2: Unclear purpose of section pages	23
Issue #3: Lack of detailed content on section pages	24
Value Proposition	25
Product	25
Website	26
Issue #4: Lack of sample data on website	26
Issue #5: Insufficient information about real client stories	26
Key Factors of Consideration	26
AttrakDiff Questionnaire	27
Interpretation	28
Competitive Analysis	30
Limitations and Takeaways	31
Future Directions	31
Appendix	33
Screening Questionnaire	33
Online Consent Form	35
Task Scripts	35
Opening Script	35
Introduction	35
Main Task Script	36
First Impressions (Part 1)	36
Task 1: Explore the Open Location Platform (OLP) homepage	36
Task 2: Explore OLP website freely (no restriction)	37
Expectations and Understanding (Part 2)	38
Task 3: Explore the Workspace section of website	38
Task 4: Explore the Marketplace section of the website	38

Task 5: Explore the Data section of the website	39
Task 6: Explore the Plans section of the website	39
Value Proposition (Part 3)	40
Post-Test Questionnaire	40
Note-taking Form	42
Session Notes (Compiled and Coded)	44
Analysis Materials	45
Codebook	45

Executive Summary

Overview

A usability test on Here Technologies' Open Location Platform (OLP) was performed to understand the target users' perceptions and attitudes towards the product website and product. We first conducted a usability test asking users to browse various sections of the website and answer attitudinal questions based on their browsing sessions. We also compared the OLP website with three other well-known services that offer location-based data, assessing them each on key factors of consideration when outsourcing data, which were highlighted from participants during our usability sessions. Based on the findings, we identify issues and make suggestions to communicate what would improve the overall perception of offerings. This report presents details of our study goals, methods, results, analyses, recommendations, limitations, and potential directions for future work.

Participants and Methodology

We screened potential participants for our study based on five key characteristics - age, job titles, programming languages, cloud computing platforms, and frameworks.

1. **Age:** 18-65+
2. Any of the following **job titles**:
 - a. Data scientist, software architect, software engineer, data engineer
3. Experience using any of the following **programming languages**:
 - a. Java, Scala, Python, R, C++
4. Experience using any of the following **cloud computing platforms**:
 - a. AWS, IBM Bluemix, Azure, Google Cloud, Alibaba Cloud
5. Experience using any of the following **frameworks**:
 - a. Spark, Flink, Storm, Hadoop, Samza

Findings Highlights

Issues	Recommendations
Lack of pricing information on Plans section	Include pricing information or show users how they can find out more about plan pricing

Unclear purpose of section pages	Consider highlighting the purpose of each section page in a more apparent way
Lack of detailed content on section pages	Provide more detailed information on each section of the site upfront
Lack of sample data on the website	Consider providing more interactive examples of data
Insufficient information about real client stories	Draw more attention to information about real clients

Introduction

Here Technologies and Open Location Platform

About Here Technologies

Here Technologies is a location-based and mapping data solutions provider that aims to build the future of location and mapping technology. Its solutions provide for a wide range of use cases across industries, ranging from advertising to automobiles. To mention just a few, some of its top application areas are:

- 1) More efficient and targeted advertising with more precise and detailed location data
- 2) Safe and streamlined urban movement with more granular and real-time location data
- 3) Improved real-time supply chain visibility for tracking position of goods

Open Location Platform

Location data has many uses today, especially with the widespread availability of Internet-connected devices. However, there are several key challenges in leveraging the data:

- 1) Data are in silos and incompatible
- 2) Managing and processing the data is complex
- 3) Access to such assets is often restricted

Here Technologies' Open Location Platform aims to solve these challenges by providing an end-to-end ecosystem that provides users: 1) access to rich location-based data, 2) a robust

development environment with tools needed to build using the location-based data, and 3) an environment for buying and selling location data enhanced products and services.

Interaction Map

Homepage

Workspace

Marketplace

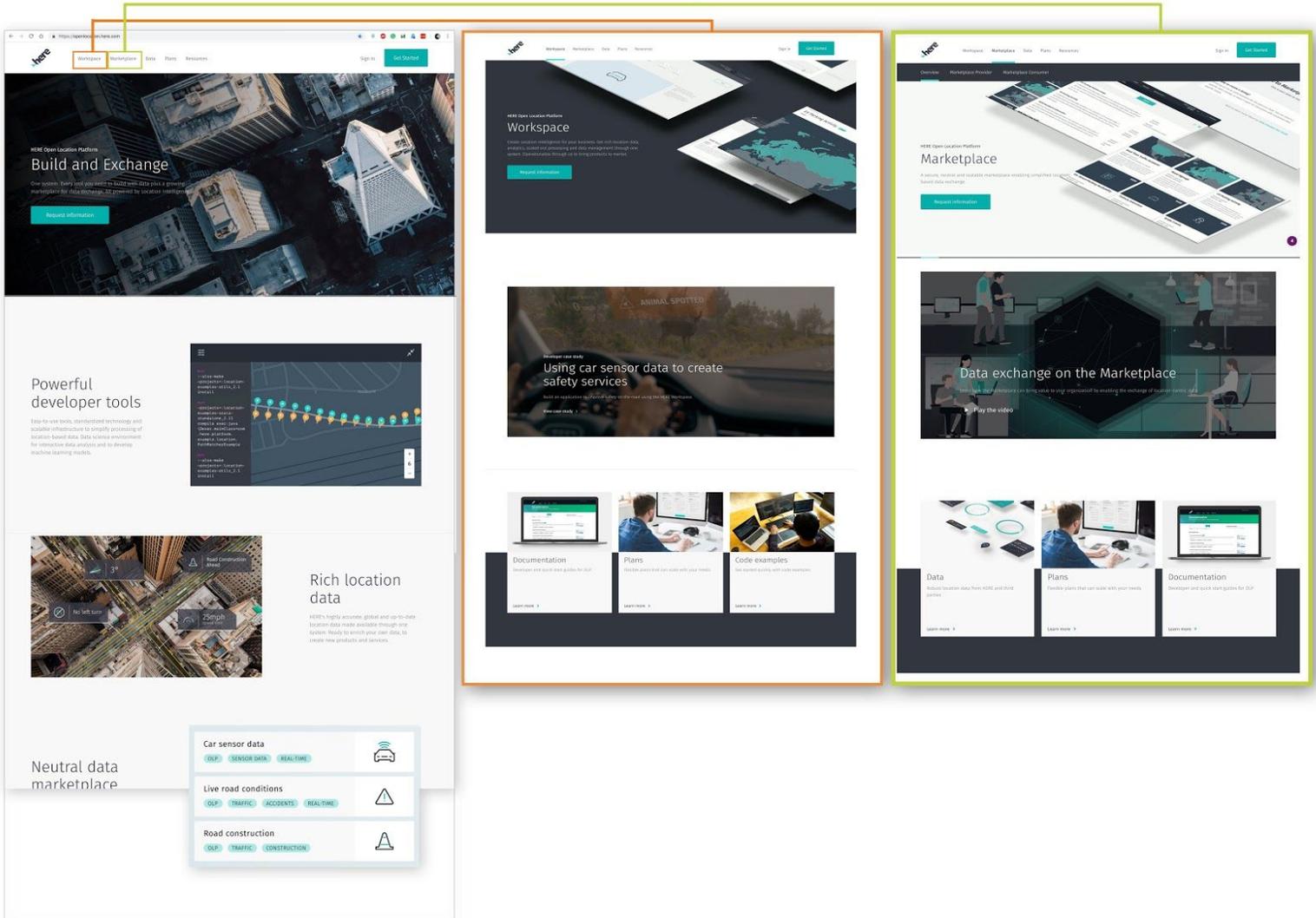


Figure 1. Workplace and Marketplace section pages

Homepage

Data

Plans

The homepage features a navigation bar with 'Workspace', 'Marketplace', 'Data', 'Plans', and 'Resources'. The main content includes:

- Build and Exchange:** A hero section with an aerial city view and a 'Request information' button.
- Powerful developer tools:** A section with a code editor and a map showing location data points.
- Rich location data:** A section with a 3D city model and text describing 'HERE's highly accurate, global and up-to-date location data made available through our system'.
- Neutral data marketplace:** A section with three data categories: 'Car sensor data' (CLP, SENSOR DATA, REAL-TIME), 'Live road conditions' (CLP, TRAFFIC, ACCIDENTS, REAL-TIME), and 'Road construction' (CLP, TRAFFIC, CONSTRUCTION).

The 'Data' section features a 3D visualization of data points and includes:

- HERE Open Location Platform Data:** A sub-section with a 'Request information' button.
- Third party data:** A section with a car icon and '74km' text, describing 'Open location data supplied to the HERE Marketplace from third-party providers'.
- Your data:** A section with a truck icon and '12' text, describing 'Data from your own fleet or other sources'.
- Plans, Documentation, Marketplace:** A footer section with three columns for 'Plans', 'Documentation', and 'Marketplace'.

The 'Plans' section includes:

- HERE Credits:** A section with a table of credit types and amounts.
- Service level agreement:** A section with a 'View' button.
- Looking for a different plan?:** A section with a 'Request more' button.

Standard HERE data	+
Premium HERE data	+
Storage	+
Transfer	+
Compute	+

Figure 2. Data and Plans section pages

Homepage

Resources

Contact us

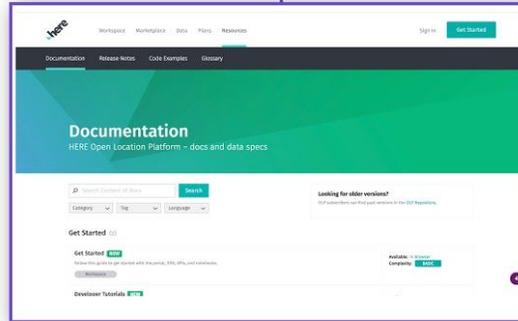
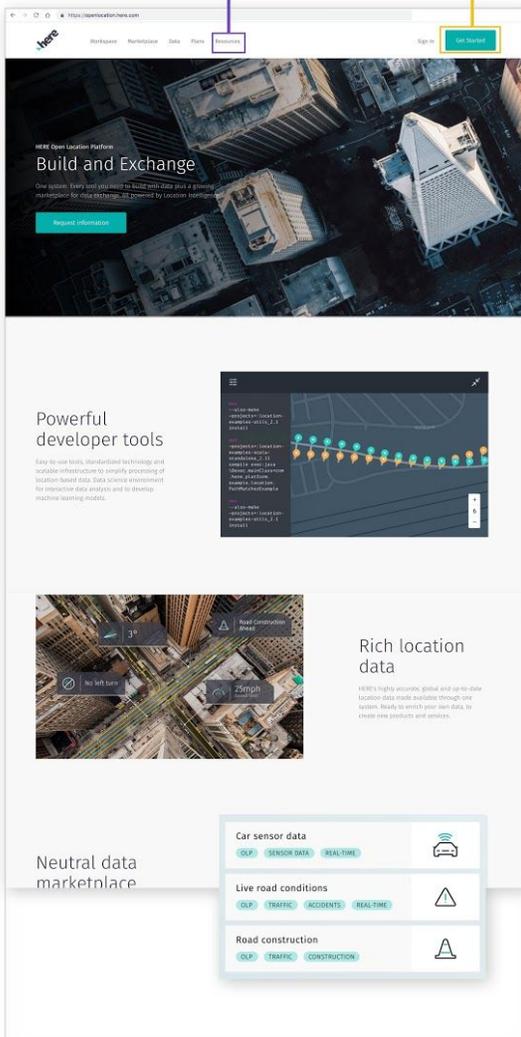


Figure 3. Resource section page and contact form (linked on every page)

Usability Study Goals

As a formative study, the key objective was to understand **the target user group's overall perceptions and attitudes towards Here Technologies' OLP** based on the website. To achieve this, we aimed to understand three key constructs that we believe paint a picture of the ultimate goal: first impressions, understanding and value propositions.

There are two key parts that constitute a user's perception and attitude:

- 1) How effectively the website delivers key information about OLP to target users
- 2) OLP's target users' first impressions, perceived understanding, and value proposition of both website and product (OLP)

Greater emphasis was placed on evaluating the website, given that it is the main *communication channel* that delivers information about the product to target users.

Research Questions

In order to cover perceived attitudes and thoughts on both the website and the product, we came up with research questions that addressed both:

1. What are the target users' *first impressions* of the website?
 - a. Does it clearly communicate information about OLP? Does it pique interest?
2. How do users *understand* OLP based on the website?
 - a. **Mental Model Alignment** - How do users perceive what the website communicates about OLP? Do expectations align with actual offerings?
3. What is the *perceived value proposition* of OLP to target users?
 - a. **Satisfaction/Appeal**- Are users satisfied with the product offerings and site- does it fulfill their needs? How does it stand against other products?

Methodology

Participants

We managed to recruit a total of five eligible participants who were all software developers. It is important to note that in our selection criteria, we were not strict about narrowing criteria to screen for those who have outsourced data or had experience dealing with location-based due to time constraints, though would have been more ideal. Fortunately, most participants did have

experience with outsourced data although not necessarily location-based data, so their comments were still useful.

Below is our participant profile:

- Age: 20-40
- Profession: Software Developer
- Employment Status: Full-time
- Web expertise level: Intermediate to Advanced

Logistics & Set-up

We conducted remote moderated usability testing, using Zoom to audio and video record the session and Google Forms to record participants' responses. Each session lasted around one hour and included both a moderator and note-taker. The moderator was responsible for facilitating the study, while the note-taker ensured that all responses were captured in detail. In facilitating, the moderator read aloud the task instructions, but the questions were read aloud by participants themselves to ensure that they were fully engaged with what was being asked.

Each participant was offered a \$50 Amazon gift card to compensate for their participation. Approval for compensation was obtained from Here Technologies, and one team member sent the gift card codes to the participant's email immediately after the session ended.

Test Protocol

The procedure of our test began by asking participants a few short warm-up questions, followed by presenting the series of tasks to perform and associated questions, and ended with a post-test evaluation of the session. Warm-up questions were asked to understand whether or not the participant had experience dealing with both outsourcing and location-based data and to what extent. We then proceeded with the tasks and questions - the first two tasks gave participants a brief opportunity to explore the website as a whole, just enough to form first impressions. The second section of the website dug a little deeper and allowed participants to explore in more depth for each key section of the website as we wanted to assess their understanding. Finally, the last section inquired about perceived value propositions of the website and product, based on their brief browsing sessions of the website from previous sections. We concluded the test with a post-test evaluation to paint a larger picture of the participants' final thoughts of OLP and the website.

Below is an overview of our protocol:

Pre-test/Warm-up Questions

Questions asking about experience with licensed and/or purchased data solutions and dealing with location-based data
Tasks and Questions
<ol style="list-style-type: none"> 1. First Impressions: initial exploration phase (3 minutes) <ol style="list-style-type: none"> a. Questions about initial impressions, attention-grabbing elements on the website, perceived impression of what the website seems to be about 2. Understanding and Expectations: In-depth browsing (1 min per section; total 4 minutes) <ol style="list-style-type: none"> a. Questions about understanding, interests, expectations 3. Perceived value proposition (no browsing, open-ended questions only) <ol style="list-style-type: none"> a. How do offerings and website compare to other options in the market? b. Does the website provide enough product/service information to fulfill user needs?
Post-test Evaluation
Likert scales AttrakDiff questionnaire

Tasks and Questions

Warm-up

1. Have you licensed or purchased data solutions before from a third party vendor? If so, please describe the experience.
2. Have you ever had experience dealing with location-based data? If so, please describe the experience.

First Impressions

Corresponding RQ: What are the target users' *first impressions* of the website? Does it clearly communicate information about OLP? Does it pique interest?

Task #1: Go to <https://openlocation.here.com>. Take no longer than a minute to browse the page. The goal is just to get an overall gist of the content on the page. Please stay on this particular page.

Questions:

1. Without leaving the homepage, state 1 word to describe how this page makes you feel. Explain your answer. [Verbal Response]

2. Without leaving the homepage, what are your initial impressions of the page? Explain your answer. [Verbal Response]
3. Without leaving the homepage, what 3 words would you use to describe the homepage? Explain your answer. [Verbal Response]
4. Without leaving the homepage, in your own words, describe what this website offers. [Verbal Response]

Task #2: Next, explore the website for 2 more minutes. This time you are free to go anywhere on the website you'd like. Again, please voice out anything that comes to mind.

Questions:

5. In your own words, what do you think you can do on this website? Be specific. [Verbal Response]
6. What is most interesting for you? Why? [Verbal Response]
7. What is the least interesting? Why? [Verbal Response]
8. Overall, did the offerings on the website exceed, meet, or fall short of your initial impressions? Explain your answer.
9. What, if anything, makes you ****want or not want**** to visit the website again? [Verbal Response]
10. I will likely return to the website in the future. Explain your answer. [5-point Rating Scale: Strongly Disagree to Strongly Agree]
11. I find the website to be attractive. Explain your answer. [5-point Rating Scale: Strongly Disagree to Strongly Agree]
12. The website has a clean and simple presentation. Explain your answer. [5-point Rating Scale: Strongly Disagree to Strongly Agree]
13. I feel confident conducting business on the website. Explain your answer. [5-point Rating Scale: Strongly Disagree to Strongly Agree]

Understanding and Expectations

Corresponding RQ: How do users *understand* OLP based on the website?

Mental Model Alignment - How do users perceive what the website communicates about OLP?

Do expectations align with actual offerings?

Workspace

Task #3: Go to the Workspace section of the website and browse for roughly 1 min. The goal is to understand the content on the page.

Questions:

1. What is your understanding of this page?
2. Would you click on anything on this page? If so, what would you click on? Why?

3. What do you expect to see when you click on “Learn More” for each of these three elements? (Docs/Plans/Code Examples)
4. Based on what you’ve viewed on this page, would you click on “Request Information”? Why/why not?
5. What do you expect to see when you click on “Request Information”?

Marketplace

Task #4: Go to the Marketplace section of the website and browse for roughly 1 min.

Questions:

1. What is your understanding of this page? “Marketplace Provider”? “Marketplace Consumer”?
2. Would you click on anything on this page? If so, what would you click on? Why?
3. What do you expect to see when you click on “Learn More” for Data?
4. Based on what you’ve viewed on this page, would you click on “Request Information”? Why/why not?
5. What do you expect to see when you click on “Request Information”?

Data

Task #5: Go to the Data section of the website and browse for roughly 1 min.

Questions:

1. What is your understanding of this page?
2. Would you click on anything on this page? If so, what would you click on? Why?
3. Based on what you’ve viewed on this page, would you click on “Request Information”? Why/why not?
4. What do you expect to see when you click on “Request Information”?

Plans

Task #6: Finally, imagine that you are trying to determine whether or not you might be interested in licensing this data solution. How would you go about doing this? Share your thoughts out loud as you walk me through the steps.

If participant did not visit the Plans page, they were given this additional sub-task:

Task #6a: If you're not there already, go to the Plans section of the website and browse for roughly 1 min.

Questions:

1. What is your understanding of this page?
2. How do you understand HERE credits?

3. Do you have enough information you need to make your decision? Is anything missing?

Value Proposition

Corresponding RQ: What is the *perceived value proposition* of OLP to target users?

Satisfaction/Appeal- Are users satisfied with the product offerings and site- does it fulfill their needs? How does it stand against other products?

1. In your own words, how might you benefit from using this website? [Verbal Response]
2. What do you think this website offers to you? [Verbal Response]
3. How ordinary (1) or unique (7) are the website's offerings? Explain your answer. [7-point Rating Scale: Not At All Unique to Very Unique]
4. How uninterested (1) or interested (7) are you in the website's offerings? Explain your answer. [7-point Rating Scale: Not At All Interested to Very Interested]
5. Describe what you typically do when you are looking for data sources online. [Verbal Response]
6. What, if anything, do you ****like or dislike**** about how you typically search for/make decisions for data solutions? [Verbal Response]
7. What, if anything, do you think will be ****better or worse**** about that decision making process through this website compared to the way you usually [activity description]? [Verbal Response]
8. What, if anything, makes you ****want or not want**** to use the OLP website for data solution purchasing activities? [Verbal Response]
9. Describe what are the key deciding factors for you when deciding to license the data for your project (business need). Name three or more. Why?
10. What questions do you have after viewing this content?

Post-test Questionnaire

1. I understood who the website was for and what I could do there. Explain your answer. [7-point Rating Scale: Strongly Disagree to Strongly Agree]
2. I will likely return to the website in the future. Explain your answer. [5-point Rating Scale: Strongly Disagree to Strongly Agree]
3. Share your final thoughts on the website.

AttrakDiff

Assessment of **Open Location Platform**

With the help of the word pairs please enter what you consider the most appropriate description for **Open Location Platform**.

Please click one item in every line.

human*	<input type="radio"/>	technical						
isolating*	<input type="radio"/>	connective						
pleasant*	<input type="radio"/>	unpleasant						
inventive*	<input type="radio"/>	conventional						
simple*	<input type="radio"/>	complicated						
professional*	<input type="radio"/>	unprofessional						
ugly*	<input type="radio"/>	attractive						
practical*	<input type="radio"/>	impractical						
likeable*	<input type="radio"/>	disagreeable						
cumbersome*	<input type="radio"/>	straightforward						

* required field

Assessment of **Open Location Platform**

With the help of the word pairs please enter what you consider the most appropriate description for **Open Location Platform**.

Please click one item in every line.

stylish*	<input type="radio"/>	tacky						
predictable*	<input type="radio"/>	unpredictable						
cheap*	<input type="radio"/>	premium						
alienating*	<input type="radio"/>	integrating						
brings me closer to people*	<input type="radio"/>	separates me from people						
unpresentable*	<input type="radio"/>	presentable						
rejecting*	<input type="radio"/>	inviting						
unimaginative*	<input type="radio"/>	creative						
good*	<input type="radio"/>	bad						

* required field

Assessment of **Open Location Platform**

With the help of the word pairs please enter what you consider the most appropriate description for **Open Location Platform**.

Please click one item in every line.

confusing*	<input type="radio"/>	clearly structured						
repelling*	<input type="radio"/>	appealing						
bold*	<input type="radio"/>	cautious						
innovative*	<input type="radio"/>	conservative						
dull*	<input type="radio"/>	captivating						
undemanding*	<input type="radio"/>	challenging						
motivating*	<input type="radio"/>	discouraging						
novel*	<input type="radio"/>	ordinary						
unruly*	<input type="radio"/>	manageable						

*required field

Assessment of **Open Location Platform**

In the following section we would ask you to give information about yourself and your own experience with the product.

Age	<input type="text"/>
Gender	<input type="text"/>
Education completion	<input type="text"/>
Profession	<input type="text"/>
How long have you been using Open Location Platform ?	
Product experience*	<input type="text"/>

*required field

Data Analysis

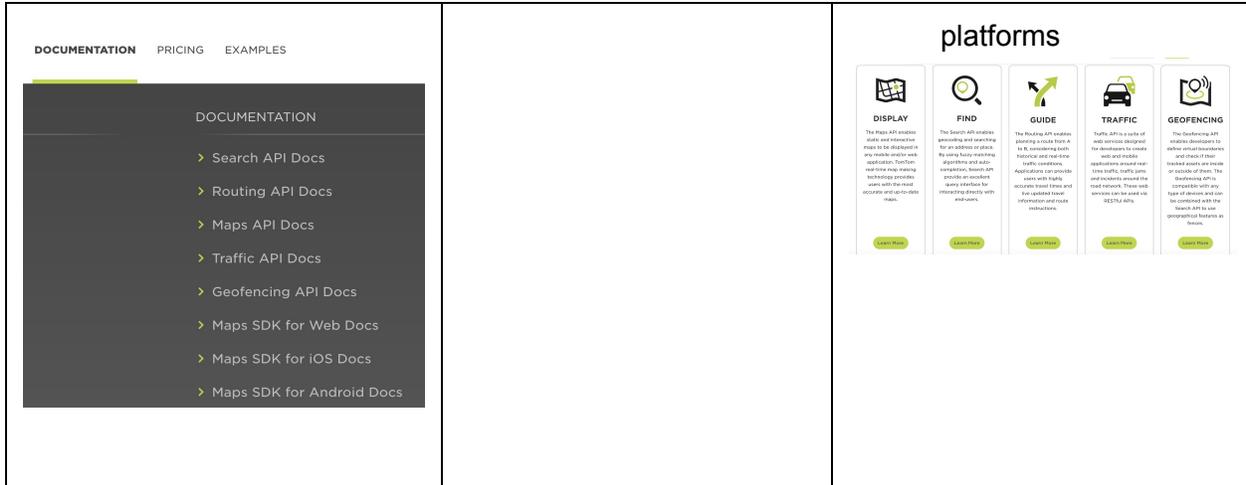
To analyze qualitative data from our sessions, we first created a coding scheme consisting of codes and definitions. We then applied these to identify patterns and themes within our data set by counting the frequency of each code in responses for each section of the test. As a team, iterated our codebook and coding process once to more accurately analyze the dataset. For quantitative data such as self-reported metrics from Likert scales and semantic differentials, we report the average ratings. Findings from questions that asked participants to choose descriptive words were also analyzed by creating a word cloud, as shown in First Impressions of Findings and Recommendations section below.

Competitive Analysis

Based on what participants identified as the top three key factors in the Value Proposition section of the usability test, we chose three well-known location-based data providers and evaluated their website against these dimensions.

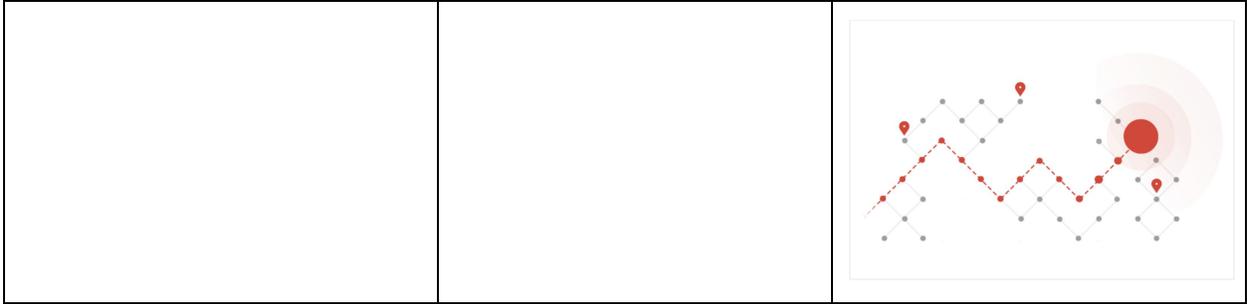
TomTom Maps

Support Documentation	Authenticity	Compatibility
<ul style="list-style-type: none"> TomTom displays documentation information on the top navigation, so developers can view documentation on Search API, Routing API, Maps API, Traffic API, Geofencing API and different kinds of Maps SDK. 	<ul style="list-style-type: none"> Mentioned their years of experience in map-making and ISO certificated quality to ensure that data is authentic; no details on third-party providers <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>FRESH</p> <p>With over 25 years of experience in intelligent map-making and frequent releases, you can trust that you will always get the latest and greatest content from us.</p> </div> <div style="text-align: center;">  <p>QUALITY</p> <p>Our maps are ISO certified and designed to meet the requirements of the most demanding applications from geospatial analysis to autonomous driving, we have you covered.</p> </div> </div>	<ul style="list-style-type: none"> TomTom has provided examples on best practices of Search API, and Maps SDK for different devices <div style="background-color: #333; color: #fff; padding: 10px; margin: 10px 0;"> <p>EXAMPLES</p> <ul style="list-style-type: none"> > Search API best practices > Maps SDK for Web examples > Maps SDK for IOS examples > Maps SDK for Android examples > Maps SDK Tutorials </div> <ul style="list-style-type: none"> Detailed explanation on how each API could be applied in different settings and across different



Factual Engine

Support Documentation	Authenticity	Compatibility
<ul style="list-style-type: none"> Developers can visit Factual resources to scan through all the existing developer documentation. It gives information about the Audience, Proximity, Measurement & API. <div> <p>OVERVIEW</p> <p>Factual Developer Documentation</p> <p>GEOPULSE</p> <p>Overview</p> <p>Geopulse Audience ▾</p> <p>Receiving Audience Segment Data</p> <p>Geopulse Proximity ></p> <p>Geopulse On-Prem ></p> <p>Geopulse Measurement ></p> <p>Geopulse APIs ></p> <p>Submitting Data for Geopulse Au... ></p> </div>	<ul style="list-style-type: none"> Factual relies on a network of trusted data contributors (TDCs) that help to validate, aggregate and ensure the ongoing accuracy of core business attributes. <div> <p>Trusted Data Contributors</p> <p>Factual's Trusted Data Contributors (TDCs) provide management interfaces and other user-friendly features to make it easy to get your data into our system, as well as manage and distribute it to Factual and other trusted contributors to Factual from our TDCs. We consider the most authoritative data in our algorithms and models. Therefore, we strongly recommend using a TDC to easily ensure that your Factual records are up-to-date and accurate.</p> <p>For more information about how Factual ingests and updates individual business listings, please read our FAQs here.</p> <p>List of Factual TDCs</p> <ul style="list-style-type: none"> Advice Local Brandify DAC Group EZlocal GoDaddy IgniteTech Local Market Launch Localistio Location3 Michaela Wilder Milestone Internet Marketing MomentFeed </div>	<ul style="list-style-type: none"> Yes, they have shared examples and use-cases that show the data is compatible across different platform and APIs. <div> <p>Data for Products & Apps</p> <p>Location data for product and engineering teams to drive deeper context, greater personalization and enhanced features within digital consumer products and mobile applications</p> <p>Find Out More</p> <p>Data for Marketers</p> <p>Location data to help marketers, advertisers and agencies better understand customers, build highly-targeted audiences, measure campaign effectiveness and deliver highly optimized or personalized experiences.</p> <p>Find Out More</p> <p>Data for Analytics</p> <p>Location data for data science, business intelligence or investment teams looking to gain unique business and customer insights that connect mobile movement to real world behavior and places</p> <p>Find Out More</p> </div>



Place IQ Solutions

Support Documentation	Authenticity	Compatibility
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- Not available

- For data provided by PlacIQ (called LandMark data), description of the company's proprietary technology to ensure dependable data included on the website



- For third-party data sources, data types (e.g. auto-purchase data, purchase data, TV viewership data) are identified, but the name of sources not indicated



- Not available, no information/samples of data provided

Findings and Recommendations

Severity Rankings

We assign severity ratings to our findings to highlight which issues demand the most attention. Our severity rating scheme is adapted from the system developed by Nielsen (1993) shown below:

	Few users experiencing a problem	Many users experiencing a problem
Small impact on the user experience	Low severity	Medium severity
Large impact on the user experience	Medium severity	High severity

Figure 4. Rating scale system from Nielsen (1993)

To better define the term “user experience”, we developed a more narrow definition of the term as:

The extent to which the issue prevents users from taking action on the website

- 3** - Many users, large impact on user experience
- 2** - Many users, small impact / Few users, large impact
- 1** - Few users, small impact on user experience

First Impressions

Comments on Visual Design



Figure 5. Word cloud based on the frequency of user-generated description words

When asked to describe the homepage using their own words, **all of the participants came up with at least one word that referred to visual appeal/layout**, with over half expressing that it was very “clean”.

Comments on Website Content

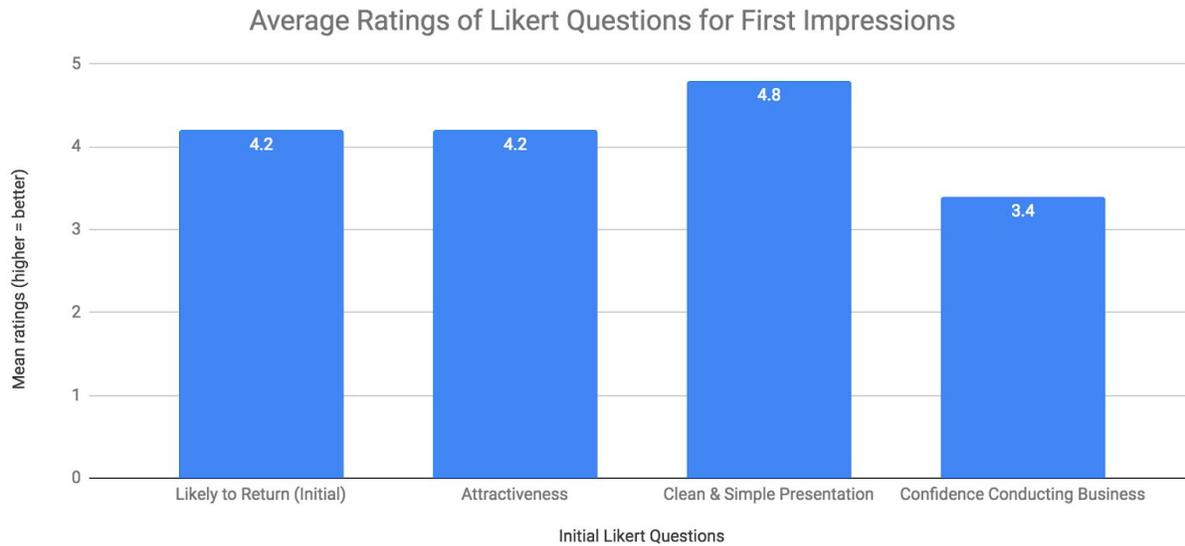
With respect to content, we also asked what they thought the site was about and to explain what, if anything, piqued their interest on the website. We found that **all users were able to correctly identify that the product offered location-based data**, the most important information that needs to be communicated.

“I can request location services, I can do data operations in the location data that I received, make decision-based on that, as well as manipulate the data”

For what seemed to be interesting/uninteresting at a glance, **4 out of 5 users said that they would be interested in learning more about specific characteristics of the data** - how rich it is, how it could be used, how scalable it is, etc. In other words, it can be said that the website successfully drew user attention to the data offered.

“..it seems that data is very rich, the most exciting part would be to think what kind of

problems can I solve, like how can I use the data.”



As the graph shows, all Likert questions asked to measure first impressions had positive ratings overall. Only one question about their level of confidence in conducting business on the site had a relatively lower rating. The primary reason for this was the *lack of any experience with the company*, which is understandable from the customers’ perspective. Overall, however, they gave high ratings for three of the four dimensions of first impressions.

Understanding and Expectations

Issue #1: Lack of pricing information on Plans section

Severity: 3

Task: #6

Recommendation: Pricing information should be included somewhere on the website or if unable to be revealed for whatever reason, that the users are shown how they can obtain pricing info. Users particularly expected to see pricing information on the Plans section of the website, so displaying it somewhere in that page might be the most appropriate.

Issue #2: Unclear purpose of section pages

Severity: 3

Task: #2, #3

Only 2 out of 5 participants were able to understand that the data could be exchanged between platform users from the Marketplace page. Participants generally seemed to be

confused about what “marketplace” suggested, as the word itself has multiple meanings. In addition, that OLP affords data exchange did not seem clear enough to be recognized from a quick glance.

In addition, although the content of most of the deeper links aligned with user expectations, the content of the Data section was unmatched. **Only one participant successfully predicted that the page would contain information about who the data providers were;** others expected either more granular information about the data such as types of data offered and some data samples, or how to gain access to the data. In other words, they were looking for more concrete information on the data rather than data sources and actionable items.

Recommendation: Consider highlighting the purpose of each section page in a clearer way. Make evident why the page is titled the way it is by including and presenting content that is descriptive of the title. This allows the user to have a more comprehensive and accurate understanding of the offering

Issue #3: Lack of detailed content on section pages

Severity: 2

Task: #5, #6

Almost all participants seemed to show interest mainly in the ‘learn more’ displayed on the section page, especially on Data and Plans. On the Data page, 4 of 5 participants were interested in clicking on the ‘Learn more’ links, confirming the finding that the page fell below their expectations. In addition, it is worth noting that on the Plans page, almost all participants were actively seeking the pricing information, which is not included in the page itself. On the Marketplace page, however, not all participants mentioned that they would click on something and those who did all pointed to different elements. This could perhaps be explained by the lack of understanding relative to other sections.

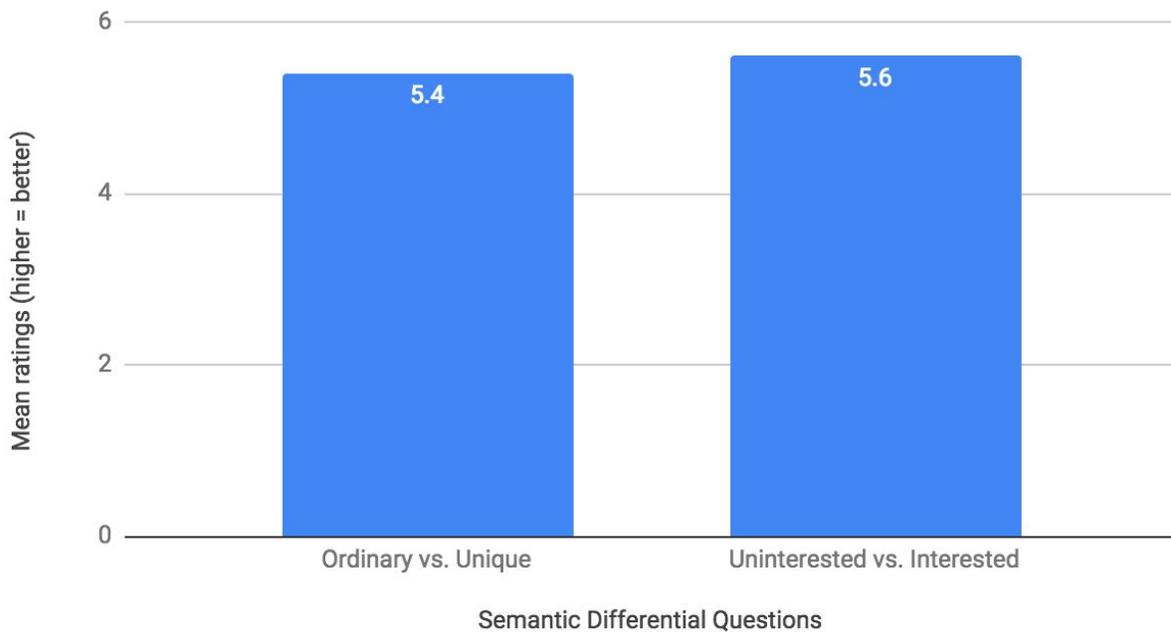
Recommendation: Provide greater detail of content on each section page *upfront*. Rather than hiding the detailed information about each feature of OLP under deeper links, making them accessible right from the beginning so that they are quickly scannable.

Value Proposition

Product

Overall, participants gave high ratings were for the perceived value proposition of the product. They were satisfied with the *variety* of features and data types offered according to individual needs in particular.

Value Proposition of Product



“I like the different data types and various services they offer”

“A variety of location and navigation data.. it has a lot of details, not just what we see on Google Maps - like what we see is very limited on Google Maps...”

Website

Issue #4: Lack of sample data on the website

Severity: 3

Task: n/a

3 of 5 participants expressed that they would like to see actual samples of the data on the website that they could play around with in order to help them determine whether or not the dataset would be worth investing in. Participants seemed to be satisfied with how the breadth of information covered about the different data types and usages, but less with the depth. For example,

Recommendation: We recommend providing more detailed information on the data. Ideally, this would be real samples of the data that users could play around with, or at least sample data that give users a better sense of key characteristics and ideas for application. Moving beyond simply describing where the data is coming from is essential.

Issue #5: Insufficient information about real client stories

Severity: 2

Task: n/a

When asked what additional questions they had after viewing all of the website's content, **3 of 5 participants mentioned that they would like more information on current clients and their stories.**

Recommendation: Visually draw more attention to information about real clients on the site - explain who the real clients are and highlight stories as users are interested in not only who constitutes the current customer base, but real-life stories to understand the use cases of the offerings. Greater emphasis should, therefore, be placed on the case studies as well.

Key Factors of Consideration

We also asked what factors participants consider when deciding to outsource data. **The top three were: accessible support docs, authenticity of data, and perceived ease in incorporation**, defined as follows:

- 1) *Are there robust support docs and can they easily be accessed?*
- 2) *Who is providing the data? What is said about the provider?*

3) *Is the data compatible across APIs and platforms?*

Two of the three factors were specific to the characteristics of data, which emphasizes that such information needs to be clear and easily discoverable for participants. Their responses corroborate the finding that they preferred to have more examples and details of the data offered. This suggests that the website should also clearly display information about these key factors to help users be more confident in the decision-making process.

AttrakDiff Questionnaire

We used AttrakDiff to measure the overall attractiveness of the website post-interaction because we wanted to see determine whether or not the website left a positive lasting impression on participants.

AttrakDiff is a survey instrument consisting of 28 seven-step semantic differentials that measure the attractiveness of a product by considering two aspects - pragmatic quality and hedonic quality. Pragmatic quality (PQ) refers to how usable the product seems to be and hedonic qualities evaluate the overall appeal of the product to the user. Hedonic qualities can be separated into two components - identity and stimulation. Identity (HQ-I) asks “does the product create a strong user-product bond?” while stimulation (HQ-S) asks “Is the content, interaction, and design of the website stimulating?” Both pragmatic and hedonic qualities contribute equally to produce an overall attractiveness score for the product.

Interpretation

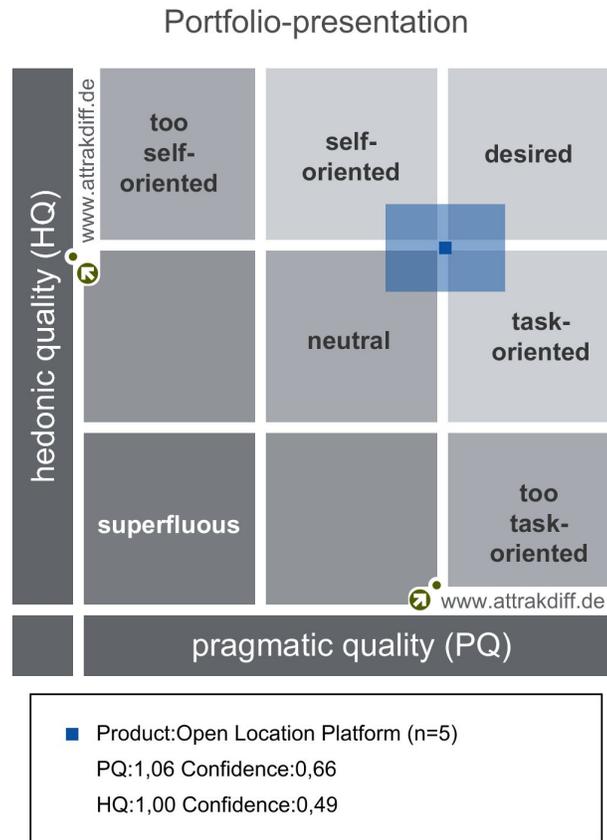


Figure 6. Average values of dimensions PQ and HQ with confidence rectangle

This visualization shows that users perceived the website to be somewhere in-between the neutral and desired level of the spectrum in terms of pragmatic and hedonic qualities. This means PQ and HQ were both relatively high. However, the rectangle which represents the confidence level for PQ and HQ is both largely due to small sample size, so results are not statistically significant.

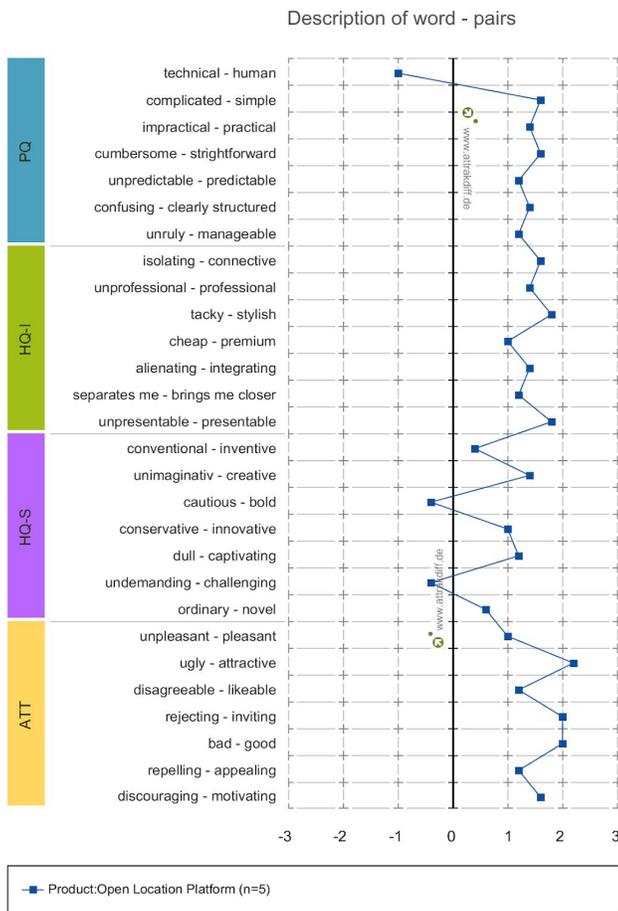


Figure 6.1. Mean values of AttrakDiff word pairs

We found that the website, on the whole, was very attractive for our users. In the figure on the left, there were a few spots where responses skewed towards one end of the spectrum, but these were insignificant enough to impact the overall attractiveness score, which received positive ratings on all dimensions.

The figure on the right also illustrates how the overall attractiveness score is in the *above average* region. HQ-S is, however, located in the average region and suggests that the website can be improved in terms of how it stimulates users and sparks interest in them to explore further.

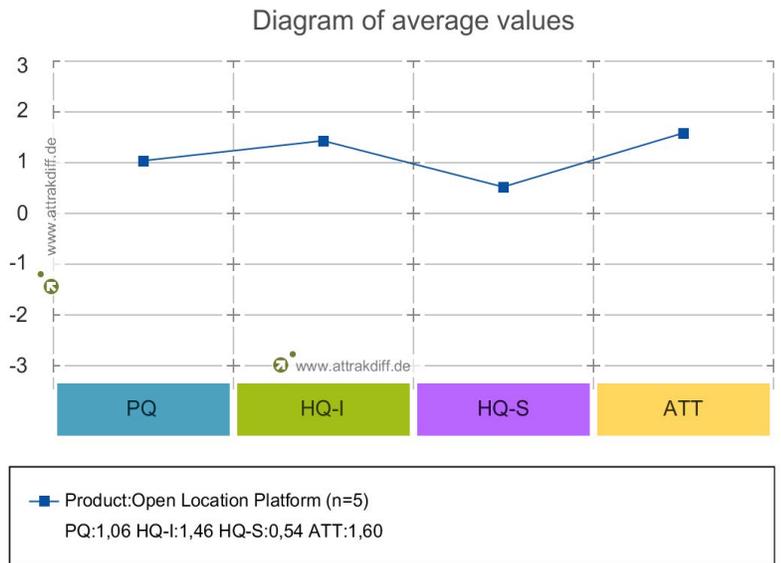


Figure 6.2. Mean values of AttrakDiff dimensions

Competitive Analysis

Lastly, competitive analysis on TomTom Maps, Factual Engine, and PlacelIQ shows that support documentation and compatibility are some of the more commonly found information on websites location-based providers.

This is similar to the OLP website, which provides support documentation found under “Resources” and indicates compatibility using tags for each framework/system for some of the code examples offered in “Code Examples”. An **identified room for improvement is, therefore, communicating more relevant details about what makes the data solutions and their providers**, including third-party data providers that users may purchase from in the Marketplace or how they can be assured of the quality and safety of the data. The approach Factual takes is one example of an approach that could be taken, as shown below:

The screenshot shows the Factual website's 'Trusted Data Contributor Program' page. The page has a navigation menu on the left with categories like OVERVIEW, GEOPULSE, and GLOBAL PLACES. The main content area is titled 'Trusted Data Contributor Program' and contains text explaining the program and a table listing various TDCs. The table has columns for TDC, Service Description, Countries Covered, Handles Multi-location Brands, and Handles SUBs.

TDC	Service Description	Countries Covered	Handles Multi-location Brands	Handles SUBs
Advice Local	Advice Local offers small businesses and enterprise customers a one-stop location to manage business listings on a wide variety of online directories, apps, and data providers. Their standard offerings in multiple countries include syndication to the Factual database.	US, Canada, UK, Australia	Yes	Yes
Brandify	Brandify manages location data for national and international brands across brand websites, social media and local search platforms, advertising campaigns, and core location data providers. This location data management service ensures that brands' data is complete, consistent and accurate wherever consumers may find it.	Global	Yes	Yes
DAC Group	DAC Group with more than 45 years' experience helping connect buyers and sellers, is a leading full service digital agency with its own proprietary marketing technology. They help national and international multi-location brands win at local search. With a host of different products from listing management to reputation management, they are poised to help brands win on desktop, mobile or even voice searches.	North America & UK	Yes	Yes
DigitalBricks	As member of the Ubliflow group, Digital Bricks today manages the Presence and Review collected for more than 10,000 points of sale in France. Our ambition is to propose the most relevant and qualitative selection of the French market in terms of web-to-store media, and offer our customers the opportunity to market an exclusive offer totally integrated with their colors and products. Ubliflow is an independent group strong of more than 60 people, present on 3 Continents and manages platforms dedicated to the dissemination of product and point of sale information.	France	Yes	Yes
EZlocal	EZlocal helps businesses manage and improve their local and social internet presence. A top-ranked search directory since 2007 with millions of indexed listings, EZlocal offers complete digital presence and listings management, including high quality citation building, social media and reputation services, online advertising and amazing mobile-friendly websites.	US	Yes	Yes
GoDaddy	GoDaddy Get Found gets businesses listed on top sites across the Web. In just a few steps, customers can publish their business information on a variety of search engines, social media and top local sites they can appear everywhere customers are looking.	US	No	Yes
IgniteTech	Ignite's Placeable solutions enable enterprise advertisers to drive brand equity and market growth by unlocking the power of their local market reach. Placeable's data management platform helps leading brands manage, normalize, and enhance location data at scale for local landing pages, marketing campaigns, and delivery to leading third party listings such as Factual. Placeable manages millions of locations for some of the world's largest brands including Bank of America, Western Union, and Nationwide Insurance.	Global	Yes	No
Local Market Launch	Local Market Launch provides a Local Presence Automation solution to simplify the foundational process of local presence management. Our user-friendly technology platform delivers an automated solution to establish and manage local presence and business listings across all digital channels. Our SMB and brand products are sold through our digital agency, newspaper group, and yellow page publisher partners.	US, UK	Yes	Yes

Figure 7. Names and Descriptions of Trusted Data Contributors from Factual's Website

Limitations and Takeaways

Perceptions and Attitudinal Study

One limitation in our study was that it wasn't necessarily task and performance driven, so we don't know if there are any major obstacles to performing key tasks on the website. A next step would, therefore, be conducting a usability test that focuses more on evaluating the users' ability to perform key tasks such as requesting information on the website. In addition, this would also help provide designers with more concrete design recommendations.

Small Number of Participants

Another limitation is that we were only able to test 5 participants. Our study includes self-reported metrics from several Likert scales and semantic differentials to evaluate first impressions and value proposition throughout the test. A relatively small number of respondents limits the statistical significance of average ratings we report and are not representative of the target user population.

Future Directions

Task-driven Usability Testing

Upon identifying that our study is not task and performance driven, we recommend running another usability study that assesses the website's usability in terms of allowing users to perform key tasks in realistic scenarios. These include, but are not limited to:

1. Requesting Information
2. Downloading user guides
3. Accessing tutorials
4. Accessing other key information essential for the target user

In addition, more testing could be performed around the Resources page, which was intentionally not included as part of the study because the goal was to understand more about users' perceptions towards the brand and less about user needs.

Testing with More Experienced Users

We would have tested with users who have more knowledge about and experience with location-based data if we had faced fewer time and resource constraints. This would have given us more relevant and detailed answers for some of the questions we asked, particularly in the value proposition section of the test. It would also have revealed more information about what the perceived value proposition of OLP was when compared to other offerings in the market.

Increasing the Number of Participants

We also recommend testing with a greater number of users. As previously mentioned, average ratings from self-reported metrics from Likert scales and semantic differentials are not generalizable. Reports from the AttrakDiff questionnaire are likewise unreliable from the small

sample size. In order to collect more sound quantitative data about user satisfaction and attitudes, we propose increasing the number of users tested with.

Appendix

Screening Questionnaire

The screenshot displays a mobile application interface for a usability study screener. The top navigation bar is dark green with a back arrow, the text "Usability Study Screener", and icons for a menu, star, and settings. A "SEND" button and a user profile icon are also present. Below the navigation bar, the interface is split into two main sections: "QUESTIONS" and "RESPONSES" (with a count of 10). The "QUESTIONS" section contains the following content:

Mapping & Location Data Company Usability Study Questionnaire

We are conducting usability studies for a mapping and location data company, in correlation with the University of Washington Human-Centered Design & Engineering graduate program. Thank you for your interest in participating in this study.

Email address *
Valid email address.
This form is collecting email addresses. [Change settings](#)

What is your gender?

- Female
- Male
- Prefer not to say

What is your age? *

- Under 18 years
- 18 - 29 years
- 30 - 49 years
- 50 - 65 years
- Over 65 years

What is your income? *

- Under \$20,999 per year
- \$20,000 - \$50,999 per year
- \$50,000 - \$99,999 per year
- \$100,000 - \$149,999 per year
- Over \$150,000 per year
- No Current Income

What is your employment status? *

- Employed Part-time (Less than 30 hours per week)
- Employed Full-time (Over 30 hours per week)
- Not Currently Employed

On the right side of the questionnaire, there are three vertical panels of icons: a top panel with a plus sign, a trash icon, a share icon, a play icon, and a list icon; a middle panel with a share icon, a play icon, and a list icon; and a bottom panel with a share icon, a play icon, and a list icon. A small question mark icon is also visible on the right side of the screen.

What is your job title? *

- Business Analyst
- Data Scientist
- Software Architect
- Software Engineer
- Data Engineer
- Product Manager
- Project Manager
- I prefer not to say / None of the above

What programming languages do you use/have used, (if any), on a regular basis? Select all that apply *

- Java
- Scala
- Python
- R
- C++
- R++
- Other
- I prefer not to say / I'm not sure / None of the above

Select the cloud computing platforms that you are using/ have used (if any)? *
Select all that apply

- AWS
- IBM Bluemix
- Azure
- Google Cloud
- Interstellar Cloud
- Alibaba Cloud
- None of the above

Select the framework that you are using/ have used (if any) for data processing? Select all that apply *

- Spark
- Flink
- Storm
- Hadoop
- Clojure
- Samos
- I prefer not to say / I'm not sure
- None of the above



Online Consent Form

← Online Consent Form

QUESTIONS RESPONSES 6

Consent Form

Please read carefully and sign this form.

The purpose of this study is to improve the usability of Here Technologies' website. In this usability test, you will be asked to perform certain tasks and answer questions based on those tasks. We expect the test to last approximately 45 minutes - 1 hour.

By giving consent, you agree to have your interactions and responses recorded. This entails both audio and video recording at the request of the researcher. All information will remain strictly confidential and only accessible by researchers within the team and staff members of Here Technologies.

Your participation in this study is completely voluntary. Should you change your mind or experience any discomfort during the study, you may withdraw your consent and stop your participation in the study at any time.

If you have any additional questions after today, please contact Minkyong Kim at mkim96@uw.edu.

If you wish to participate in this study, please type your full name below: *

Short answer text

Question *

Month, day, year

Task Scripts

Opening Script

Facilitator dialogue in italics

Facilitator instructions are in BOLD.

Expected results are underlined.

(Time restrictions for tasks in parentheses).

Introduction

Hello, my name is ___ and I will be the moderator for the study today.

First off, I'd like to thank you for taking the time to participate in our study. We are students of the HCDE Master's program at UW and as part of our course project, we are working with Here Technologies to improve the usability and content of their online website.

Before we get into further details about the study, do you have any questions?

The study today will primarily involve performing very simple tasks on various sections of the website and answering questions based on them. At the end of the session, we will also ask you to complete a short post-study questionnaire for feedback on your overall experience with the website.

Before we begin, I would like to inform you that our session today will be audio and video recorded on Zoom. All information will remain confidential within our team and Here Technologies and will only be used for the purposes of this study. If you understand this information and agree to proceed, please read this consent form we have prepared for you and sign your full name and date to give consent. Do you have any questions?

[Ask the participant to sign consent form].

Please be aware that there are no right or wrong answers to the questions asked and that any type of feedback is highly valued. We also ask that you think out loud as you perform these tasks so that we know about your thought process, reactions, and feelings behind your actions. If you become lost or have any questions at any point in time during the study, please feel free to stop and ask me.

If you don't have any other questions, let's begin!

Main Task Script

First Impressions (Part 1)

Task 1: Explore the Open Location Platform (OLP) homepage

First, I'd like to explain the set up on the screen. What you're seeing here now is a Google form with task information and questions. You'll be opening up a website to perform tasks on a separate tab, as shown here. When answering the questions, it is completely OK to switch back to the website - in fact, you will need to and are highly encouraged to switch back and forth. Read what's shown and let me know if everything makes sense. Don't click the next button just yet.

[Check with the participant that he/she has read the short intro on screen]

*Before we proceed, I'd like to just explain a little bit of the dynamics of this session. For all tasks you are asked to perform, I will read the instructions out loud. Instructions will also be displayed on the screen. Questions, however, will **not** be read aloud by the moderator and we ask that you read them (preferably out loud) during the session and answer them on your own. There will be a mix of verbal, and rating scale questions. Verbal questions will be highlighted in purple. Okay, let's begin! You may click on next now.*

I'd like to start by asking you a couple of questions regarding licensing data solutions. In particular, have you..

- 1. Ever licensed data solutions before from a third-party vendor?*
- 2. If so, what type of data solution was it and what was the process like?*

3. *Have you ever had experience dealing with location-based data?*
4. *If so, please describe what the experience was like.*

*The first task I'd like you to perform is to go to <https://openlocation.here.com>. We suggest opening this link on a new tab. Take no longer than a minute to browse the page. The goal is just to get an overall gist of the content on the page. Once you're ready, switch back to the Google form to answer your questions. All the questions ask for verbal responses, read and say your answer as you normally would. **(Limit to 1 min)***

[Keep time and prompt participant to stop if they go past one minute].

[Check participant has switched tabs to Google Form]

1. Without leaving the homepage on the website, state 1 word to describe how this page makes you ****feel****. Explain your answer. [Verbal Response]
2. Without leaving the homepage on the website, what are your initial impressions of the page? Explain your answer. [Verbal Response]
3. Without leaving the homepage on the website, what 3 words would you use to describe the homepage? Explain your answer. [Verbal Response]
4. Without leaving the homepage on the website, in your own words, describe what this website offers. [Verbal Response]

Task 2: Explore OLP website freely (no restriction)

*Next, explore the website for 2 more minutes. This time you are free to go anywhere you'd like. Again, please voice out anything that comes to mind. Once you're done, switch back to the Google form for questions to answer about this task. Make sure to explain your answer where indicated. **(Limit to 2 min)***

[Keep time and prompt participant to stop if they go past two minutes].

[Check participant has switched tabs to Google Form]

1. In your own words, what do you think you can do on this website? Be specific. [Verbal Response]
2. What is most interesting for you? Why? [Verbal Response]
3. What is the least interesting? Why? [Verbal Response]
4. Overall, did the offerings on the website exceed, meet, or fall short of your initial ****impressions****? Explain your answer. [Multiple Choice: It exceeded my initial impressions., It met my initial impressions., It fell short of my initial impressions., Other]
5. What, if anything, makes you ****want or not want**** to visit the website again? [Verbal Response]

OK, now I'd like to ask you a couple of questions based on your experience of briefly browsing through the website. Click Next. After you've marked your response on the screen, explain your choice for each question verbally.

1. I will likely return to the website in the future. Explain your answer. [5-point Rating Scale: Strongly Disagree to Strongly Agree]
2. I find the website to be attractive. Explain your answer. [5-point Rating Scale: Strongly Disagree to Strongly Agree]
3. The website has a clean and simple presentation. Explain your answer. [5-point Rating Scale: Strongly Disagree to Strongly Agree]
4. I feel confident conducting business on the website. Explain your answer. [5-point Rating Scale: Strongly Disagree to Strongly Agree]

OK, great! Now you may click next. Now, we will take some time to explore each section of the website in a little bit more depth. This refers to the workspace, marketplace, data, and plans sections you see in the top header. You will get around one minute per section to explore. The goal here is to understand the content shown on each page. Let's switch back to the website to begin.

Expectations and Understanding (Part 2)

Task 3: Explore the Workspace section of the website

[Check participant has switched tab to website]

Go to the Workspace section of the website and browse for roughly 1 min. The goal is to understand the content on the page. (Limit to 1 min)

[Keep time and prompt participant to stop if they go past one minute].

[Check participant has switched tabs to Google Form]

1. What is your understanding of this page?
2. Would you click on anything on this page? If so, what would you click on? Why?
3. What do you expect to see when you click on "Learn More" for Docs, Plans, and Code Examples?
4. Based on what you've viewed on this Workspace section of the site, would you click on "Request Information"? Why/why not?
 - a. What do you expect to see when you click on "Request Information"?

Task 4: Explore the Marketplace section of the website

[Check participant has switched tab to website]

Go to the Marketplace section of the website and browse for roughly 1 min. (Limit to 1 min)

[Keep time and prompt participant to stop if they go past one minute].

[Check participant has switched tabs to Google Form]

1. What is your understanding of the Overview page?
 - a. Marketplace Provider?
 - b. Marketplace Consumer?
2. Would you click on anything on this page? If so, what would you click on? Why?
3. What do you expect to see when you click on “Learn More” for Data? (at bottom of page)
4. Based on what you’ve viewed on this Marketplace section, would you click on “Request Information”? Why/why not?
 - a. What do you expect to see when you click on “Request Information”?

Task 5: Explore the Data section of the website

[Check participant has switched tab to website]

Go to the Data section of the website and browse for roughly 1 min. (Limit to 1 min)

[Keep time and prompt participant to stop if they go past one minute].

[Check participant has switched tabs to Google Form]

1. What is your understanding of this page?
2. Would you click on anything on this page? If so, what would you click on? Why?
3. Based on what you’ve viewed on the Data section of the site, would you click on “Request Information”? Why/why not?
 - a. What do you expect to see when you click on “Request Information”?

Task 6: Explore the Plans section of the website

Finally, imagine that you are trying to determine whether or not you might be interested in licensing this data solution. How would you go about doing this on the website? Share your thoughts out loud as you walk me through the steps.

Expected result: participant should point out Plans section at some point in their explanation.

[If participant references Plans section, proceed to ask set of questions below (as participants would have already browsed while walking through their steps). If not, ask participants to click on a section of the website.]

Okay, now click next for the follow-up task.

1. *Go to the Plans section of the website and browse for roughly 1 min. (Limit to 1 min)*

[Keep time and prompt participant to stop if they go past one minute].

[Check participant has switched tabs to Google Form]

- a. What is your understanding of this page?
- b. How do you understand HERE credits?
- c. Do you have enough information you need to make your decision? Is anything missing?

Value Proposition (Part 3)

****No tasks, participants asked to answer questions only****

The final section of the study will involve only answering a series of questions about your thoughts on the website and what it offers based on what you've learned about it so far. Click Next.

1. In your own words, how might you benefit from using this website? [Verbal Response]
2. What do you think this website offers to you? [Verbal Response]
3. How ordinary (1) or unique (7) are the website's offerings? Explain your answer. [7-point Rating Scale: Not At All Unique to Very Unique]
4. How uninterested (1) or interested (7) are you in the website's offerings? Explain your answer. [7-point Rating Scale: Not At All Interested to Very Interested]
5. Describe what you typically do when you are looking for data sources online. [Verbal Response]
 - a. What, if anything, do you ****like or dislike**** about how you typically search for/make decisions for data solutions? [Verbal Response]
 - b. What, if anything, do you think will be ****better or worse**** about that decision making process through this website compared to the way you usually do so? [Verbal Response]
 - c. What, if anything, makes you ****want or not want**** to use the OLP website for data solution purchasing activities? [Verbal Response]
6. Describe what are the key deciding factors for you when deciding to license the data for your project (business need). Name three or more. Why?
7. What remaining questions do you have after viewing this content?

Post-Test Questionnaire

1. I understood who the website was for and what I could do there. Explain your answer. [7-point Rating Scale: Strongly Disagree to Strongly Agree]
2. After this session, I will likely return to the website in the future. Explain your answer. [5-point Rating Scale: Strongly Disagree to Strongly Agree]

3. *Visit this link and answer the displayed set of questions:*

<https://esurvey.uid.com/survey/#4da9a0c1-084c-4b26-b6c2-41f922b864b7>

You may need to switch the language to English before completing the questions here (AttrakDiff website).

Before we end the session today, please share any final thoughts you have on the website.

That concludes our session today. Thank you so much again for taking the time to participate in our study! We will be sure to email you the Amazon gift card code within today.

Note-taking Form

Task #	Question	Notes
Pre-Task	<ol style="list-style-type: none"> 1. Have you ever licensed data solutions before from a third-party vendor? 2. If so, what type of data solution was it and what was the process like? 3. Have you ever had experience dealing with location-based data? 4. If so, please describe what the experience was like. 	<ol style="list-style-type: none"> 1. 2. 3. 4.
1	<ol style="list-style-type: none"> 1. Without leaving the homepage, state 1 word to describe how this page makes you feel. Explain your answer. [Verbal Response] 2. Without leaving the homepage, what are your initial impressions of the page? Explain your answer. [Verbal Response] 3. Without leaving the homepage, what 3 words would you use to describe the homepage? Explain your answer. [Verbal Response] 4. Without leaving the homepage, in your own words, describe what this website offers. [Verbal Response] 	<ol style="list-style-type: none"> 1. 2. 3. 4.
2	<ol style="list-style-type: none"> 1. In your own words, what do you think you can do on this website? Be specific. [Verbal Response] 2. What is most interesting for you? Why? [Verbal Response] 3. What is the least interesting? Why? [Verbal Response] 4. Overall, did the offerings on the website exceed, meet, or fall short of your initial impressions? Explain your answer. [Verbal Response] 5. What, if anything, makes you want or not want to visit the website again? [Verbal Response] 	<ol style="list-style-type: none"> 1. 2. 3. 4. 5.
2	<ol style="list-style-type: none"> 1. I will likely return to the website in the future. Explain your answer. [5-point Rating Scale: Strongly Disagree to Strongly Agree] 2. I find the website to be attractive. Explain your answer. [5-point Rating Scale: Strongly Disagree to Strongly Agree] 3. The website has a clean and simple presentation. Explain your answer. [5-point Rating Scale: Strongly Disagree to Strongly Agree] 4. I feel confident conducting business on the website. Explain your answer. [5-point Rating Scale: Strongly Disagree to Strongly Agree] 	<ol style="list-style-type: none"> 1. 2. 3. 4.
3	<ol style="list-style-type: none"> 1. What is your understanding of this page? 2. Would you click on anything on this page? If so, what would you click on? Why? 3. What do you expect to see when you click on "Learn More" for Docs/Plans/Code Examples? (refers to links to three pages at bottom of page) 4. Based on what you've viewed on this Workspace section of the site, would you click on "Request Information"? Why/why not? 5. What do you expect to see when you click on "Request Information"? 	<ol style="list-style-type: none"> 1. 2. 3. 4. 5.
4	<ol style="list-style-type: none"> 1. What is your understanding of the Overview page? Marketplace Provider? Marketplace Consumer? 2. Would you click on anything on this page? If so, what would you click on? Why? 3. Scroll down to the bottom of the page. What do you expect to see when you click on "Learn More" for Data? 4. Based on what you've viewed on this Marketplace section, would you click on "Request Information"? Why/why not? 5. What do you expect to see when you click on "Request Information"? 	<ol style="list-style-type: none"> 1. 2. 3. 4. 5.
5	<ol style="list-style-type: none"> 1. What is your understanding of this page? 2. Would you click on anything on this page? If so, what would you click on? Why? 3. Based on what you've viewed on the Data section of the site, would you click on "Request Information"? Why/why not? 4. What do you expect to see when you click on "Request Information"? 	<ol style="list-style-type: none"> 1. 2. 3. 4.
6	<ol style="list-style-type: none"> 1. What is your understanding of this page? 2. How do you understand HERE credits? 3. Do you have enough information you need to make your decision? Is anything missing? 	<ol style="list-style-type: none"> 1. 2. 3.

Value-prop	<ol style="list-style-type: none"> 1. In your own words, how might you benefit from using this website? [Verbal Response] 2. What do you think this website offers to you? [Verbal Response] 3. How ordinary (1) or unique (7) are the website's offerings? Explain your answer. [7-point Rating Scale: Not At All Unique to Very Unique] 4. How uninterested (1) or interested (7) are you in the website's offerings? Explain your answer. [7-point Rating Scale: Not At All Interested to Very Interested] 5. Describe what you typically do when you are looking for data sources online. [Verbal Response] 6. What, if anything, do you like or dislike about how you typically search for/make decisions for data solutions? [Verbal Response] 7. What, if anything, do you think will be better or worse about that decision making process through this website compared to the way you usually go about licensing data solutions?? [Verbal Response] 8. What, if anything, makes you want or not want to use the OLP website to for data solution purchasing activities? [Verbal Response] 9. Describe what are the key deciding factors for you when deciding to license the data for your project. Name three or more. Why? 10. What questions do you have after viewing this content? 	<ol style="list-style-type: none"> 1. 2. 3. 4. 5. 6. 7. 8. 9. 10.
Post-Test	<ol style="list-style-type: none"> 1. I understood who the website was for and what I could do there. Explain your answer. [7-point Rating Scale: Strongly Disagree to Strongly Agree] 2. I will likely return to the website in the future. Explain your answer. [5-point Rating Scale: Strongly Disagree to Strongly Agree] 3. Share your final thoughts on the website. 	<ol style="list-style-type: none"> 1. 2. 3.

Session Notes (Compiled and Coded)

Task #	Session	St. Activity	Notes and Reflections	St. Activity	Notes	St. Activity	Notes and Reflections	St. Activity	Notes and Reflections	St. Activity	Notes and Reflections
1	1. What are the main characteristics of a... 2. How do you think the... 3. What are the main... 4. How do you think the...	1. The... 2. The... 3. The... 4. The...	1. I... 2. I... 3. I... 4. I...								
2	1. How do you think the... 2. What are the main... 3. How do you think the... 4. What are the main...	1. The... 2. The... 3. The... 4. The...	1. I... 2. I... 3. I... 4. I...								
3	1. How do you think the... 2. What are the main... 3. How do you think the... 4. What are the main...	1. The... 2. The... 3. The... 4. The...	1. I... 2. I... 3. I... 4. I...								
4	1. How do you think the... 2. What are the main... 3. How do you think the... 4. What are the main...	1. The... 2. The... 3. The... 4. The...	1. I... 2. I... 3. I... 4. I...								

<https://docs.google.com/spreadsheets/d/1DSIJ-zZudP33DpHoEvmP0awbyYKO-ft99c4pLMc1zv/edit?usp=sharing>

Analysis Materials

Codebook

TAG GROUP NAME	TAG GROUP DESCRIPTION	TAG NAME	TAG DESCRIPTION
	Description of tag group. Some codes can belong in two groups because of the overlap in questions we had in different sections of the test.	Name of tags in this column. List any tag names for each cell if tag is present. Note that for some cells, it will not make sense to have multiple tags.	A description of each tag
<i>understanding</i>	<i>User responses displaying an understanding of page content and purpose</i>	<i>affordances</i> <i>location-based</i> <i>data exchange</i> <i>data types</i> <i>data usage</i> <i>credits as money</i> <i>plan types</i>	<i>User demonstrates knowledge or awareness of what affordances OLP provides</i> <i>User identifies the site as being something about location-based data</i> <i>User demonstrates knowledge or awareness of ability to exchange data</i> <i>User demonstrates knowledge or awareness of data types offered from page</i> <i>User acknowledges knowledge or awareness of being able to use/obtain access to data from page</i> <i>User demonstrates understanding of HERE credits as currency/money</i> <i>User demonstrates knowledge or awareness of different plan types</i>
<i>expectations</i>	<i>Responses regarding what users anticipate to see</i>	<i>unmatched</i> <i>partial match</i> <i>matched</i>	<i>Users' expressed expectations does not match actual content that exists</i> <i>Users' expressed expectations partially match actual content that exists</i> <i>Users' expressed expectations match actual content that exists</i>
<i>factors</i>	<i>Codes that describe what users look for when making decisions to source data externally</i>	<i>analytics</i> <i>incorporation</i> <i>pricing</i> <i>fit</i> <i>support docs</i> <i>authenticity</i> <i>trust</i> <i>fit</i>	<i>User expresses analytics as key factor of consideration in data sourcing</i> <i>User expresses ease of incorporating data (with server) in data sourcing</i> <i>User expresses price as key factor of consideration in data sourcing</i> <i>User expresses data recency as key factor of consideration in data sourcing</i> <i>User expresses importance of robust support docs as key factor of consideration in data sourcing</i> <i>User expresses importance of data authenticity</i> <i>User expresses importance of trustworthiness as key factor of consideration in data sourcing</i> <i>User mentions that offerings would be useful/of interest if there is a need/use case for such data</i>
<i>interest</i>	<i>Codes that capture what elements on the site the user expressed interest in</i>	<i>demos</i> <i>videos</i> <i>learn more buttons</i> <i>case study</i> <i>actions</i>	<i>User expresses interest in seeing more demos</i> <i>User expresses interest in seeing more videos demonstrating data usage</i> <i>User expresses interest in clicking learn more buttons on each section of the site</i> <i>User expresses interest in seeing more case studies/real clients of data usage</i> <i>User expresses interest in the actions they are able to take with the offerings</i>
<i>pros</i>	<i>Responses that indicate what user(s) like about either the product or website</i>	<i>details</i> <i>ease of use</i>	<i>User mentions that site contains a lot of detail about product</i> <i>User expresses that data seems to be easy to use/incorporate</i>
		<i>variety</i> <i>data</i> <i>visual</i>	<i>User acknowledges variety in features or plans offered</i> <i>User comments on the richness of data provided and/or other characteristics about the data quality</i> <i>User comments on some aspect of the visual design and/or layout of the website</i>
<i>improvement</i>	<i>Codes that signal something about site can be improved</i>	<i>pricing info</i> <i>missing</i> <i>repetitive info</i> <i>visual</i>	<i>User mentions lack of pricing info on website</i> <i>User expresses lack of info to make a decision/give a definitive answer</i> <i>User mentions that info is repeated and redundant</i> <i>User comments on some aspect of the visual design and/or layout of the website</i>