# Serendipitous Discovery & PitchBook Data

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# Executive Summary

PitchBook Data is a data platform that provides research, financial information, and resources to analyze private companies, investments and funds, private equity and venture capital. Their search functionality is managed as a database through which users can query data using different parameters and analyze the results using analytic tools, graphs, models and data visualizations. These searching capabilities are rigid and don't allow users to perform dynamic analysis and discovery within the platform; most users must export the data in order to analyze the information more closely and uncover insights.

We partnered with Pitchbook to utilize user research, information architecture, interaction design, data analysis, and visualization skills to open the platform to discoverability of information and ability for users to gain more valuable information from their searches. Using a user centered design process, we focused on redesigning the content, navigation, and interaction capabilities in Basic Search and Advanced Search as well as designing and building data visualization dashboards that allow users to complete industry analytics with ease without leaving the platform. Our focus was primarily the companies and deals information that is relevant to the venture capitalist segment of their client base.

The project took a total of seven months from the first meeting with the sponsors to the presentation of the final deliverables. We performed domain research, competitive analysis, and informational interviews in order to design the three pages. We tested and iterated over the last three months by performing usability testing with fourteen individuals with varying knowledge of the VC industry and financial analytics. The final deliverable was a high fidelity interactive platform encompassing all the pages that allow the stakeholders, sponsor and potential users, to navigate through our recommended designs.

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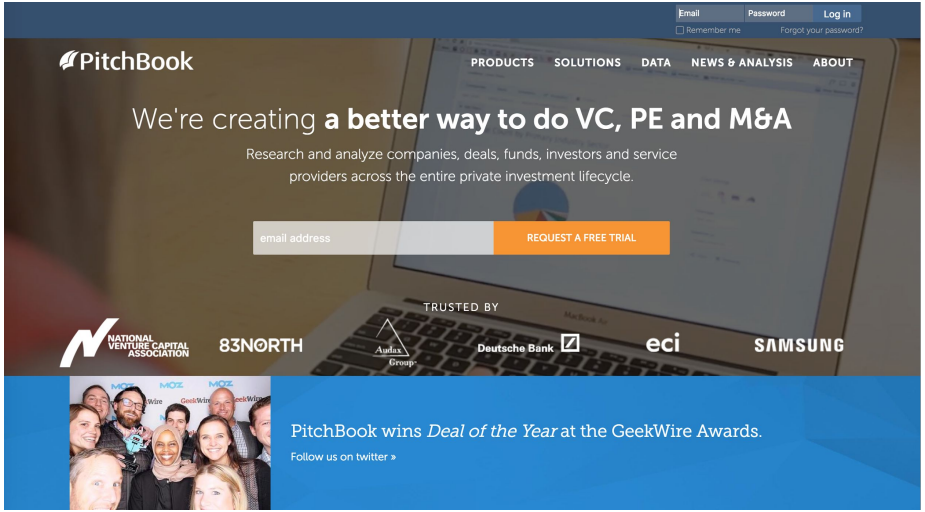
# About | Who is PitchBook

PitchBook Data is an online data platform that provides research and analysis on companies, deals, funds, investors and service providers across the entire private investment lifecycle. The company was founded in Seattle by John Gabbert in 2007. The company caters to a wide range of clients, including investment banks, VC and PE firms, law and accounting firms; users are comprised mostly of analysts and assessors.

The information is managed as a database where users can query data using different parameters and analyze the results using analytic tools, graphs, models and data visualizations. The information is highly structured and users need to interact with the platform in a rigid search format in order to find specific information. Currently, the platform has several types of advanced search options that provide multiple criteria for searching for companies, deals, investors, and more.

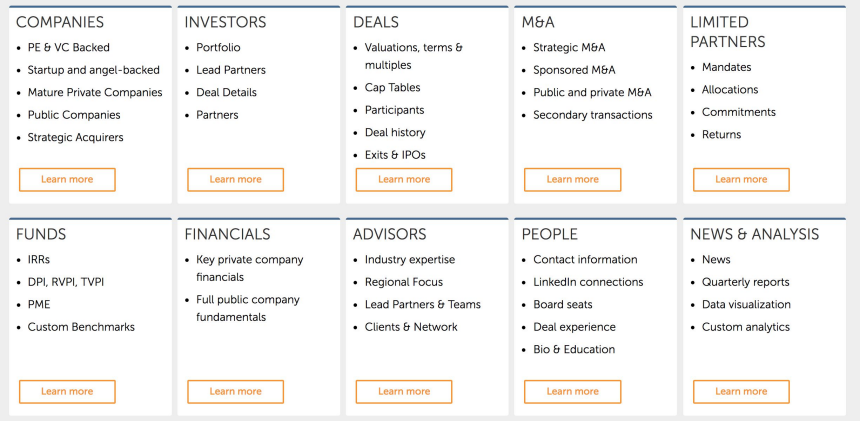
PitchBook

Better Data. Better Decisions.



# About | Our Project

We partnered with PitchBook in order to perform research on user needs and behaviors leading to the design of functionalities that allow them to discover more information beyond what they were searching for, making PitchBook a one stop shop for all of VC research needs.




The current inflexibility of the platform creates a known-item and existence searching environment where users are expected to have specific criteria to filter through the data and know the precise concepts they are searching for. This gap in the search functionalities leaves users unable to explore more within the platform and find insights they were not aware of previously. PitchBook's current platform has a siloed format that makes it difficult for people to do serendipitous discoveries of information that might be beneficial for their financial research.

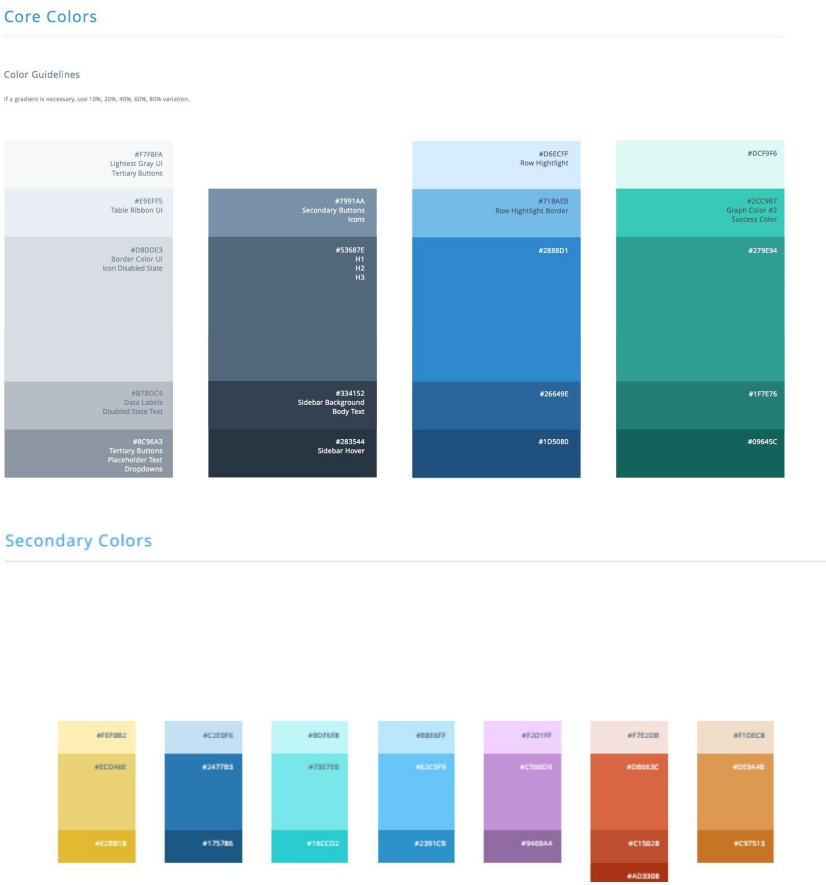
Our goal is to increase discoverability of information by redesigning the views and functionalities of Basic Search and Advanced Search pages, and adding a new data visualization feature where users are able to visualize information leading to easier performance of industry analytics. We are incorporating information architecture knowledge with interaction design, visualization design and data analytics.

# About | Project Requirements

The requirements for the project and the new pages were not extensive or disruptive which allowed for plenty of creative freedom. We were given the task of utilizing our visualization and information architecture knowledge along with other skills as we saw fit, keeping in mind the visual styles and designs of the UX department and the business goals of the company.

There were a few sponsor-mandated requirements that we diligently incorporated into the process and designs:

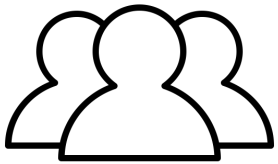
- User testing and research had to be performed with relevant stakeholders.
- No real data to be used in the prototype if using web services or posting information online.
- Prototype should be done in high fidelity using PitchBook's style guide.
- At least three rounds of testing and prototype iterations.



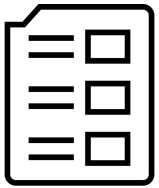
# About | Approach

The strategy for achieving our goal is directed at reducing complexity in the advanced search, providing more insight in the basic search, and creating visualizations for industry analytics. A balance between retaining current functionalities and capturing the complexity of this industry was to be achieved for this project to be successful. Both advanced and novice users must be able to attain value from the new designs and the ease of interaction between pages had to be a priority.

We focused on translating text-heavy information into visual components to promote visibility and discovery. In order to solve these problems, we used the following approach:

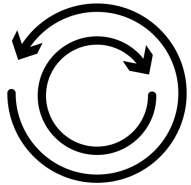


**Background Research**
Understand the user & platform at a granular level



**Wireframes**
Redesign & optimize design of current basic & advanced search pages using Axure

**Tableau Dashboards**
Design & incorporate interactive visualizations in a dashboard



**Testing**
Iterative & user centered design process to improve design & content

# Research | Background

The first portion of our background research consisted of three parts: an in-depth analysis of PitchBook's already existing personas, research of the Venture Capital domain, and analysis of the existing Advanced Search pages and site map structure. After this, our background research continued with a competitive analysis and informational interviews.

### Persona Analysis

- Analysis of 17 existing personas used at PitchBook
- Examination of characteristics important to Advanced Search and discovery
- Examination of common PitchBook pain points, and pain points specific to the VC process

### Domain Research

- Answered "What is Venture Capital?"
- Defined the venture capital (VC) process
- Created dictionary of VC terms relevant to our project
- Determined most common search tasks for VC analysts

### Analysis of Existing Structures

- Examined site map and taxonomy to determine what information is presented to users
- Examined Advanced Search user interface to determine how that information is presented to users

# Research | Competitive Analysis

PitchBook's main competitors are CrunchBase, Mattermark, and CB Insights. These companies provide similar information to user groups that overlap with PitchBook's primary target users. PitchBook's strengths are its breadth of information and data visualizations on the company overview pages that allow users to learn about the company quickly. However, it lacks an easy-to-use advanced search.

**CrunchBase** has a discovery feature, which includes companies, people, investors, funding rounds, acquisitions, schools, and events. Users can filter the results of the "Discovery" tabs based on several metrics and attributes. These categories can be filtered further.

**CB Insights** allows the user to find information on specific companies or discover companies that were previously unknown to them. They are presented with a results list that includes the company and similar companies with bios, as well as a box showing some analysis and visualizations on whichever company is selected.

**Mattermark** has a simple presentation of filter options in the advanced search which makes the advanced search appear easier to navigate. Their advanced search options can provide the user with a list that fits the parameters they are interested in, but this still makes discoverability challenging.

# Research | Informational Interviews

We were given the opportunity to interview eight employees from PitchBook that had experience with Venture Capitalist clients and their needs. We focused on finding a diverse group of individuals in different roles within the organization's operations so that we could have exposure to varying points of view.

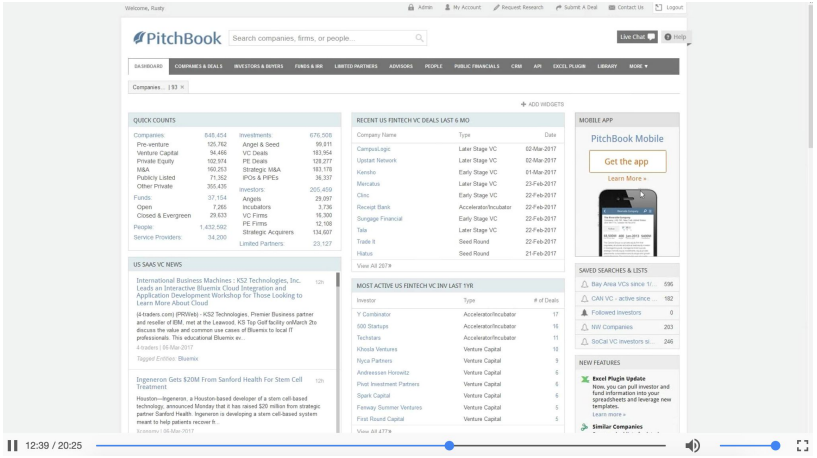
We interviewed four account managers, two customer service representatives, and two operational managers.We asked them eight questions along with follow up questions to gather data on their view of a VC analyst and decision makers and their process in finding new companies to invest in.

Each interview lasted 30 to 45 minutes. They were recorded and partially transcribed in order to allow for analysis which enabled us to compile the concepts and ideas to create an affinity diagram which led to narrowing the focus of our designs.

**Questions**

Can you tell us a bit about your role at Pitchbook?

1. How do VC firms determine the industries they invest in?
2. Do you know where or how VC analysts find new companies in general? (news, word of mouth, etc.)
3. Are clients interested in companies that are outside of their industry focus?
4. How do clients compare a company to the overall industry? What does this process look like?
    a. Do they compare to the top companies in the industry?
    b. Do they compare to specific industry metrics?
    c. Do they compare to industry trends?
5. What are the top 5 factors that would lead a business analyst to present the company to decision makers?
    a. *(What are VC metrics clients are using when deciding upon a group of companies?)*
6. Which metrics and attributes on a company profile do your clients use to estimate the success or failure of their investments?
7. What do clients do with this data when they export from PB?
    a. Are they comparing it to other sources? Or they using it as a primary source?
8. When researching new companies, what kinds of information do clients need that is not readily available on PitchBook?



# Research | Testing and Iteration

We performed three rounds of usability testing throughout our design process with different iterations of our page designs. We interviewed and tested a total of fourteen participants across the different testing rounds.

**1st Round**
Navigational components on low fidelity wireframes.We wanted to make sure that interactions between pages were intuitive, specifically moving from the basic search to advanced search pages.

**2nd Round**
Content validation on a low fidelity, interactive prototype. We targeted financial and VC analysts with experience working with financial data.

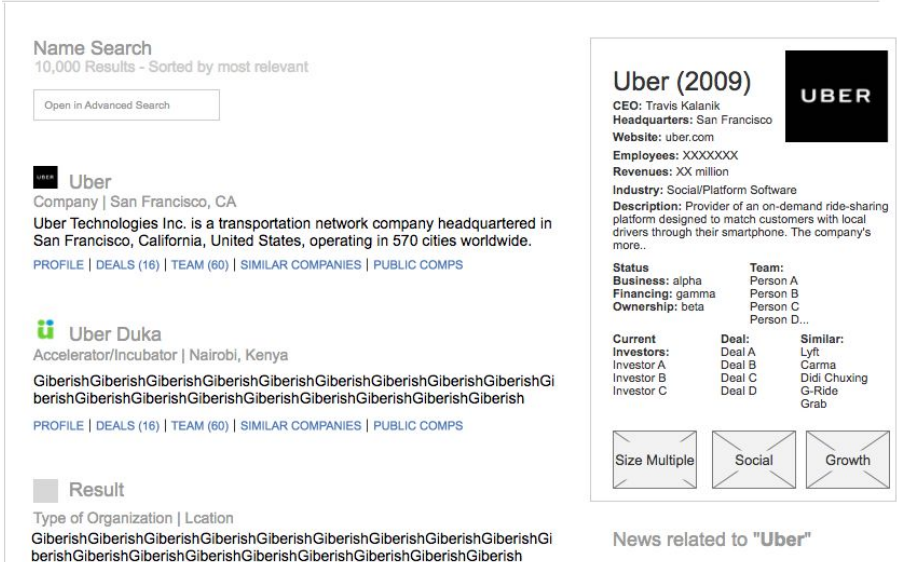
**3rd Round**
Information validation on a high fidelity, interactive prototype. Protocol included questions on the value of information portrayed and real-life scenarios. We aimed at putting our platform in a believable scenario to assess utility and value.

| Date | Time | Location | Proctors |
|---|---|---|---|
| 4/2/17 | 2:00 PM | RC Red A Room | Christina & Priya |
| 4/2/17 | 2:30 PM | RC Red A Room | Julie & Christina |
| 4/2/17 | 3:30 PM | RC Red A Room | Sam & Priya |
| 4/2/17 | 6:00 PM | House | Julie & Priya |
| 4/2/17 | 6:30 PM | House | Julie & Priya |
| 4/3/17 | 7:00 PM | | Julie, Sam, Christina |
| 4/3/17 | 5:45 PM | RC Booth A (5:30-7) | Julie, Sam, Christina |
| 4/3/17 | 6:30 PM | RC Booth A (5:30-7) | Julie, Sam, Christina |

# Basic Search | Low Fidelity Wireframes

Our persona analysis, informational interviews, and competitive analysis informed our first sketches of the redesigned Basic Search. We found that Basic Search would be an ideal space to surface high-level information about companies, and also information about similar companies in order to promote discovery. Our goal was to allow users to uncover this information without additional clicks.

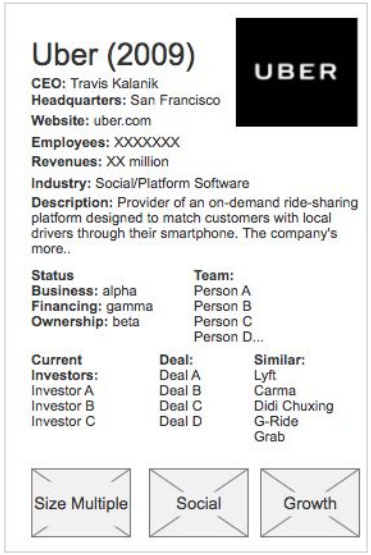
In order to accomplish this, we wanted to provide company information and metrics commonly used by VC analysts. We placed this in an summary box, which would display the first result's information and change as the user hovers over other search results. We also wanted to include recent news about that company. This information is a solution to the lack of discovery within the platform. It is directed at those users who are beginning their initial search on companies early in the VC process, have companies already in mind, but may still benefit from finding other similar companies.

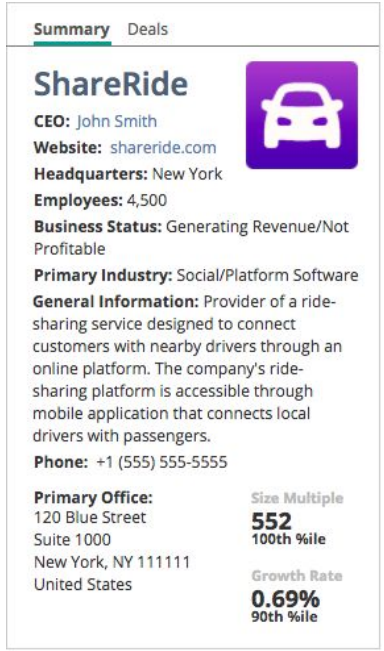


# Basic Search | Findings

In testing the Basic Search page, we found that users thought our method for uncovering information was useful in the paper prototype, but users wanted to be able to see more financial data in the summary box. We also found that users did not want to see all of the information that was provided in this section. Specifically, they did not think that information on team members and similar companies was necessary. Instead, they expected to see similar companies as search results and would likely go to the profile page of the company to view team and more granular information. In addition, users expressed their interest in deal information for companies, and work history for people.

For our final iteration, we settled on the summary box having two tabs for all search results (company searches and people searches). Both display summary information about the person or company for the first tab, including contact information. The second tab includes deal information for company search results and role information for people search results.



# Basic Search | High Fidelity Wireframes

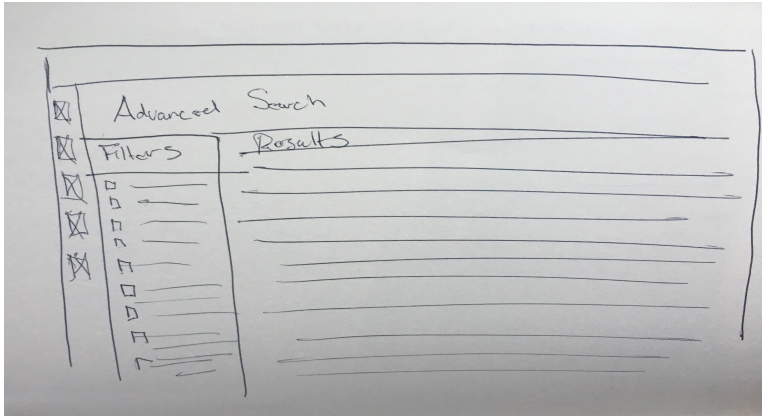
**Summary Box:** The Basic Search summary box was added to allow users to find information more quickly and discover information about other companies and people related to their search. This information is easily scannable without the need to open a profile page. Users will see the summary of the first search result but can hover their mouse over other results to read a summary of those companies or people, and can easily go to the deal or role information if they want to learn more. This allows for ease of uncovering information which allows for more discovery of new companies for users.

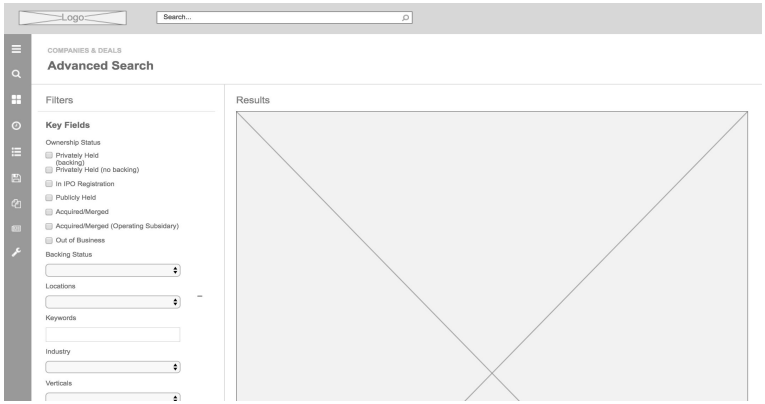



**Filters:** Within the Basic Search prototype, users are now able to filter search results, using multiple filters by clicking on filter options on the left. This allows for greater control over the results being viewed, but is much faster than using the Advanced Search for users that are looking to get information on specific searches quickly.

**Related News:** In addition to seeing summaries about the companies or people in which the users are interested, users can also view recent news about the top search result. Similar to the summary box, when users hover over each search result, the related news changes to recent news about that company or person.

# Advanced Search | Low Fidelity Wireframes




Based on the informational interviews and testing, our research suggested that advanced search criteria could be integrated into the results page. Users expressed a desire to see results update dynamically as they entered search criteria. This would make it easier to modify searches (by not backtracking to advance search) and it would reduce the number of clicks needed to adjust the search.

The first sketches and iterations of the prototype introduced this concept by altering the functionality of the advance search to allow both of these entities (advance search and results) to exist on the same page.

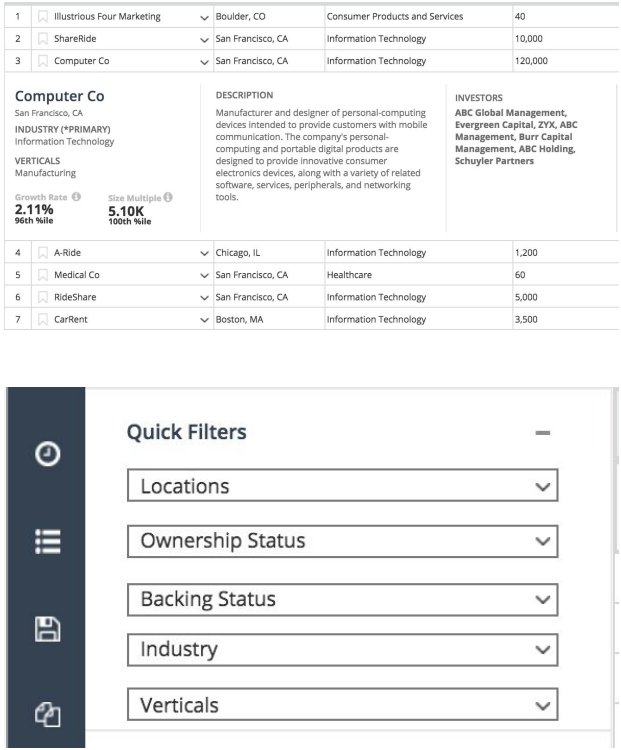
We grouped some of the criteria within existing and new categories. The key fields section was left visible to allow users the ability to quickly add common filters and criteria used by VC analysts. These fields were chosen based on the informational interviews and the domain research. Other categories were collapsed to not over saturate content in the advanced search sidebar.

# Advanced Search | Findings

Based on the first and second rounds of user testing, we determined that the prototype needed more functionality in terms of entering and adjusting search criteria.

As advanced search criteria were integrated into the wireframes, it became clear that there were too many search filters to fit in such a small window of the screen. Thus, the search criteria categories were simplified by removing criteria that were deemed unnecessary or seldomly used according to user interviews. As criteria were grouped and moved, this led to the development of the Quick Filters feature that was integrated later in project timeline.

Due to Axure's limited capabilities, it was diffiuclt to create a prototype that mimicked an advanced search similar to PitchBook's. However, we created a dummy data set that allowed users to enter certain search criteria and see the filtered results.

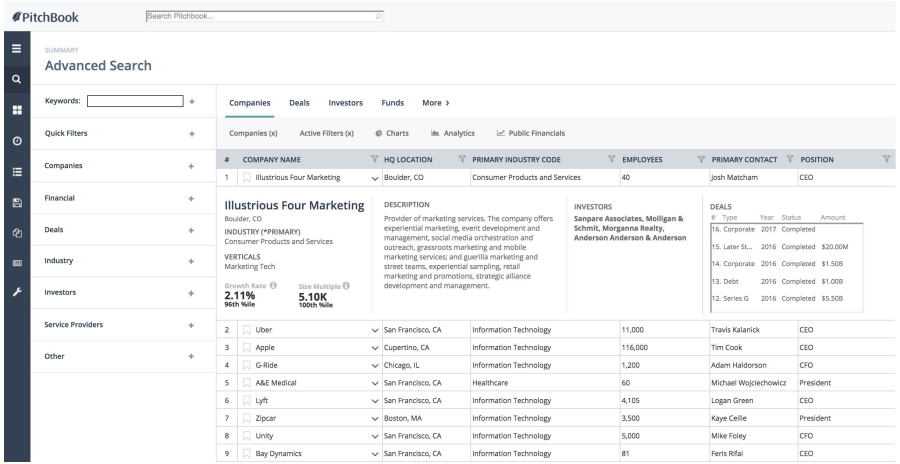


# Advanced Search | High Fidelity Prototype

**Criteria Sidebar:** We combined the two main entities so advanced search criteria and results were both visible. As soon as the user adds criteria and filters to the search, the results update dynamically. After testing this functionality with users, we found that they were able to navigate the advanced search bar effectively to filter search results.

**Company Overview Dropdown:** This feature allows the user to click the arrow next to each search result to view company description, investors, growth metrics, and contact information. These items shown in this window were metrics determined important based on interviews with Pitchbook product managers. Over the course of testing, we altered the types of metrics seen in this window based on user recommendations with venture capital and financial backgrounds.

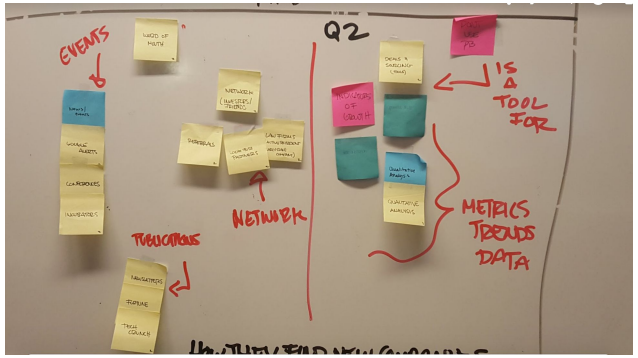
**Quick Filters:** As criteria were grouped and moved, this led to the development of the Quick Filters feature that was integrated later in project timeline. These quick filters were derived from our research into VC analysts and the search criteria used most frequently.



# Explore | Dynamic Industry Analysis

PitchBook wanted a new feature that would allow analysts to look at financial and deal information more dynamically. After a couple of meetings and more understanding about the user needs, we decided to use our visualization and data analysis skills to design a new page where analysts would be allowed to visually “play” with the data and uncover information that might not be immediately apparent by looking at it in tabular form.

After our initial user research and affinity diagramming, we had a clear understanding of the most relevant data that VC analysts use during their research. We downloaded the Companies and Deals metadata from the PitchBook platform and populated a spreadsheet with dummy data so that we had the freedom to post the visualizations to public servers in order to embed the dashboards into the interactive prototype.

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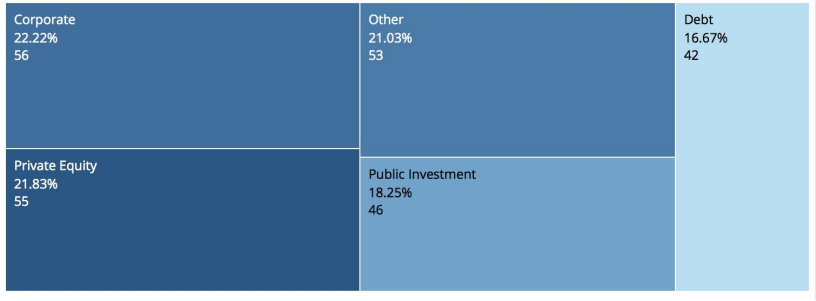
|---|---|---|---|
| Deal ID | Debt Type 3 | Implied EV/EBITDA | Industry Vertical |
| Company ID | Deal Size (million, USD) | Implied EV/EBIT | All Industries |
| Company Name | Deal Size Status | Deal Size/Revenue | Business Status |
| Company Website | Company Pre-money Valuation (million, USD) | Valuation/Revenue | Financing Status |
| Description | Company Post Valuation (million, USD) | Implied EV/Revenue | Employees |
| Deal No. | Company Post Valuation Status | Deal Size/Cash Flow | Company City |
| Deal Date | Implied EV (million, USD) | Valuation/Cash Flow | Company State/Province |
| Deal Type | Revenue (million, USD) | Implied EV/Cash Flow | Company Post Code |
| Deal Type 2 | Revenue Status | Implied EV/Net Income | Company Country |
| Deal Type 3 | Revenue Growth since last deal | Deal Status | PitchBook Link |
| Deal Class | Gross Profit (million, USD) | Investors | Growth Rate |
| VC Round | Gross Profit Status | Investors Websites | Size Multiple |
| Price per Share | Net Income (million, USD) | Lenders | Facebook Likes |
| % Acquited | Net Income Status | Sellers | Twitter Followers |
| Deal Synopsis | EBITDA (million, USD) | Exiters with no Proceeds | |
| Debt Type | Net Income Status | Dividend/Distribution Beneficiaries | |
| Debt Type 2 | Debt Raised in Round/Equity | Service Providers | |
| Debt Type 3 | Debt Raised in Round/EBITDA | Primary Industry Sector | |
| Deal Size (million, USD) | Deal Size/EBITDA | Primary Industry Group | |
| Deal Size Status | Valuation/EBITDA | Primary Industry Code | |

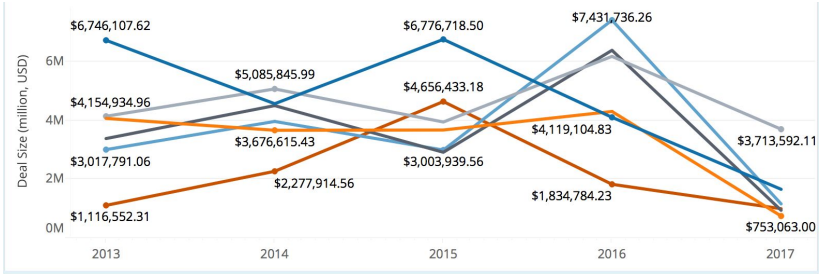
# Explore | Data Visualization

Once we had populated an excel spreadsheet with dummy data, we connected it to Tableau and started building visualizations that could be useful and intuitive to an analyst performing variations of industry analysis.

We relied on visualizations that are common in financial analysis, mainly heatmaps for proportions, line graphs for trends and bar charts for comparison and magnitude representations.

During the initial steps of the design of this page, we created one dashboard encompassing a variety of different visualizations giving an overview of the whole market, allowing for quick filtering of data via interactions with the visualizations. The information represented was high level and allowed for analysts to see how their specific industry may compare to others.



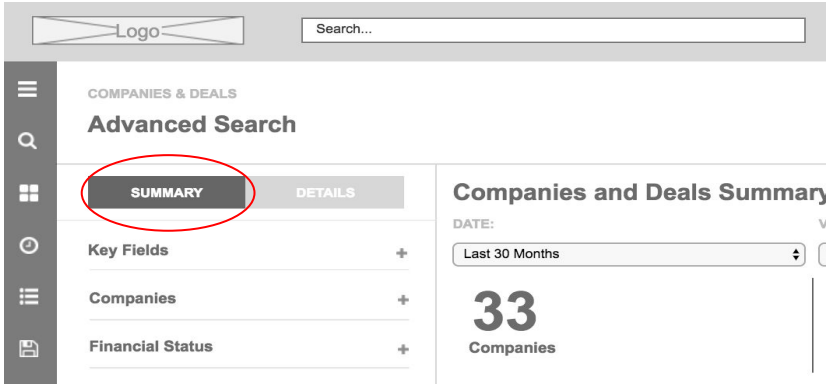



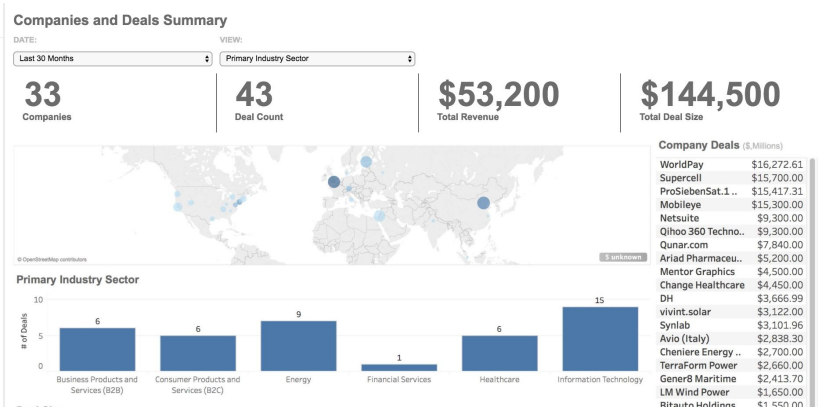
# Explore | Wireframes

The wireframes for the explore page were initially built into the advanced search and the section was denoted as the summary tab. The user could apply filters and criteria to the search that would be applied to both the summary tab and details tab (results of the advanced search).This would create a dynamic page where users could search for desired information and switch from a tabular presentation to a data visualization dashboard with ease.

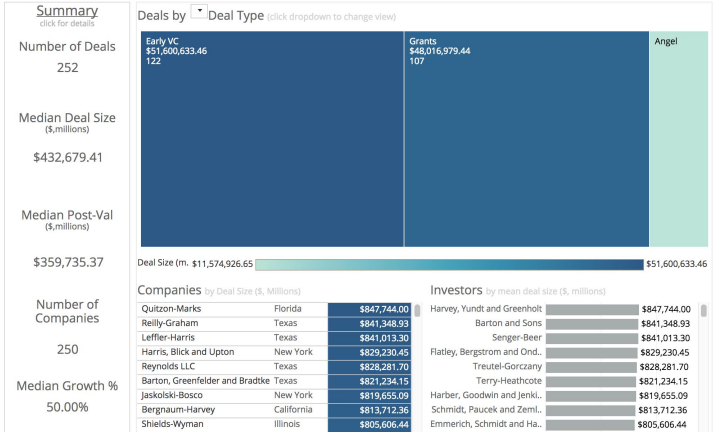
In the current Pitchbook platform, users can generate data visualizations from the searches they create. However these graphs are not interactive and portray just a handful of metrics.

The explore page allows users to  filter the data through clicking on certain widgets in the graph, while also being able to apply criteria through the advance search.



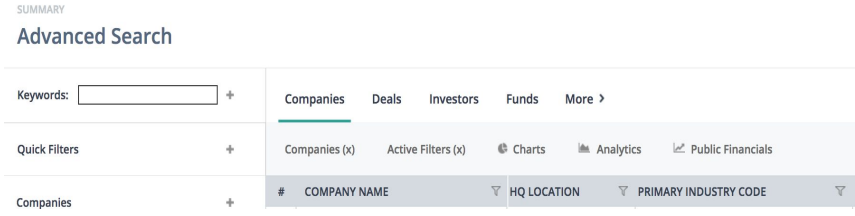



# Explore | Iterations




People responded positively to the interactivity of the designs and the ability to analyze financial information visually. We would have to decide if this page should work as a separate section of the website instead of incorporating it into the advanced search. When incorporating this page into the prototype, we embedded the dashboards into the Axure project which allowed users to interact with the information the same way they would in Tableau.

Another option would be to integrate the page as a charts option (and removing their current chart functionality all together) and allow for the criteria to change the presentation of data within the page. Because of time constraints and the timing of the project, we decided to place the explore and discover page in a location separate from advance search and give it, in a way, it's own identity.

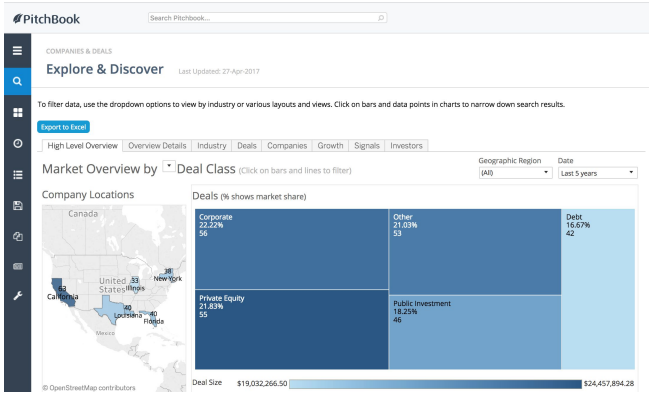


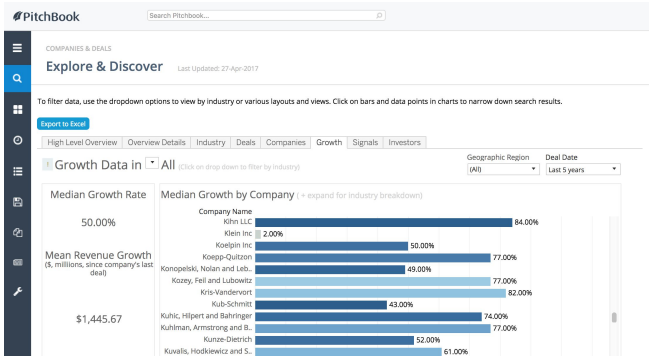
# Explore | Final Design

After further input from our usability testing and the sponsors, we decided to treat the explore page as a separate analytics tool capable of providing the presentation of both broad information and very granular data. This involved incorporating more financial metrics and the option for the analyst to either drill down on charts and graphs or see a high level summary of the data available, not only per industry but also at a market level.

The high fidelity design of this page allows the user to explore data interactively and to filter by different dimensions and parameters across different dashboards. Filtering capabilities by region and time range allow the VC analyst to see current industry metrics and statistics as well as trends over time and the performance of certain companies and industries in their respective fields of focus

All the dashboards presented provide a view of a specific company or deal concept that might be relevant for the user to perform analysis to determine the performance of an industry.



# Conclusion | Proposition Value

With our prototype, users are able dive deep into the data points that interest them and their stakeholders. Each part of our project was tested for usability and content; they were improved upon based on this feedback. The prototype is optimized to provide the most relevant information in a consumable way that makes sense to the users through the surfacing and highlighting of information, and translating this data to interactive visualizations.

Basic Search includes high level information on a box next to the search results. This new feature allows users to view the company overview, deal history, and people information without clicking through multiple pages or searching through the company profile. We have also included this feature in the Advanced Search; the user can use the dropdowns to get granular information based on their search criteria. These criteria have been consolidated and frequently used fields are available through the Quick Filters which users can select for routine searches. This information can also be viewed through visualizations in the Explore page. Through user research, we have found the most pertinent data points which we have displayed through interactive visualizations making it easier for users to dig deep into the data they care about.

PitchBook's rich database is what makes it different from competitors. By enabling users to explore and utilize all of its proprietary resources, it stands out from the rest in both ease of use and discoverability of information.

# Conclusion | Next Steps

**Basic Search**

- Invest in ontology tool (PoolParty, Protege) that makes search results robust, allows analysts to find relevant information quickly  from one search term, and allows them to search using questions.
- Test filtering and allow analysts to filter information for a more targeted search.

**Advanced Search**

- Provide information about people and their relationships to investors, companies and deals.

**Explore page**

- Use tableau as a visualization tool embedded into the platform. Utilize Tableau server to keep the data private.
- Incorporate into advanced search and allow visualizations to be modified via the left criteria selections