Cox Automotive - Strategy and Design Case Study

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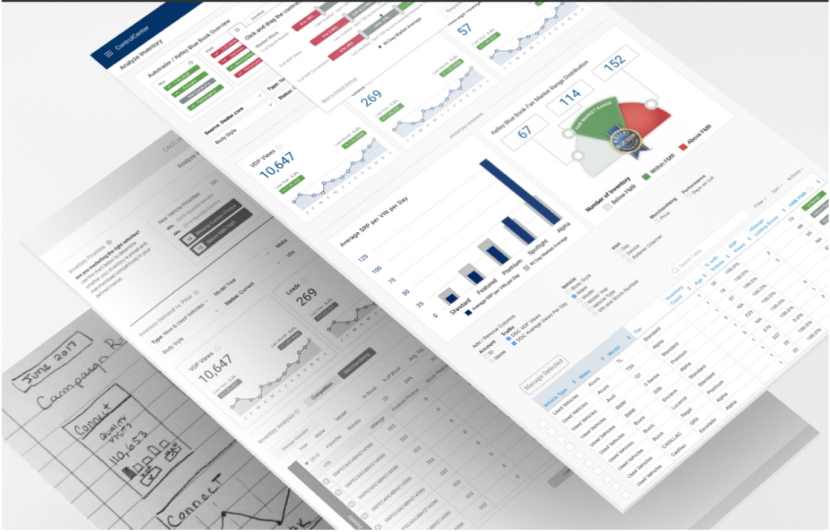

ControlCenter
Analyze Inventory
Autotrader / Kelley Blue Book Overview
Click and drag the controls
57
269
VDP Views
10,647
Kelley Blue Book Fair Market Range Distribution
67
114
152
Fair Market Range
Number of Inventory
Below FMR
Within FMR
Above FMR
Average SRP per VIN per Day
125
100
75
50
25
0
Standard
Featured
Premium
Spotlight
Alpha
Inventory Priorities
Are you marketing the right vehicles?
Leads
269
VDP Views
10,647
Inventory Analysis
Competition
Merchandising
Manage Selected
Vehicle Type
Make
Model
Trim
June 2017
Campaign R
Connect
Quality VVDTs
110,653
Connect

Goals

Business The business goal of this project was to increase the barrier to entry for Cox Automotive competitors while improving the retention of existing customers.

User The user goal for this work was to, for the first time, be able to accurately monitor the direct impact their marketing spend has on specific sales across their automotive dealership in order to increase revenue while improving operational efficiency.

My Roles

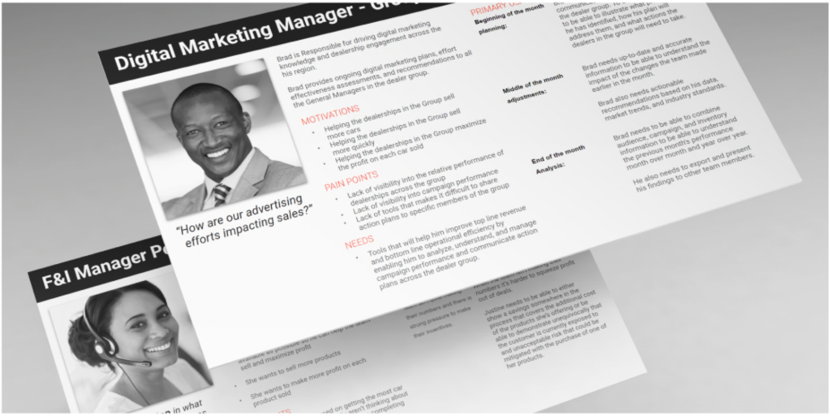
- Usage Analysis
- UX Strategy
- Market Research
- Data Visualization
- Interaction Design
- Usability Testing
- UI Design

> “Kevin is a true leader whom the rest of the community looked up to, and he helped drive much of the design culture across our offices...”

Jeremy Eccles
Director of User Experience
Cox Automotive Inc.

Strategies and Objectives

Strategy 1	**Design a report that helps users understand how well their inventory is merchandised as well as how well it is performing in the market.**
Objective 1	Combine data from Dealer.com, Kelley Blue Book, and Autotrader to create a comprehensive view of how every vehicle in the dealership’s inventory is merchandised.
Objective 2	Use the combined data from Dealer.com, Kelley Blue Book, and Autotrader to demonstrate how every vehicle in the dealership’s inventory is performing in the market.
Strategy 2	**Design a report that helps users understand how potential car buyers are being influenced by their marketing spend.**
Objective 1	Use the combined data from LiveRamp, Dealer.com, Kelley Blue Book, and Autotrader to create a comprehensive view of how a dealership’s marketing spend is influencing shoppers.
Objective 2	Use the combined data from LiveRamp, Dealer.com, Kelley Blue Book, and Autotrader to create a holistic view of how car buyers move through their purchase process over time and what marketing tools impact their decisions at each step as they progress.



Digital Marketing Manager -

"How are our advertising efforts impacting sales?"

Brad is Responsible for driving digital marketing knowledge and dealership engagement across the his region.

Brad provides ongoing digital marketing plans, effort effectiveness assessments, and recommendations to all the General Managers in the dealer group.

MOTIVATIONS

- Helping the dealerships in the Group sell more cars
- Helping the dealerships in the Group sell more quickly
- Helping the dealerships in the Group maximize the profit on each car sold

PAIN POINTS

- Lack of visibility into the relative performance of dealerships across the group
- Lack of visibility into campaign performance
- Lack of tools that makes it difficult to share action plans to specific members of the group

NEEDS

- Tools that will help him improve top line revenue and bottom line operational efficiency by enabling him to analyze, understand, and manage campaign performance and communicate action plans across the dealer group.

PRIMARY

Beginning of the month planning: the dealer group. to be able to illustrate what he has identified, how his plan will address them, and what actions the dealers in the group will need to take.

Middle of the month adjustments: Brad needs up-to-date and accurate information to be able to understand the impact of the changes the team made earlier in the month.

Brad also needs actionable recommendations based on his data, market trends, and industry standards.

End of the month Analysis: Brad needs to be able to combine audience, campaign, and inventory information to be able to understand the previous month's performance month over month and year over year.

He also needs to export and present his findings to other team members.

F&I Manager P

Scenarios - Digital Marketing Manager

Monthly Kick-off

Brad needs to be able to refine and communicate the new plan across the dealer group.

To do this, he'll need to be able to illustrate what problems he has identified, how his plan will address them, and what actions the dealers in the group will need to take.

Mid-month Adjustments

Brad needs up-to-date and accurate information to be able to understand the impact of the changes the team made earlier in the month.

Brad also needs actionable recommendations based on his data, market trends, and industry standards.

Month-end Analysis

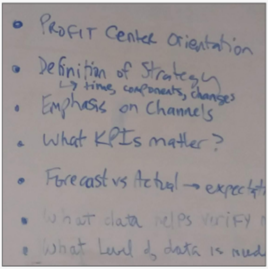
Brad needs to be able to combine audience, campaign, and inventory information to be able to understand the previous month's performance month over month and year over year.

He also needs to export and present his findings to other team members.

The marketing manager persona was prioritized over the others for this project because they are the primary customer of the analytics product and they have been identified by the sales team to be the group most likely to make purchase decisions.

All of the personas used in this project were based on information gathered from usage analytics, research sessions with industry experts, and interviews with dealership employees.

Whiteboard Ideation Sessions and Sketching



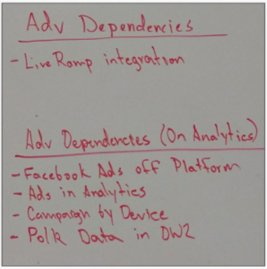
- PROFIT Center Orientation
- Definition of Strategy
  - ↳ time, components, changes
- Emphasis on Channels
- What KPIs matter?
- Forecast vs Actual → expect
- What data helps verify
- What Level of data is need

Divergent Exploration

With clear objectives defined and a research-backed persona to help focus our efforts, I facilitated workshops with leaders from the analytics product and development teams to begin the process of exploring our options. We started by running a divergent exercise where the team shared ideas in response to “How might we...?” prompts.

Converging and Prioritizing

With many different approaches to choose from, our next step was to consolidate the duplicates and discuss the pros and cons of the ideas that remained. This process helped the team consider the potential value, effort level, and feasibility as we narrowed and prioritized the list of items we would continue exploring.

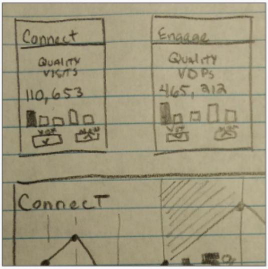


Adv Dependencies

- LiveRamp integration

Adv Dependencies (On Analytics)

- Facebook Ads off Platform
- Ads in Analytics
- Campaign by Device
- Polk Data in DW2


Connect
QUALITY VISITS
110,653
Engage
Quality VOPs
465,212
ConnecT

Rough Sketches and Iterations

The result of the initial ideation sessions was a plan focused on exploring three core themes including how dealerships **connect** with potential buyers, how they **engage** with those prospects, and finally how they **convert** them into paying customers. I used those themes to begin the process of sketching and exploring how our new approach might better enable our customers to run their businesses more profitably.

Task Flow

The sketching process helped the team quickly identify and iterate on the type of content we would be presenting and the interactions we might need to support. At this point, the team needed a way to visualize how users might move through the entire system to complete different tasks so I created a flow diagram to illustrate the most current thinking. After iterating as a group we decided our solution should flow through a data maturity model that provides the user with information, observations, and recommendations building context and meaning at each step.

Information

The previous version of the analytics product presented users with simple data almost exclusively. Users didn't find the raw data useful so additional context was provided and the resulting information has been promoted within the improved user experience.

Observations

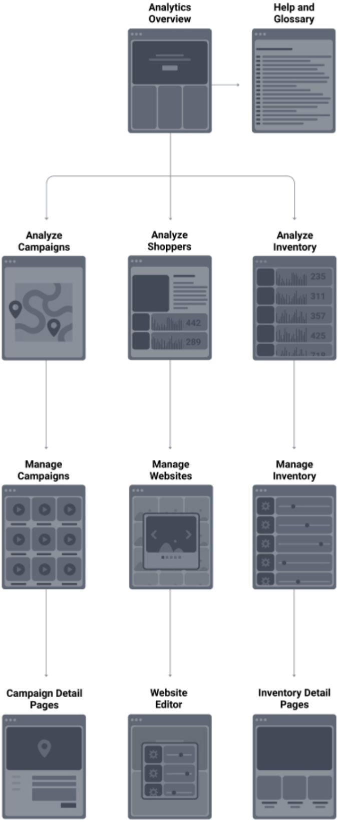
Once meaningful information was established as a foundation, observations were identified and promoted within the Campaign, Shopper, and Inventory reports. The goal of these observations is to simplify analysis tasks for users while establishing a basis for the recommendations.

Recommendations

User research indicated that many of the users are not well-trained analysts. This finding means that whenever possible, information and observations needed to also include recommendations so that users understand both how their systems are performing and what they can do to improve.

Change Management

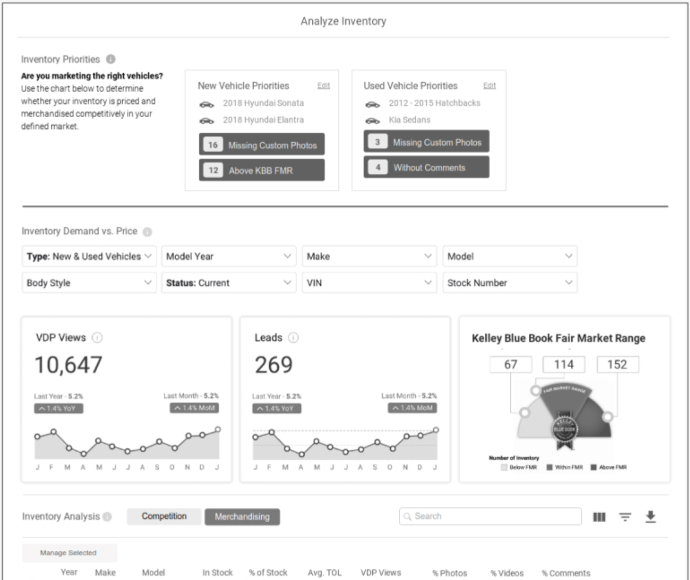
The previous version of the analytics product did not have access to change management systems. The new system now provides access to the various systems involved in changing their campaigns, websites, and inventory in order to increase engagement and reduce "time on task."


Analytics Overview
Help and Glossary
Analyze Campaigns
Analyze Shoppers
442
289
Analyze Inventory
235
311
357
425
Manage Campaigns
Manage Websites
Manage Inventory
Campaign Detail Pages
Website Editor
Inventory Detail Pages

Wireframing, Prototyping, and Testing

Every step of this process involved sketching, talking, iterating, and testing. Once the team agreed on a direction for how users might flow through the content I created wireframes to help the team visualize how the decisions we made would manifest themselves in the new interface. One of our leading ideas was to create an interface that would allow users to select from a list of questions and then present them with all the data that answers those questions. This approach failed in testing because it deviated from user expectations and limited discovery.

The solution we ended up promoting is a traditional interactive dashboard that leads users into three core task flows for analyzing ad campaigns, shopper behavior, and inventory. **From this point, my work focused on the inventory and shopper reports**.



Analyze Inventory

Inventory Priorities

Are you marketing the right vehicles?
Use the chart below to determine whether your inventory is priced and merchandised competitively in your defined market.

New Vehicle Priorities Edit
2018 Hyundai Sonata
2018 Hyundai Elantra
16 Missing Custom Photos
12 Above KBB FMR

Used Vehicle Priorities Edit
2012 - 2015 Hatchbacks
Kia Sedans
3 Missing Custom Photos
4 Without Comments

Inventory Demand vs. Price

Type: New & Used Vehicles
Model Year
Make
Model
Body Style
Status: Current
VIN
Stock Number

VDP Views
10,647
Last Year - **5.2%**
1.4% YoY
Last Month - **5.2%**
1.4% MoM

Leads
269
Last Year - **5.2%**
1.4% YoY
Last Month - **5.2%**
1.4% MoM

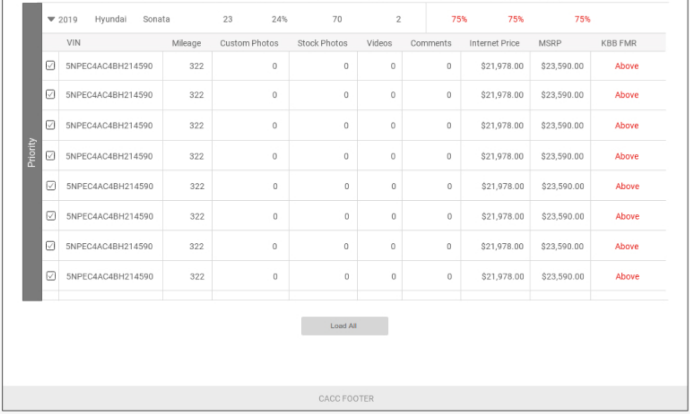
Kelley Blue Book Fair Market Range
67
114
152

J F M A M J J A S O N D J
J F M A M J J A S O N D J
FAIR MARKET RANGE
KELLEY BLUE BOOK
Number of Inventory
Below FMR
Within FMR
Above FMR

Inventory Analysis

Competition
Merchandising
Search
Manage Selected

Year	Make	Model	In Stock	% of Stock	Avg. TOL	VDP Views	% Photos	% Videos	% Comments



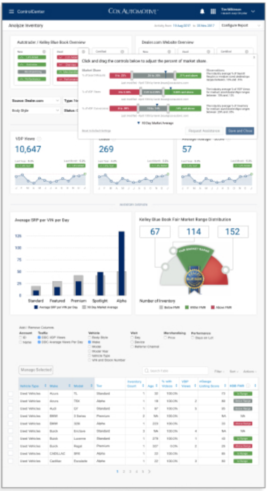
▼ 2019 Hyundai Sonata 23 24% 70 2 75% 75% 75%

Priority

	VIN	Mileage	Custom Photos	Stock Photos	Videos	Comments	Internet Price	MSRP	KBB FMR
☑	5NPEC4AC4BH214590	322	0	0	0	0	$21,978.00	$23,590.00	Above
☑	5NPEC4AC4BH214590	322	0	0	0	0	$21,978.00	$23,590.00	Above
☑	5NPEC4AC4BH214590	322	0	0	0	0	$21,978.00	$23,590.00	Above
☑	5NPEC4AC4BH214590	322	0	0	0	0	$21,978.00	$23,590.00	Above
☑	5NPEC4AC4BH214590	322	0	0	0	0	$21,978.00	$23,590.00	Above
☑	5NPEC4AC4BH214590	322	0	0	0	0	$21,978.00	$23,590.00	Above
☑	5NPEC4AC4BH214590	322	0	0	0	0	$21,978.00	$23,590.00	Above
☑	5NPEC4AC4BH214590	322	0	0	0	0	$21,978.00	$23,590.00	Above

Load All
CACC FOOTER

High-fidelity Design, Data Visualization, and Testing


ControlCenter
Cox Automotive
Analyze Inventory
10,647
269
57
67
114
152

While the analytics team was working on this new set of reports, UX team members from across Cox Automotive's brands were working on a new design system. **The updated design presents a unified brand experience for Dealer.com, Autotrader, and Kelley Blue Book users** while establishing consistency across interfaces and interactions.

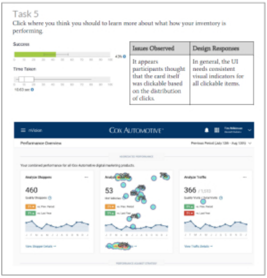
I was one of the advisors that provided feedback and guidance as the system was refined. **The primary goal of any feedback I provided was to make sure the new system would promote a strong visual hierarchy so users could navigate, scan, read, and comprehend the content quickly** and accurately.

Once an iteration that utilized the new design system was complete, I made clickable prototypes and tested them with users.

Cards and Click Confusion

Participants in our first round of high-fidelity testing clicked all over the inventory card when trying to learn more about how their inventory was performing. **Multiple users stated something similar to “Everything should be clickable!”**

The expectation that everything should be clickable combined with the lack of affordance, resulted in low task success for this test.

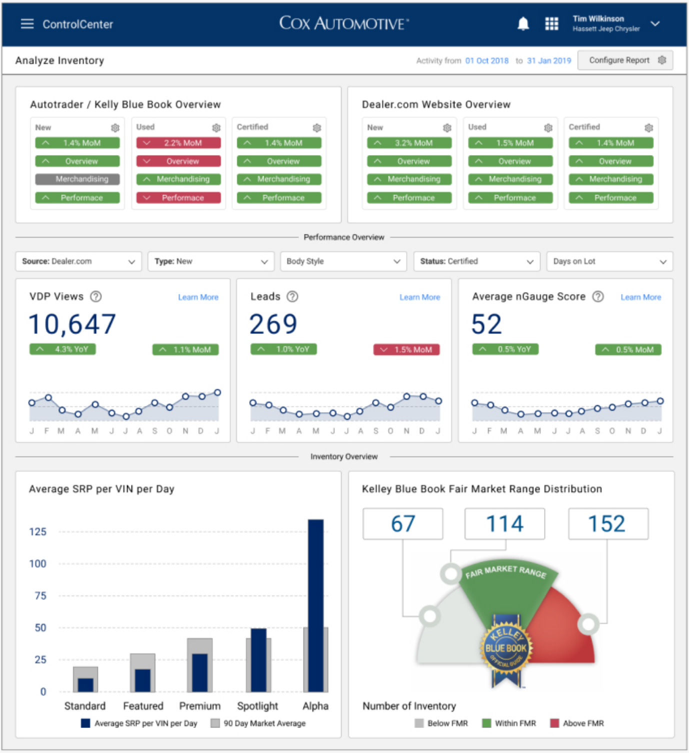


Task 5

Click where you think you should to learn more about what how your inventory is performing.

Success
43%
0 10 20 30 40 50 60 70 80 90 100
Time Taken
0 10 20 30 40 50 60 70 80 90 100
10.63 sec
nVision
Cox Automotive
Performance Overview
460
53
366

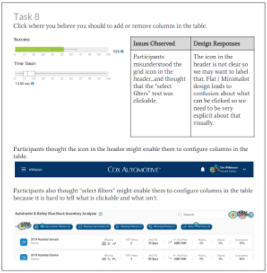
Issues Observed	Design Responses
It appears participants thought that the card itself was clickable based on the distribution of clicks.	In general, the UI needs consistent visual indicators for all clickable items.



ControlCenter
Cox Automotive
Tim Wilkinson
Hassett Jeep Chrysler
Analyze Inventory
Activity from 01 Oct 2018 to 31 Jan 2019
Configure Report
Autotrader / Kelly Blue Book Overview
New
1.4% MoM
Overview
Merchandising
Performace
Used
2.2% MoM
Overview
Merchandising
Performace
Certified
1.4% MoM
Overview
Merchandising
Performace
Dealer.com Website Overview
New
3.2% MoM
Overview
Merchandising
Performace
Used
1.5% MoM
Overview
Merchandising
Performace
Certified
1.4% MoM
Overview
Merchandising
Performace
Performance Overview
Source: Dealer.com
Type: New
Body Style
Status: Certified
Days on Lot
VDP Views
Learn More
10,647
4.3% YoY
1.1% MoM
J F M A M J J A S O N D J
Leads
Learn More
269
1.0% YoY
1.5% MoM
J F M A M J J A S O N D J
Average nGauge Score
Learn More
52
0.5% YoY
0.5% MoM
J F M A M J J A S O N D J
Inventory Overview
Average SRP per VIN per Day
125
100
75
50
25
0
Standard
Featured
Premium
Spotlight
Alpha
Average SRP per VIN per Day
90 Day Market Average
Kelley Blue Book Fair Market Range Distribution
67
114
152
FAIR MARKET RANGE
KELLEY BLUE BOOK OFFICIAL GUIDE
Number of Inventory
Below FMR
Within FMR
Above FMR

Data Visualization

The inspiration for the overview visualization at the top of the screen above is a spreadsheet that digital marketers in the auto industry use to track their performance. The spreadsheet wasn't beautiful but **when it was tested, users showed high levels of comprehension because this design matched their expectations for how this type of data is presented** based on their training. I added controls to the interface that allow dealerships to customize their % of market share for key values to further enhance the relevance of the overview information.



Task 8

Click where you believe you should to add or remove columns in the table.

Success
Time Taken

Issues Observed	Design Responses
Participants misunderstood the grid icon in the header...and thought that the "select filters" text was clickable.	The icon in the header is not clear so we may want to label that. Flat / Minimalist design leads to confusion about what can be clicked so we need to be very explicit about that visually.

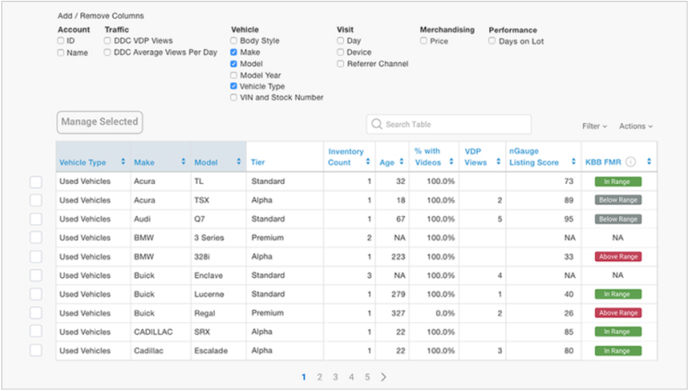
Participants thought the icon in the header might enable them to configure columns in the table.

Cox Automotive

Participants also thought "select filters" might enable them to configure columns in the table because it is hard to tell what is clickable and what isn't.

Confusing Icons and Link Miscues

Our **testing showed that icons were not the best design choice for many of the participants**. In most cases, icons require users to recall what will happen when they are clicked instead of their meaning being immediately recognizable. **This round of testing also confirmed that "flat" design can make it difficult for users to know where they can click**. These issues were resolved in the next design iteration.



Add / Remove Columns

Account
☐ ID
☐ Name

Traffic
☐ DDC VDP Views
☐ DDC Average Views Per Day

Vehicle
☐ Body Style
☑ Make
☑ Model
☐ Model Year
☑ Vehicle Type
☐ VIN and Stock Number

Visit
☐ Day
☐ Device
☐ Referrer Channel

Merchandising
☐ Price

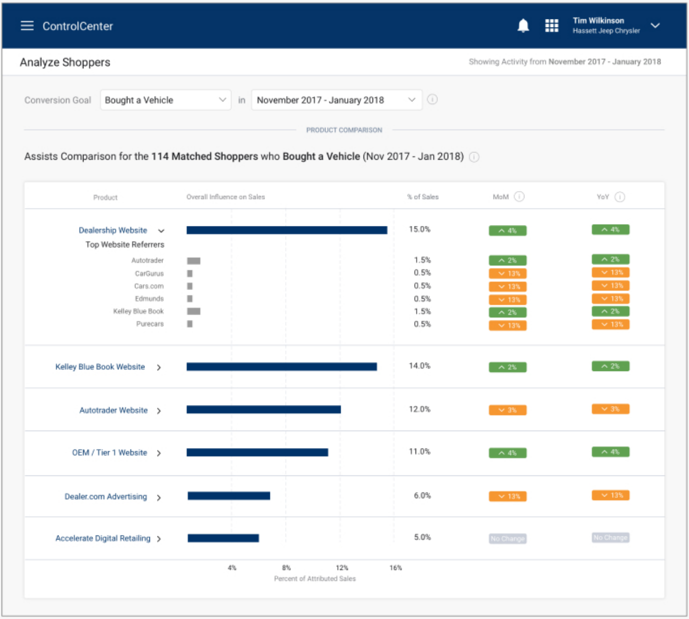
Performance
☐ Days on Lot

Manage Selected
Search Table
Filter
Actions

	Vehicle Type	Make	Model	Tier	Inventory Count	Age	% with Videos	VDP Views	nGauge Listing Score	KBB FMR
☐	Used Vehicles	Acura	TL	Standard	1	32	100.0%		73	In Range
☐	Used Vehicles	Acura	TSX	Alpha	1	18	100.0%	2	89	Below Range
☐	Used Vehicles	Audi	Q7	Standard	1	67	100.0%	5	95	Below Range
☐	Used Vehicles	BMW	3 Series	Premium	2	NA	100.0%		NA	NA
☐	Used Vehicles	BMW	328i	Alpha	1	223	100.0%		33	Above Range
☐	Used Vehicles	Buick	Enclave	Standard	3	NA	100.0%	4	NA	NA
☐	Used Vehicles	Buick	Lucerne	Standard	1	279	100.0%	1	40	In Range
☐	Used Vehicles	Buick	Regal	Premium	1	327	0.0%	2	26	Above Range
☐	Used Vehicles	CADILLAC	SRX	Alpha	1	22	100.0%		85	In Range
☐	Used Vehicles	Cadillac	Escalade	Alpha	1	22	100.0%	3	80	In Range

Table Design

The table design above, while not perfect, was **improved based on information uncovered while testing with users**. In previous designs the “Add / Remove Columns” tools and other important functionalities were hidden under menu icons. This approach negatively impacted discoverability and usage. **The new design replaced icons with text links and presents the column selection controls by default. The usability of the selection controls was also enhanced by logically grouping the controls** rather than simply listing them alphabetically.


ControlCenter
Tim Wilkinson
Hassett Jeep Chrysler

Analyze Shoppers

Showing Activity from **November 2017 - January 2018**

Conversion Goal: Bought a Vehicle in November 2017 - January 2018

PRODUCT COMPARISON

Assists Comparison for the **114 Matched Shoppers** who **Bought a Vehicle** (Nov 2017 - Jan 2018)

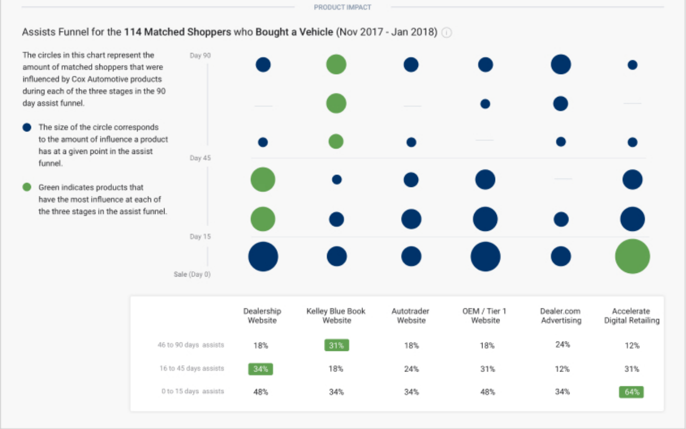
Product	Overall Influence on Sales	% of Sales	MoM	YoY
Dealership Website		15.0%	⌃ 4%	⌃ 4%
Top Website Referrers				
Autotrader		1.5%	⌃ 2%	⌃ 2%
CarGurus		0.5%	⌄ 13%	⌄ 13%
Cars.com		0.5%	⌄ 13%	⌄ 13%
Edmunds		0.5%	⌄ 13%	⌄ 13%
Kelley Blue Book		1.5%	⌃ 2%	⌃ 2%
Purecars		0.5%	⌄ 13%	⌄ 13%
Kelley Blue Book Website		14.0%	⌃ 2%	⌃ 2%
Autotrader Website		12.0%	⌄ 3%	⌄ 3%
OEM / Tier 1 Website		11.0%	⌃ 4%	⌃ 4%
Dealer.com Advertising		6.0%	⌄ 13%	⌄ 13%
Accelerate Digital Retailing		5.0%	No Change	No Change

4%
8%
12%
16%
Percent of Attributed Sales

Simplified for Novice Users with Additional Functionality for Experts

The most important finding from all of the testing we conducted was that **less than 25% of the analytics product users have any formal training as an analyst**. This is important because it impacts both the types of information we could present to users as well as how we presented it.

The original version of the chart above was essentially a spreadsheet that only included rows of the referrer sub item data. To simplify the presentation we rolled the referrer data up and grouped them by property type. **This presentation creates an actionable overview for the majority of users while allowing advanced users to drill down further** to learn more.


PRODUCT IMPACT
Day 90
Day 45
Day 15
Sale (Day 0)

Assists Funnel for the **114 Matched Shoppers** who **Bought a Vehicle** (Nov 2017 - Jan 2018)

The circles in this chart represent the amount of matched shoppers that were influenced by Cox Automotive products during each of the three stages in the 90 day assist funnel.

- ● The size of the circle corresponds to the amount of influence a product has at a given point in the assist funnel.
- ● Green indicates products that have the most influence at each of the three stages in the assist funnel.

	Dealership Website	Kelley Blue Book Website	Autotrader Website	OEM / Tier 1 Website	Dealer.com Advertising	Accelerate Digital Retailing
46 to 90 days assists	18%	31%	18%	18%	24%	12%
16 to 45 days assists	34%	18%	24%	31%	12%	31%
0 to 15 days assists	48%	34%	34%	48%	34%	64%

Increasing the Barrier to Entry for Competition

No other company in the automotive industry has direct access to the data that is required to create a visualization like the one shown above. **This chart was designed to leverage data from all of Cox Automotive brands in combination with user data from LiveRamp to show exactly what products are most impactful at each stage of the automotive purchase process.** For the first time, digital marketers are able to quickly see the direct impact their marketing spend is having on sales.

The first version of this chart was designed to flow across the screen from left to right (like a timeline). **Testing revealed that users were better able to comprehend this data when presented vertically (like a funnel).** The layout was adjusted and a detailed legend was added to address other issues uncovered while testing.

The Results

Acquisition	The number of users has doubled since launch.
Task Success	The industry-first data visualizations provide users with the ability to understand how their marketing spend across Dealer.com, Kelley Blue Book, and Autotrader is turning into sales. These new reports also allow users to improve their operational efficiency by providing the information needed to identify and eliminate marketing spend that is primarily driving bot traffic.
Engagement	Having access to reliable information that provides insights into how to manage their marketing spend has increased engagement from monthly to bi-weekly.
Retention	The new system turned the tide for the analytics product that was leaking users to Google Analytics and custom solutions.