

VENDORGRAPHS | DATA VISUALIZATION

Samuel J Park | Liberty University | Thesis




Thank you.

Thank you to my professors and professional advisors that helped me in my design journey. I would especially like to thank my wife, Tina, and kids, for helping me complete this degree. I can't thank you enough for your support and encouragement to help me get through this challenging process. It's been a crazy few years, but I will continue to strive in my educational and professional career to provide a better life for us.

VENDORGRAPHS

DATA VISUALIZATION

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A thesis submitted to Liberty University for
Master of Fine Arts in Studio and Digital Arts.

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Impressions

7,811

▼ 5.05%

Avg. daily viewers

115,945

26%

180,000

150,000

120,000

May 15



VENDORGRAPHS | PART I

Research



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“I’ve got data, but I have no idea
what it means or how to read it.”

Greg Thompson, Dealership Owner

TITLE & DESCRIPTION

Creating a data visualization solution for automotive dealers to enhance sales performance. As many auto dealers use over 20 vendors per store, it is very difficult to keep track of vendor performance. Therefore, auto dealers need a tool that explains vendor performance through visual charts and graphs. VendorGraphs will meet this need.

Currently, auto dealerships use Customer Relationship Management (CRM) tools to keep track of their marketing efforts. However, there is an overwhelming amount of data that managers have to filter through to understand what is going on. The poor visual presentation of the data makes it even harder to decipher the information. Dealers spend over \$100,000 every month on advertising and with roughly 20 different vendors that claim to help them sell more cars. As they spend so much on advertising and try to determine which vendors provide good results, they need a data visualization solution that helps them see the data clearly with visual charts and graphs. With a successfully designed user interface and a clear hierarchy of data visualization, auto dealers will be able to understand which vendors perform well and which vendors they need to get rid of. A simple tool such as this will help auto dealers stay on top of their spending and be smarter with their outgoing costs.



INTRODUCTION OF RESEARCH

As technology is taking over, many main stream industries have been taking large steps to keep up with the fast pace changes. That industry includes the auto dealership with its future in mainly online sales. Marketing has its new challenges as well and many dealership owners and managers are facing issues when it comes to keeping track of their sales leads that come through the internet. When customers just walked in by foot, methods of sales were easily tracked. However, as more and more vendors are being used to bring in online leads, it is very hard to keep track of the return on investment.

In an effort to resolve this situation for dealerships, VendorGraphs is a reporting tool that will allow dealers to have a clear picture of how their vendors perform. VendorGraphs keeps track of vendor fees, potential customers provided by the vendor (referred to as leads), and also how many leads converted into sales. Essentially, this web app will work for many industries as the main goal for it is to help business owners keep track of their vendors and their performances. As owners and general managers will be able to track and analyze their leads, they can spend money knowing exactly how their vendors are performing.

As challenging as this tool may be to create, in its design and development, the research behind its creation will be very important. We need to find out details about the dealership industry and where it is headed. We also need to know about the various issues they are having keeping track of their sales, leads, and marketing dollars. Research behind data visualization design is crucial because we need to find ways to group reports from multiple sources.



Dashboard



- Item 1
- Item 2
- Item 3
- Item 4
- Item 5
- Item 6
- Item 7
- Item 8
- Item 9
- Item 10
- Item 11
- Item 12
- Item 13
- Item 14
- Item 15
- Item 16
- Item 17
- Item 18
- Item 19
- Item 20

2500

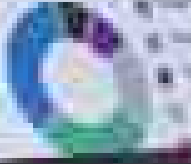
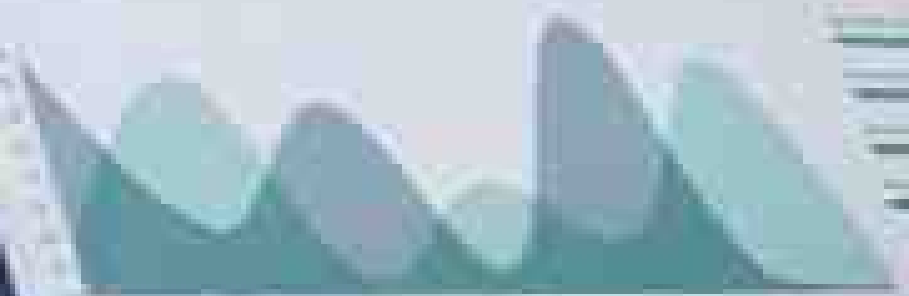
1.51

2.500

4.581

2.319

7.305





RESEARCH PROBLEM

Data Visualization has become an integral part of the web and has taken over the realm of representation of delivering complicated content. Current automotive dealerships have access to data about sales, marketing dollars, and their day to day performance. The issue of what we are trying to resolve comes with 3 specific challenges;

- 1 There is too much data to make sense of it all.
- 2 CRM reports are complicated and require multiple reports for a summary
- 3 It's difficult and time-consuming to read dense Excel reports to see what is working.

When a report is lengthy and dense in information, auto dealership managers do not have the time to look through their CRM (Customer Relationship Manager) to find the data that they need. When the same issues cycle time and time again, automotive dealers end up dumping the solution and looking for another. As this cycle continues for dealership owners and managers, they are constantly feeling lost in measuring their spending and being knowledgeable about the outcomes of their marketing efforts.

RESEARCH STATEMENT

The solution, in theory, is simple; make an easily accessible data management program specifically for automotive dealerships that makes it easy to track vendor performance and easy to read. The idea is simple and the goal is for the end product to be simple as well. However, the road to making it a simple web tool is the difficult part. What information is particularly necessary and how can we make it visually appealing and legible for a broader audience is what needs to be solved. This is where the real solution of visual representation comes in; not only to track the right performance but also to set it up in a way where it is very easy to read. It has to be a program that is also easy to implement so that they can have the most up to date data in their hands. Competitor research also shows that too many options lead to unclear messages and conclusions, so it is important to constantly think of one end goal and to work towards just that. Designing the best visual representation for different avenues of online sales will be beneficial for the future of this web tool. Focusing on the simplicity of the business model and design will be kept in mind throughout this process. The data visualization software for automotive dealers will help them see which vendors perform well for them and also determine which vendors they need to cut from their budget. I will implement various research strategies to create this web app.

RESEARCH STATEMENT

One of the ways I plan to research is by conducting 'automated remote research'. According to the Universal Methods of Design, the automated remote research is "a method that can reveal statistically relevant data about what people are doing on your website, to help identify the usability enhancements with the biggest impact" (Hanington and Martin). As difficult as it is going to be to find "observed behavioral data" about dealership websites, this is going to assist in making the web tool efficient in its design and functionality. We can look at CRM stats and see how long people spend on CRMs. In more detail, we can take a look at and their issues and task abilities according to various stats in order to see exactly where the issues lie in the CRMs and how we are able to fix it with this web app.

'Brainstorm graphic organizers' is another method I plan to use as apart of my research. This method will "help in the creation of new knowledge by visually structuring a deep dive into a problem space" (Hanington and Martin). By creating visual diagrams of the different layers of the web app, the understanding and flow of the app will become clearer to both myself and whoever will be involved in the development of VendorGraphs. I can show various charts by making "brainstorming webs, tree diagrams, and flow diagram" (Hanington and Martin).

Lastly, I plan to build a 'business origami', which is a 3D representation of my work. As a visual learner and demonstrator, I am hoping that it would be easier to identify and solve issues with the web app with a visual representation of how the app will flow. As it has so much stored information that can be pulled through more than one way, the organization and structure of the app must be solid. A strong focus on visualization design is key in making VendorGraphs successful.

Strong research and creations of these graph structures will make my vision more clear and easier to produce the actual web application. With the combination of these research methods, a successful web app with a strong backbone and an infallible navigation system will be accomplished.

RESEARCH STATEMENT

The values that will be measured will consist of the following:

- Leads
- Calls
- Total Leads
- Leads Sold
- Calls Sold
- Total Sold
- Gross Income
- Finance & Insurance Income
- Total Gross Income
- Spend Amount Per Vendor
- Cost Per Lead
- Cost Per Sold
- Web Referral
- VDP (Vehicle Detail Page) Views
- Ad Impressions
- Ad Clicks
- Ad Cost Per Click
- Ad Cost Per VDP
- Response Times
- Appointment Made Percentage

“Decision making increasingly relies on data, which comes at us with such overwhelming velocity, and in such volume, that we can’t comprehend it without some layer of abstraction, such as a visual one”

(Harvard Business Review)

LITERATURE REVIEW

As my goal is to make a web tool that is useful and visually appealing for dealerships, lengthy research was done to defend the importance of visual data in the business world today.

Data Visualization Overview

Data visualization is something that has been around for ages. However, we are now studying it as a method of work, making it easier to create, use, and read. Data Visualization is “the presentation of data in a pictorial or graphical format. It enables decision makers to see analytics presented visually, so they can grasp difficult concepts or identify new patterns. With interactive visualization, you can take the concept a step further by using technology to drill down into charts and graphs for more detail, interactively changing what data you see and how it’s processed” (www.sas.com). This article also shares key points on how data visualization can be used. What we can take away from it is that data visualization identifies areas that need improvement, clarifies customer behavior, helps you understand the placement of products, and sometimes even helps predict sales volumes.

The importance of data visualization is clearly reviewed in a Harvard Business article titled “Visualizations that really work” by Scott Berinato. In short, the article really outlined the reason why visual data is important to businesses. “Data is the primary force behind this shift. Decision making increasingly relies

on data, which comes at us with such overwhelming velocity, and in such volume, that we can’t comprehend it without some layer of abstraction, such as a visual one” (hbr.org). I couldn’t have stated this better and it clearly backs up the theory on why visual data is important. In addition to this research, I was able to find general visual content statistic developed by Hubspot. Statistics that validate the usage of visual data such as “37% of marketers said visual marketing was the most important form of content for their business... When people hear information, they’re likely to remember only 10% of that information three days later. However, if a relevant image is paired with that same information, people retained 65% of the information three days later.” (blog.hubspot.com) The article provides more in depth percentages on more visual marketing stats and emerging marketing trends but that was beyond the length of research that we need to know. These statistics are helpful in validating that visual graphics is indeed helpful and are a great demand in our culture today.

Through detailed research on dealerships and its future, problems with CRMs, possible solutions, market research on visual data, the development of my web tool became more clear.

LITERATURE REVIEW

Dealerships Are Here to Stay, Vendors Seek Revenue from Dealers

I thought it was very important to research on the future on the dealership industry as I want to make sure that I am thinking ahead of the trend and also predict the needs and changes that this web app will need in the near future. A blog article caught my attention immediately as it was titled “The Dealership of the Future May Resemble an Apple Store” (blog.caranddriver.com). Just as the title states, the article talks about how the Tesla model of direct sales without dealerships will become a model business for many car makes. A more interesting fact that was said in the article was that “Toyota will soon roll out a limited test of no hassle transactions at Lexus dealerships” and also that “Chevrolet sent 18,000 dealers to Disney Institute for hospitality workshops” (<http://blog.caranddriver.com/the-dealership-of-the-future-may-resemble-an-apple-store/>). Another very interesting fact was that “BMW aims to ease the transition to its multi-layered technology features for new owners by training specialists who serve as advisers in dealerships” (blog.caranddriver.com). Throughout all of this car-make research, the conclusion that I was able to make was that there is a long future in this web app. The idea of only having Tesla sales models, a dealership-less world is far from near. Rather, more and more vendors who will try to wow the dealerships with a new sales approach will become more common. In turn, the web app will become ever more useful.

Garbage In, Garbage Out

“Any CRM is only as good as the data within it. As the old programmer’s motto goes, “Garbage in, garbage out.” Leads are automatically tracked through CRMs, but they are never completely accurate. Sources might be incorrect or mislabeled. Therefore, it’s important to have a person or third party application to scrub and validate all the lead sources per vendor. In order to dive into the Automated Remote Research process of my project, I dove into researching about auto dealership tracking systems and how they are tracking leads. In hopes of finding statistics to help the automated remote research, I read up on an article titled “What does “lead tracking” mean for auto dealership marketing” (9clouds.com). With basic background about CRM and DMS, the article talks about the difficulties and the variety of ways leads come in from outside sources. This got me thinking rather about the organization of the web app and how it should be laid out in the Business Origami. The integration of the CRM system was debated during this article, but making it manual would rather take out the flaws that many of these CRM systems face. It’s always important to make sure that the data itself is as accurate as possible before moving onto creating visual representations. It is only useful if the data is represented accurately.

LITERATURE REVIEW

Using Dealer CRMs as the Primary Data Source

I wanted to explore how companies invest into CRMs and how I can incorporate the positive aspects of it into my web app. Nucleus Research stated a few years ago that “CRM pays back \$8.71 for every dollar spent... companies continue to make new investments in CRM to take advantage of new analytics, social collaborations, mobile, and other capabilities with good reason” (nucleusresearch.com) Another Forbes article shares that “Gartner predicts CRM will be a \$36 billion dollar market by 2017” (forbes.com). The articles continues on about statistics that show the increasing market of CRM systems all across the board, for businesses big and small. This claims to prove that businesses are seeking a more organized and efficient sales and marketing solution. The main difference between these CRM systems and my web app would be that most companies would use CRM systems when the would “customer base grows and the company is suddenly faced with more relationships to manage, more prospects to track and more data to collect, organize, and analyze” (business2community.com). That is a lot to handle. The next phase then for businesses is managing their vendors. Organizing, keeping track, and seeing exactly how much of their marketing dollars are being well invested is in demand as well. These researches on CRM systems show that my web app will also be a growing need as dealerships also needing to grow larger and smarter.

In the process of making my web app, my main focus will be on the data visualization of this CRM data. Data visualization “describes any effort to help people understand the significance of data by placing it in a visual context” (searchbusinessanalytics.techtarget.com). This is exactly what I aim to accomplish for my clients who will be using my web app. I want to present the “patterns, trends, and correlations that might go undetected in text-based data, which can be exposed and recognized easier with data visualization software” (searchbusinessanalytics.techtarget.com).

LITERATURE REVIEW

Issue 1: Too Much Data to Make Sense of it All

When working with automotive CRMs, you'll immediately notice that there are way too many features and navigation tools. It's almost impossible to navigate through it without getting lost. When automotive dealers get new CRMs, they require their sales staff to attend a week-long rigorous training course just to use the system. I feel that this is counter-intuitive for a tool that is supposed to be helping people access data and practical information that they need on demand.

In a Q&A session with several executives from automotive industry leading CRM companies, they shared their thought when asked what complaints they heard the most. Bill Wittenmyer from Elead1One CRM solutions stated, "First, their people don't use it. Sometimes the system is ineffective because it's too complicated or has too many pages or tabs to navigate basic fundamentals—or a CRM is selected based on the "wow factor." It may be shiny and flashy, but misses the mark on complementing the store's process and culture." Additionally, Stephen Coabes from AutoLoop stated, "Some of the complaints that I hear from dealers about their CRM systems are that it's not user-friendly, it doesn't help drive sales by effectively engaging customers, and that it lacks effective reporting capabilities. CRM systems should create a synergy between customers, your dealership, and your staff. Data collected from your customers should be easy to decipher,

and turned into an opportunity to up-sell and resell." (Dealer Marketing Magazine). Auto dealership owners typically have an internet director who takes care of anything technical. Most of the staff are not tech savvy, so this internet director is typically responsible for pulling reports and figuring out how vendors are performing. The internet director is also responsible for making sure his internet salespeople are closing their deals, so he or she usually finds it challenging to set aside 4-5 hours to pull various reports to give the dealership owner a detailed analysis of how their marketing efforts are performing. This is the reason why there needs to be a solution such as VendorGraphs to consolidate all the data and present it easily.

LITERATURE REVIEW

Issue 2: CRM reports are complicated and require multiple reports for a summary

All automotive CRM technologies provide marketing ROI reports. However, to capture a summary report, it requires auto dealers to pull several different reports. It's crucial for dealerships to measure and track marketing ROI effectively and actively. According to 9cloud's automotive digital marketing blog, author Abby writes, "While the majority of auto dealers we surveyed do check their analytics regularly, most fail to then check and document their marketing ROI, which is a very important step in any marketing strategy. Analytics and marketing ROI go hand in hand. Dealerships who check their analytics at least three times a week are 3.5 times more likely to see higher ROI than those who do not." 9cloud also conducted *The State of Automotive Marketing (SAM)* survey. As stated on the report, it is "based on a survey conducted via SurveyMonkey over a two-month period, from December 2016 to January 2017. A total of 108 people completed the survey. Of them, 66 were marketers at a dealership, 24 were managers at a dealership." For the second year in a row, proving ROI has been the biggest marketing challenge for dealerships.

https://cdn2.hubspot.net/hubfs/136465/State%20of%20Automotive%20Marketing%20Report%202017%20by%209%20Clouds.pdf?__hssc=174741629.7.1509669970638&__hstc=174741629.7a551e364d2760c705f8c98a6bf60ef8.1509665758241.1509665758241.1509669970638.2&__hsfp=2953860325&h-sCtaTracking=e97620df-dcb1-4fcb-b429-45cdab5f95d3%7C0820db-ca-9e8d-4f66-a0a1-48abf5db2407

LITERATURE REVIEW

Issue 3: It's difficult to read Excel reports to see what is working.

In Ryan Sleeper's blog post titled, "A Spreadsheet is not a data visualization," he mocks an Excel fan by quoting him/her saying, "Thanks for this – looks great. Would it be possible to take your world-class data visualization and turn it into an unreadable wall of numbers?" An unreadable wall of numbers sounds accurate to most of the reports automotive CRMs provide. There are so many columns and irrelevant data being delivered in each report. Dealers are always asking CRM companies to customize their reports, but CRM companies always disregard their requests and say that it's not a possibility.

As Laura Magnuson states, "...experts generally consider Excel to be a poor tool for processing data and creating visualizations (e.g., Panko 2008). There is a great deal more that can be done with circulation data than just creating line graphs in Excel!" (Magnuson, Data Visualization: A Guide to Visual Storytelling for Libraries). Rather than reading reports that simply show charts of numbers, visual formats will help tell stories and show if vendors are trending for positive or negative ROIs.

Less effective text format

23.4K vs. 3.42M

More effective visualized format

<https://www.ryansleeper.com/a-spreadsheet-is-not-a-data-visualization/>

LITERATURE REVIEW

User Experience

In text and writing, information can be overwhelming, especially in this world where simplicity is key. We want to see everything in one shot, we don't want to read more than one simple tag line, and we thrive on thumbing through information as quickly as we can scroll. For this very reason, infographics became a large effective tool in the graphics world. "In the enterprise, infographics are used by all levels of management for high level views of data" (whatis.techtarget.com). We know that infographics consists of "bar graphs, pie charts, histograms, line charts, tree diagrams, mind maps, Gantt charts, and network diagrams... such tools are often components of business intelligence software" (whatis.techtarget.com). All these components are exactly what the research points to in making the app successful. With readable graphs and charts for dealership decision makers to view, it will be a great tool that will give useful information in a timely manner.

The text "Interactive Data Visualization: Foundations, Techniques, and Applications" (Keim, Grinstein, Ward) talks about the details of why and how data visualization is important. It gives examples of how the same data can be represented in different ways to be more appealing and easily readable on the clients end. There is a visual aid that I can use an example for my 'brainstorm graphic organizer' portion of the project. By color coating and

showing different layers and connections, I will be clear about graph of what needs to be created (Keim, Grinstein, Ward). Moreover, the name of this process is of organizing for the brainstorm graphic organizer is "data modeling, data selection, data to visual mappings, scene parameter setting, and rendering or generation of the visualization" (Keim, Grinstein, Ward). As I began researching the term "infographics" along with "data visualization" I came upon a book "Cool Infographics" that shared that "we are actively seeking information and at the same time, companies and advertisers are pushing their information at us" (Krum, 31). In this immense push and pull society, it is important to be able to keep track of what is working for us and against us to make wiser decisions about our spending. If dealerships were in the know about their specific spending's, they will no longer have to guess whether or not their vendors are performing for them.

LITERATURE REVIEW

User experience design is also a large part of this project after all the organization process is complete. After all the components of the web app is organized, its going to be important to think about the color scheme, the size of the font, the design and imaging layers of each page. However, it is important to remember, “every design decision should have significant reasoning behind it” (“User Experience Design”, 2012). In my business origami, I plan to incorporate a lot of my understanding of user experience. For example, making it “fall in the category of –beautiful” (“User Experience Design”, 2012) meaning we must concentrate on the look of the web app as much as the functionality of it. But we must also consider this, “if prettiness is really as important as we think then the current Facebook home page should perform better than the plain alternative” (“User Experience Design”, 2012). As the audience base is male dominant, corporate, and quite stoic, the design configurations will be simplistic and straight-forward.

LITERATURE REVIEW

Functionality and Product Offering to Dealerships

Through various research and interviews conducted with Dealership CRM users, I have come to conclusions about how the this web tool will be organized. The web tool will have to be manually entered into the admin system as it will have a back-end admin page that will allow the project manager to input data. Retrieving data through an API or some sort of data extraction process can input data, but there has to be a manual data entry process to ensure that the data is being measured and filtered correctly. Since there are so many different type of reports, the data entry specialist or project manager will have to aggregate all the data manually and enter them into the admin system for it to calculate and create charts.

Through researching costs of various vendors that dealerships use, I've come to a conclusion of how VendorGraphs will have its costs and functionalities structured. The web tool and service will be offered to automotive dealerships as a monthly recurring service. The price range will cost dealers \$1,200 monthly. The software, data entry services, and consulting of reading the visual graphics will be included in this cost. In terms of marketing this tool to dealers, VendorGraphs finds vendors that perform poorly and saves dealers tens of thousands of dollars by canceling their services. Sales will increase as money is shifted from these bad vendors to vendors that perform well. Once they realize that they need this tool to help measure their own dealership's

performance, they will be more inclined to become clients of VendorGraphs. There will also be consultants that will visit dealerships to do analysis of individual dealerships on the spot to demonstrate its value. After speaking to dealership decision makers, it its apparent that they like to make face connections to the services they receive.

<https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/manufacturing/deloitte-uk-automotive-analytics.pdf>

“The amount of data available to automakers can be daunting and they need to find a way of collating and analysing it so data driven decisions can be made. Marketing analytics has the potential to significantly improve the decision making of automakers and returns they can deliver, by collating and analysing marketing information and customer behaviours in a consistent and seamless environment. Having done this, automakers can then begin to leverage historical data to gain some insight into which levers are best applied in which situations.”

Big data and analytics in the automotive industry;
Automotive analytics through piece
Deloitte



Google Analytics Dashboard

Temps réel

Right now
28
visiteurs actifs sur votre site

Progression
Par heure

Top Referrals

Source	Nombre de visiteurs
1. facebook.com	100%
2. youtube.com	100%
3. blog.hubspot.com	100%
4. google.com	100%

Top Social Traffic

Source	Nombre de visiteurs
1. Facebook	100%

Top Keywords

Keyword	Nombre de visiteurs
1. [keyword]	100%

KNOWLEDGE GAP

The gap between my research is found in areas where I cannot find information on how dealerships are currently keeping track and using data analysis or visual data to assist with their sales. As I have visited various dealerships to discuss vendor performance, they do have several tools that allow them to conduct data analysis. Several tools include the CRM, reports from vendors, and reports from Google Analytics. Dealerships do have these tools to use, but they do not have the knowledge or bandwidth in staff to review and understand these charts. There needs to be more research behind how often and how many dealerships actually use the CRM system they are provided.

To go beyond the small spectrum of dealership businesses, it would be very beneficial to see what other businesses can benefit from this web tool. Many people use CRM systems but there is no case study research as it is generally new. The problem to solve here is numerous vendors, thousands of dollars spent on marketing, all without knowing what is effective and what is unsuccessful. Another factor to consider is also the future of the dealership business and where it is headed. Though my research stated that because dealerships act as a middleman for car makers, the future may just be the web

for all purchases. This, too, is the same for many businesses. More research on the future of dealerships and its up coming business models would be beneficial to the research and improvement of VendorGraphs.

Another gap in my research is on data visualization and how to make it most effective. There was general information on charts and companies that create visual data as an online creator tool, but no further research was found. From my current surroundings, there is a high interest in data visualization. I hear from educators to marketing specialists that they want to create more effective and easy to understand graphs for their peers. As Excel is still the standard tool for creating visual representations, we still have a long way to go in the area of design and creation of creative graphs.

RESEARCH METHODS

Research problems were explored and resolved by utilizing various research methods. By creating three different methods;

1. Automated Remote Research
2. Brainstorm Graphic Organizers
3. Business Origami

Before its development, the problem will be solved, as the brainstorm graphic organizer will organize the site map in all its layers and visually show on one chart and confirm to me that all of its components will come together. The business origami method will be able to take the brainstorm graphic organizer to the next level with this extra step of the project. With these methods, the research problems will be resolved.

RESEARCH METHODS

The three different types of research methods that were interesting and applicable to the research project are:

1. Automated Remote Research;
2. Brainstorm Graphic Organizers; and
- 3: Business Origami

The first one was Automated Remote Research. What I would do for this is review the different ways the current CRM has been used. Rather than using live participants, I would take data from existing reports that were pulled in the CRM platform. That would provide insight as to what clients use CRMs for primarily. I'll also see how many different reports it takes them to get information they need. I'll also count and record how many steps it takes to complete each task.

For Brainstorm Graphic Organizers, this is a very effective way to research and find solutions to major design challenges. The process includes laying

out post-it notes or drawing out large sitemaps and wireframes on large white boards to reveal the big picture. I would choose either a brainstorming web, tree diagrams, and flow diagrams. Perhaps I can have a mix of a tree diagram and a flow diagram together depending on user case scenarios. It would be interesting to see how people would navigate through the different parts of the CRM to get information presented in a visual way.

The third research method I would consider is Business Origami. This is very similar to Brainstorm Graphic Organizers because it starts with a whiteboard diagram of all the different pages of the CRM. However, the whiteboard would be laid flat on the floor and there would be cutout pieces that you can interact with more. It gives a more physical approach to figuring out what interactions take place.

RESEARCH METHODS

There are various reports that need to be pulled from the CRM, call tracking report, Google Analytics, and the website provider's admin tool to get access that can be aggregated into one dashboard. The first report that needs to be pulled is the New Leads by Source report. This has be bulk of information, but it does not have information, such as call tracking, added into the summary of the data.

New Leads by Source (Tracking Codes)
 Sample Dealer
 Date Range: 8/1/2017 - 8/31/2017

Source	Marketing	New Leads	Contacted	Store Visits	Appt Open	Appt Show	Appt Unrpt Show	Appt No Show	Sold	Appt Sold	Sold/Lead %	Appt Sold/ Open %	Top Gross	F&I Gross	Total Gross
		1	1	0	1	1	0	0	1	1	100%	100%	\$-2834	\$0	\$-2834
		8	8	0	0	0	0	0	8	0	100%	0%	\$-13437	\$11011	\$-2427
		2	2	1	1	1	0	0	2	1	100%	100%	\$-4075	\$3303	\$-771
		2	3	0	2	2	0	0	2	1	100%	50%	\$-3564	\$4456	\$891
		25	23	4	9	4	0	3	3	2	12%	22%	\$-3152	\$1660	\$-1492
		1	1	0	1	1	0	0	2	1	200%	100%	\$-3010	\$0	\$-3010
		102	81	3	22	8	0	14	3	0	2%	0%	\$4352	\$2484	\$7037
		8	7	1	1	1	0	0	0	0	0%	0%	\$0	\$0	\$0
		26	29	8	12	8	0	4	4	2	14%	17%	\$-12501	\$6752	\$-5749
		0	1	0	0	0	0	0	0	0	0%	0%	\$0	\$0	\$0
		8	4	0	2	0	0	2	0	0	0%	0%	\$0	\$0	\$0
		3	1	0	0	0	0	0	0	0	0%	0%	\$0	\$0	\$0
		3	11	0	2	2	0	0	3	1	100%	50%	\$-8385	\$6549	\$-1642
		8	1	0	0	0	0	0	0	0	0%	0%	\$0	\$0	\$0
		3	3	0	1	1	0	0	3	1	100%	100%	\$-4009	\$2222	\$-1787
		13	5	0	2	0	0	2	0	0	0%	0%	\$0	\$0	\$0
		50	34	2	13	8	0	8	3	1	6%	8%	\$-2821	\$2723	\$-104
		39	26	6	18	6	0	10	2	1	5%	8%	\$-1154	\$2084	\$850
		64	29	0	7	3	0	4	1	1	2%	14%	\$368	\$682	\$851
		209	149	19	75	32	0	41	17	5	8%	7%	\$-23375	\$30019	\$-14054
		4	4	0	0	0	0	0	0	0	0%	0%	\$0	\$0	\$0
		5	11	0	4	4	0	0	8	2	120%	50%	\$-7378	\$8076	\$704
		40	30	9	18	8	0	10	6	0	15%	3%	\$7446	\$10073	\$17542
		87	29	4	13	7	0	6	3	1	4%	8%	\$-356	\$1435	\$1035
		5	2	0	0	0	0	0	0	0	0%	0%	\$0	\$0	\$0
		22	12	1	3	2	0	1	0	0	0%	0%	\$0	\$0	\$0
		0	4	0	0	0	0	0	0	0	0%	0%	\$0	\$0	\$0
		33	23	0	1	0	0	1	3	0	9%	0%	\$-2336	\$7048	\$4712
		9	5	1	7	3	0	3	2	0	22%	0%	\$-3124	\$8196	\$2072
		4	3	1	0	0	0	0	0	0	0%	0%	\$0	\$0	\$0
		4	0	0	1	0	0	1	0	0	0%	0%	\$0	\$0	\$0
		1	1	0	0	0	0	0	1	0	100%	0%	\$-426	\$0	\$-426
		4	1	0	0	0	0	0	0	0	0%	0%	\$0	\$0	\$0

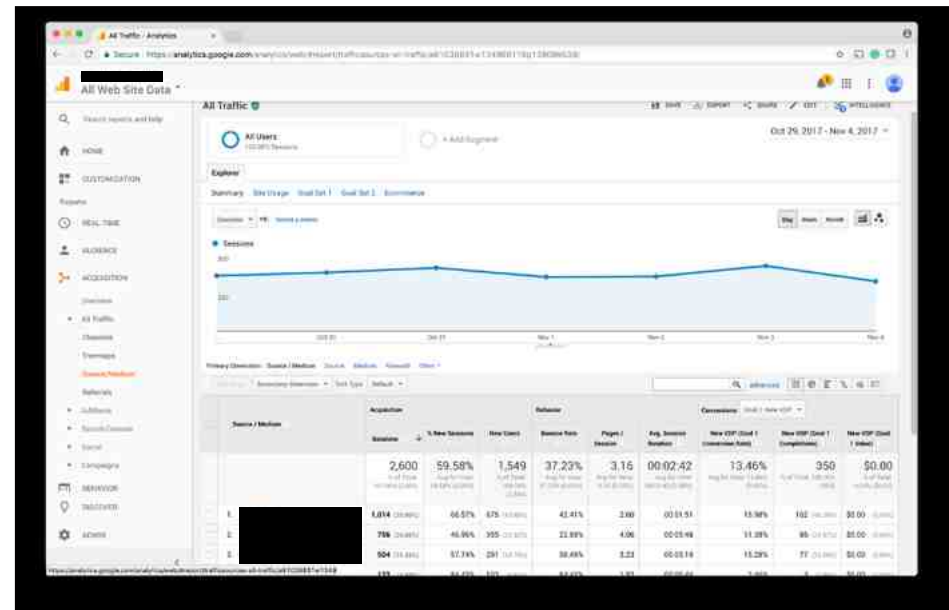
RESEARCH METHODS

The call tracking report is a report that is highly overlooked. Dealers do not check their call tracking reports unless there is a major issue. Dealers should constantly see how many calls they are receiving from each vendor.

Dates & Times:		08/01/2017 - 08/31/2017, All Hours, All Days		
Call Duration:		Any Call Duration		
Locations:		[REDACTED]		
Call Results:		Any Call Result		
Ad Sources:		All		
Ad Source	# of Leads	Cost per Lead	Avg Call Duration	% of Leads
[REDACTED]	2	n/a	0:00:45	0.10%
[REDACTED]	0	n/a	0:00:00	0.00%
[REDACTED]	5	n/a	0:03:09	0.20%
[REDACTED]	1	n/a	0:00:00	0.00%
[REDACTED]	1	n/a	0:00:00	0.00%
[REDACTED]	2	n/a	0:01:12	0.10%
[REDACTED]	237	n/a	0:03:03	7.60%
[REDACTED]	1	n/a	0:00:00	0.00%
[REDACTED]	8	n/a	0:04:57	0.30%
[REDACTED]	5	n/a	0:04:49	0.20%
[REDACTED]	0	n/a	0:00:00	0.00%
[REDACTED]	0	n/a	0:00:00	0.00%
[REDACTED]	1	n/a	0:00:39	0.00%
[REDACTED]	0	n/a	0:00:00	0.00%
[REDACTED]	0	n/a	0:00:00	0.00%
[REDACTED]	60	n/a	0:02:13	1.90%
[REDACTED]	13	n/a	0:03:19	0.40%
[REDACTED]	5	n/a	0:03:40	0.20%
[REDACTED]	2	n/a	0:00:00	0.10%
[REDACTED]	0	n/a	0:00:00	0.00%
[REDACTED]	1	n/a	0:12:22	0.00%
[REDACTED]	3	n/a	0:02:58	0.10%
[REDACTED]	0	n/a	0:00:00	0.00%
[REDACTED]	1	n/a	0:00:00	0.00%
[REDACTED]	1	n/a	0:00:23	0.00%
[REDACTED]	24	n/a	0:03:48	0.80%
[REDACTED]	2	n/a	0:01:15	0.10%
[REDACTED]	9	n/a	0:03:23	0.30%
[REDACTED]	2	n/a	0:00:19	0.10%
[REDACTED]	37	n/a	0:02:55	1.20%
[REDACTED]	84	n/a	0:02:56	2.70%
[REDACTED]	0	n/a	0:00:00	0.00%
[REDACTED]	1	n/a	0:00:27	0.00%
[REDACTED]	2	n/a	0:00:45	0.10%
[REDACTED]	1	n/a	0:00:22	0.00%
[REDACTED]	5	n/a	0:00:37	0.10%

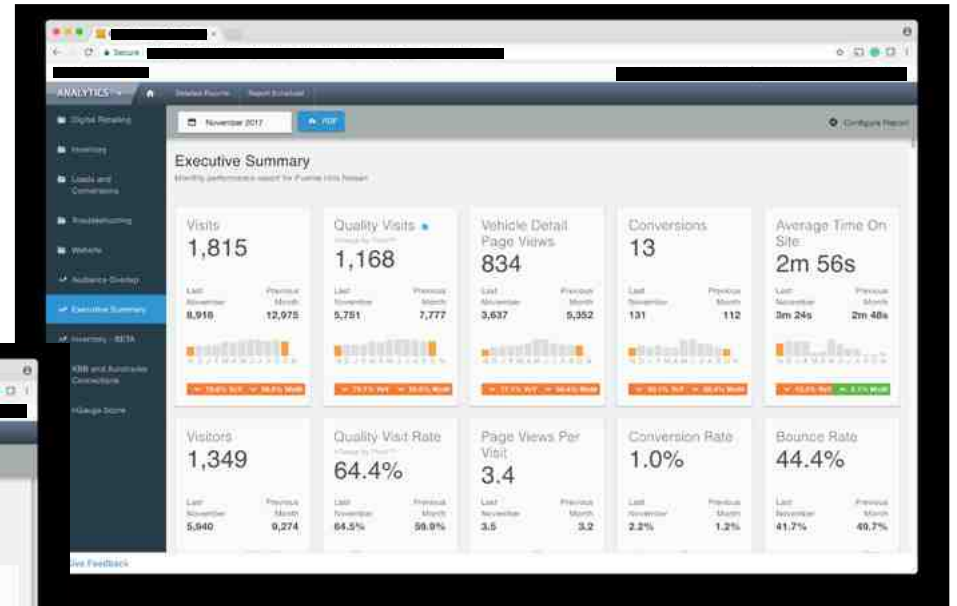
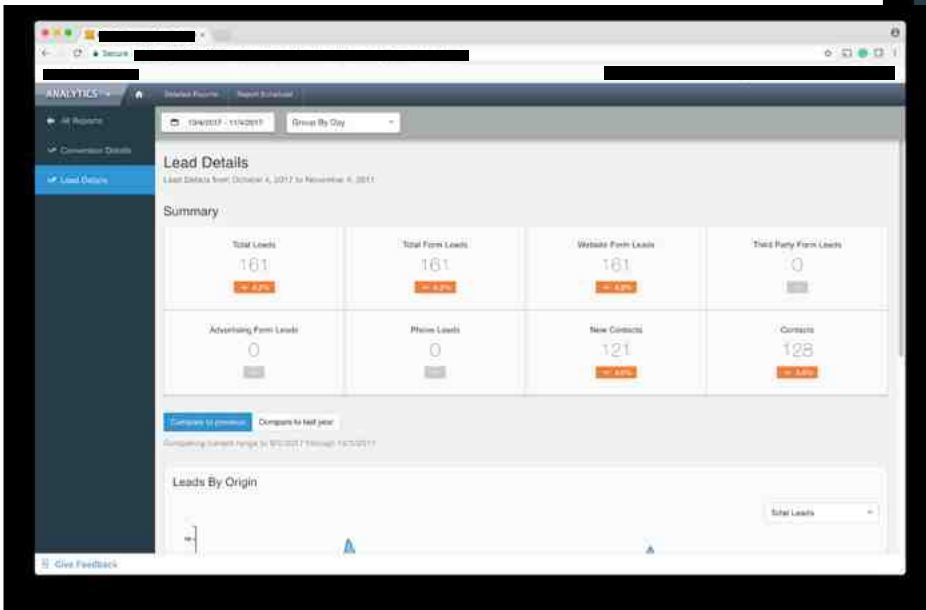
RESEARCH METHODS

When vendors are questioned about not providing enough leads, they seldom state that although they didn't provide actual leads, they provided a lot of traffic to the dealer's website. To make sure they are being honest, Google Analytics must be accessed and an accurate measure of quantity of traffic has to be measured separately.



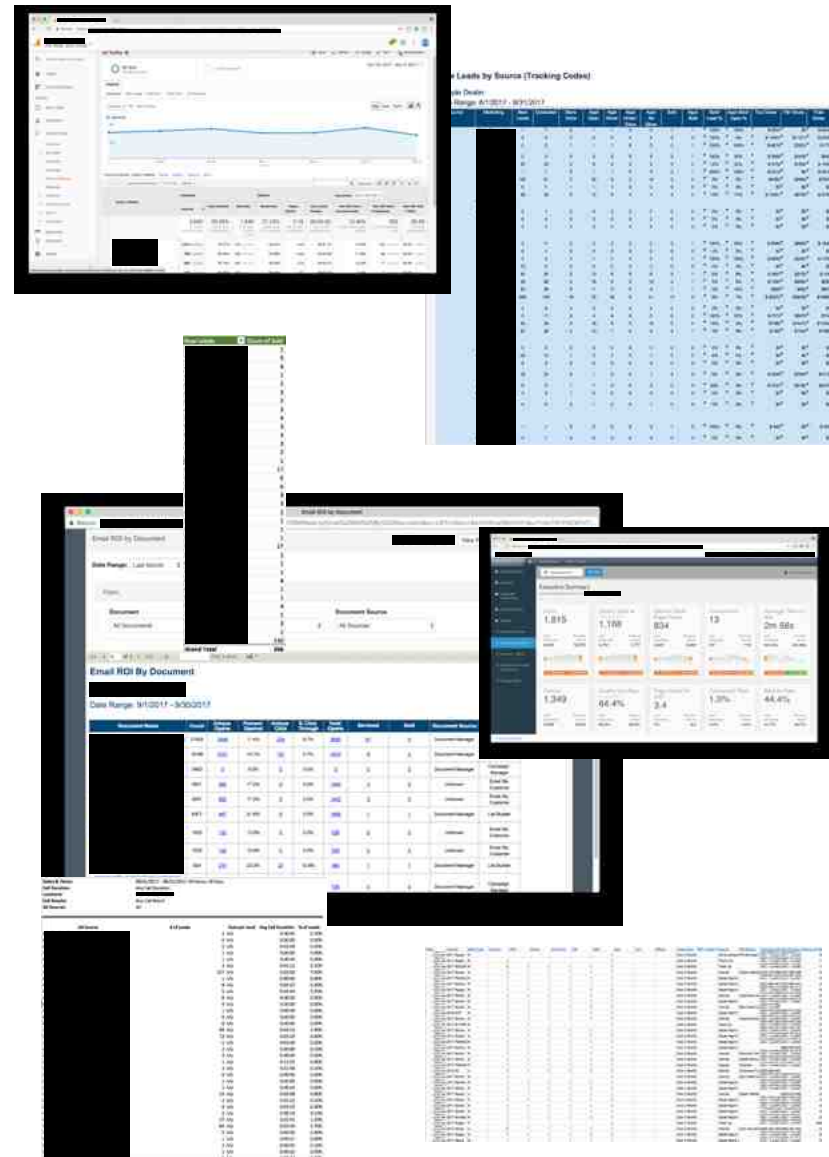
RESEARCH METHODS

Also, data from the website provide also has to be pulled separately because they are the only ones who know how people interact with their website platform. Statistics must be pulled from their reports separately as well in order to get a summary of all digital marketing efforts.



RESEARCH METHODS

Having to pull all these various reports, it gets extremely difficult for auto dealers to understand what is going on. To get a summary, an individual has to create these reports, download them, and then aggregate the data into a spreadsheet to make sense. VendorGraphs will make it extremely easy because it combines all data into a simple and easy visual interface. It simplifies the data and translates it into a format that's easy to read.



STAKEHOLDERS

This solution will help automotive dealership owners and general managers. Vendors visit auto dealership and scare them into buying their product by instilling a fear of missing out on the next big thing. If you ask any dealership owner or general manager, they don't know how to precisely know how well or poorly a vendor is performing. They always guess and decide using their gut instincts. While working with auto dealers in the past, I had to present data to them to let them know that they would make a huge decision by cutting certain vendors. The dealers that didn't listen ended up with bad results. Having a clear understanding of vendor performance will help them budget properly and invest in vendors that are proven to help them succeed.

STAKEHOLDERS / PERSONAS

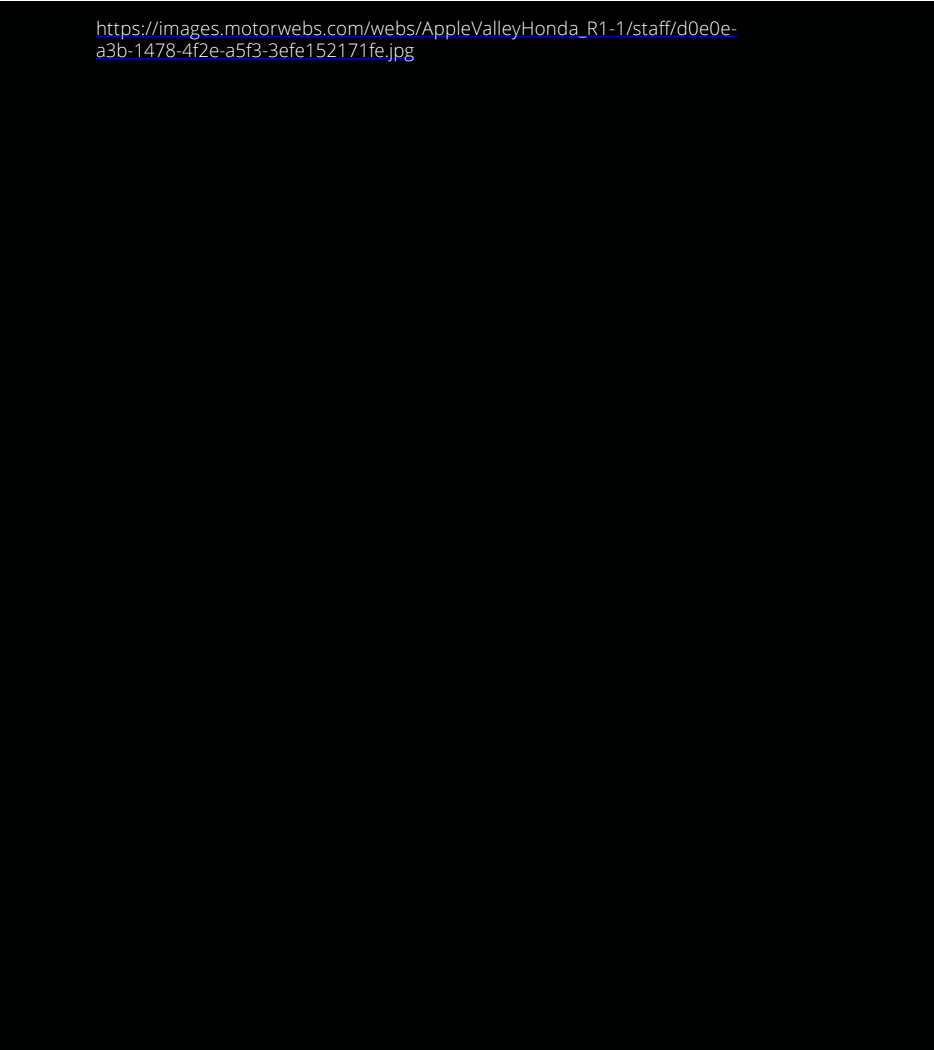
The website will have 3 main types of viewers to target.

Greg Thompson
Dealership Owner

Bryan Cooper
General Sales Manager

Jake Knight
Internet Director

https://images.motorwebs.com/webs/AppleValleyHonda_R1-1/staff/d0e0e-a3b-1478-4f2e-a5f3-3efe152171fe.jpg



"I'm paying for a lot of vendors and tools, but I can't make sense of it all."

GREG THOMPSON DEALERSHIP OWNER

Greg Thompson is the owner of a Ford dealership. He spends a lot of money on digital advertising, but he has no idea what is going on. He just measure success by how many cars he has. Vendors send him reports that show they are doing well for him, but he can't make sense of it all and doesn't believe their reports anyway. His CRM is far too complicated to learn. He just needs a simply solution to summarize how all his vendors are doing.

Age: 65 Occupation: Owner Status: Married
Location: Riverside, CA Tier: Management





Motivations

Simple
Easy to understand
Trustworthy

Personality

Extrovert —●— Introvert
Sensing —●— Intuition
Thinking —●— Feeling
Judging ●— Perceiving

Technology

Mobile Apps 
Web browsing 
Social Media 
E-commerce 

<http://pictures.dealer.com/c/cantonfordfd/1237/bb72b5aa369d3b62daf5fe-5fe255aed6x.jpg?impolicy=resize&w=400>

BRYAN COOPER GENERAL SALES MANAGER

Bryan Cooper is the General Sales Manager of an automotive dealership. He oversees the sales department and doesn't care how much of the owner's money he spends in advertising. All he cares about is finding the right vendor to give him more leads. He just wants to see where he should throw the dealership's money to. He wants a simple answer that will show him, with data, where to invest to sell more cars.

Age: 37 Occupation: GSM Status: Divorced
Location: Torrance, CA Tier: Lower Management





Motivations

Enticing
Motivating
Hope (to sell more cars)

Personality

Extrovert ● ———— Introvert
Sensing ● ———— Intuition
Thinking ———— ● Feeling
Judging ———— ● Perceiving

Technology

Mobile Apps 
Web browsing 
Social Media 
E-commerce 

"I just want more leads that will help sell more cars. Cut the bad vendors!"

<https://di-uploads-pod13.dealerinspire.com/toyotaofboerne/uploads/2017/08/Blake-Vaughan-Internet-Director-356x356.jpg>

JAKE KNIGHT INTERNET DIRECTOR

Jake is the young technically savvy employee who the owner and managers rely on when it comes to digital technology. Jake is the only one at the dealership who can speak the same technical language with vendors. Jake is detailed and needs to understand the technical aspects of all vendors so that he can explain it clearly to management. Jake is very meticulous and asks very specific questions.

Age: 34 Occupation: Internet Status: Single
Location: Stanton, CA Tier: Employee





Motivations

Detailed explanation of how it works
How it functions
Will it help workflow

Personality

Extrovert —●——— Introvert
Sensing —●——— Intuition
Thinking —●——— Feeling
Judging —●——— Perceiving

Technology

Mobile Apps 
Web browsing 
Social Media 
E-commerce 

"I need a tool that will help me organize the chaotic vendor reports!"

RESEARCH IMPLICATIONS

Research implications of this project can have both positive effects and also negative results. The positive effects will obviously help automotive dealers. It will also help auto manufacturers, such as Nissan, BMW, Audi, and others. It will give them insight as to which lead vendors, digital advertisers, or traditional advertising providers truly help their overall brand. Collecting data across multiple dealerships will give a greater insight into vendor effectiveness.

This research project will make it difficult for vendors. I have seen many general managers sign deals with new vendors just because they like the salesperson at a personal level, or they were just manipulated by an amazing sales pitch. With this tool, dealers will have a clear understanding of vendor results and can speak intelligently to vendors to challenge them while stating facts. Therefore, vendors cannot simply try to sway dealers with a top notch sales presentation. They must prove themselves because they'll be precisely measured. This will also be great for vendors as they will have insight into how they are performing as well. They can use VendorGraphs statistics and cross-reference their own statistics to see if they tracking or even their products are performing at its optimal level. It will be a great way for vendors to improve on their own.





CONCLUSION

Looking into scholarly books, trustworthy blogs, and articles, I was able to retrieve good information in the areas of dealership, CRMs, and data visualization. These three factors made up the research I needed to reinforcement my web app as a quality tool. My research did not solve everything I had explored, but it gave me enough knowledge to prepare me for my deliverables. I will have to look into the CRM issues and be sure to make Vendorgraphs compensates for what CRM's lacks. My goal is to create a web tool that function more effectively than tools currently employed by the automotive industry. In an attempt to represent the smartest graphics in my web app, I also researched infographics in which I can reference for a more appealing look for decision makers to utilize. Better design and infographics will assist in making the web app a success. Furthermore, data visualization was the largest part of my research as it uncovers the efforts in helping people understands data through a visual context. Though broad, this confirms the main concept and idea behind the web app. Based on a variety of researched VendorGraphs will be a useful tool for the dealership industry that has never been seen before.



VENDORGRAPHS | PART II

Visual Solution



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hold on, we're loading

Process

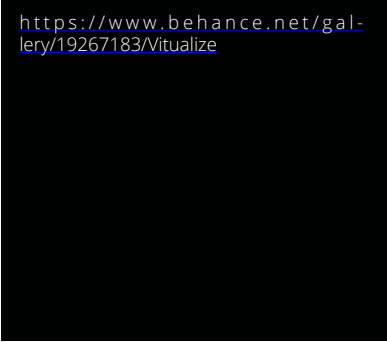
This process section showcases the development of the end product. Rather than showing just the final pieces, this section will present the thought process and ideology that helped shape the final products. Factors such as logo design, content formation, and visual hierarchy are several major components that are presented in this section.

LOGO DESIGN

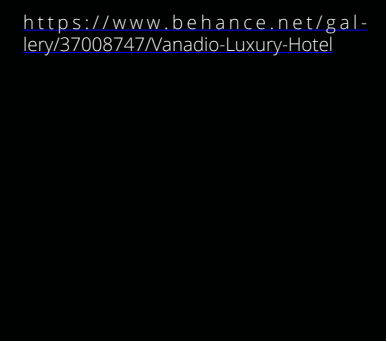
When creating the logo for VendorGraphs, I wanted to make sure that the V played a significant role in the visual cues. The V is visually strong, but it also represents the essence of the web application very well. It can signify a visual graph that is moving down and up, and it can also signify a check mark, which can demonstrate that the web app is being used to make good decisions. Working with a bank of inspirational research and several different types of sketches, a final logo design was created. The logo is designed to serve a broad spectrum of industries. Although the initial approach is for automotive dealers, VendorGraphs will eventually serve many different industries.

LOGO INSPIRATION


<https://www.behance.net/gallery/19267183/Vitualize>



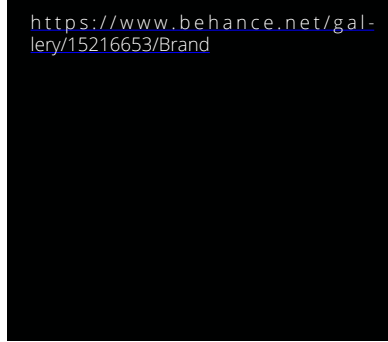
<https://www.behance.net/gallery/37008747/Vanadio-Luxury-Hotel>



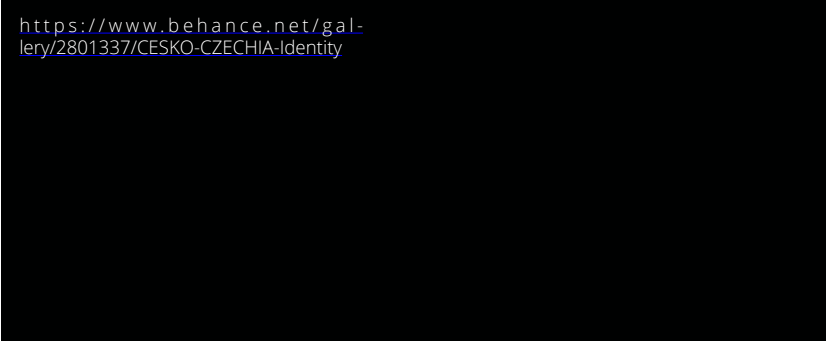
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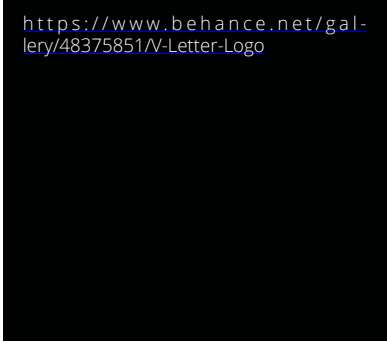
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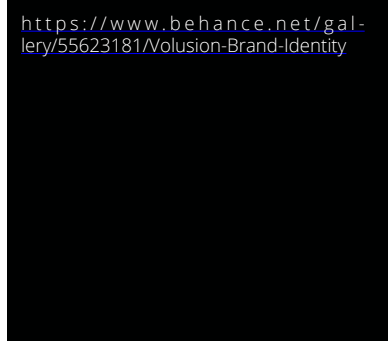
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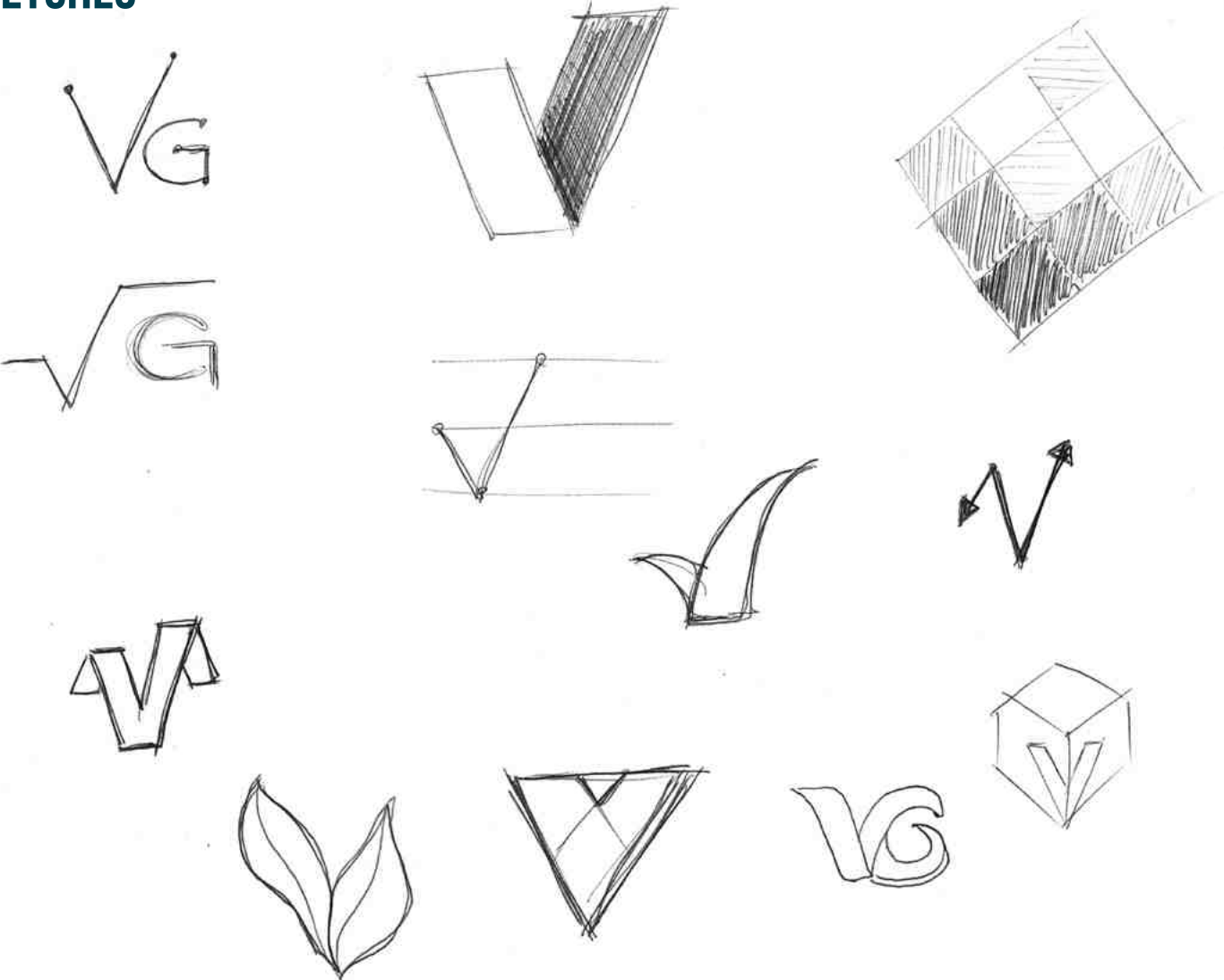
<https://www.behance.net/gallery/48375851/V-Letter-Logo>



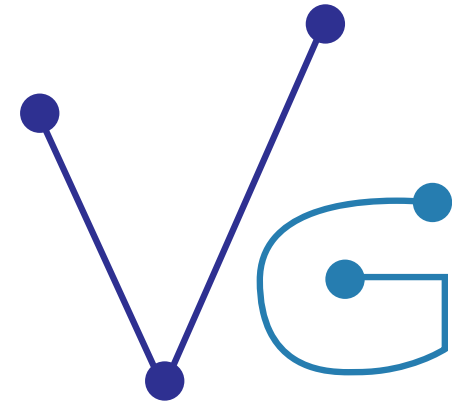
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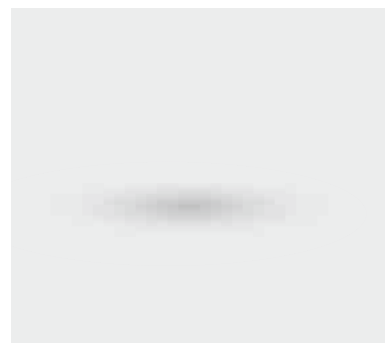
LOGO SKETCHES



LOGO DIGITAL SKETCHES



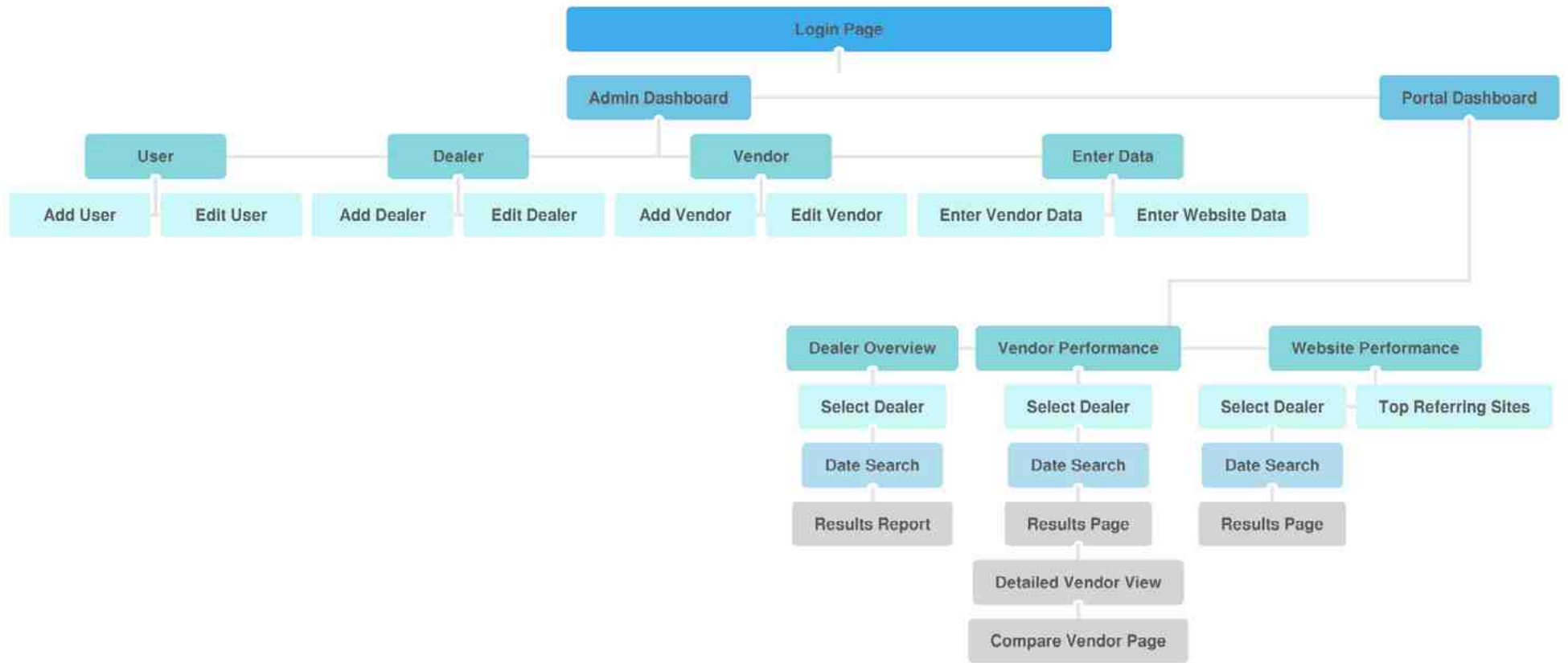
LOGO ITERATIONS



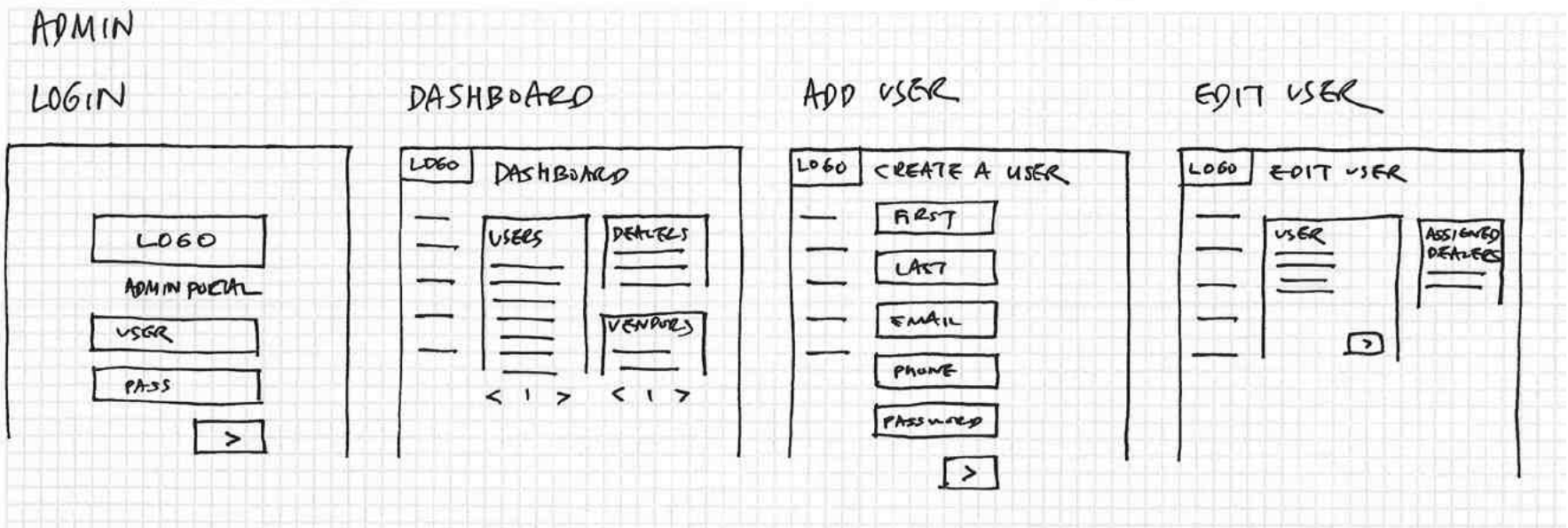
WEBSITE APPLICATION

The website application is the main part of this project. It is the actual user interface that allows auto dealers to interact with easily to find out which vendors are effective. In order to create the web app, I needed to first figure out all the different sections that had to be created.

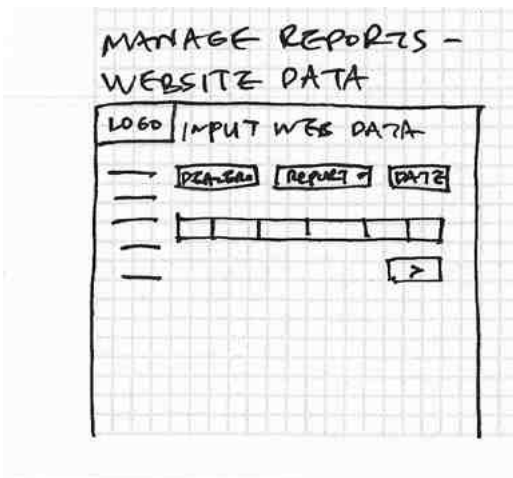
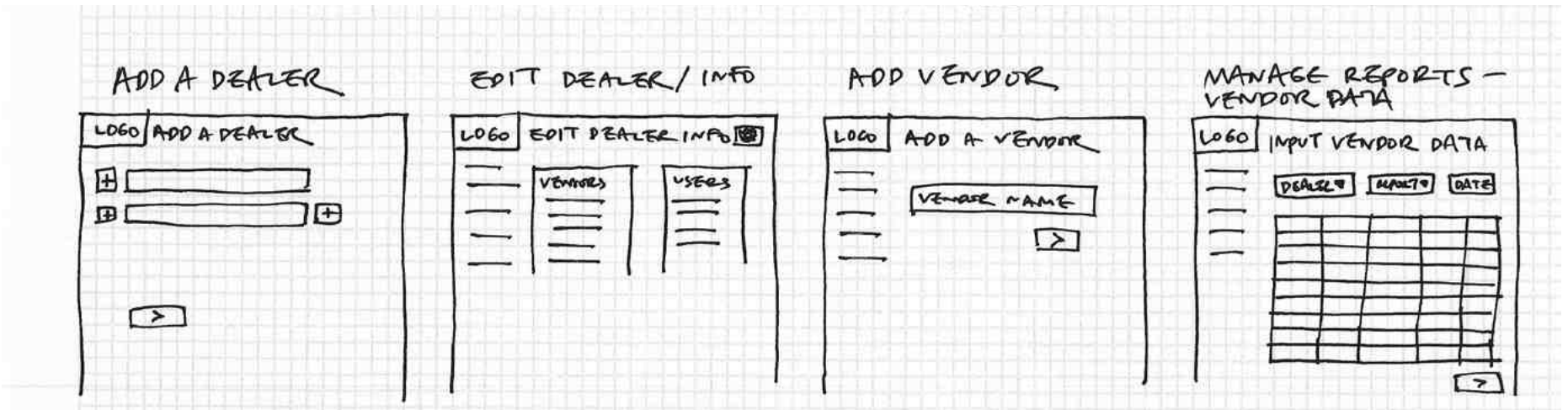
WEB APP SITEMAP



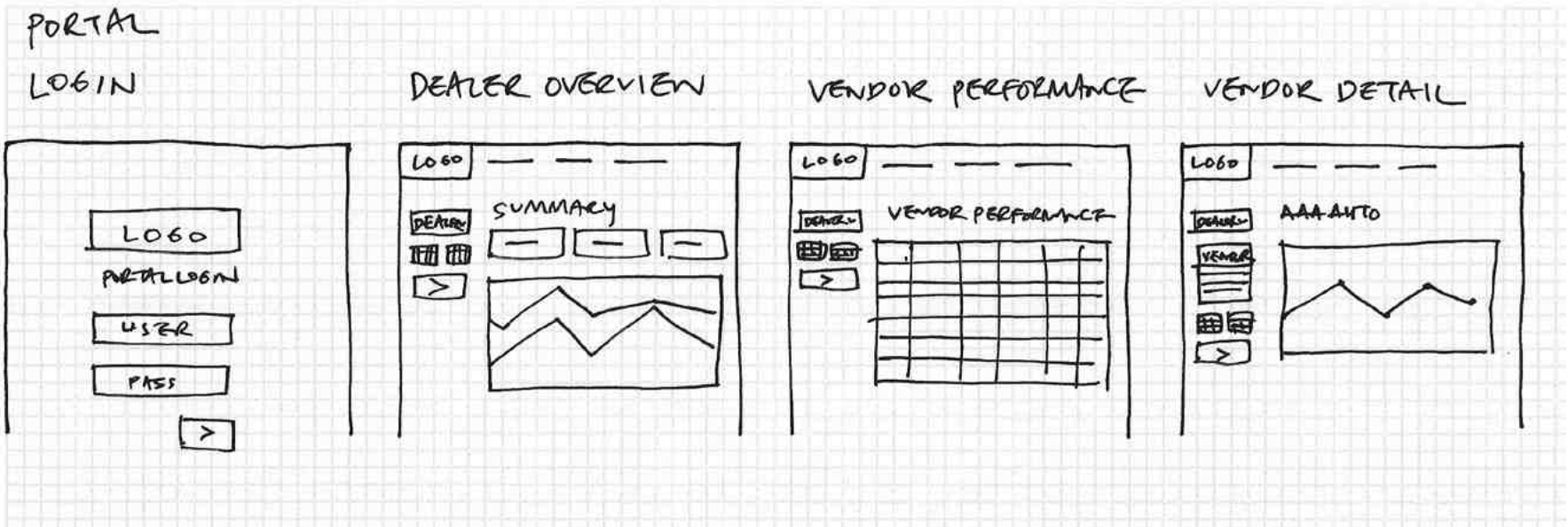
WEB APP WIREFRAMES



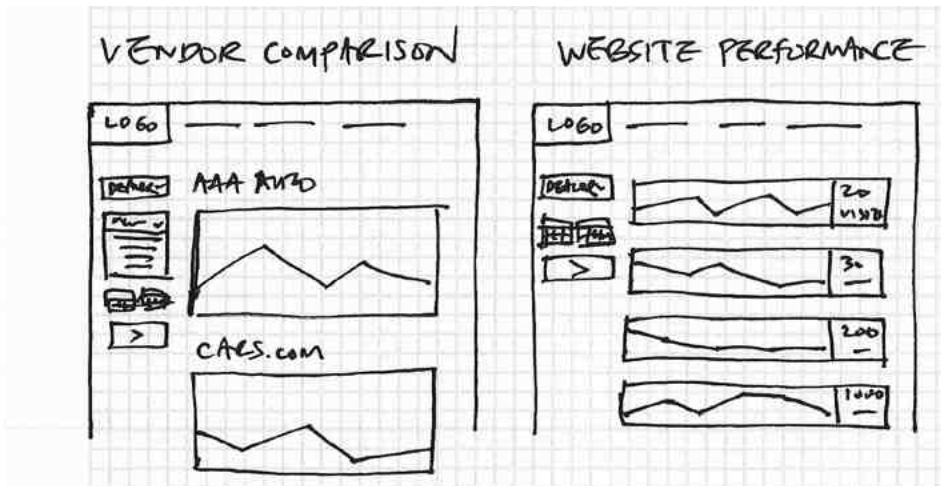
WEB APP WIREFRAMES



WEB APP WIREFRAMES



WEB APP WIREFRAMES



MARKETING SELL SHEET

The marketing sell sheet is an informational page that helps auto dealers understand what VendorGraphs can do for them. It's a clear and simple way to present the product in a visual format. It's a condensed and concise medium that is effective in selling the tool.

MARKETING SELL SHEET CONTENT IDEAS

Brainstorm of ideas to include in the marketing sell sheet

Our Purpose: We exist to protect dealers and help them reveal the truth about what vendors are doing for them.

Why?

- Auto dealers are having trouble keeping track of their vendors' performance. Auto dealers spend a lot. Everyone after their money.
- Vendors spin the truth. We find the absolute truth in vendor performance.

How?

- We pull and combine 8+ complicated reports into 1 simple visual graph
- Investigate what really works (or doesn't)

What?

- We audit and manage vendors

What does it look like?

- Vendor Analysis
 - o Tell complete, unbiased story of what is happening
 - o Consultation
- Lead scrub (process of finding duplicate or bad leads)
- Website Performance Analysis
- Verify and correct Lead tracking phone numbers

Next Steps:

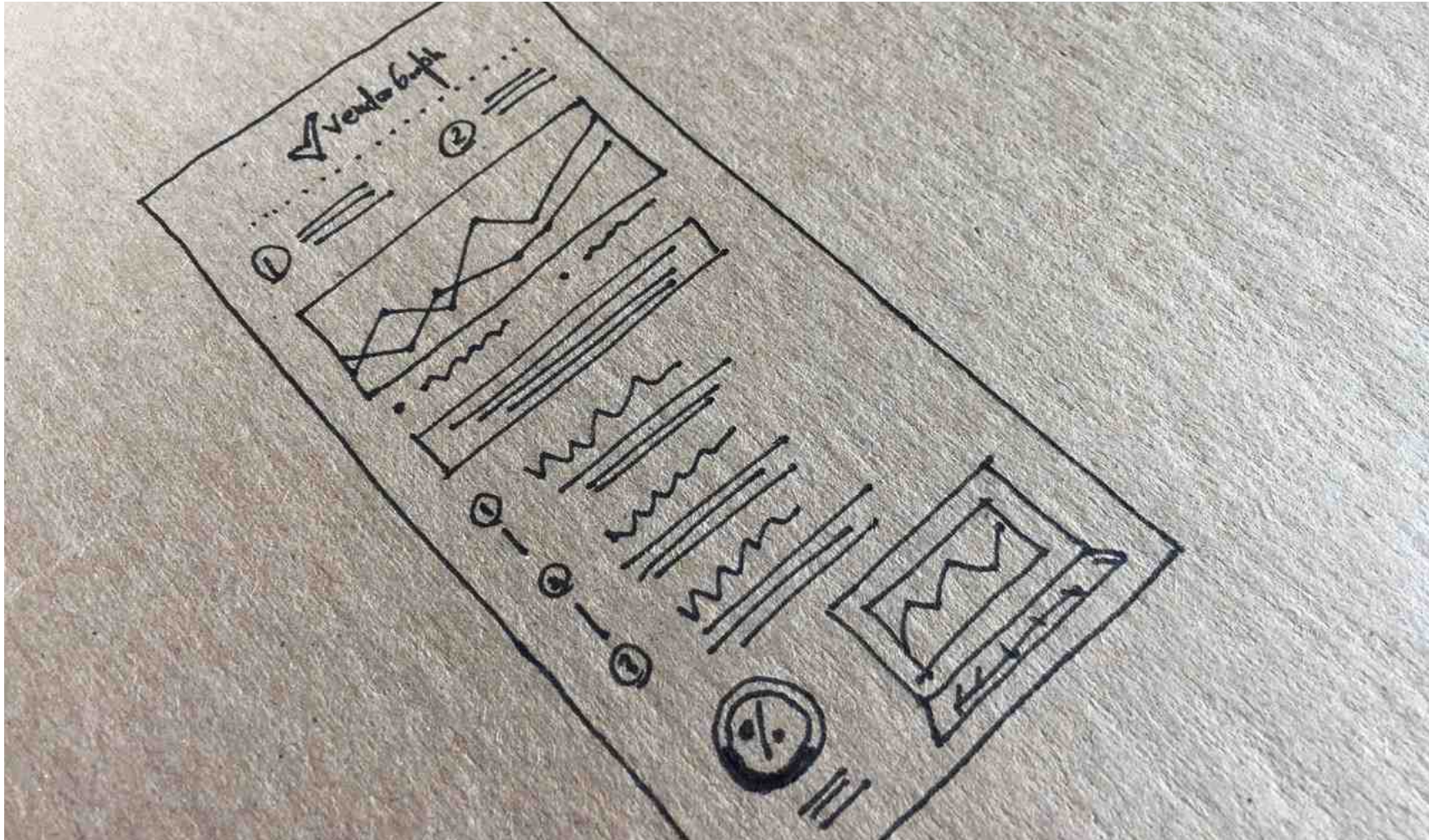
1. Gather login info for (Set up): a. CRM b. Call-tracking c. Google Analytics d. Website Vendor Report e. BUDGET (monthly)
2. Verify/Correct Lead tracking numbers (Set up)
3. We Input data manually(monthly)
4. Analyze, Summarize and Present data back (monthly)
5. Lead Scrub (monthly)

Proof Sources

- What insights are we providing? Things I would've never known:
 - o CPL vs. CPS
 - o Response rate vs. Sold
 - o OEM Lead drop/increase
 - o High traffic/High Bounce rate
 - o High leads/Low sales
- What value am I providing?
 - o Can we monetize the savings we've provided?
 - o How have we lowered costs and help sell more cars?
- What is working for the dealership?
- What metrics are we measuring?

Messaging buzz words: Honest – Transparent – Accurate - Evidence

MARKETING SELL SHEET CONTENT SKETCHES



SINGLE PAGE WEBSITE PURPOSE

To create a website for VendorGraphs.com using principles of user experience design methodologies.

Website Problem

VendorGraphs.com is a data visualization company focused on helping auto dealers figure out which vendors help them with overall all car sales and also determine which vendors are wasting their budget. Automotive dealers spend over \$85,000 monthly on digital advertising and they have over 15 different vendors on average. Because dealers spend so much on digital advertising, they are always attacked by vendors and they feel like they have to sign up in fear of missing out. As dealers have been doing this for years, they now have an issue of tracking all their vendors' performance. VendorGraphs helps dealers see vendor performance visually to see which vendors to invest more in and which vendors to cut.

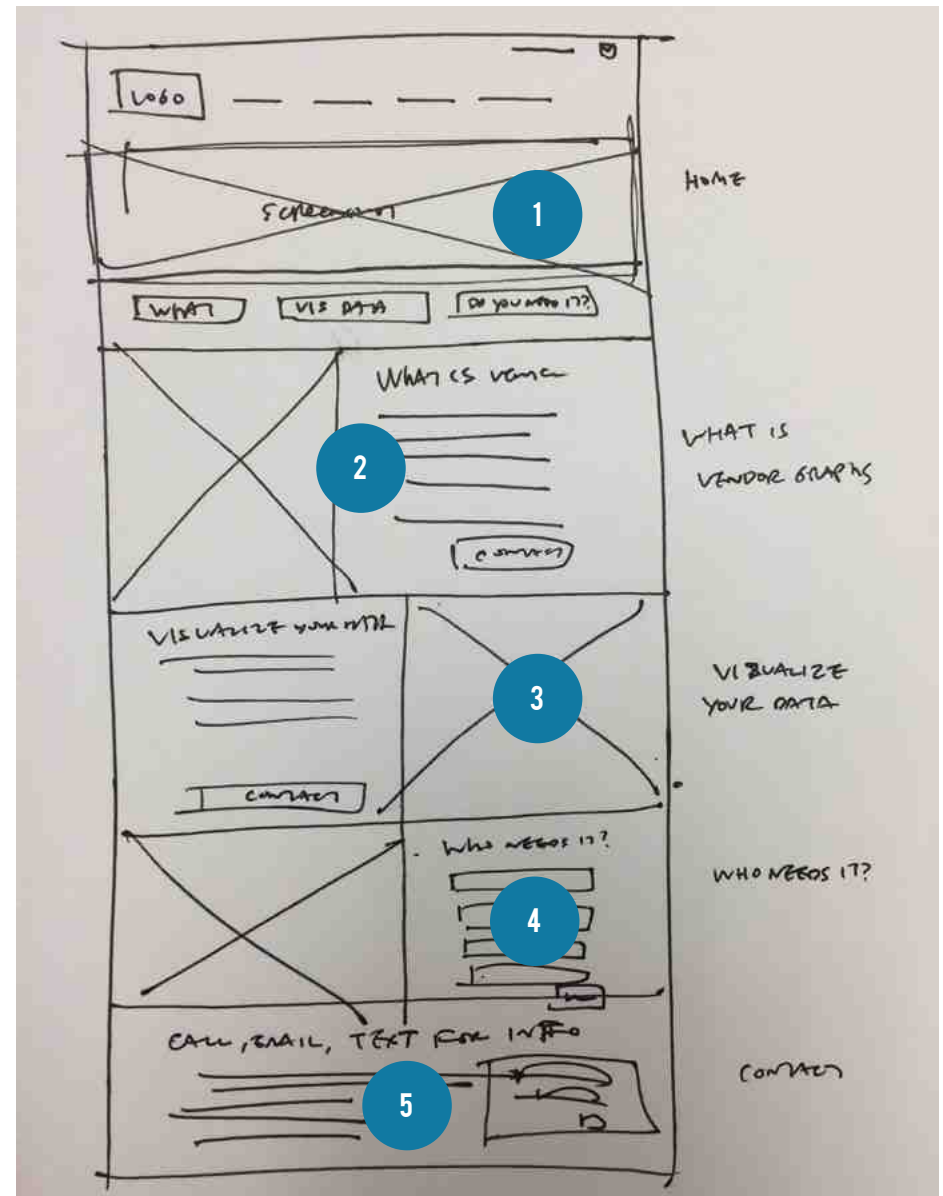
Website Solution

The website will have 5 main sections: Home/Introduction; What is VendorGraphs; Visualize Your Data; Who Needs It; Contact. The home/introduction page will hook viewers' attention with a strong header image that will show them a comparison of how useful the graphs are versus using their CRM. What is VendorGraphs will balance out the viewer by explaining who they are. Visualize Your Data will allow viewers to recognize what they are missing. Who Needs It will create a disruption or conflict to make them aware of it. The contact section will summarize the sections above and remind viewers of their current problem and how VendorGraphs will help them solve it. Then a form is the main objective to make contact.

WEBSITE CONTENT WIREFRAME

A free-form visual board of ideas and concepts.

- 1 The homepage will have a slideshow of different marketing and visual references of the web application. It will also have 3 buttons below that will be the main call to actions from the homepage. These call to actions will slide the user down to that section.
- 2 The second section will feature what VendorGraphs is all about. As the viewer scrolls down, the image will slide from left to right while the header text and body copy move from right to left as it starts off at 0% and ends up at 100%.
- 3 The third section will provide more insight to what the web app will do for the persona. This section will be a slideshow, possibly a vertical slideshow that shows different screenshots of the report. This can be a before and after representation with captions.
- 4 This fourth section will have a form that the client will have to fill out. It's more like a quiz to see if they know enough about their vendor performance. To get the results of this form, they will have to hit submit and enter their email to get their score.
- 5 The fifth and final section of the page will have an interactive map and a contact form that is very simple. The header will fade on while the body copy will move in from the left and the form will move in from the right.

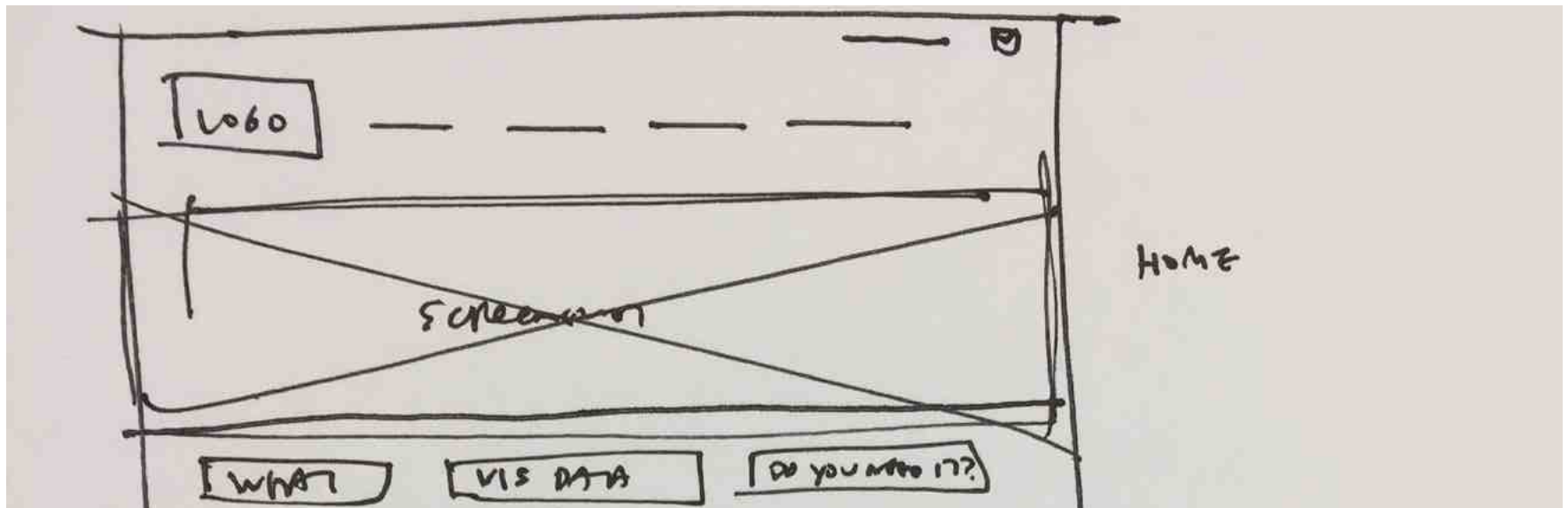


WEBSITE PAGE SECTIONS

Section 1 - Homepage

The homepage will have the logo on the top left along with the navigation on the right of it. The navigation will be a clean typeface with a simple bar under it to signify which page is currently selected. The phone number will be listed on the very top right of the page along with an email icon that will link to the contact page. Under the logo and navigation links will be the

main header image. It will be a slideshow showcasing various screenshots of the VendorGraphs software screenshots on a physical computer. Under the main header screenshot, there will be three featured boxes that will link to the three main content areas, which are: What is VendorGraphs; Visualize Your Data; and Do You Need It? The three boxes will have anchor points that link to their designated areas on the single page website.

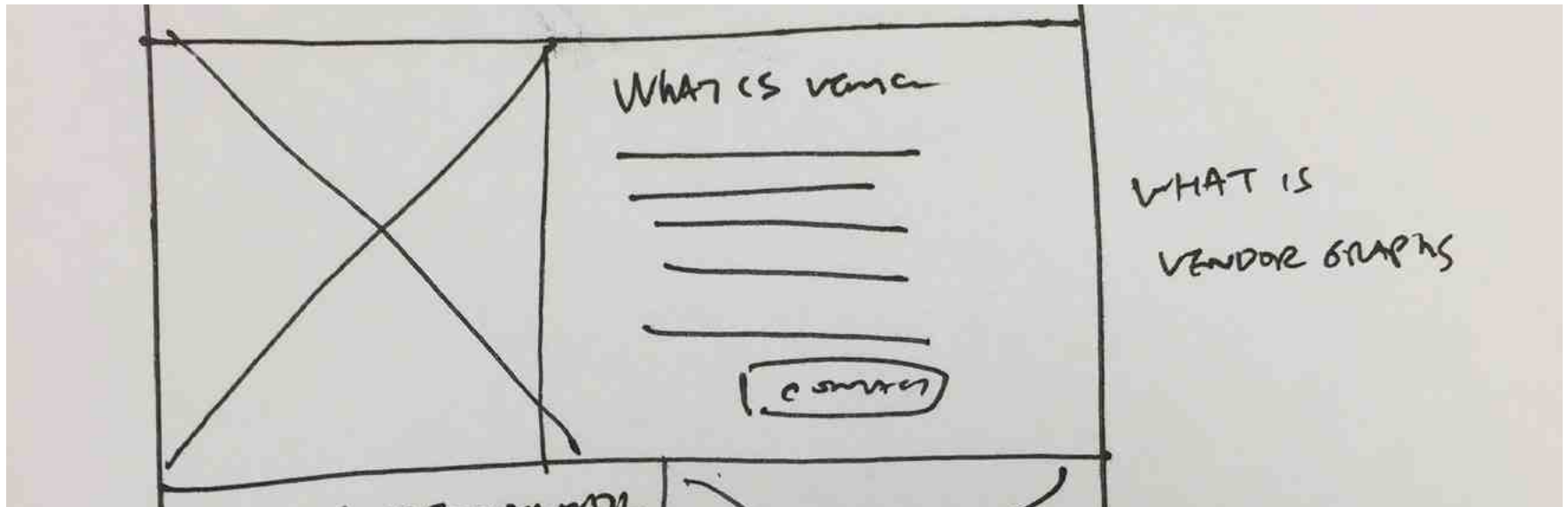


WEBSITE PAGE SECTIONS

Section 2 - What is VendorGraphs

This section of the page will have the title "What is VendorGraphs?" and it will be followed up by a paragraph that explains what it is and why you need it. The verbiage will be in spoken form and not too technical so that all persona types can understand the product right away. There will be

an image on the left hand side that shows a happy salesperson using the software. There will also be a subtle large image in the background with a parallax effect. Below all the content of this section, there will be a contact us button so that the website can capture lead information that would potentially lead to sales.

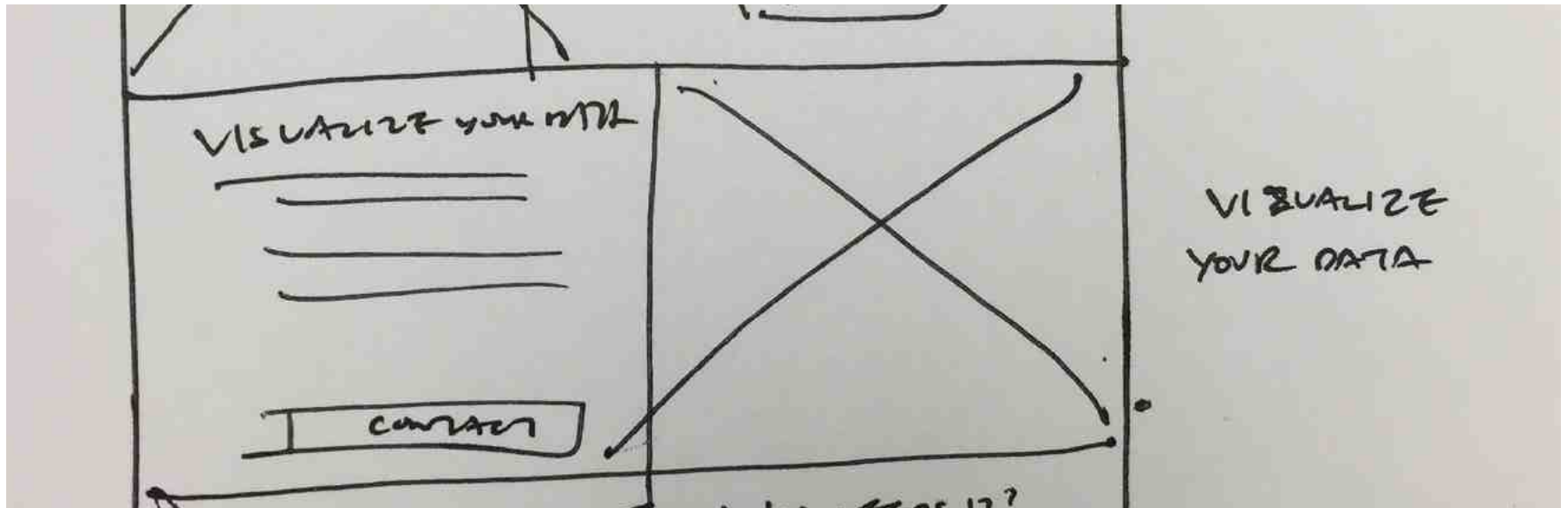


WEBSITE PAGE SECTIONS

Section 3 - Visualize Your Data

This page will show a comparison of current reports that are pulled from CRM (Customer Relationship Manager) formats versus the new format that VendorGraphs provides. The reports from CRMs are very dense and the layout is not user friendly. To get a summary of performance of all vendors, the dealer has to pull 5-8 different reports and put them together. The right

side of this page will have an image will scrolling to show the difference between the old way and the new way (through VendorGraphs) to show how much easier it is. The left side of this section will have the title, and paragraph description of the importance of visualizing data, and a link to the contact form.

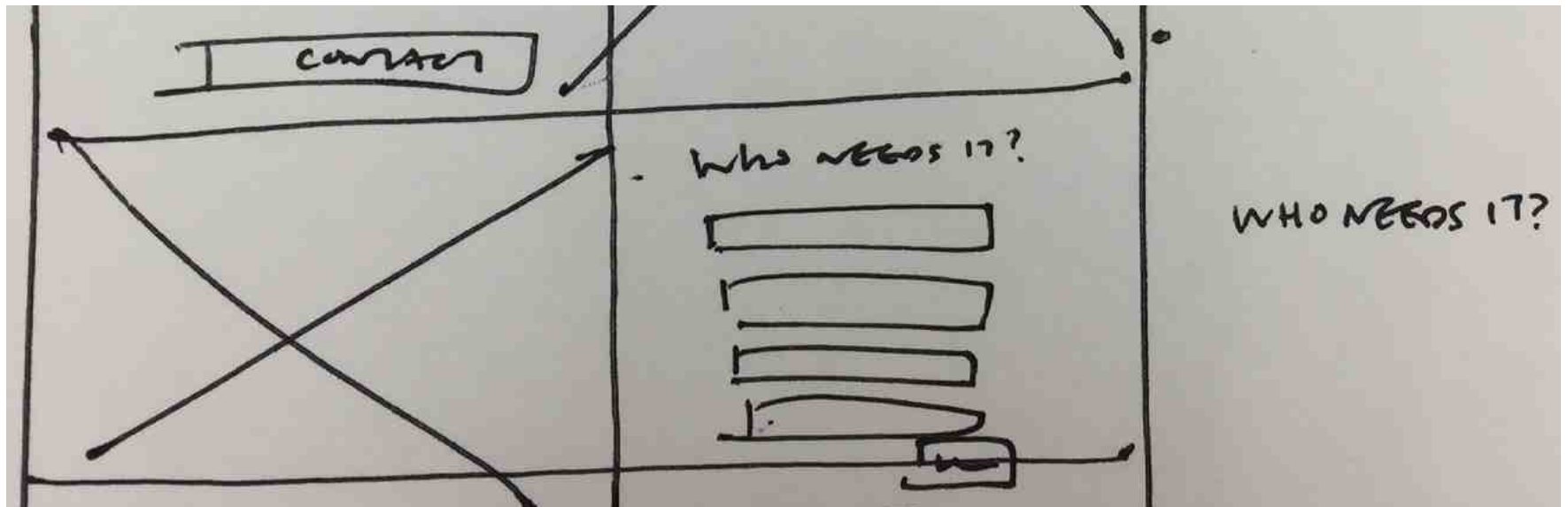


WEBSITE PAGE SECTIONS

Section 4 - Who Needs It?

This page will be much more interactive. It will start with the title, "Do you need VendorGraphs?" and it will have a paragraph talking about how many people think they don't need help trying to figure out if their vendors are helping them sell cars or if they're just making them bleed money. There

will be a 5-question form that they would take. Once they answer all of the questions, they would hit enter and it would give them a notification saying that they will be notified via email of the results. It would be a good way of capturing leads. Along with that, there will be an image of the 3 different types of personas on the left side of the page.

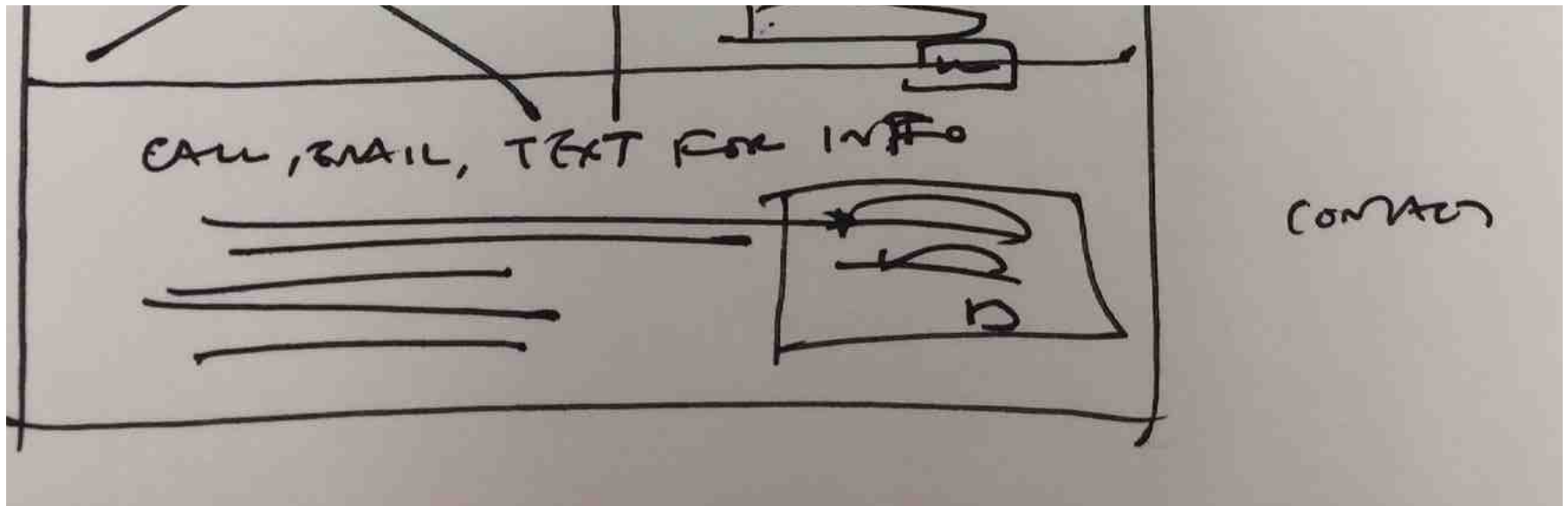


WEBSITE PAGE SECTIONS

Section 5 - Contact

The contact page will be the last part of the page. It will be the most interactive and the user scrolled down all the way to the bottom after reading all the information. That means that the viewer is still engaged and the chances of wanting more info is greater. The title will say, "Call, Email, or Text for

More Information." There will be a brief text paragraph and a form. There will also be a Google Map that is interactive along with social media icons. This page, or section, is rather simple, but it has to be delivered and laid out very simply for the viewers. We need to capture their info at this point of the website for it to be successful. There will also be a support link as well.

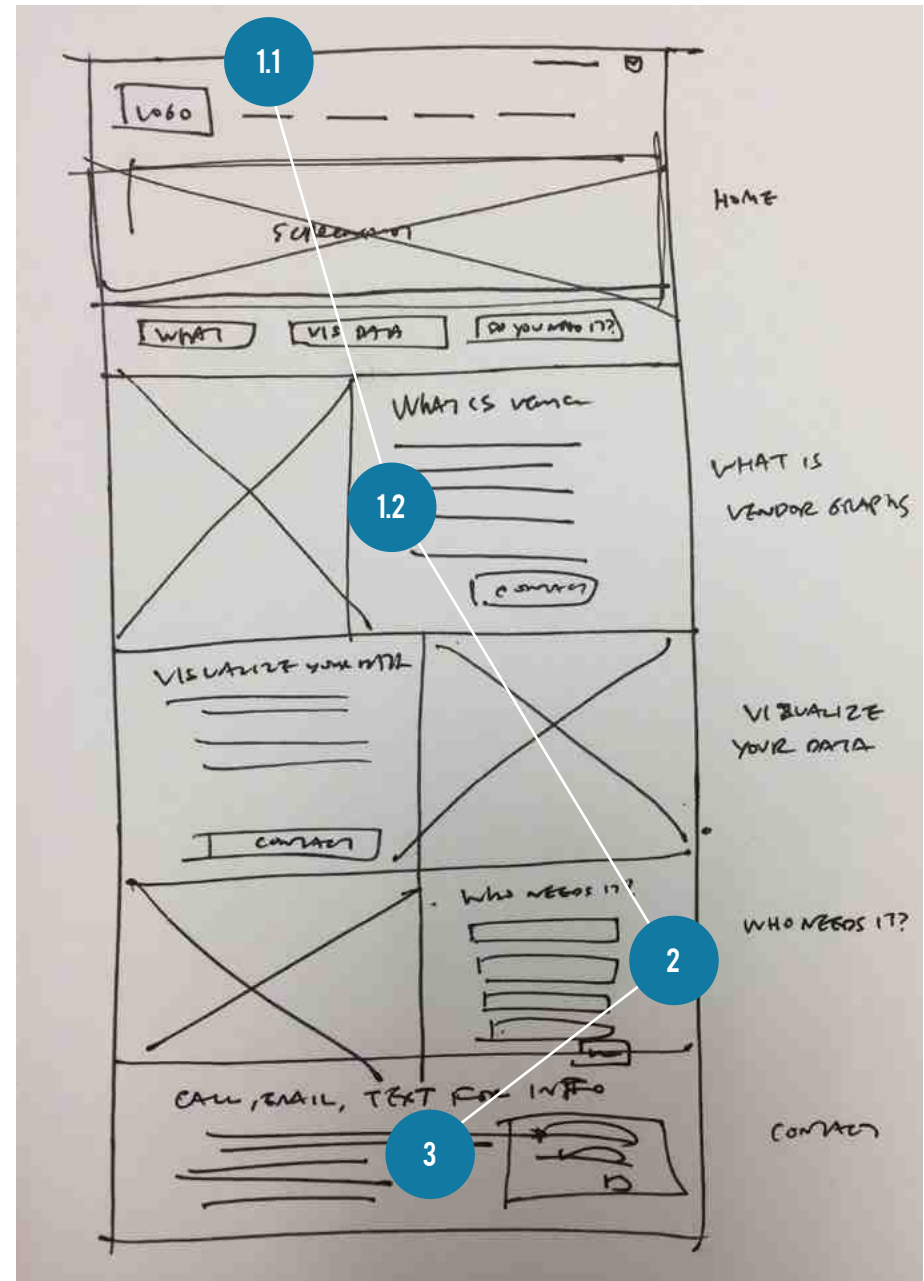


WEBSITE USE CASE SCENARIO 1

Greg Thompson, Dealership Owner

Greg Thompson is the owner of Raceway Ford. He spends a lot of money on digital advertising, but he has no idea what is going on. He just measure success by how many cars he has. Vendors send him reports that show they are doing well for him, but he can't make sense of it all and doesn't believe their reports anyway. His CRM is far too complicated to learn. He just needs a simply solution to summarize how all his vendors are doing. What he needs to find out from this website is what VendorGraphs does and how it will help him sell more cars.

- 1 He will click on the main navigation link that says: What is VendorGraphs? This will take him down to the section on the one page website that has content that briefly states that VendorGraphs helps dealer owners take control of their vendors and figure out which vendors help sell cars and also determine which vendors make them bleed moeny.
- 2 After figuring out what VendorGraphs does, he needs to figure out if what he is already paying for with his CRM companies already does what this company does. So he'll scroll down to the Who Needs it? section. This section will give him a quick quiz to see if he is not tracking his vendors' performance properly.
- 3 After being quizzed and realizing he needs to track his vendors better, there will be a contact form right away to learn more about the product. The simple form will allow him to input just his name, email, and phone number quickly.



USE CASE SCENARIO 2

Jake Knight, Internet Director

Jake is the young technically savvy employee who the owner and managers rely on when it comes to digital technology. Jake is the only one at the dealership who can speak the same technical language with vendors. Jake is detailed and needs to understand the technical aspects of all vendors so that he can explain it clearly to management. Jake is very meticulous and asks very specific questions. On this website, he's just looking for details rather than high level overview material.

1

Jake will browser through the navigation options and then sit through the homepage slider images to determine if VendorGraphs is really what he thought it would be. He would read through the details, then he would start scrolling down.

2

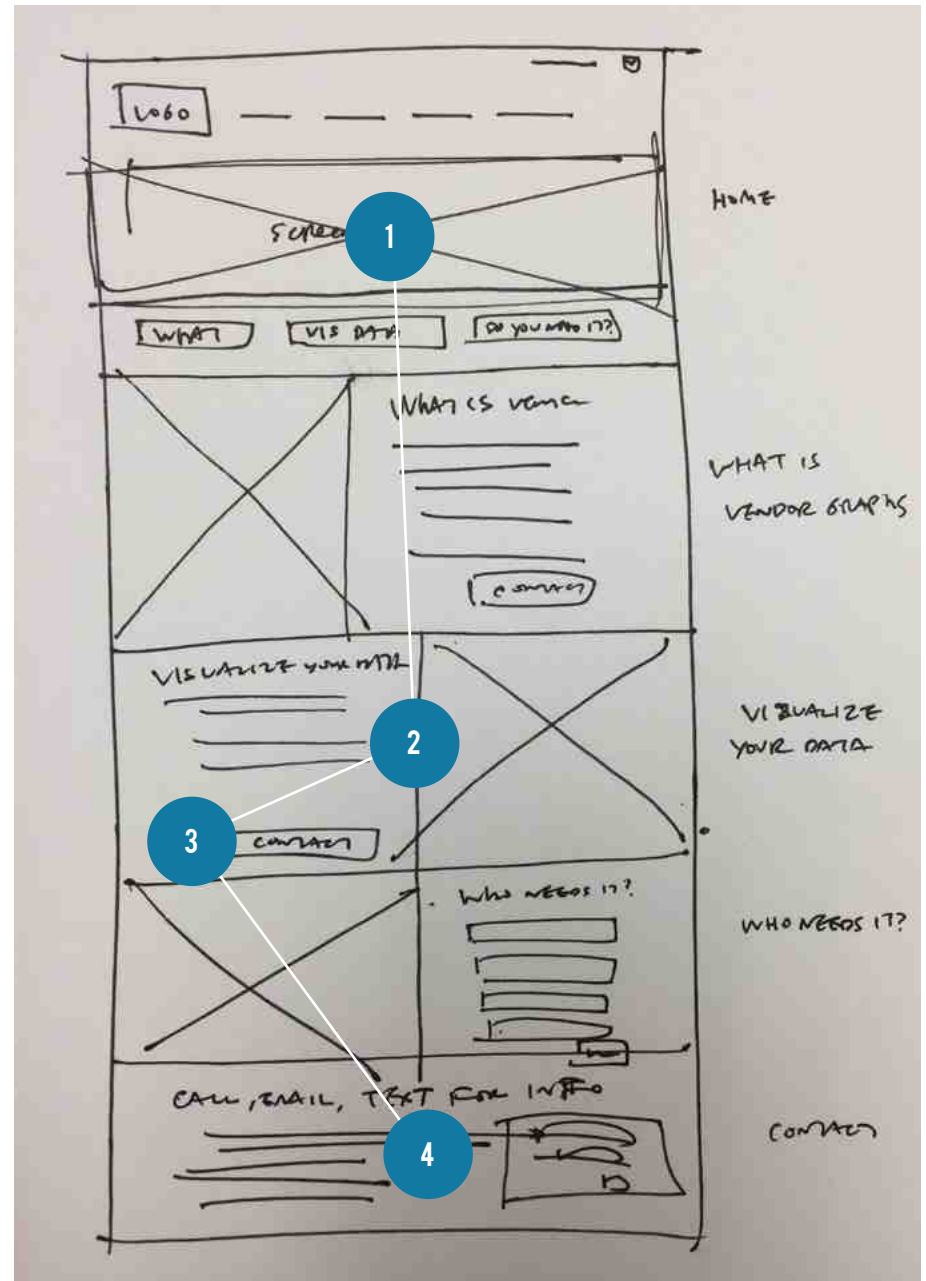
He would skip past the What is VendorGraphs section and go straight to the Visualize Your Data section. This is the section where he'll spend the most time. He will look at the gallery of sliding images that show screen shots of the product that clearly and easily show how easy it is to get data on vendor performance.

3

Right away, Jake will click on the contact button to enter his information to be contacted. He might not need any further information after seeing the screenshots.

4

If he didn't click on the contact form right away, he would do his due dilligence to read through the rest of the page before finally getting to the last part of the page, which is the contact form. From there, he'll fill out the form or call the number that's listed.



Visual Solution

This section presents the final designs of the logo, branding guidelines, web app, marketing sell sheet, and website. This is the final design of all elements of the final project.

BRAND ELEMENTS

The brand elements consist of various visual factors that the brand must abide by. The logo, color usage, and type usage must follow the guidelines in order to keep a consistent visual representation of the brand.

BRAND ELEMENTS



Font Usage

Open Sans was chosen because it's a web-based font that can be accessed without any issues on most browsers. The style and look will be consistent on all website-based productions. Open Sans was also chosen because it has a wide range of weights and variances in the font family.

Open Sans Font Family

ABCDEFGHIJKLMNOPQRSTUVWXYZ

abcdefghijklmnopqrstuvwxyz

1234567890!@#\$<>?

Color Usage

Using a triad color wheel, the following four colors were chosen as the color combination for the brand. The blue and green tones will be used as the main colors, and the orange-like color will be used for accent purposes.



1f83c1

36BAC3

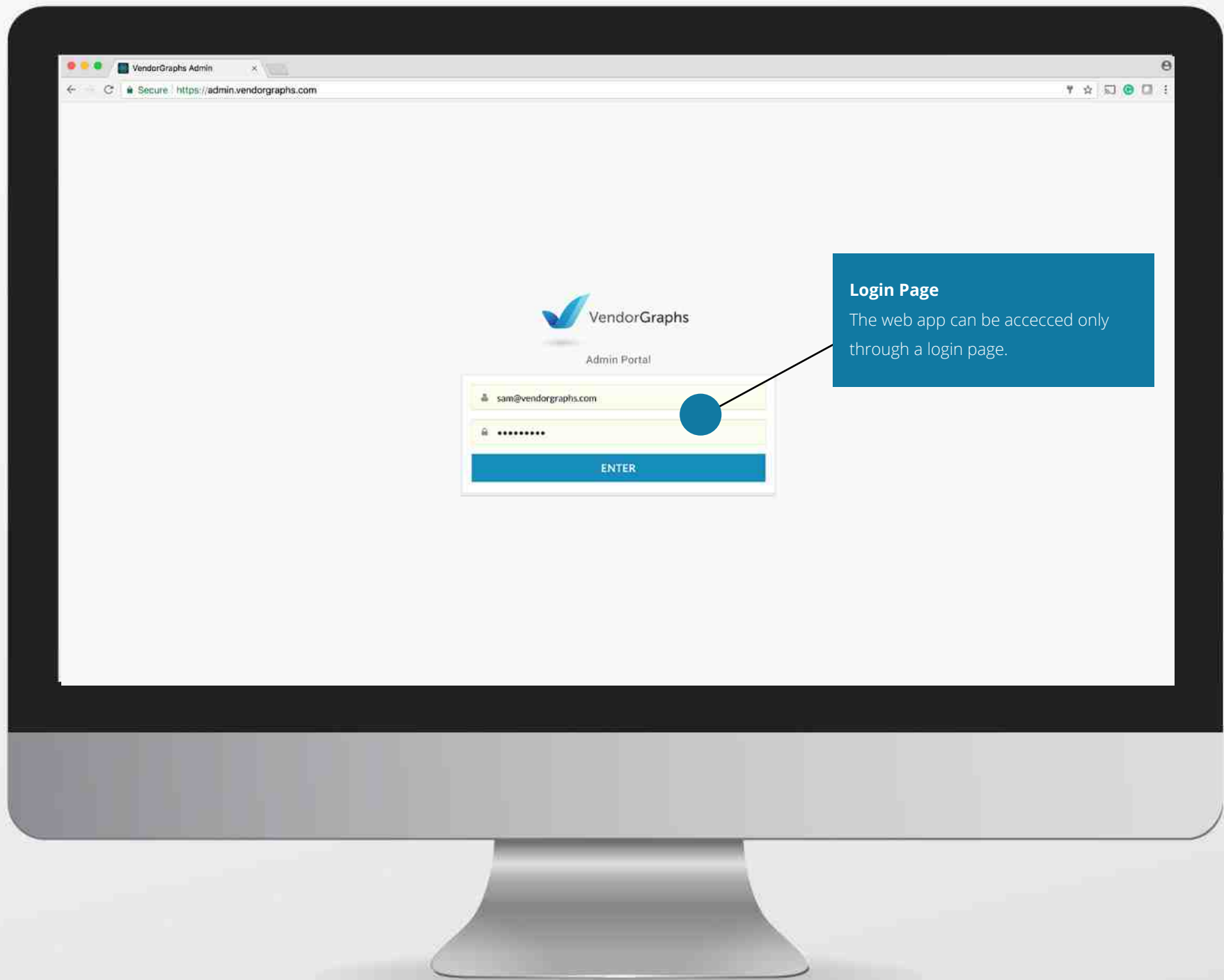
E45625

2d5da9

WEB APPLICATION VISUAL SOLUTION

The web app is the main part of this project. There are various elements that help solve the problem of having too much data that is difficult to read. This section presents how VendorGraphs provides a visual solution to help auto dealers understand how vendors are performing for them, and to make quick and educated decisions on how to spend their marketing dollars.





VendorGraphs Admin x
Secure | https://admin.vendorgraphs.com



VendorGraphs

Admin Portal

👤 sam@vendorgraphs.com

🔒

ENTER

Login Page

The web app can be accessed only through a login page.

Admin

Dashboard

Create Resource

Add User

Add Dealership

Add Vendor

Add Website

Reports

Manage Reports

LOGOUT

Dashboard

Create Resource

Add User

Add Dealership

Add Vendor

Add Website

Reports

Manage Reports

LOGOUT

Dashboard

View and manage manage resources.

Admin: Dashboard

This admin page provides access to update users, dealerships, and vendors.

Users

First Name	Last Name	Email	Actions
Samuel	Park	sam@vendorgraphs.com	View/Manage
Jonathan	Kim	jonathan@gmail.com	View/Manage
Joelene	Bradley	joeleneb@kiaoforange.com	View/Manage
Joe	Chahine	joe@kiaoforange.com	View/Manage
Daniel	Park	danielpark@gmail.com	View/Manage
Sam	Park	emailsampark@gmail.com	View/Manage
Puente Hills	Ford	artcentersam@gmail.com	View/Manage
Vendor	Graphs	sam@gooddealergraphics.com	View/Manage
Carl	Sutherland	carl+test@acuityscheduling.com	View/Manage
Mathew	Tinsley	vendorgraphstest@gmail.com	View/Manage
Test	Park	danielpdfs@gmail.com	View/Manage
Dallas	Ford	dallas@thebrownautogroup.com	View/Manage

Previous Page 1 of 1 20 rows Next

Dealerships

Dealership	Actions
Kia of Orange	View/Manage
Puente Hills Ford	View/Manage
Puente Hills Nissan	View/Manage
Buena Park Nissan	View/Manage

Previous Page 1 of 1 Next
5 rows

Vendors

Vendor	Actions
AutoTrader	View/Manage
Cars Direct	View/Manage
Cars.com	View/Manage
CarGurus	View/Manage
AAA	View/Manage
Autoytel	View/Manage

Previous Page 1 of 27 Next
5 rows

Websites

Website	Actions
www.test.com	
www.test1.com	
www.test2.com	

Viewing information for Samuel Park

Manage and view user information and associated dealerships.

Admin

Dashboard

Create Resource

Add User

Add Dealership

Add Vendor

Add Website

Reports

Manage Reports

LOGOUT

Update User

First Name:

Samuel

Last Name:

Park

Email:

sam@vendorgraphs.com

Phone Number:

Enter phone number

User Type:

Single Dealership

New Password:

Password

Confirm Password:

Confirm Password

UPDATE

CANCEL

Associated Dealerships

ASSOCIATE DEALERSHIP

1. Puente Hills Ford

Admin: Edit User

This page allows the admin to update user information, including password updates.

Create Resource

- Add User
- Add Dealership
- Add Vendor
- Add Website

Reports

- Manage Reports

LOGOUT

Dealership Name:

UPDATE

CANCEL

Associated Vendors

AAA	Created At: 2017-09-15 21:22:34
Autotytel	Created At: 2017-09-15 21:22:42
AutoTrader	Created At: 2017-09-08 17:49:33
Capital One Mailer	Created At: 2017-09-15 21:23:03
CarFax	Created At: 2017-09-15 21:23:15
CarGurus	Created At: 2017-09-08 17:50:16
CarNow Chat	Created At: 2017-09-15 21:23:30
Cars.com	Created At: 2017-09-08 17:49:54
Cars Direct	Created At: 2017-09-08 17:49:44
Dealer Centric - eLend	Created At: 2017-09-15 21:23:53
Dealer.com Website	Created At: 2017-09-15 21:24:06
Edmunds	Created At: 2017-09-15 21:24:17
Engage to Sell Chat	Created At: 2017-09-15 21:24:25
Internet Not Sold	Created At: 2017-09-15 21:24:37
KBB	Created At: 2017-09-15 21:24:41
Kia Digital - 3rd Party Leads	Created At: 2017-09-15 21:24:53
Kia DMG	Created At: 2017-09-15 21:25:11
Kia Event	Created At: 2017-09-15 21:25:18
Kia.com	Created At: 2017-09-15 21:25:22

Associated Users

Name	Email	Phone Number	User Type
Joe Chahine	joe@kiaoforange.com	7145555555	General User
Joelene Bradley	joeleneb@kiaoforange.com		General User
Sam Park	emailsampark@gmail.com	5629721397	General User
Vendor Graphs	sam@gooddealergraphics.com	5629721397	General User
Daniel Park	danielparkk@gmail.com		General User
Carl Sutherland	carl+test@acuityscheduling.com	7143191200	General User
Test Park	danielpdfs@gmail.com	8141414123	General User
Dallas Ford	dallas@thebrownautogroup.com	8888888888	General User

Admin: Edit Dealer

This page allows the admin to update the dealership name.

Admin

Dashboard

Create Resource

Add User

Add Dealership

Add Vendor

Add Website

Reports

Manage Reports

LOGOUT

+ Create a User

Use the form below to create a new user. You can assign dealerships upon creation or later in the manage Users/Dealerships tab.

First Name:

Enter first name

Last Name:

Enter last name

Email:

Enter email

Phone Number:

Enter phone number

User Type:

Select user type

Desired Password:

Password

Confirm Password:

Confirm Password

SUBMIT

Admin: Add User

This page allows the admin to create new users on demand.

Admin

Dashboard

Create Resource

Add User

Add Dealership

Add Vendor

Add Website

Reports

Manage Reports

LOGOUT

Add a Dealership

Use the spreadsheet below to add dealerships. Click add row to add more than one.

Add Row

#	Dealership Name
1	<input type="text"/>

Admin: Add Dealer

This page allows the admin to create new new dealership accounts on demand.

SAVE DEALERSHIPS

Admin

Dashboard

Create Resource

Add User

Add Dealership

Add Vendor

Add Website

Reports

Manage Reports

LOGOUT

Add a Vendor

Vendor Name:

Enter Vendor Name:

SUBMIT

Admin: Add Vendor

Users will need to create new vendors on the fly through this page.

Manage Reports

View, manage, create reports for dealerships.

Dealership:

Kia of Orange

Report Type:

Vendor Reports

Date:

Aug 2017

Actions:



Add Row

#	Vendor Name	Leads	Calls	Leads Sold	Calls Sold	Top Gross	F&I Gross	Cost	Web Referrals	VDP Views	Impressions	Ad Clicks	Ad Cost VDP
	AAA	30	0	3	0	\$3,899	\$4,128	\$1,150	0	0	0	0	\$0
	Autoytel	87	8	3	0	\$3,440	\$3,385	\$1,800	0	0	0	0	\$0
	AutoTrader	16	14	1	0	\$0	\$0	\$5,125	0	0	0	0	\$0
	Capital One Mailer	0	15	1	1	\$3,585	\$6	\$17,128	0	0	0	0	\$0
	CarFax	9	10	1	0	\$2,293	\$504					0	\$0
	CarGurus	21	13	0	0	\$0	\$0					0	\$0
	CarNow Chat	7	0	0	0	\$0	\$0					0	\$0
	Cars.com	65	11	2	0	\$3,788	\$2,306					0	\$0
	Cars Direct	155	1	0	0	\$0	\$0					0	\$0
	Dealer Centric - eLend	26	0	2	0	\$4,309	\$250	\$299	0	0	0	0	\$0
	Dealer.com Website	122	192	5	1	\$462	\$2,783	\$1,299	0	0	0	0	\$0
	Edmunds	124	3	0	0	\$0	\$0	\$1,500	0	0	0	0	\$0
	Engage to Sell Chat	3	0	0	0	\$0	\$0	\$399	0	0	0	0	\$0
	Internet Not Sold	1	355	1	0	\$-1,603	\$0	\$0	0	0	0	0	\$0

Admin: Manage Report

Users will be able to enter data for each vendor in this matrix. Entered data will be updated automatically and reflect live in the reports.

Admin

Dashboard

Create Resource

Add User

Add Dealership

Add Vendor

Add Website

Reports

Manage Reports

LOGOUT

Manage Reports

View, manage, create reports for dealerships.

Dealership:

Kia of Orange

Report Type:

Website Reports

Date:

Aug 2017

Actions:



#	Web Visitors	Web Leads	VDP Views	Overall Sold	Overall Spent	Resp. Rate (Min)	Appt. Shown	Bounce Rate (%)
0	5789	201	5141	149	81171	21	433	39

Admin: Manage Website

Users will be able to enter web visitor data for each month in this section. This data will be shown in the Website Performance reports.

LOGOUT

SAVE REPORT

User Console

Email: samr@goodautoanalytics.com
 # of Dealerships: 4

Dealership Select:
 Kia of Orange

Start/End Dates:
 From: Jan 2017
 To: Dec 2017

SEARCH

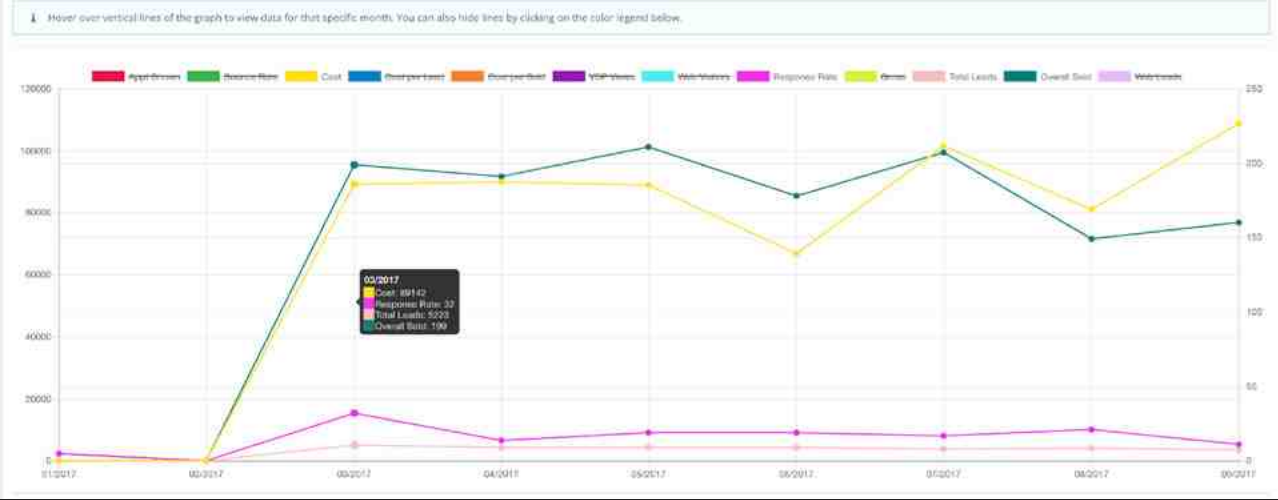
Dealership Overview

View an overall summary for your dealership, being by using the console to the left.



Month to Month Data

View month to month data from 01/2017 to 09/2017



VendorGraphs Portal

Secure https://portal.vendorgraphs.com/vendors

User Console

iam@gooddeale-graphix.com
4 dealerships

Dealership Select:
Puente Hills Nissan

Start/End Dates:
From: Mar 2017
To: Oct 2017

SEARCH

VISUALIZE DATA

Vendors Summary List

View data as a table for your vendors. Being by using the console to the left.

Filter Options:

Use the checkboxes to hide certain columns. Click the column headers to sort.

Vendor Name
 Leads
 Calls
 Total Leads
 Leads Sold
 Marked Sold
 Total Sold
 Top Gross
 P/B Gross
 Total Gross
 Cost
 Cost per Lead
 Cost per Sale
 Web Referrals
 VCP Views
 Impressions
 Ad Clicks
 Ad CPC
 Ad Cost VPA

Vendor Name	Total Leads	Total Sold	Total Gross	Cost	Cost per Lead	Cost per Sale
Auto	1853	17	\$738	\$194,400	\$753	\$71,558
Local Direct	2946	5	\$0	\$146,825	\$1,000	\$38,000
ColoursGraphics	163	1	\$0	\$18,036	\$3,607	\$18,036
Red Flux	172	2	\$0	\$56,898	\$2,567	\$12,675
AutoTrader	74				\$1,118	\$10,850
Re Media	423				\$208	\$10,488
Autosyn	974				\$52	\$7,417
AAA	186				\$338	\$5,558
Cars Direct	1407				\$189	\$4,739
Yipzy Sign	175				\$2,445	\$4,400
Newsm 3rd Party Leads	817				\$83	\$4,243
CarGenix	470				\$185	\$3,867
Cars.com	51				\$1,321	\$3,385
CarNow Chat	235				\$657	\$3,216
CarFax	147	8	\$1,857	\$5,620	\$277	\$3,077
Edinonda	191	6	\$6,548	\$4,213	\$85	\$2,933
Finan 114	181	10	\$11,766	\$3,469	\$187	\$2,726

Vendor Performance

This page lists all the vendors and their data. Users can sort order by the way they prefer Dealers can sort by cost per sale, by total leads, by sold amount, or any other metric they want to measure.

User Console

sarah@coastbealergroup.com
4 dealerships

Dealership Select:

Puente Hills Ford

Date Range Select:

From: Jan 2017

To: Oct 2017

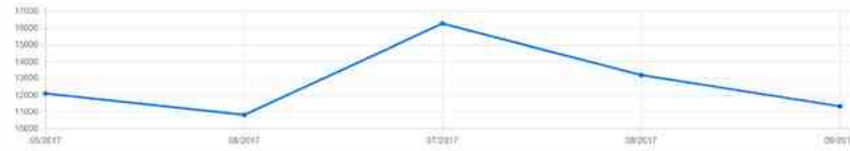
SEARCH

VDP KEY METRICS BY DS

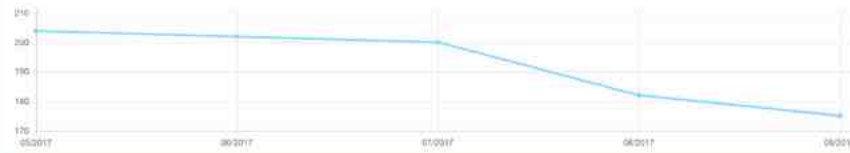
Website Statistics

Select from the dropdown to the left to view website performance reports for different dealerships.

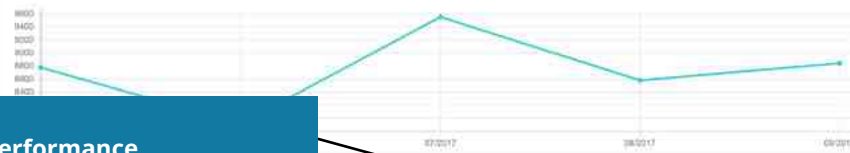
Web Visitors

63,599
WEB VISITORS

Web Leads

963
WEB LEADS

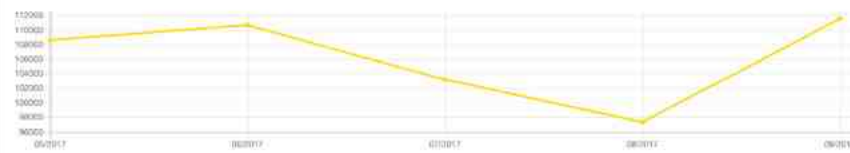
VDP Views

43,633
VDP VIEWS

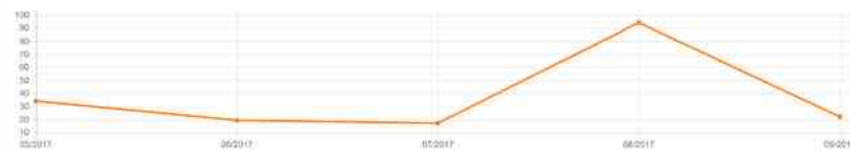
Website Performance

Dealers can track website performance in this section to see how their website is affecting their lead acquisition.

Spent

\$537,254
SPENT

Response Rate

186
RESPONSE RATE

Dealership Overview

View an overall summary for your dealership. Begin by using the controls to the left.

Overall Summary

Here are your total Category Summaries for this date range.

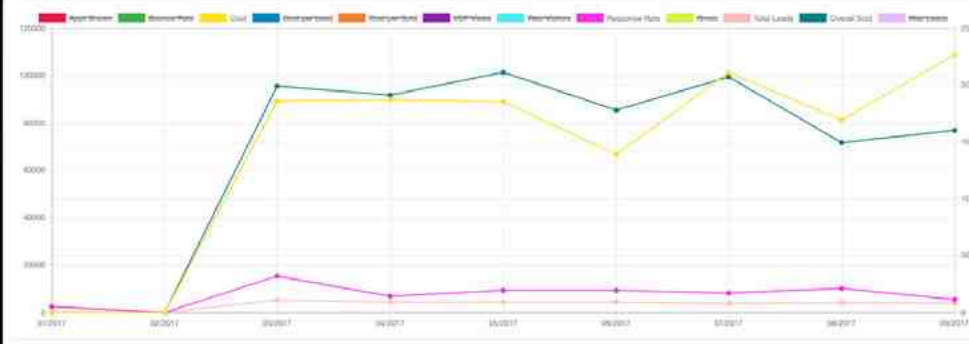
Deal # Resp. Rate (M/R) Total Leads Overall Sold



Months to Month Data

View month to month data from 01/2017 to 09/2017

Hover over vertical lines of the graph to view data for that specific month. You can also hide lines by clicking on the color legend below.



MARKETING SELL SHEET VISUAL SOLUTION

The final marketing sell sheet is used to present VendorGraphs to auto dealerships. Marketing tools such as this help dealers understand what the web app will do for them in a simple and clear format.



Dealer Vendor Management & Analytics

- Do you know how your vendors are performing? Which vendors are helping you? Which vendors can you get rid of?
- Do all vendors tell you they are doing a great job for you? Track your own data so you can know the truth.



Vendor 1 Vendor 2

VendorGraphs will provide a visual display of how your vendors are performing. You can clearly see what is working and what is not.

- Combine 8+ complicated reports**
VendorGraphs takes 8+ CRM and vendor data reports and combines them into a single dashboard that shows you how vendors are performing.
- Compare vendors**
VendorGraphs will allow you to compare vendors. So when vendors tell you to spend with them over others, you can accurately measure internally.
- Develop Marketing Strategy**
We'll help you determine which vendors are performing well and provide consultation on which vendors you should invest with to maximize sales.



\$10K

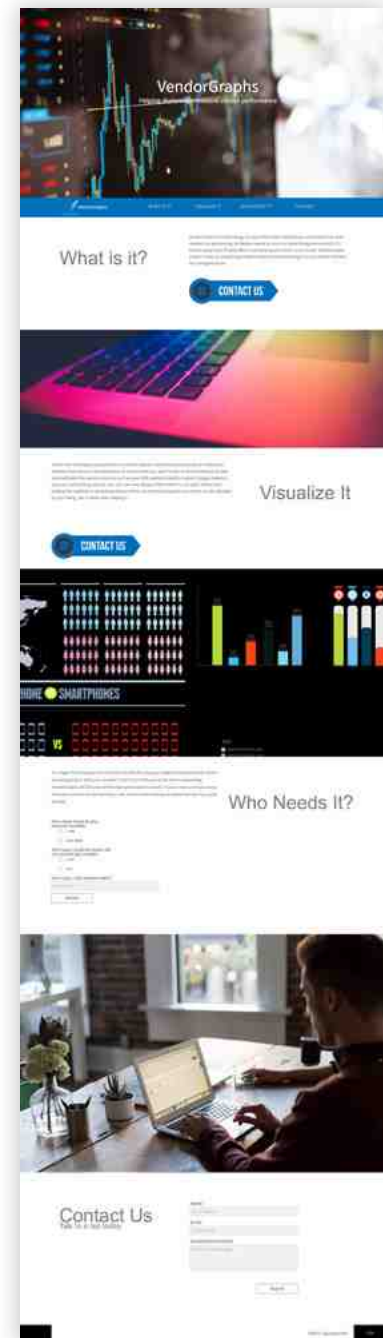
We've helped dealers save \$10K on average while maintaining or increasing sales volume.



www.vendorgraphs.com



SINGLE PAGE WEBSITE VISUAL SOLUTION





What is it?

VendorGraphs is a technology company that helps dealerships understand how their vendors are performing. As dealers spend so much on advertising every month, it's hard to keep track of what efforts are working and which ones are not. VendorGraphs makes it easy by combining multiple reports and presenting it on one simple interface for managers to see.





CONCLUSION

Considering VendorGraphs is a simple, concise web application for auto dealers, the research conducted to make it function correctly was a very complicated process. Not only in the research of dealerships, their future, and usage of current CRM's but research about data visualization was very useful. In the text by Keim, Grinstein, Ward titled "*Interactive Data Visualization: Foundations, Techniques, and Applications*," we are reminded about the value of data visualization. With specific examples of how the same data can be represented in different ways I found way to alter design to be more appealing and legible by the end user. The end goal for VendorGraphs is to show owners and decision makers of dealerships which vendors are working and which are taking up money. Though the concept is easy, detailed organization must go into the color coating and departmentalizing the different parts of the web tool. Here, we realize that design is just as important as the functionality of the tool. In an industry that is known to be fickle and make hasty uneducated decisions, VendorGraphs will be the base of all their decisions. Furthermore, it will change the landscape of how auto dealers make their marketing decisions and ultimately help them sell more cars. Auto dealers will have no choice but to rely on VendorGraphs in order to make crucial decisions on which vendors to invest in. VendorGraphs will be an integral part of auto dealerships.

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