

**HAYSTACK** / SEPTEMBER 20, 2023

# Improving Search: a user-centric product journey

[Stéphane Renault](#), search product manager

## Safe Harbor Statement

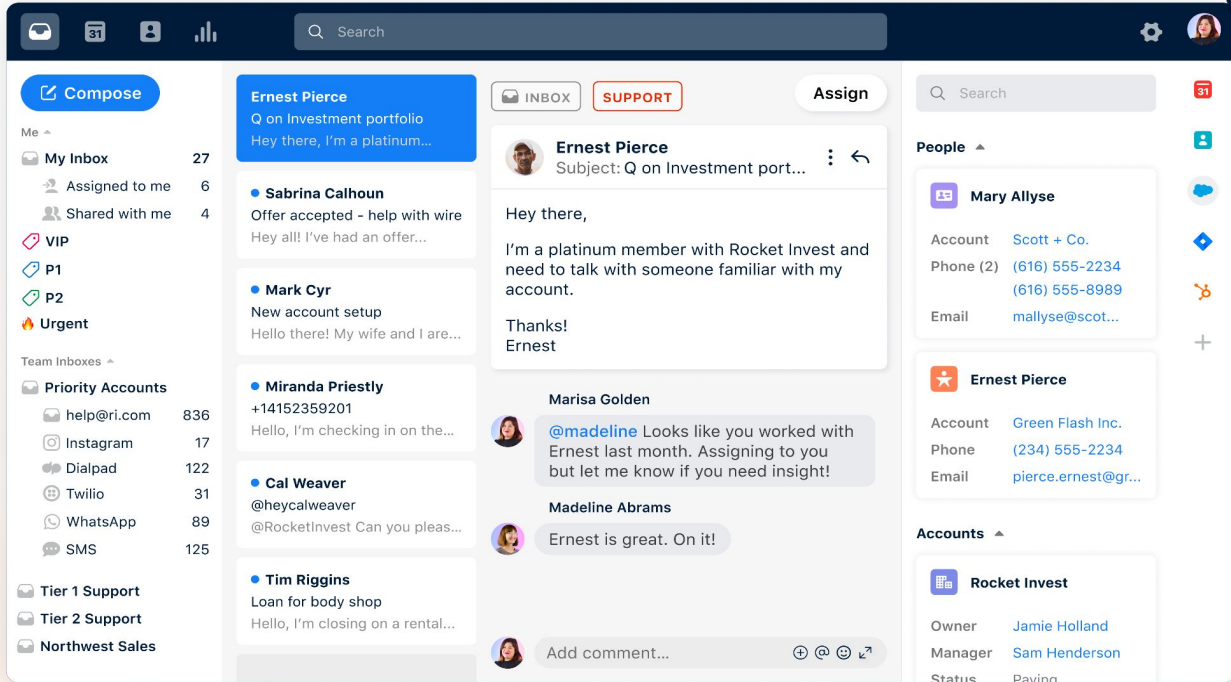
This presentation is my analysis on how we improved the search journey at Front.  
The knowledge shared should not be used for other purposes than learning.  
This doesn't engage Front.

# Context

## Hi I'm Stéphane

- Product Manager with 4 years of experience on Search
- Experience on both sides of the Search stack
  - Algolia → Building a search solution as PM of the search platform (core search API)
  - Front → Managing the full search experience with a team of 3-5 engineers, a designer and a data analyst

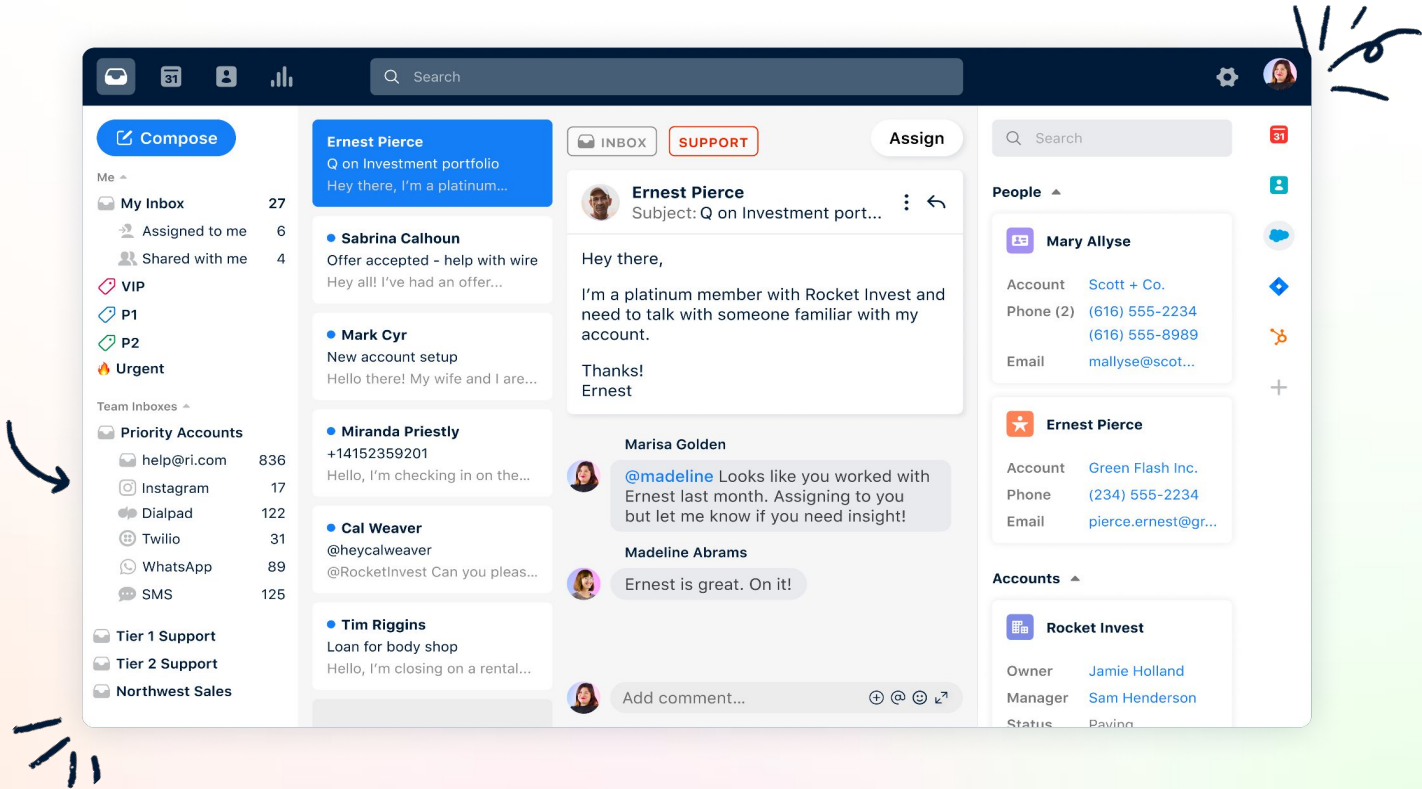
# Front: A tool to streamline communications



Thanks to the familiarity of email and the efficiency of a help desk

# Front: A tool to streamline communications

Shared inboxes



Thanks to the familiarity of email and the efficiency of a help desk

# Front's search



The screenshot shows a search interface with a search bar containing 'stephane renaudt'. Below the search bar are filters: 'Inbox', 'From Stéphane Renault', 'Has attachment', and 'More filters'. The results list shows 99+ results, sorted by 'Newest'. A dropdown menu is open over the first result, showing options: 'Newest' (selected), 'Oldest', 'Newest Unreplied', and 'Oldest Unreplied'. The first result is from 'Antonia Hidalgo' with the subject 'Accepted: Search 6 month outlook discussion'. Below the results, there is an attachment 'invite.ics' and a notification: 'Antonia Hidalgo has accepted this invitation'. The event details show it is on Tuesday, Jan 10, 2023, at 10am - 10:30am in Paris-R1-Tartiflette (6) [Zoom Room].

The screenshot shows the search interface with a dropdown menu open. The search bar contains 'stephane renaudt'. The dropdown menu is divided into 'Recent searches' and 'Suggestions'. Under 'Recent searches', there is one entry: 'stephane renaudt'. Under 'Suggestions', there are three entries: 'with Stéphane Renault (stephane.renaudt@...com)', 'with Stéphane Renault (stephane.renaudt@...app.com)', and 'with Stéphane Renault Outlook (stephane-test-front@...com)'. Below the suggestions, there is a section for 'Top results' with four email entries: 'Presentation shared with you: "Haystack presentation 2023 - Sea... 8H', 'Test of conversation stages pre Beta - Outbond -> unresolved 5D', 'Test of conversation stages pre Beta - Outbond + archive -> no ac... 5D', and 'Re: Test of conversation stages pre Beta - Inbound -> unresolved ... 5D'. A hand-drawn '1/2' is visible in the bottom right corner of the image.

# Front's search challenges

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## High user expectations

Everyone has an Gmail or Outlook account and the associated expectations (speed, experience, relevancy...)



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## Harder problem

Front users use dozens of shared inboxes, resulting in unknown content and X times more content to search through

# Front's search challenges



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## Hard data

Email, and communication data is not structured

# Front's search challenges



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## High standards

24/7, 100% Availability, high security due to sensitive data

# Front's search challenges



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## Hard business case

Search is a must have feature but it doesn't generate revenue per se

# Search as a company challenge

A year ago: Search was the **number 1** problem to be solved  
(9 quarters in a row)



# Today's talk is about

Lessons from improving the search experience

Search is the  
**number 1**  
problem to be  
solved



Search is **not** in  
the **top 5**  
problem to be  
solved

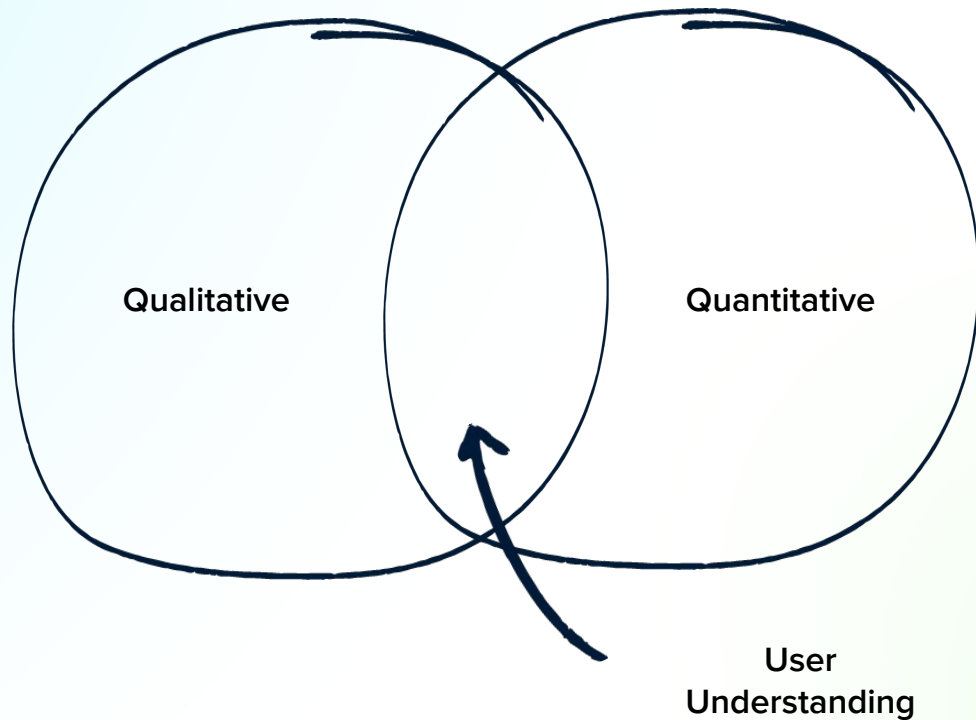
# Agenda

- 1 Understanding Users & the Search Problems**
- 2 Strategise and align on a plan**
- 3 Build & experiment**

# **Understanding Users & the Search Problems**



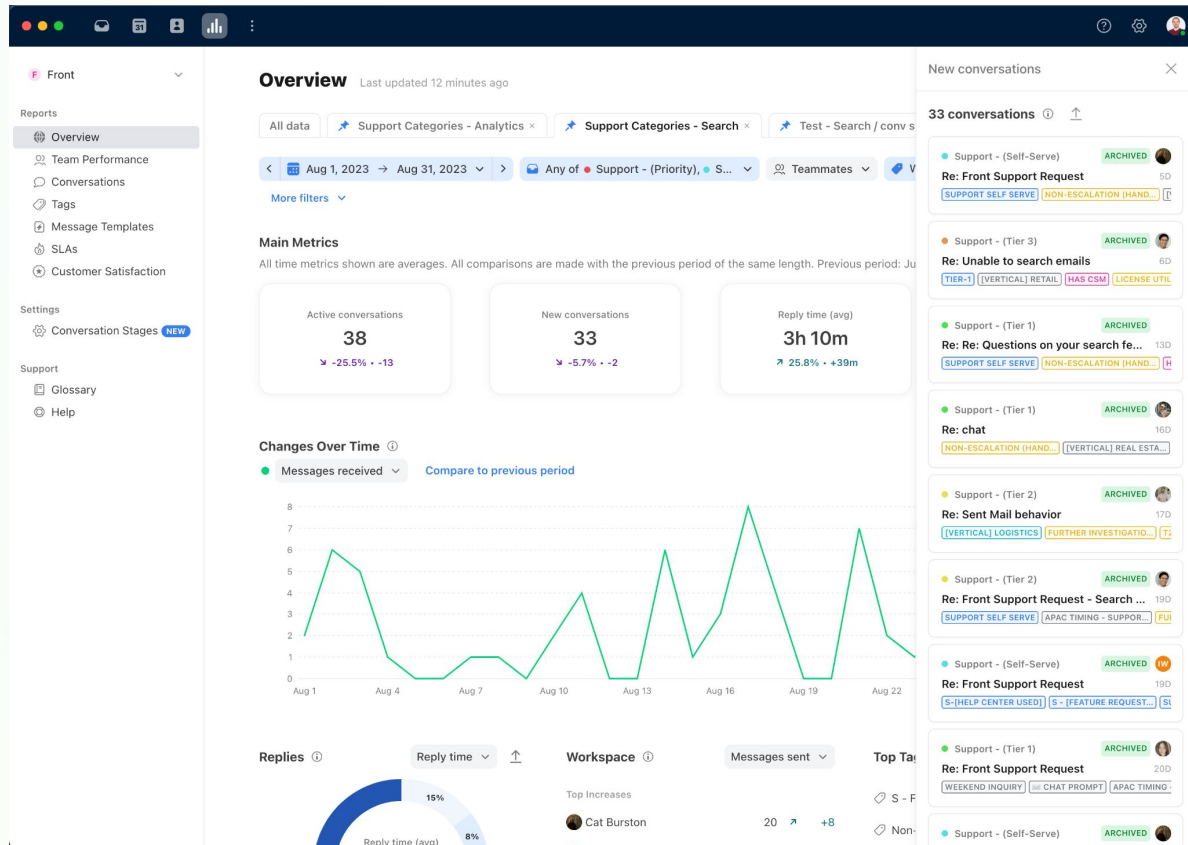
# Qualitative VS Quantitative



## Tools & Tips: Qualitative

# Gather user inputs 1/3

## Support tickets



## Tools & Tips: Qualitative

# Gather user inputs 2/3

## Feature requests



Aha! Product Releases Ideas Features Roadmaps

List report

### Search / Insights ideas created in the past week ★ [Create new report](#)

Workspace name: Product Idea created date: Last week Idea categories: Navigation, Sear...

| <input type="checkbox"/> | Idea categories                                | Idea name  | Idea status | Idea votes | Idea visibility                       |
|--------------------------|--|--|-------------|------------|---------------------------------------|
| <input type="checkbox"/> | <a href="#">Search</a> <a href="#">Filters</a> | "-" search function to omit certain search results | Backlog     | 1          | Visible to creator and internal users |

Aha! Product Releases Ideas Features Roadmaps

List report

### Search VOTES created in the past week ★ [Create new report](#)

Workspace name: Product Idea categories: Navigation, Sear... Vote created date: This week

| <input type="checkbox"/> | Idea categories  | Idea name  | Idea status | Idea votes | Idea visibility |
|--------------------------|--|--|-------------|------------|-----------------|
| <input type="checkbox"/> | <a href="#">Search Results</a><br><a href="#">Matching</a> | Highlight all query keywords in a conversation (attachment, body, subject ...) | Backlog     | 3          | Not visible     |
| <input type="checkbox"/> | <a href="#">Search Results</a>                             | Searching in a conversation thread (cmd/ctrl+f is not working)                 | Backlog     | 20         | Visible to all  |
| <input type="checkbox"/> | <a href="#">Filters</a>                                    | Filter Negation (keyword, tag, email, account...)                              | Backlog     | 31         | Visible to all  |
| <input type="checkbox"/> | <a href="#">Filters</a>                                    | Filter Negation (keyword, tag, email, account...)                              | Backlog     | 31         | Visible to all  |

## Tools & Tips: Qualitative



# Gather user inputs 3/3

## NPS surveys



body:search after-last-week

Compose

NPS Surveys

Body contains search

Has attachment

Is unread

More filters

Archive

Me

- Inbox 22
- Assigned to me 2
- Shared with me 6
- Discussions 6
- Front Work E... 13
- Starred 8
- Drafts 8
- Sent 8
- Watch 149
- To do 1
- P2 sender line cus... 5
- P2 Sender Line 5
- Data updates 1
- Search cust (tv ca... 1
- Search feedback 4
- proj remove calen... 1
- Conv. Stages 1

Views

- Support - Featur... 1
- Search feedback... 1
- P2 sender line... 1
- Create view

Front

- Shared inboxes 1091
- Product 1
- Insights Team 11
- Product Insi... 94
- Search Feed... 76
- NPS Surveys 22
- Fronteer U... 392
- Solutions Engine... 1
- Support - (Chat)

17 results

T1 Newest

NPS Surveys

Jordan, Marie Chardon > Marie ... 2D  
Re: A survey ...  
...satisfied with our search engine...

Amy Mason > Carly Leicht ... 2D  
A survey you took for Front  
...emails than outlook, the search

Mariluz Santos > Me Siragusa ... 4D  
A survey you took for Front  
...love to have the discussion search

Kelly Patterson > Brogan Conk... 4D  
A survey you took for Front  
...multifunctional but the search

Jen Henson > Carly Leicht ... 4D  
A survey you took for Front  
Its also not search friendly when yo...

Andres Melendez > Carly Leicht ... 4D  
A survey you took for F...  
When you search for a specific...

Kiran, Brogan Conklin > Broga... 5D  
Re: A survey you took for ...  
...using the search function Would...

Janet ... Agnes Bolanos ... 6D  
Re: A survey you took for ...  
Also hard to search in front (don't...

Kerry, Maria Silva Urrea > Mari... 6D  
A survey you took L...  
...NE: FIND IT FRUSTRATING TO SEA...

A survey you took for Front

DELIGHTED PROMOTER

USER

LARGE TEAM (20+)

HIGH NPS - REFERENCE

SUPPORT - NPS VOLUME

Subject: A survey you took for Front

Delighted Response

Name: Mariluz Santos

Email: [REDACTED]

Survey Type: NPS

Score: 10 (Promoter)

Comment: It is friendly to use; I personally prefer the web to the app (computer) I would love to have the discussion search more efficiently. Also, could it be possible to create a discussion draft? because this option is only available for emails.

Company Id: 93763

Is Admin: False

Team: A

Teammate Id: 6157911

Survey response

Reply

NPS Survey Rotation

Respond to our client's survey! Be the Human behind the computer and let's

3 days ago

Jordan

Searching for emails is very difficult and makes the system unusable

Add a tag

4 days ago

Mariluz

It is friendly to use; I personally prefer the web to the app (computer) I would love to have the discussion search more efficiently. Also, could it be possible to create a discussion draft? because this option is only available for emails.

Add a tag

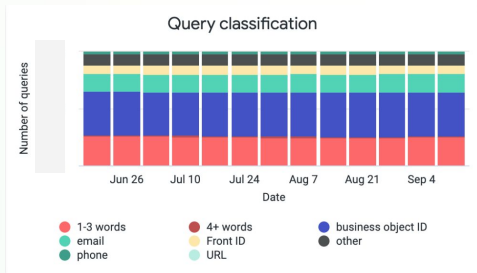
## Tools & Tips: Quantitative



# Segmenting usage

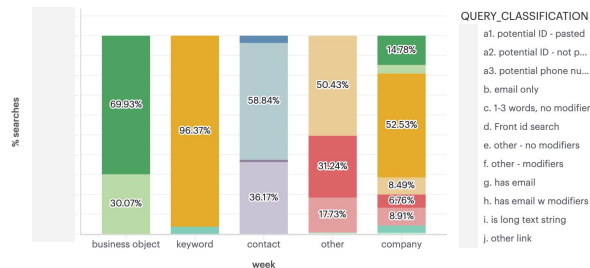
## What & how users are searching.

- Detecting search categories
- Understanding verticals specificity
- Behaviour per query type
- Identifying outliers

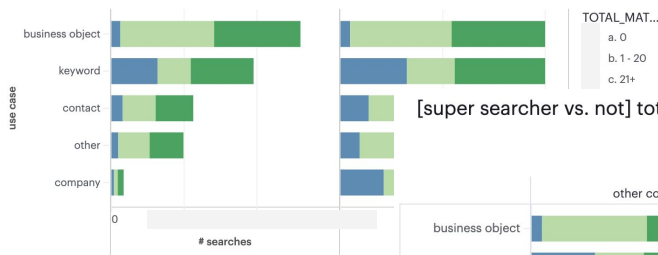


## Use Cases

Query classification to use case mapping (searches after 1/26)



## Total matches by search use-case

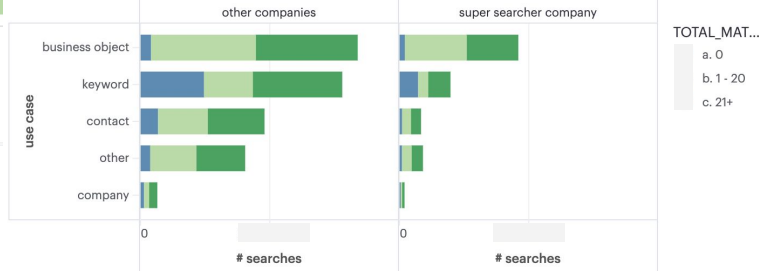


[super searcher vs. not] total matches by search ...



Explore

## SUPER\_SEARCH\_CATEGORY



## Tools & Tips: Quantitative



# Defining success metric

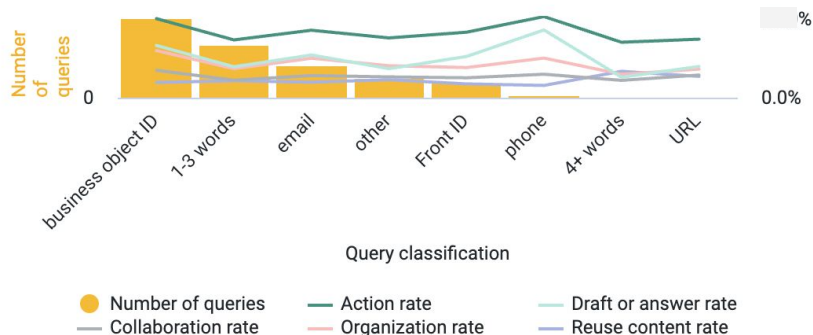
Hard to do in a non transactional search world.

For email search we identify actions qualifying as successful.



| User story / Action   | Strength of signal |
|---|--------------------|
| <b>I answer ...</b><br>Send a reply message in the conversation<br>Start a draft                                      | High signal ▾      |
| <b>I collaborate ...</b><br>Assign conversation<br>Comment<br>Mention<br>Share conversation<br>Copy conversation link | High signal ▾      |
| <b>I collaborate ...</b><br>Copy conversation ID  |                    |
| <b>I reuse the content ...</b><br>Copy text<br>View contact info<br>Copy contact info                                 |                    |
| <b>I organize ...</b><br>Archive / Unarchive<br>Snooze<br>Add tag / Remove tag<br>Move inbox                          |                    |
| <b>I search for an object ...</b><br>Open a link (URL) in the P3 message or comment body<br>Open an attachment        |                    |
| <b>I look for context ...</b><br>Click in the conversation<br>Highlight text (but not copy)                           | Low signal ▾       |

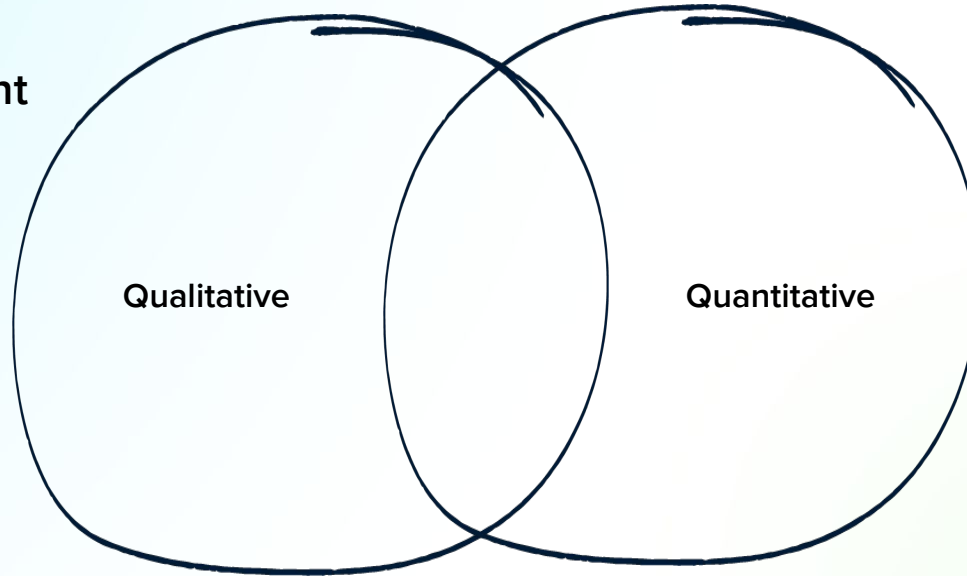
Action rate per query classification



# Qualitative VS Quantitative

## A great starting point

- + Generate hypotheses
- + Understand users motivations
- + Often already exists in your company tools (feedback tool, support tickets, survey, user research campaign...)
- Doesn't represent all users
- Hard to scale manually



## Powerful but costly

- + Testing hypotheses
- + Increase confidence in decisions
- + Detect invisible patterns
- + Reduce blind spots
- Hard to get the granularity right
- Can be time consuming

**Strategise and align on a  
plan**



## Tools & Tips: Summarize your understanding



# User

## journey

- steps and actions
- pain points

### In our case:

- Complex experience
- Missing results
- Not able to filter results



| README updated August                            | CORE ACTIONS TEACHERS NEED TO DO TO FIND THE INFORMATION THEY SEEK TO COMPLETE AN ACTION |   |   |   |   |   |  |   |  |  |
|--|--|---|---|---|---|---|--|---|--|--|
|  | Before search  | QUERY BUILDING: Get users to SUCCESSFUL and EFFICIENT queries   | RESULTS: Return results users can TRUST   |   |   |   |  |   |  |  |
| Core action                                      | Trigger to search  | Start the search  | Type a valid query  | Use filters to specify my query [pre-query]   | See instant results as I type   | Understand results  | See results according to my preferences  | Get the result I seek (recall)  |  |  |
| Sub action (ordered by importance top to bottom) | Reading or answering a conversation and need to check something                          | Quickly start my search / I click the search bar / better shortcut to start the search  | Write my query when I know exactly what I search / I type or past my query and submit it / Unclear what best way to do my search: name VS email VS suggestions  | Know how and what filter to use / I know criteria to refine my query but not how to add them. The query builder opens overlaid. I want simple filters / discoverability and accessibility of filters / dropdown filters chip like Gmail = advanced query builders + adding filters in the query when using post-search tabs / Natural language query filter extractions   | Get top results / I see top results as I type my query. It encourages to further specify my query / not visible enough: "hard" to react / missing results (discussions). Ranking is not always relevant a.g. snippets / Speed: Search-as-you-type rendering: look for improved readability, improved recall, improved ranking / Boosted ranking with AI Summary | Clearly see results, what they are, why they matched / I scan the results and wish to quickly identify what a conversation is about and why it matched, without having to open it in a PI, unless I really have a doubt / small previews, multiple matches merged to one conversation thread, all query keyword highlight / larger previews, option to unbreak results ... / Conversation Summary on Result previewer (AI summary), [drag] Interactions Summary with an entity (contact, account, context link) | Sort results / I want to be able to sort results by a specific criteria like time, time unexpired, relevance / We can't surface most relevant results after I submitted the query, misses sort options = improvement to: Top Results or more sort options (best match) | RECALL: Have my result in / I want my result even if there are variations like plurals, accounts, email types, number formatting, don't want irrelevant results / We search is too simple, list-like, abbreviations, no prefix search; / (one measurement) relevance (tokenization...) / entity recognition / "did-you-mean-this" / number / Boosted recall with AI Sum |  |  |
|  | Working in Front and search for something to help me to my work                          | Do an advanced search with the query builder / I want to do a very specific search or I don't know how to search my query / I click the advance query builder | Search in the right location / I want to search in a specific inbox or in all inboxes and have the search location added instantly. / Unclear location dropdown options, forgot to change, unclear impact on location when PI click, no search in draft, no search in everywhere something, / removing location   | Can't filter as wished / I want to use a specific filters but it doesn't seem to exist from the query advanced builder but, I wish to have a place to find all filtering capabilities, I wish I can reuse filters logic and syntax I know from other search solutions / missing capabilities like "and" + "or" or filter: OR between filters + add missing capabilities   |   | Understand how results are ordered / I see results and understand how they're ordered thanks to the standard chronological ranking + timestamp visible + sorting indicator / Timestamp can be confusing because it's related to the conversation last activity and not about the match timestamp / Option to sort based on a different timestamp  |  | Know what to do if no results / I wish to be guided if no results / No result page failure more proactive: on search other results previewer, clearer c   |  |  |
|  | Working outside of Front and open Front to search for something to help me to my work    | Resume a search done right before, after ending a search due to PI nav for ex. (no nav tag button on desktop)   | Get helped in writing my query when I don't know exactly what I search / I don't remember the exact name, tag etc. I check the suggestions for help and either click on one, or submit my partial query and check the results. Else I search for a known conversation to recall the entity / search, or the contact center or PI tag dropdown ... / good suggestions assist, if type or if many similar suggestions, Relevance could be improved - auto-complete could make it even more slow a way to get more suggestions on a specific entity (e.g. see more suggestions for tag) (cc: slack experience) | Get helped in writing my query when I don't know exactly what I search / I don't remember the exact name, tag etc. I check the suggestions for help and either click on one, or submit my partial query and check the results. Else I search for a known conversation to recall the entity / search, or the contact center or PI tag dropdown ... / good suggestions assist, if type or if many similar suggestions, Relevance could be improved - auto-complete could make it even more slow a way to get more suggestions on a specific entity (e.g. see more suggestions for tag) (cc: slack experience) | Use filters properly / I want to use a filter using the filter syntax / Support only one word, have to remember the syntax, / clear filters appear out issues   |   |  |   |  |  |
|  |  |   | Get to a good query if I made a typo / I made a typo and want to see it or still want to see good suggestions / no correction suggestion, no typo tolerance auto-complete, Typo-tolerant suggestion? did-you-mean-this?   |   |   |   |  |   |  |  |
|  |  |   |   |   |   | Search for a unique message and not a thread / I wish that my search is specific on the same message and not across a conversation / impossible to specify this today / option to search in one message (advanced query builder)  |  |   |  |  |

## Tools & Tips: Building alignment & empathy as a team

# Team workshop

Exercise to:

- Try the user shoes
- Identify other issues
- Kickstart ideation process
- Build empathy



USER STORY MAPPING FOR THE FOLLOWING USE CASE:

### Searching with a company

INSTRUCTIONS

Acting as **Your Persona** you will document how your persona can complete the task in Front today, identified in the **User Story**, via the **Sub Actions Row**

While you're doing this, add issues you see in the **Pain Points row**

After you complete their task, identify the **Top 3 Pain Points**. You will share your top 3 with the group afterward.

**YOUR PERSONA**

**THE SUCCESS I.D.**

**David**  
Product Executive

"I'm more like a coach, making sure they're using the product properly (...), have best practices, and so if they can benefit from another (greater) package, it's a mix between support and sales."

Depth of client relationship: Shallow Deep

**USER STORY**

As David, an account exec, I want to see all interactions my company has had with another company, so that I can understand how to prevent this company from ending their contract with us.

I want to start my search with the company.

Note: This user is not a Front user, and does not have extensive knowledge of how Front works like we do.

**Sub Actions Row:** Learn more >

**USER JOURNEY** JOB 1: Get users to SUCCESSFUL, and EFFICIENT queries

**CORE ACTION** Start the search | Type the query

**SUB ACTIONS**

- I click on the PD search box
- I want to search for the company "number" by different criteria "Gender", "Location", "ESender"
- I want select all boxes, because I'm looking for all the information related company
- I want to specify some things about my search, like the date range

**PAIN POINTS YOU SEE**

- Do not have what search selector to choose
- Do not have how to best write my query:
  - "number" is not a type, and don't realize I can't build at the right results
  - "number" can be an acronym, even the price we build (internal) about B2B customer, even I can't see all the communication WITH "number"
  - "ESender" is not even back on the email only

**TOP 3 PAIN POINTS AND WHY**



# Principles

To help decide what to work on



Availability is a non negotiable. It's a top priority.

The search journey is a funnel, garbage in = garbage out

Search is full of constraints. Plan for them

Simplify to amplify.

# Prioritize

To optimize impact

- **Reach:** how many users & searches impacted
- **Impact:** game changer or a nice to have
- **Confidence:** how much we know about the problem and our hypothesis
- **Effort:** how much time it would take

| Initiatives and spec   | Rice score global | Reach (%WA U) (1-100) | Reach %searches (1-100) | Impact (low 0,5 - medium 1 - high 2 - massive 3) | Confidence (100 high, 50 low, 20 moonshot) | Team (weeks) |
|--|-------------------|-----------------------|-------------------------|--|--|--------------|
| Q1 below   |                   |                       |                         |  |  |              |
| <a href="#">Suggestions are not relevant because they only consider the active token</a>         | 17727             | 100                   | 30                      | 3  | 100  |              |
| <a href="#">Unified suggestions: Score normalisation</a>   | 7407              | 100                   | 100                     | 5  | 80   |              |
| <a href="#">[UI] Suggestions UI is overwhelming and confusing</a>                                | 7000              | 100                   | 100                     | 3  | 70   |              |
| <a href="#">[Filter] Searching for a person is confusing</a>                                     | 7226              | 100                   | 40                      | 2  | 80   |              |
| Q2 below   |                   |                       |                         |  |  |              |
| <a href="#">[Relevancy] Better rank suggestions: New Ranking (exact matching + desirability)</a> | 6400              | 100                   | 100                     | 4  | 80   |              |
| <a href="#">[Recall] Searchable context links</a>  | 545               | 5                     | 10                      | 2  | 80   |              |
| <a href="#">[UI] Business object broken icon for objects and modifier chip UI.</a>               | 3750              | 5                     | 10                      | 1  | 100  |              |

Illustration when prioritizing the work on suggestion





# Roadmap

Outcome of the prioritization, but:

- Reevaluate often
- Scope aggressively
- Keep some time for platform platform availability work



### 6-MONTH PLAN

For the next 6 months, we will make progress across the 2 areas:

1. Make it easier to find results
2. Miss less results

[Source](#)

| JTBD - Theme                                | Project   | Description   | Timeline Q1 / Q2 | Comment  |
|---|---|---|------------------|--|
| Trusted result - Smarter results            | Remove noisy results  | Remove (transparently) results that are not engaged with from the result set, so that it's easier for users to find the right result.                                 | Q1               | This one should happen before other relevancy improvements as it will reduce the size of the data set. |
| Foolproof query - Tolerant search           | Query correction  | Preventing spelling mistakes by suggesting corrected queries to the user so that they don't have to redo their search all over again                                  | Q1               |  |
| Foolproof query - Context-aware suggestions | Suggestions for all search types (business object, person...) | Adapt suggestions to the different types of queries users do by supporting more object types (link, business object, files) and the associated suggestion (modifiers) | Q1               |  |
| Foolproof query - Context-aware suggestions | Smarter suggestions   | Improve the quality of suggestions thanks to an improved logic based on suggestions' usage, popularity, context in the app, info about the users                      | Q1               |  |
| Trusted result - Smarter results            | Options to show relevant results                              | Show most relevant results to the user. This can be either by improving the visibility of top results suggestions or modifying P2 (e.g. a new sort option)            | Q2               |  |
| Trusted result - Tolerant search            | More flexible matching  | Make the search more tolerant to light variations between how the user expresses the query and how results are matched (plurals, accent, light typo)                  | Q2               | Should happen after removing noisy results so that we improve the result set before relaxing it.       |
| Foolproof query - Context-aware suggestions | Suggestions based on multiple query tokens                    | Power suggestions based on the full query and not only the last token   | Q1/Q2            | Should happen after smarter suggestions  |
| Foolproof query - Tolerant search           | 1 typo tolerant suggestions                                   | Make suggestions tolerant to one typo so that suggestions correct for potential users typo, without them having to rewrite their query                                | Q2               |  |

## Tools & Tips: Rally stakeholders



# Strategy

## doc

Tell a story to rally stakeholders and create momentum.

- Summarize learnings
- Clarify business challenge
- Inspire

**Search product strategy 2023**

This product strategy has been presented during Jan 11, 2023 Product Review.  
Here is the presentation shared and the recording: Search product strategy 2023.

### The State of Search Today

The goal is to align on the current state of Search today and why it is not yet "good enough".

### Search mission statement

**Front search makes it effortless for users to find known information, to complete a task.**

- THE HOW**  
Successful  
Fast, few attempts  
Simple, few and relevant results  
Delightful
- THE WHAT**  
The **object of info** (person, company, convo, doc, link, a business object)  
The **info needed** (history, contact info activity, status, reusable content)
- THE WHY**  
To **answer a request** (respond, copy info, collaborate)  
To **be informed** (read, discover)  
To **organize work** (add tag, assign, archive, move inbox, pull in folks needed to discuss internally)

### Context

**Search is part of the core experience of Frontline users. Our Frontline users are primarily delivering high-stakes, reactive communications, and want to do so as efficiently as possible. Search is integral to Frontline efficiency; it is used throughout Frontline user journeys for recall**

**Build & experiment**

# Learnings from some successful initiatives

Solving core problems before improving:

## 1. Building trust

- Better availability
- Less missing results
- Better result interpretability

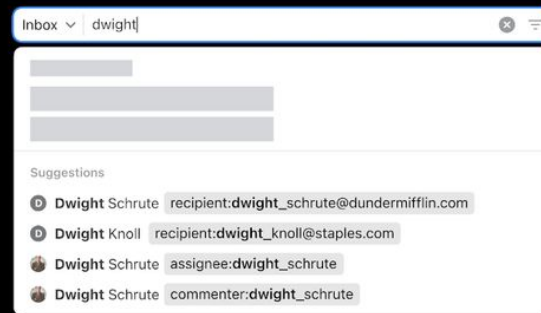
## 2. Reducing the complexity of the search

- Removing unnecessary and unused feature
- Simplify the UI

## 3. Improving

- Faster and more relevant search suggestions
- New filters

## Before



## After

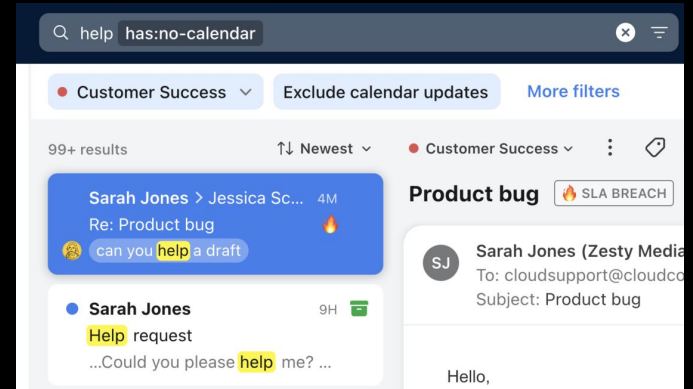




# Learnings from **less successful** initiatives

## Biased by our own usage

- Searching for files
  - → not the reach we anticipated
- Removing calendar updates
  - → not the reach we anticipated + heavy on the computation side





# Experimentation framework

Accelerate impact thanks to higher confidence, faster

Example: Query backtesting tool

| Tools  | Description  | Goals   | Product building phases (ordered chronologically)  | How and examples  |
|--|--|---|--|---|
| <b>User-like Front instance</b>                                  | A Front instance with data & settings close to what customers have.<br>- Data (conv type, contacts data, attachment, threads ...),<br>- Features (tags, rules, comments, assign ...),<br>- Setup (team inboxes...),<br>- Usage (inbound/outbound)<br><br>We could have a few of those per segment (logistics, support...)  | To <b>"Understand"</b> our users' setup<br>To <b>"Feel"</b> the impact of a change  | - <b>Discovery</b><br>- <b>Solution testing</b><br>- <b>QA</b>                                       | Front demo <a href="#">cloudcode</a><br>more info <a href="#">here</a>        |
| <b>Representative queries</b>                                    | Set of queries representatives of real search use case that we can manually test against to feel the impact of a change.   | To <b>"Feel"</b> the impact of a change   | - <b>Solution testing</b><br>- <b>QA</b>   | WIP Q2 2023 FR  |
| <b>Competition testing</b>                                       | Comparing the search experience across Outlook, Gmail, and Front.  | To <b>"Feel"</b> and <b>"Learn"</b> about our users' mental models and expectations   | - <b>Discovery</b>   | Having a similar set Gmail  |
| <b>UI/UX testing tool (online)</b>                               | Detect the difference in UI and experience for users by monitoring representative queries.   | To <b>"Feel"</b> the impact of a change<br>To <b>"Detect"</b> unwanted changes  | - <b>Solution testing</b><br>- <b>QA</b><br>- <b>(Regression detection)</b>                          | Ghost Inspectors to representative queries                                    |
| <b>Ranking testing tool (online)</b>                             | Detect the difference in ranking for users by testing some queries   | To <b>"Measure"</b> and <b>"Feel"</b> the impact of a change<br>To <b>"Detect"</b> if a change is bringing unexpected changes | - <b>Solution testing</b><br>- <b>QA</b><br>- <b>Regression detection</b><br>- <b>Impact measure</b> | A testing tool like <a href="#">QA</a> of ranking changes representative data |
| <b>★ Ranking testing tool (offline) → Query backtesting tool</b> | Measure the difference between logged queries and a ranking change by measuring the diff in ranking, perf ...<br>Before launching an online experiment:<br><ul style="list-style-type: none"> <li>Replay a representative query load and measure how much changes.</li> <li>Sample changes and judge them explicitly for their relevance <b>impact</b>.</li> <li>Test new ranking by reranking <b>first</b> page and measuring <b>MRR</b> of clicks.</li> <li>Test <b>new filter</b> by measuring <b>fraction</b> of clicks it would have filtered out.</li> </ul> + fast, cheap<br>- miss new signals | To <b>"Measure"</b> the impact of a change  | - <b>Solution testing</b><br>- <b>QA</b><br>- <b>Regression detection</b><br>- <b>Impact measure</b> | Experimentation   |
| <b>★ A/B test framework</b>                                      | Determines whether <b>impact</b> of a change is positive – or at least not harmful.<br><ul style="list-style-type: none"> <li>Holds everything else constant except for the change <b>being</b> tested.</li> <li>Statistical significance is a way to distinguish signal from noise.</li> <li>The larger the impact targeted, the less data needed to validate it.</li> </ul> One of the most valuable and versatile <b>tool</b> to measure and improve search.  | To <b>"Measure"</b> the impact of a change  | - <b>Solution testing</b><br>- <b>Impact measure</b><br>- <b>Decide release</b>                      | Search A/B test   |
| <b>Fronteer Experiment (online)</b>                              | Canary test a change with Fronteers as first users. Increase confidence in a change by catching the first batch of obvious feedback  | To <b>"Detect"</b> obvious and visual issues. (Not a good fit for functional issues)  | - <b>(Solution testing)</b><br>- <b>(QA)</b><br>- <b>Decide release</b>                              |   |
| <b>👤 User testing session</b>                                    | Interview users to see live their behavior, capture feedback, and ask questions.   | To <b>"Feel"</b> and <b>"Learn"</b> about our users' mental models and expectations   | - <b>Solution testing</b>  | E.g like we did for <a href="#">P</a>   |
| <b>👤 Beta program</b>  | Test a feature that requires significant onboarding with real users and gather qualitative feedback.   | To <b>"Validate"</b> with real users' data and qualitative feedback   | - <b>Solution testing</b><br>- <b>Impact measure</b><br>- <b>Decide release</b>                      | Gathering Beta  |

# Key takeaways

**Think beyond**

# Questions?

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