Capabilities Presentation:
Data Science & Analytics

AI Analytics LLC

A1 Analytics data science: Advantages

Experience

Our team of subject matter experts each averages 8-10 years in the field. Collectively, we have over **500 projects under our belts, bringing you:**

- **Deep B2B and B2C experience**
- **Relationships with top data providers worldwide**
- **Experience working with leading technology vendors**

Rapid Analytics ROI

We deliver quick and actionable results with our phased approach:

- Identify your goals
- Leverage data sources
- Build advanced models
- Share recommendations
- Scale profitably

Our Global Team

We solve your most complex problems cost-effectively, with rapid ROI from our offices across the world, including:

- Silicon Valley
- Washington, D.C.
- Pune, India
- Sydney, Australia

Multiple Industries

We have produced high ROI solutions for Autodesk, British Airways, Cisco, eBay, Oracle, and F500 leaders in multiple industries including:

- Automotive
- e-Commerce
- Financial Services
- Government
- Healthcare & Pharma
- High Tech & Telecom

Evolution of data science: Where is your organization?

Monitoring

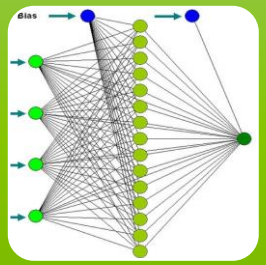
- What's happening?
- Most operations monitor changes
- Data quality can be a problem
- Lag in systems can create delays

Reporting

- What happened?
- Only as good as the systems
- Must be accurate at the atomic level
- Various departments may calculate things differently

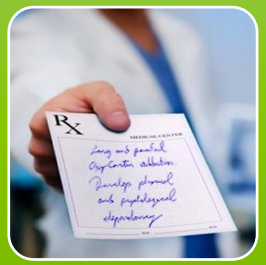
Diagnostic

- Why did it happen?
- Advanced analytics can help
- Third party data append adds value such as geo-demographics, psychographics, or firmographics



Predictive

- What may happen?
- Sampling methods are important
- Factors analysis reveals strongest predictors
- Various types of models can be used



Prescriptive

- What should I do?
- Depends on the business case and objective
- Output can take various forms
- Automated model scoring
- Automated triggered events

Cognitive

- Decision automation
- Guided by analysts
- Run autonomously
- Conditions change
- Continual tuning of models
- Systems that speak to each other
- Auto-learning

No matter where you are in your progressive adoption of analytics, we can help.

Become a predictive-driven organization

Data Audit
Our Data Audit is free to new customers

- Improve your overall business data 22-65%
- Improve your consumer deliverability by about 33%
- This can reduce costs and improve sales between 22-65%

Product Cross-Sell and Up-Sell
Identify the ideal product mix for your target segments

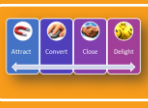
- Intelligent market basket analysis can improve sales
- Cross-sell and up-sell can be improved 10% to over 300%
- Combine this with segmentation and timing analytics

Predictive Dashboards
Go from looking backward to forward

- Improve sales efficiency up to 2X to 8X
- Reduce marketing costs 5-50%

Customer Churn-Reversal
Reduce churn by 10-80% before it occurs

- It can cost 5X-10X more to acquire than retain a customer
- Less than 20% of companies focus on churn mitigation
- We can reduce churn and improve LTV by 10-80%

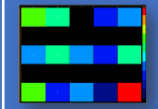


Customer Acquisition
We scale your customer base with data science

- We access over 78 million businesses worldwide
- We access over 500 million active consumers worldwide
- We can predict and identify your best prospects

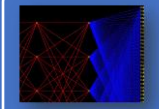
Predictive Customer Support
Improve your customer satisfaction and sales

- You probably have very good support scores overall
- This is often not true for a company's biggest customers
- Predictive outbound calls can preempt expensive losses



Customer Needs-based Segmentation
Use customer differences to your advantage

- Most marketing is only 5-14% effective
- Double your click-to-open by needs-based segmentation
- Reduce opt-out rates for your best segments by 70%



Risk Management and Fraud Detection
Reduce internal and external losses

- Easily 5% of revenues each year are lost to fraud
- About 85% of fraudsters have a clean employment history
- Our models surface both unusual patterns and fraud

Note: These are representative results achieved with prior clients and employers. Your results may be lower or higher.

Getting started is as easy

Step 1

Free analytics discussion

- Your needs, priorities, and gap analysis
- A1 Analytics analytics solutions
- Types of data you currently collect
- Valuable 3rd party data you can leverage
- Roles and responsibilities
- Basic timelines and cost estimates

Once we collect this information, we'll prepare a formal Step 2 proposal within 5 business days for your review.

Step 2

Discovery (2-4 weeks)

- Guide your team in data preparation
- Prepare your data for model building
- Enhance your data with 3rd-party data
- Apply analytics and models
- Review our findings with your team
- Establish timelines and cost estimates

Step 3

Implementation (1-3 months)

- Build-out modules and internal testing
- Deploy into production each module
- Test data collection at scale
- We test model scoring at scale
- Sign-off on project acceptance

Industries and potential solutions

Automotive

- Seat belt adoption
- Customer profiling
- Customer segmentation
- Customer satisfaction
- First-time customer analysis
- Repeat customer analysis
- Factors analysis
- Cross-sell
- Up-sell
- Maintenance outbound

Communications

- Customer acquisition
- Customer churn control
- Customer profiling
- Customer segmentation
- Customer satisfaction
- First-time customer analysis
- Repeat customer analysis
- Factors analysis
- Cross-sell
- Plan optimization

Education

- Quotas indexing
- Student acquisition
- Job placement analytics
- Student psychographics
- Geo-demographics
- Financial analytics
- Course ROI
- Professor performance
- Campaign development
- Channel ROI

Enterprise Security

- Market basket analytics
- Cross-sell models
- Up-sell models
- Customer acquisition
- Family-tree selling
- Account activity
- Contact behavioral analysis
- Prospect signals
- Competitive intelligence

Industries and potential solutions - continued

Financial Services

- Customer acquisition
- Customer profiling
- Customer segmentation
- Customer ROI
- Loan portfolio analysis
- Fraud detection
- Household marketing
- PFI sales strategies
- Market basket analysis
- Cross-sell
- Up-sell

High Tech

- Market basket analytics
- Cross-sell models
- Up-sell models
- Customer acquisition
- Family-tree selling
- Account activity
- Contact behavioral analysis
- Prospect signals
- Competitive intelligence
- Community programs

Healthcare

- Patient acquisition
- Patient profiling
- Patient segmentation
- Patient ROI
- Billing fraud detection
- Household marketing
- Location analytics
- Service mix analysis
- Employer program sales
- Mobile services

Government

- Safety adoption studies
- Predictive crime maps
- Predictive fire services
- Satisfaction studies
- Pension analytics
- Overtime abuse
- Fraud detection
- Program effectiveness
- Social Network Analytics
- Geospatial analytics
- Anomaly detection

Industries and potential solutions - continued

Pharma

- Coverage mapping
- Channel analytics
- Patient segmentation
- Patient ROI
- Product mix analysis
- MSL event planning
- Field Sales Rep mapping
- Managed care database
- Predictive analytics

Retail

- Customer acquisition
- Customer cross-sell
- Customer up-sell
- Loyalty programs
- Online communities
- Store product mix
- Drive-time analytics
- Customer satisfaction
- Customer service

Travel

- Customer acquisition
- Customer cross-sell
- Customer up-sell
- Loyalty programs
- Online communities
- Airline affinity programs
- Travel packaging
- Customer satisfaction
- Customer service
- Corporate programs

Utilities

- Customer satisfaction
- New entrant analytics
- Solar-adoption analytics
- Customer profiling
- Customer segmentation
- Usage anomaly detection
- Thematic mapping
- Multivariate mapping
- Service area analytics
- Plan optimization

Data science & analytics successes

Affymetrix	Autodesk	British Airways	Cisco
• **Salesforce Migration** Used third-party ODBC connector to migrate and update thousands of product prices in USD, Euro, and GBP. • **Sales Team Performance** Identified key factors associated with sales team top performance.	• **B2B Family Tree Sales** Enabled company to cross-sell into corporate family trees. Captured largest account in Autodesk history. • **Partner Empowerment** Developed analytic programs for major VARs, increasing sales 800% in key segments.	• **Business Client Program** Performed firmographic profiling on business-class passengers, enabling British Airways to perform precision customer acquisition. • **Major Agency Win** Won the British Airways account from a much larger Chicago agency.	• **Advertising Optimization** Collaborated with Cisco's direct and interactive agency of record's creative team to launch a worldwide advertising program, in recognition of the millionth sale of their most advanced router.

Clients and projects our team members have empowered in current or prior roles

Data science & analytics successes - continued

eBay	Levi Strauss	Nielsen Mobile	Oracle
• **Customer Satisfaction** Expanded eBay's monthly buyer and seller survey from 3 English-speaking countries to over 20. • **Customer Segmentation** Psychographic profiling that enabled higher ROI advertising worldwide.	• **Product Launch** Performed analytics for a nationwide launch of Levi's "Personal Pair", generating thousands of media reports. • **Product Positioning** Increased brand awareness among younger, upper class target market in Nordstrom and Macy's.	• **Competitive Intelligence** Worked with T-Mobile to contrast Telephia's Test Mobile System (TEMS) against that of Ericsson. • **Telecom System Map** Created a predictive map that reveals where carriers are most likely to experience dropped calls 24/7.	• **Trade Shows** Performed the pre-show, show, and post-show analytics for Oracle OpenWorld. • **Attendee Targeting** Developed the first predictive model of likely attendees and created first spatial intelligence of any Oracle show.

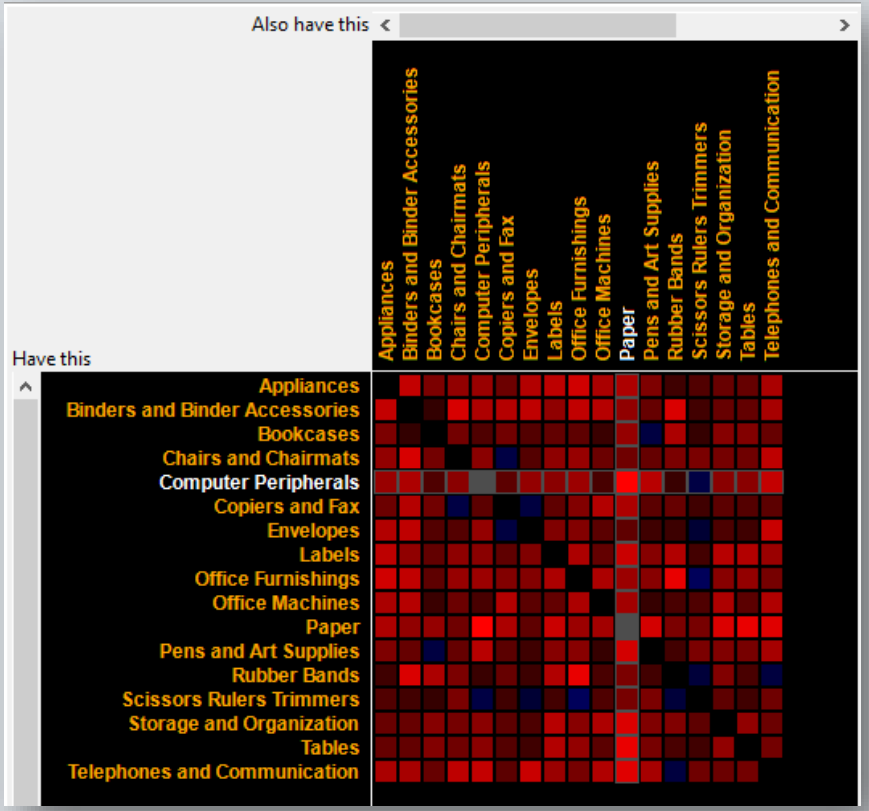
Clients and projects our team members have empowered in current or prior roles

Data science & analytics successes - continued

Palo Alto Networks	Robert Mondavi	T-Mobile	West Marine
			
• **Demand Generation** Increased leads by partnering with online advertising and third-party data vendors. • **Sales Empowerment** Delivered behavioral signals on entire account hierarchy to individual account owners worldwide via Tableau in Salesforce.	• **Customer Database** Created a consolidated database of all wine club members, various surveys, and online orders. • **Customer Segmentation** Identified cross-sell and up-sell models for red and white wines at low to high price points.	• **Competitive Intelligence** Worked with T-Mobile to contrast Telephia's Test Mobile System (TEMS) against that of Ericsson. • **Telecom System Map** Created a predictive map to reveal where carriers are most likely to experience dropped calls 24/7.	• **Mobile Campaign** Initiated use of QR codes and MMS campaign tracking. • **Customer Segmentation** Created all manner segmentation and targeting models. • **Monetize Satisfaction** Built model that reveals financial impact on CSAT.

Clients and projects our team members have empowered in current or prior roles

Product cross-sell: Market basket analytics

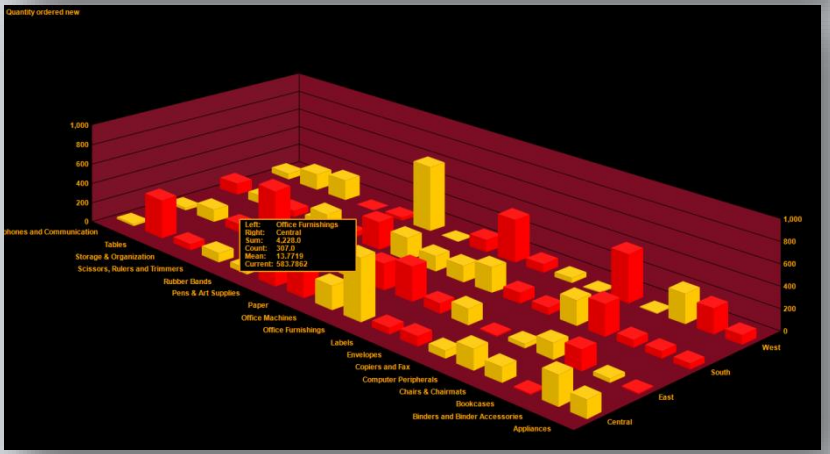


Market basket analytics reveals which products go together, based on customer type. It works for both B2B and B2C segmentations. Use it improve cross-selling efforts online and offline.

Item 1	Item 2	Support	Ratios	Coefficients
Computer Peripherals	Paper	25.7%	46.6%	0.1040
Computer Peripherals	Telephones and Communication	25.7%	35.5%	0.0740
Computer Peripherals	Pens and Art Supplies	25.7%	26.6%	0.0676
Computer Peripherals	Binders and Binder Accessories	25.7%	34.2%	0.0624
Computer Peripherals	Office Furnishings	25.7%	30.5%	0.0535
Computer Peripherals	Appliances	25.7%	19.7%	0.0521
Computer Peripherals	Envelopes	25.7%	11.9%	0.0496
Computer Peripherals	Tables	25.7%	16.4%	0.0444
Computer Peripherals	Storage and Organization	25.7%	22.8%	0.0443
Computer Peripherals	Chairs and Chairmats	25.7%	16.8%	0.0442
Computer Peripherals	Labels	25.7%	13.3%	0.0442
Computer Peripherals	Copiers and Fax	25.7%	4.1%	0.0210
Computer Peripherals	Bookcases	25.7%	7.9%	0.0141
Computer Peripherals	Office Machines	25.7%	13.3%	0.0108
Computer Peripherals	Scissors Rulers Trimmers	25.7%	5.1%	-0.0085
Computer Peripherals	Rubber Bands	25.7%	7.1%	0.0029

Product cross-sell: Deviation analytics

Quantity ordered new	Central		East		South		West	
Appliances	2,219.00	(31.51%)	1,873.00	(26.60%)	1,211.00	(17.20%)	1,737.00	(24.67%)
Binders and Binder Accessories	4,142.00	(31.28%)	3,582.00	(27.05%)	2,318.00	(17.50%)	3,197.00	(24.14%)
Bookcases	776.00	(28.80%)	530.00	(19.67%)	413.00	(15.33%)	975.00	(36.19%)
Chairs & Chairmats	1,986.00	(31.39%)	1,845.00	(29.16%)	845.00	(13.35%)	1,649.00	(26.07%)
Computer Peripherals	3,624.00	(30.88%)	3,184.00	(27.13%)	2,344.00	(19.97%)	2,583.00	(22.01%)
Copiers and Fax	418.00	(35.51%)	300.00	(25.48%)	145.00	(12.31%)	314.00	(26.67%)
Envelopes	1,064.00	(26.87%)	1,213.00	(30.63%)	608.00	(15.35%)	1,074.00	(27.12%)
Labels	1,344.00	(28.03%)	1,185.00	(24.71%)	1,107.00	(23.09%)	1,158.00	(24.15%)
Office Furnishings	4,228.00	(33.97%)	3,005.00	(24.14%)	2,401.00	(19.29%)	2,812.00	(22.59%)
Office Machines	1,597.00	(34.16%)	997.00	(21.33%)	990.00	(21.18%)	1,090.00	(23.32%)
Paper	5,237.00	(27.77%)	5,105.00	(27.07%)	3,617.00	(19.18%)	4,893.00	(25.95%)
Pens & Art Supplies	2,241.00	(20.84%)	3,403.00	(31.64%)	1,662.00	(15.45%)	3,446.00	(32.04%)
Rubber Bands	862.00	(31.28%)	767.00	(27.84%)	443.00	(16.07%)	683.00	(24.79%)
Scissors, Rulers and Trimmers	684.00	(33.96%)	376.00	(18.66%)	435.00	(21.59%)	519.00	(25.76%)
Storage & Organization	2,322.00	(28.53%)	2,095.00	(25.74%)	1,395.00	(17.14%)	2,325.00	(28.57%)
Tables	1,134.00	(21.86%)	1,516.00	(29.22%)	1,023.00	(19.72%)	1,514.00	(29.18%)
Telephones and Communication	4,205.00	(29.43%)	3,857.00	(27.00%)	2,452.00	(17.16%)	3,770.00	(26.39%)
TOTAL	38,083.00	(29.28%)	34,833.00	(26.78%)	23,409.00	(17.99%)	33,739.00	(25.94%)



Deviation Analytics reveals the hidden story in your data that is impossible to identify using standard tools like Excel.

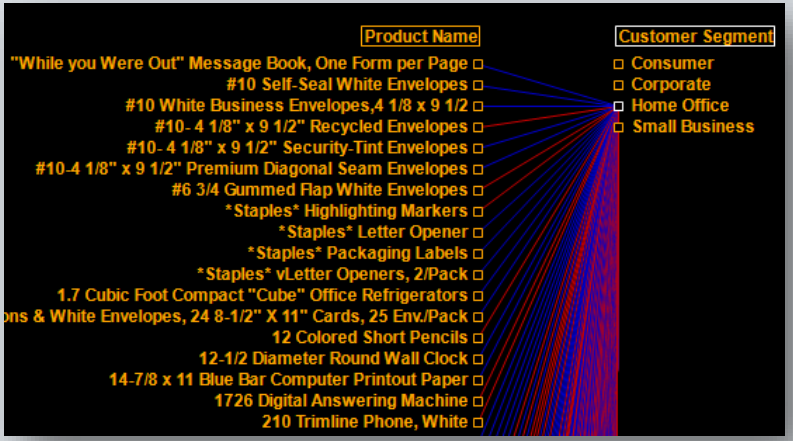
Deviation Analytics shows where your product sales are unusually high or low, and it can even reveal what you should have sold had there been no bias. It contrasts your observed results with a statistically unbiased outcome.

Deviation Analytics benefits

- Identify hidden patterns not possible with Excel
- Reveal what you 'should have' obtained
- Calculate the ratio of Observed / Expected
- Reveal hidden strengths and weaknesses
- Perform better targeting

Our data science team can create deviation analysis insights that will improve your organization's performance.

Product cross-sell: Correlation analytics



Correlation analysis can reveal hidden product affinity for specific customer segments, from product group, sub-group, and all the way down to SKU level for any customer segmentation.

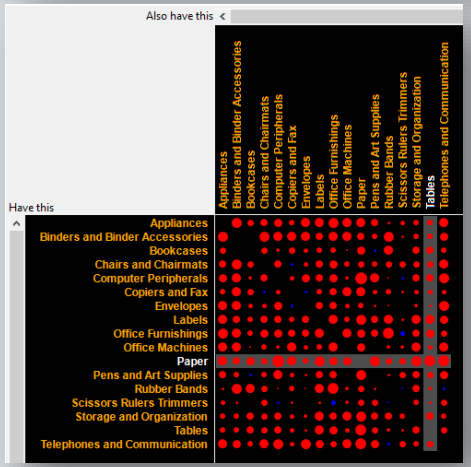
Correlation analytics benefits

- Identifies key product combinations for segments
- Performs up-sell or cross-sell
- Optimizes inventory planning by segment
- Is very flexible and can be used for everything from improving product sales to reducing shipping costs

Our unique ability to combine your data with 3rd party data to perform correlation analysis will result in better cross-sell opportunities for your organization.

Product cross-sell example: Low margin items

Product Base Margin	Consumer	Corporate	Home Office	Small Business
Appliances	0.5560	0.5560	0.5519	0.5553
Binders and Binder Accessories	0.3723	0.3752	0.3743	0.3731
Bookcases	0.6610	0.6513	0.6687	0.6628
Chairs & Chairmats	0.6302	0.6369	0.6425	0.6397
Computer Peripherals	0.5906	0.5860	0.6122	0.5801
Copiers and Fax	0.4366	0.4067	0.4230	0.4278
Envelopes	0.3715	0.3747	0.3713	0.3757
Labels	0.3746	0.3777	0.3748	0.3803
Office Furnishings	0.5224	0.5225	0.5260	0.5291
Office Machines	0.4450	0.4479	0.4459	0.4425
Paper	0.3754	0.3744	0.3755	0.3745



By combining market basket analysis, deviation analysis, and correlation analysis, we are able to create solutions for low margin items and loss-leaders:

Deviation analysis reveals that paper is among the lowest margin items.

Solution: Cross-sell customers on computer peripherals promo.

In this case, we cross sell paper buyers on new eco-friendly, high resolution printers-copiers.

L/N	Item 1	Item 2	Support	Ratios
1	Paper	Computer Peripherals	38.0%	31.5%
2	Paper	Tables	38.0%	17.8%
3	Paper	Telephones and Communication	38.0%	34.9%
4	Paper	Storage and Organization	38.0%	24.2%

Monetizing net promoter: Executive summary

Net promoter is a management tool that can be used to gauge the loyalty of a firm's customer relationships, based on responses to the question: How likely is it that you would recommend our company/product/service to a friend or colleague?

An advanced approach to Net Promoter for B2B or B2C

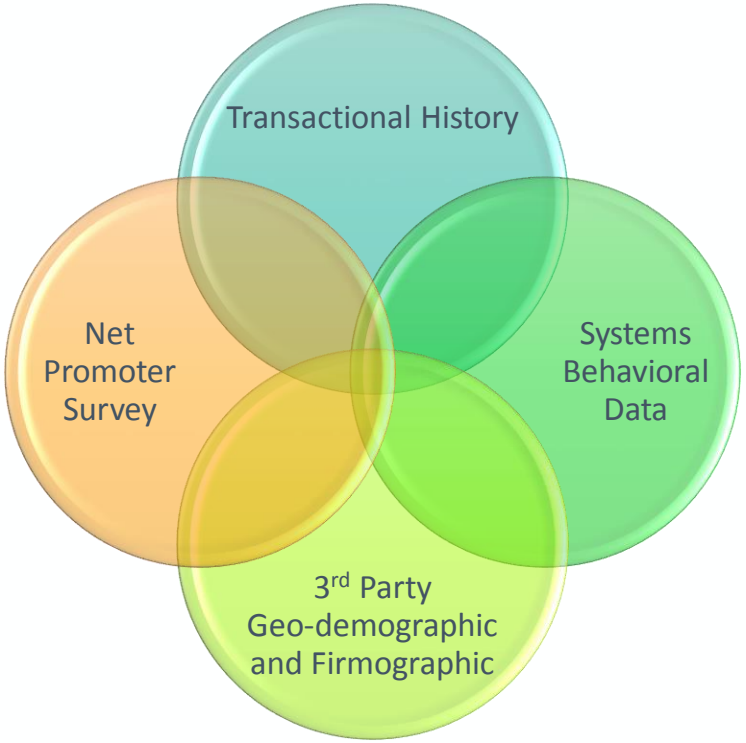
Unless you *monetize* net promoter, all you have is a report card – it's hardly actionable. Most vendors in the net promoter business lack the experience to establish the data groundwork. To derive maximum ROI from this type of program, we recommend integrating multiple data sources:

- Customer satisfaction longitudinal responses, spanning several areas of product satisfaction
- Transactional histories, aggregated by customer, plan, product, features, spend, and churn
- Firmographic, Geo-demographic and psychographic data to open opportunities for much greater insights and applications

Once this type of data has been assembled, our data science team can surface valuable insights and suggest automated processes such as:

- Churn early warning system
- Market basket cross-sell automated recommendation engine
- Plan optimization recommendation engine
- New customer acquisition modeling based on geo-demographics and psychographics

Monetizing net promoter: Advantages



By combining transactional histories, firmographic (SIC / NAICS) , geo-demographics and psychographics (Experian Mosaic), and systems usage data, you're able to better understand:

Drivers of Satisfaction: Some factors are causative and others are correlative. Our job is to reveal which levers you best control.

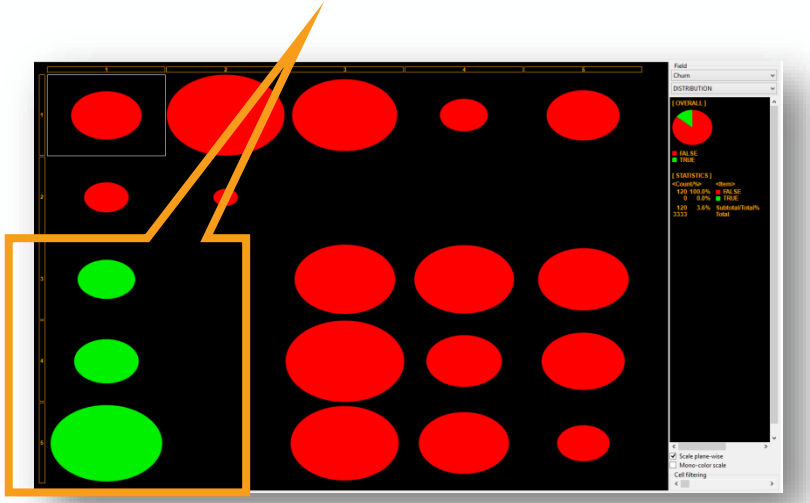
Historical back-testing: Where clients have a history of capturing customer satisfaction for products and services, a model can be built that reveals the the impact those factors have on satisfaction, loyalty, churn, and of course, profitability.

Neural network segmentation

No.	Field name	Data type	Minimum	Maximum	Average	Categories
1	State	CATEGORY				51
2	Account length	INTEGER	1	243	101.06	
3	Area code	COMMENT				
4	International plan	CATEGORY				2
5	Voice mail plan	CATEGORY				2
6	Number vmail messages	INTEGER	0	51	8.099009	
7	Total day minutes	REAL	0.0	350.8	179.77	
8	Total day calls	INTEGER	0	165	100.43	
9	Total day charge	REAL	0.0	59.64	30.562307	
10	Total eve minutes	REAL	0.0	363.7	200.98	
11	Total eve calls	INTEGER	0	170	100.11	
12	Total eve charge	REAL	0.0	30.91	17.083540	
13	Total night minutes	REAL	23.2	395.0	200.87	
14	Total night calls	INTEGER	33	175	100.10	
15	Total night charge	REAL	1.04	17.77	9.039324	
16	Total intl minutes	REAL	0.0	20.0	10.237293	
17	Total intl calls	INTEGER	0	20	4.479447	
18	Total intl charge	REAL	0.0	5.4	2.764581	
19	Customer service calls	INTEGER	0	9	1.562856	
20	Churn	CATEGORY				2

Data preparation: We work with your marketing and IT teams to identify the meta-data (data about the data) available for model-building. We then prepare that data for neural network analytics.

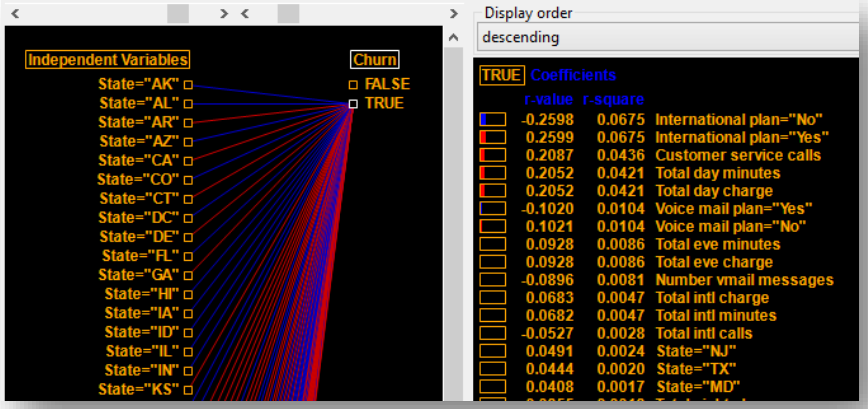
In this telecom example, we're exploring the contributing factors to churn and identifying high-churn and low Net Promoter Score segments.



Neural network segmentation - continued

The top two clusters represent only 9.1% of the customers, but they account for 83.4% of all churn.

Label	Count	%	cum.	%	Class	%	cum.	%	captured%	row/column	Predicate
	302	9.1%	302	9.1%	302	100.0%	302	100.0%	62.5%	(5, 1)	(5, 1)
	101	3.0%	403	12.1%	101	100.0%	403	100.0%	83.4%	(4, 1)	(4, 1)



When we examine the highest churn cluster, we discover the following characteristics:

- Low Net Promoter scores
- Customer has an international plan
- Customer indexes high for service calls
- Customer indexes high for total day minutes and high cost
- Customer indexes low for having voice mail plan
- New Jersey (Puerto Rico), Texas (Mexico) index higher

Neural network segmentation - continued

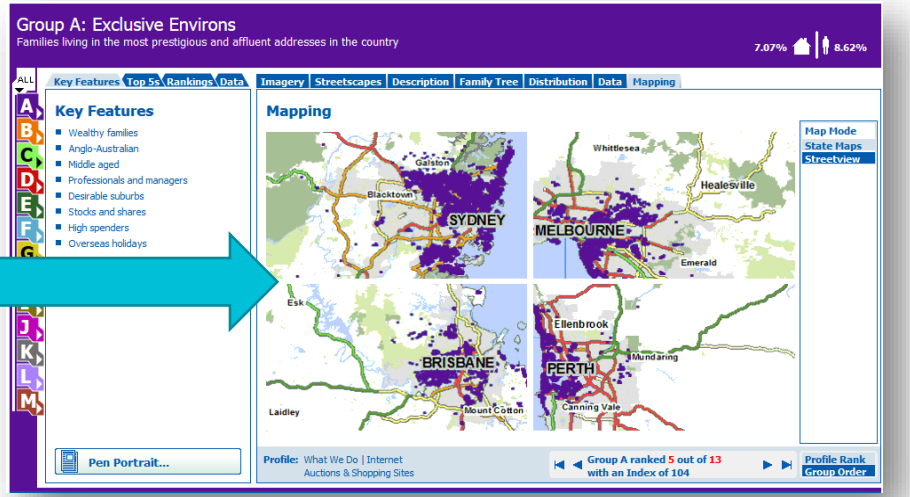
The benefits of neural network segmentation to monetize Net Promoter are many:

Identify clusters with common characteristics

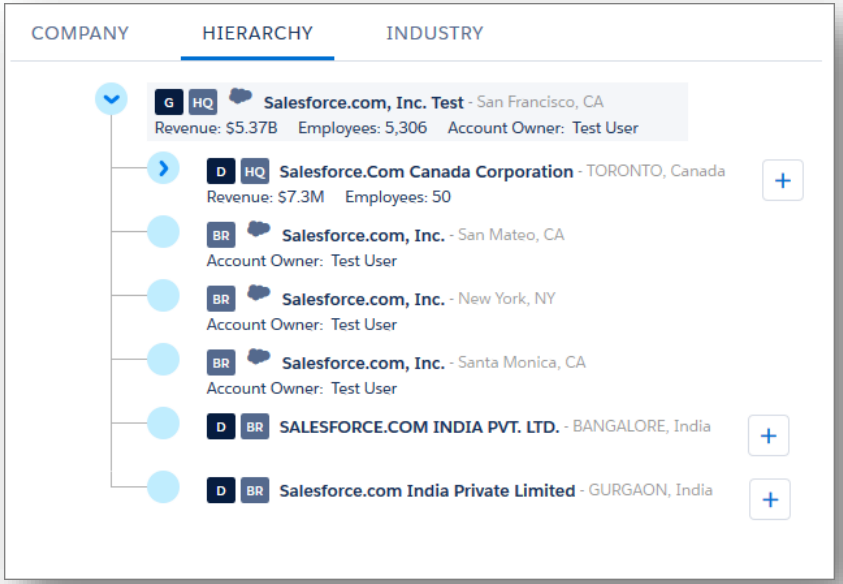
- Reveal segments with common concerns
- Discover usage patterns
- Enable more targeted marketing efforts
- Intelligent cross-sell or up-sell
- Identify at-risk customers before they churn
- Eliminate some segments from marketing altogether

Combine Psychographic and Geodemographics

- Create much richer segment profiles
- Identify marketing partners for consumers
- Improve your tone and messaging
- Overlay telecom coverage with psychographic clusters



Firmographic profiling & targeting



We can create firmographic profiling and targeting so you can monetize Net Promoter using:

3rd Party data from Dun & Bradstreet and/or HG Data to enable you to add tremendous value to Net Promoter analytics

- SIC / NAICS Codes
- Company Size and Telecom spend
- Corporate Family
- Competitors used the prospect or customer

Penetration Analytics: By understanding the underlying market opportunity at the 6-digit SIC level you can identify opportunities with a high propensity to buy.

Advanced Family Trees: One of the easiest sales strategies is to target corporate family members, such as subsidiaries (subsidiaries of Salesforce.com in this example) and predict both propensity and potential LTV of each member.

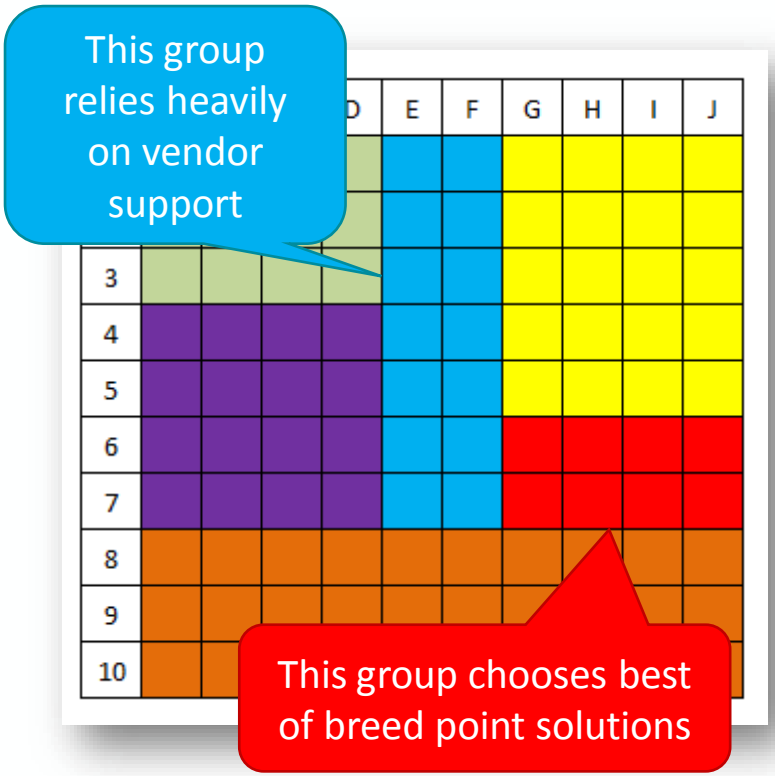
Needs-based segmentation

A “needs-based segmentation” combines advanced data analytics with human insights gained from telephone interviews and email surveys. It enables you to accelerate and better define discoveries by over-laying responses on top of the neural network segmentation. It can improve upon or pre-populate Net Promoter.

Our process:

1. A “needs-based segmentation” starts with three or four data sources to build a neural network matrix. In this example, the method produces 100 micro-segments, each with different product, service, or satisfaction levels.
2. Next, a telephone interview into 10-50 diverse customers is conducted to craft a survey with question branching.
3. We then email the survey into each of the (100 in this example) micro-segments and collect at least 50 responses per micro-segment cell if possible.
4. The results of the survey enable us to create groups that share common needs characteristics as shown in the next slide, with 6 groups having similar needs.

Needs-based segmentation - continued



Benefits:

1. Builds on your data-based neural network segmentation.
2. Fills in the picture with deeper insights.
3. Identifies groups with common needs and perceptions.
4. Simplifies marketing while improving your relevance.
5. Can still use the micro-segments for scoring your database.
6. Ideal to understand your customers on a personal level:
   - Who they are in terms of title, role and level
   - What they do at work and want from a vendor
   - Where they fit in the decision process
   - When they make decisions and why
   - How much budget and authority do they control in those decisions

Monetizing net promoter: Phases

Phase 1: Exploration and Insights (3 - 6 weeks)

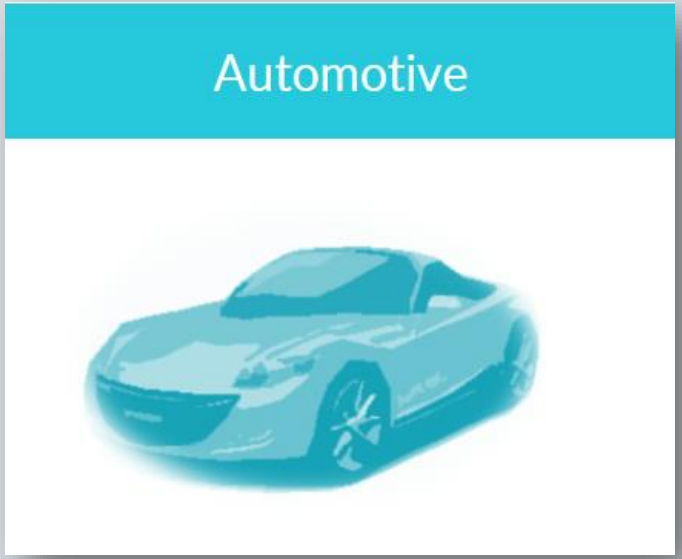
- Determine what data we have to work with
- Collaborate to prepare statistical sample
- Prepare data for model building
- Build neural network segmentation
- Identify segments we can exploit for profit
- Build decision trees and regression models
- Review our findings and recommendations
- Discuss opportunities to scale globally

Phase 2: Automation and Initial Scale

- Agree on any 3rd party psychographic data
- Determine specific components to automate
- Establish timelines and milestones
- Build-out the modules and internal testing
- Customer signs-off UAT (User Acceptance Testing)
- Deploy into production modules in sequence
- Test data collection, model and dashboards at scale
- Identify next steps for sales

Phase 3: Operate and Increase Scale / Integration

Automotive: Applied analytics



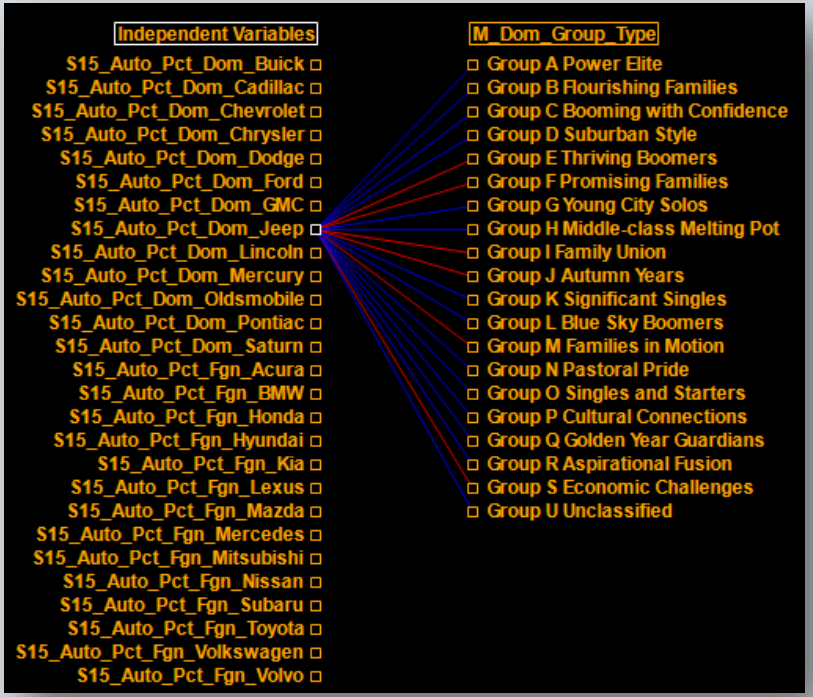
Automotive predictive and prescriptive analytics

Like most industries, automotive industry margins are shrinking, and competition for new customers and repeat business has never been keener. Fortunately, advanced analytics, including predictive and prescriptive analytics, can help your company improve on everything from vehicle design to sales and customer service.

We can help you:

- Create customer profiling with great detail
- Create customer segmentation to improve targeting
- Improve customer satisfaction to improve lifetime value
- Increase first-time customer acquisition
- Improve repeat customer timing and targeting
- Create factors analysis for all manner of studies
- Cross-sell between brands or models
- Up-sell across brands and models
- Increase maintenance outbound predictive calling

Automotive: Customer profiling



Psychographic Group

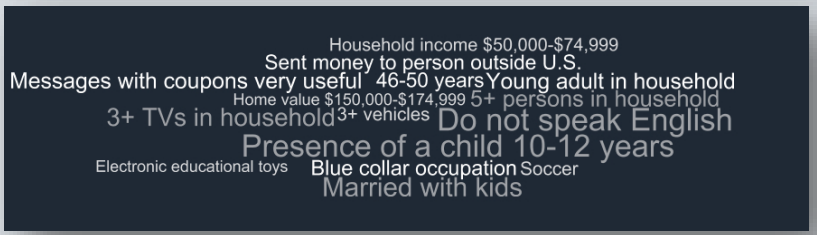
Psychographic analytics enables you to make smarter decisions in your sales, marketing, and customer support decisions.

We use Experian Mosaic which offers 19 Groups and 71 Types, allowing you to learn about almost every aspect of your customer base. We can drill-down to the actual household level.

Once you know the psychographic groups and types most associated to your (or your competitors') products and services, it opens a world of insights to your company.

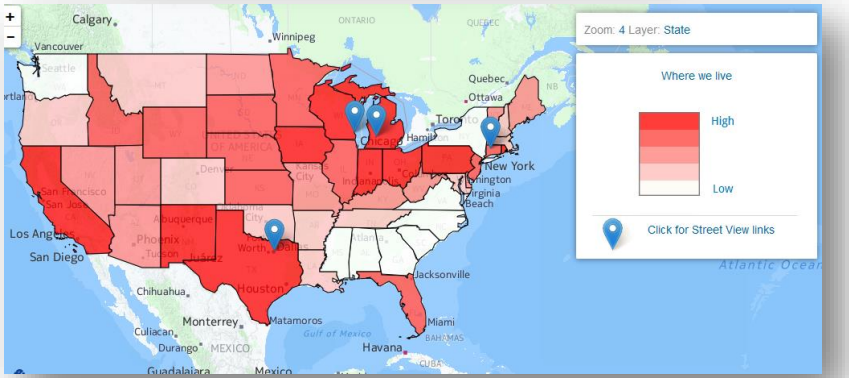
The following slides use the automotive industry and Jeep as an example, but we could run the same analysis for other major brands across various industries.

Automotive: Customer profiling example for Jeep

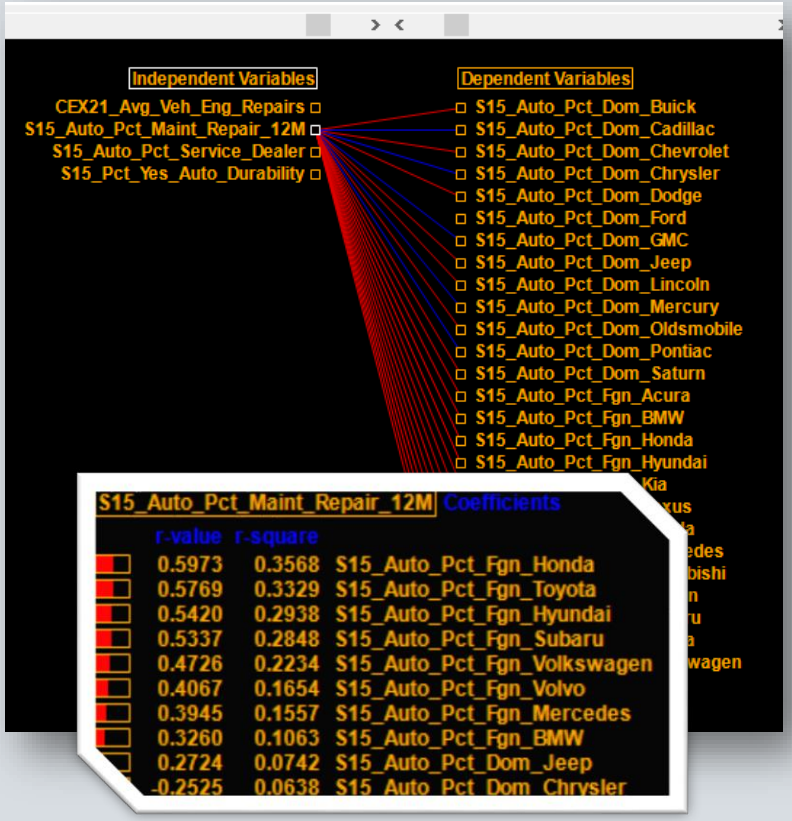


Jeep: Psychographic Group and Types

- Jeep correlates first to the “Family Union” group
- Jeep correlates second to the “Thriving Boomers” group



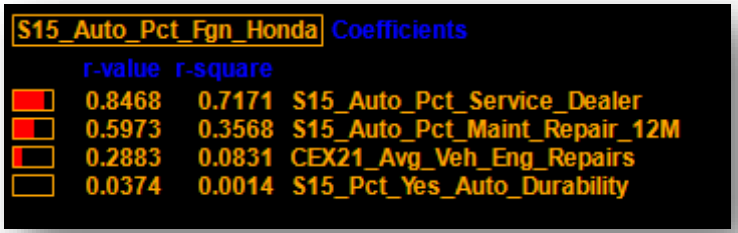
Automotive: Correlating brand to repair propensity



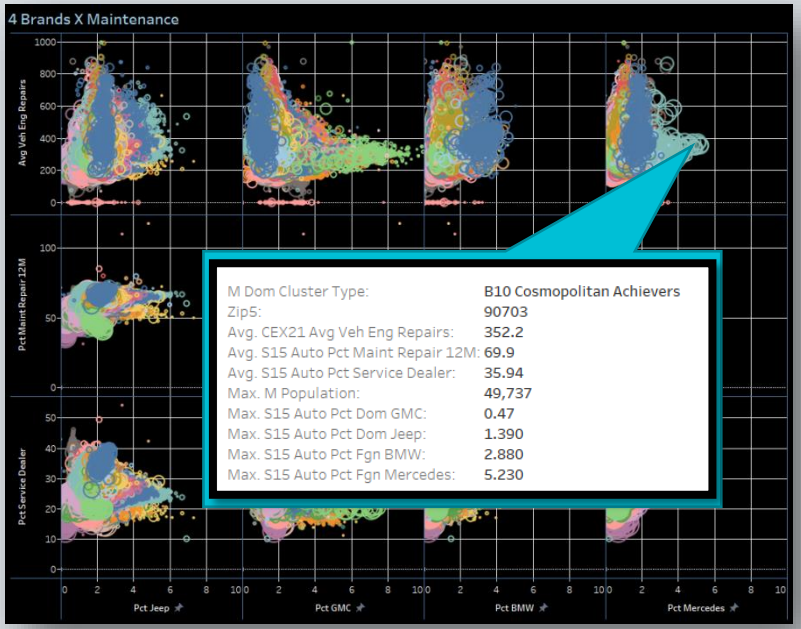
Service propensity

This example illustrates the use of correlation analysis to compare automotive service metrics to brands. We can use similar methods to analyze service telemetry data in real-time and then progress to predictive and prescriptive analytics.

- Honda indexes highest for maintenance or repair (For the brands in this analysis)
- Honda also indexes highest for dealer service (Versus non-dealer provided service)



Automotive: Correlating brand & psychographic repairs



Service by brand and psychographic

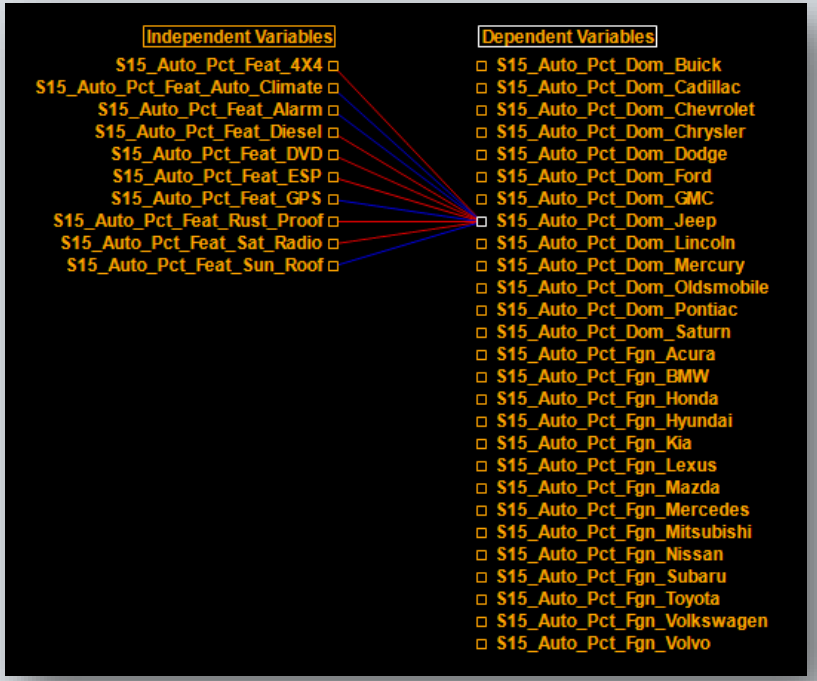
Valuable and actionable insights can be surfaced when we combine psychographics with service information such as average vehicle engine repairs, 12-month maintenance history and the preference for dealer service departments.

As an example, Extended Service Plans (ESP) might not be profitable for all segments. The client should focus on those segments where the ROI is high, and do less promotion to those segments that have a lot of repairs during the ESP period.

Our predictive ESP break-even models:

- Enable the client to improve your messaging strategy
- Allow the client to achieve more ESP adoption
- Identify segments that with low or negative warranty ROI
- Correlate service to vehicle usage patterns

Automotive: Correlating brand to features



Brand - Model - Feature analysis

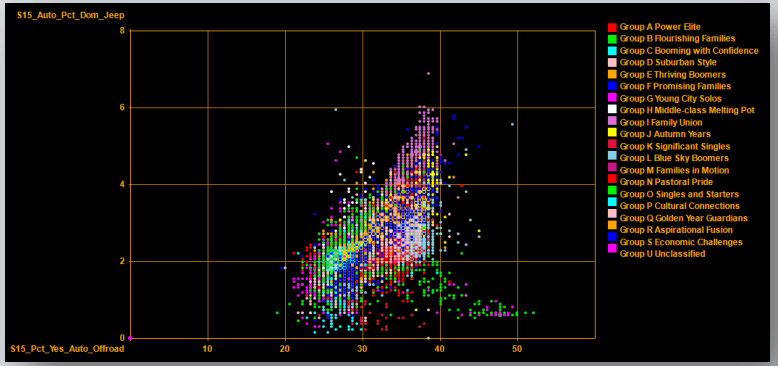
This example illustrates the use of correlation analysis to compare automotive features to brands. Here we have selected Jeep, but we could examine individual brands or all the brands against all features. What does this tell us about Jeep feature popularity?

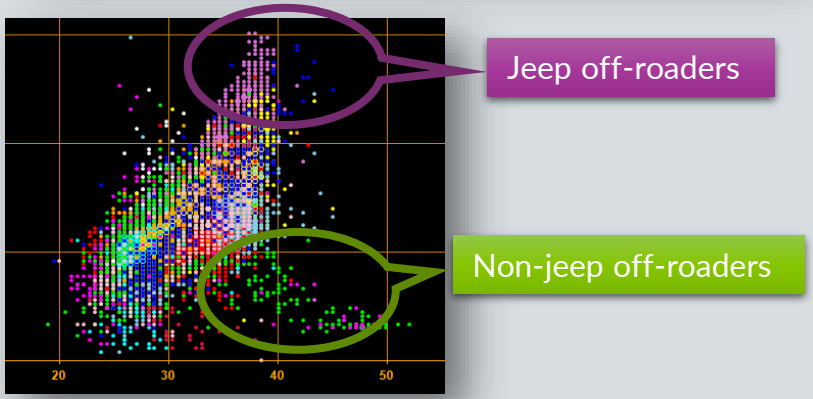
- Jeep is strongly correlated to 4X4 as a feature
- Extended Service Plans (ESP) are popular add-ons
- Rust proofing is an additional revenue opportunity

S15_Auto_Pct_Dom_Jeep Coefficients

r-value	r-square	
0.4988	0.2488	S15_Auto_Pct_Feat_4X4
0.3901	0.1522	S15_Auto_Pct_Feat_ESP
0.3107	0.0966	S15_Auto_Pct_Feat_Rust_Proof
-0.2040	0.0417	S15_Auto_Pct_Feat_Sun_Roof
0.1935	0.0374	S15_Auto_Pct_Feat_Diesel
-0.1790	0.0321	S15_Auto_Pct_Feat_GPS
-0.1540	0.0237	S15_Auto_Pct_Feat_Auto_Climate
0.0978	0.0096	S15_Auto_Pct_Feat_Sat_Radio
-0.0548	0.0030	S15_Auto_Pct_Feat_Alarm
0.0134	0.0002	S15_Auto_Pct_Feat_DVD

Automotive: Scatterplots contrast multiple data points





Brand - Feature - Psychographic Group

By using scatterplots, we can contrast more than one data point simultaneously.

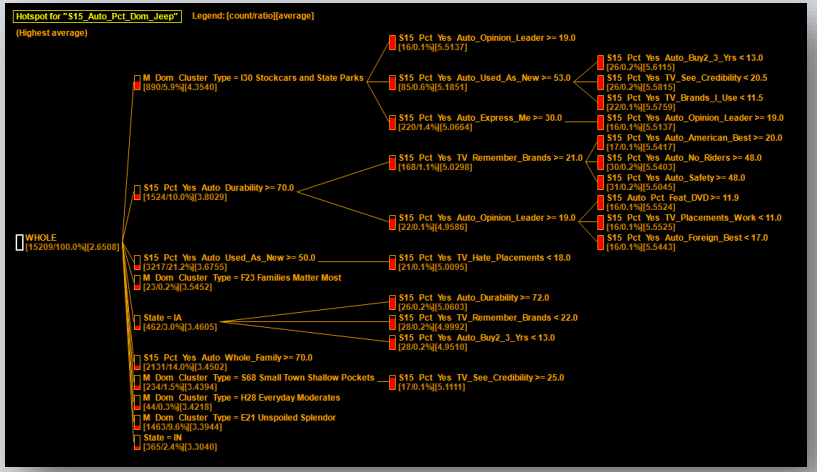
Different psychographic groups have varying levels of adoption for Jeep.

We can see from the chart to the left that there are two strong off-roading groups; the purple group are Jeep loyalists, while the green are not.

Our data science and analytics team can:

- Identify hidden patterns in purchasing and usage
- Explore root causes through focus groups and surveys
- Improve your messaging and targeting

Automotive: Hotspot analytics characteristics



Jeep – Branching characteristics

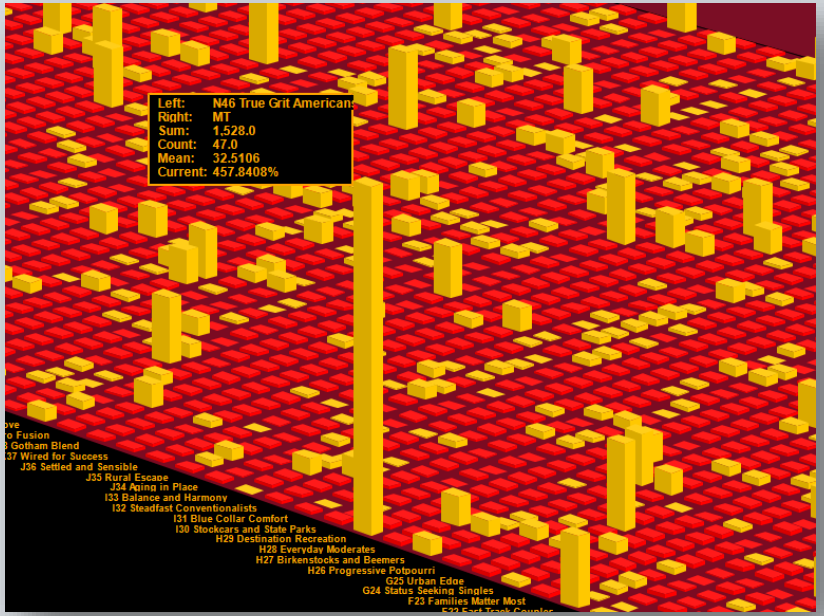
There is no "one" Jeep buyer. Our hotspot analysis produces a kind of tree with branches that have various characteristics about brand, lifestyle, and budget.

This type of analysis enables your team to make more informed marketing communication and targeting decisions. You can combine various factors of interest, such as other consumer products used, recreational activities, and even political sentiment.

In this example, we show that Jeep buyers:

- Fall into the "Stockcars and State Parks" psychographic group
- Believe auto durability is important
- Often consider the needs of their entire family
- Believe that Jeep expresses their personality
- View TV placements as persuasive
- Consider themselves opinion-leaders for their peer group
- Are open-minded to buying used Jeeps as well as new

Automotive: Deviation analytics



Deviation analysis reveals under- and over- patterns

Tools like Excel do a good job of showing highs and lows based on the population. Excel, however, does not reveal expected values versus actual values.

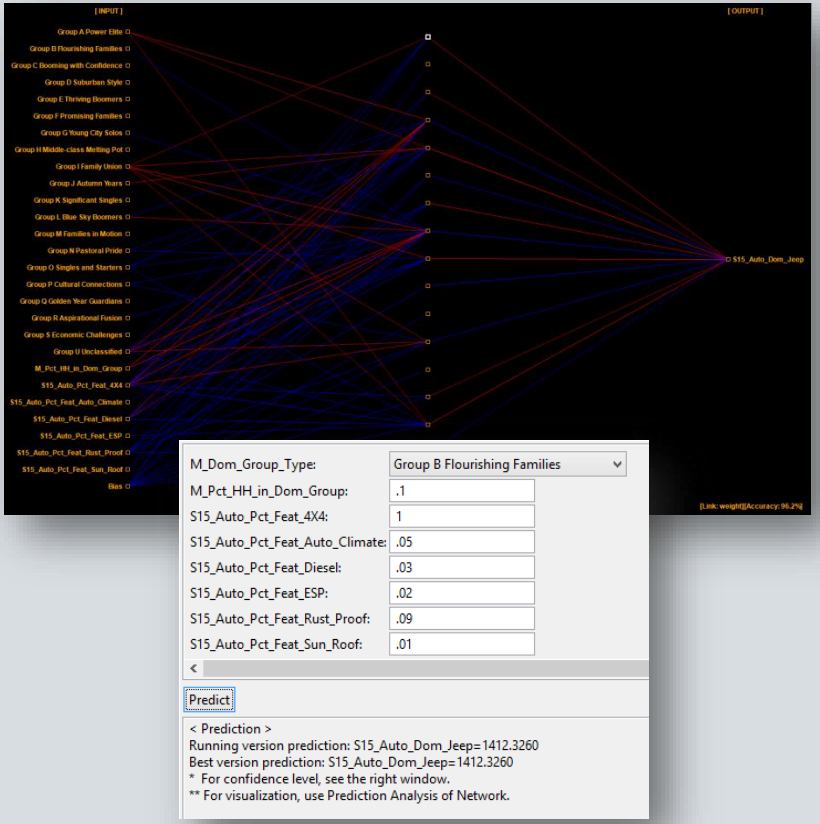
Deviation analysis, on the other hand, reveals gains or losses that are outside the expected values.

Deviation analysis can be viewed both as a chart or table.

Jeep example:

- Expected value is the statistical unbiased value
- Obtained value is what you actually have in a cell
- Deviation value = Obtained – Expected value
- Deviation ratio = Obtained / Expected value
- True Grit American in Montana is 457% higher for Jeep
- We can identify all other higher Jeep cells

Automotive: Neural networks



Neural network predictions

Among the various models we use to predict outcomes, one of the most flexible is neural networks, which allow us to combine numeric and categorical fields to make predictions.

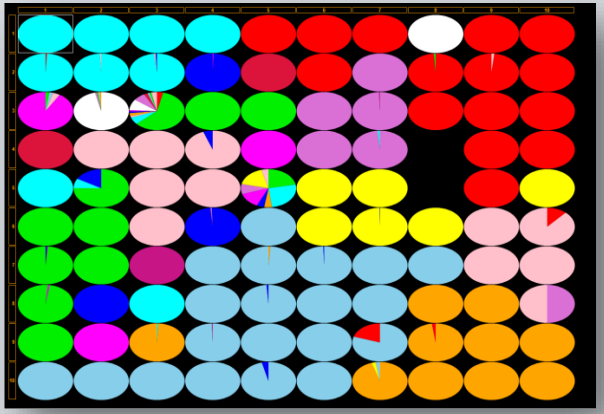
We can create models that:

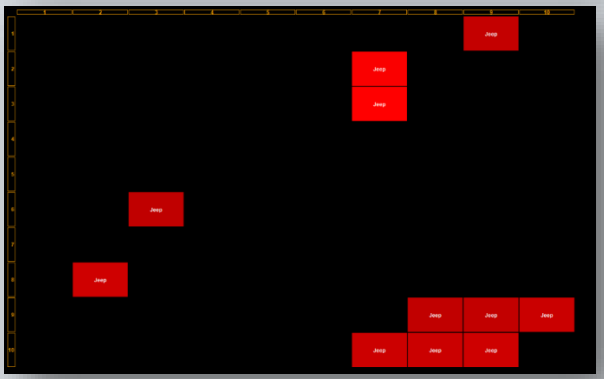
- Are automatically scoring
- Can be used to create predictive user applications
- Can be dynamically updated

Jeep Example:

We used a neural network to predict the ideal zip codes to target for Jeep sales.

Automotive: Neural network segmentation





Neural network segmentation: Jeep example

Neural network segmentation groups together clusters that have similar characteristics. Let's focus on the Jeep clusters.

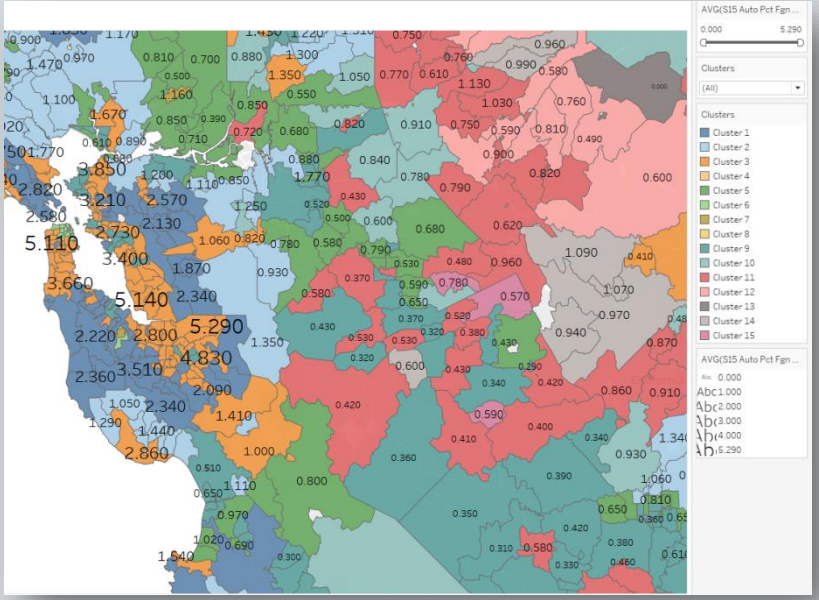
The chart on the bottom left shows that the Jeep clusters vary enough (they are spread out across the chart, as opposed to being all together) that different types of messaging and targeting efforts may work best.

Benefits of neural network segmentation:

- Very useful for identifying customer groups
- Great level of detail possible on cluster descriptions
- Can be used to target ideal prospects improving ROI
- Can simplify and improve communication or advertising

Label	Count	%	cum.	%	Average	LF	cum.	LF	row/column	Predicate
Jeep	154	1.0%	154	1.0%	4.3833	1.65	4.3833	1.65	(3, 7)	(3, 7) Jeep
Jeep	724	4.8%	878	5.8%	4.3675	1.64	4.3703	1.64	(2, 7)	(2, 7) Jeep
Jeep	740	4.9%	1618	10.6%	3.5263	1.33	3.9843	1.50	(9, 10)	(9, 10) Jeep
Jeep	223	1.5%	1841	12.1%	3.4474	1.30	3.9192	1.47	(8, 2)	(8, 2) Jeep

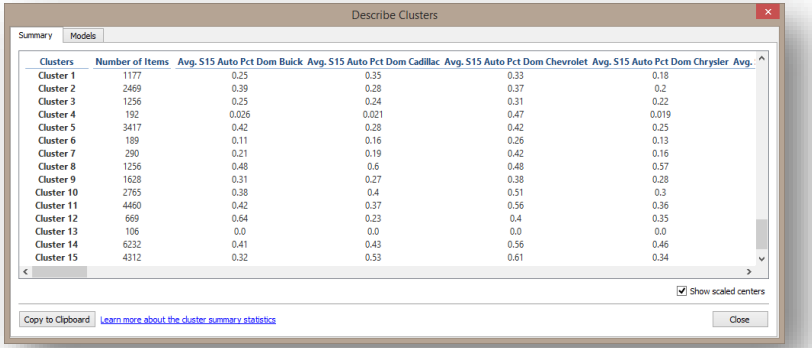
Automotive: Segmentation combined with mapping



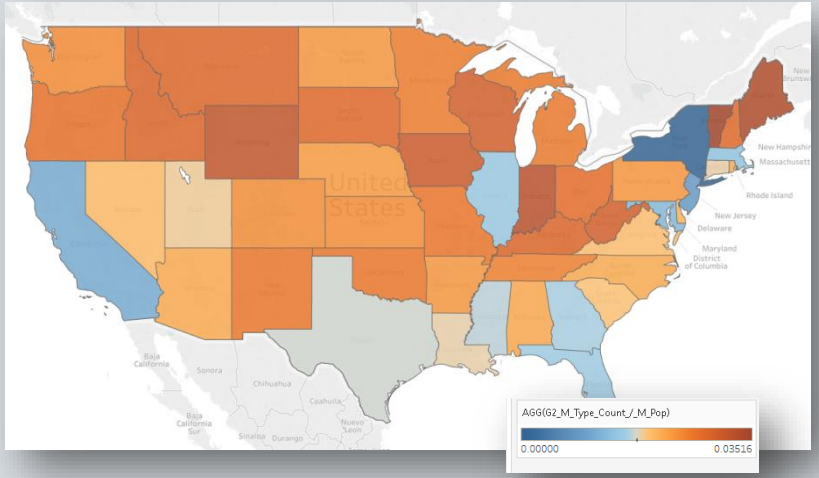
Combining k-means clustering with mapping

We can combine neural network segmentation with mapping or use k-means clustering directly in our dashboards, so that our client can easily perform the following analytics tasks:

- Decide how many clusters you want to work with
- Add or remove any data fields from the clustering
- Cluster at any level of geography supported by data
- Understand what makes each cluster different
- Filter the clusters by any of the available fields



Automotive: Predictive mapping

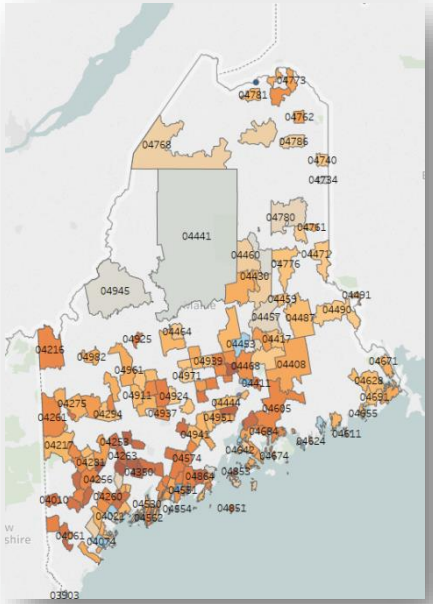


- Predictive models identify key states
- We drill into Maine (the strongest state)
- We can then identify key zip codes
- Ideal psychographic type = Stockcars & State Parks
- Finally, we can identify the ideal Jeep household

Using predictive mapping for Jeep

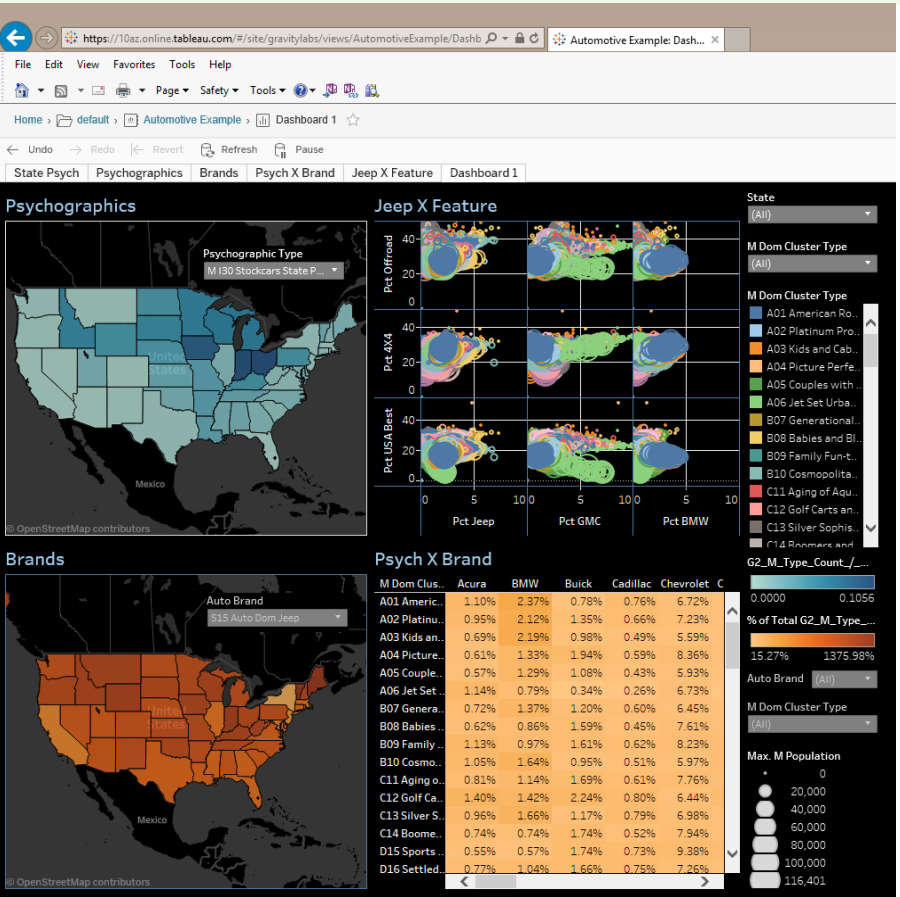
The ideal location to advertise Jeep in Maine:

We built a predictive Jeep sales map that enables us to identify the ideal state, city, zip, and even household.



Stockcars & State Parks

Automotive: Bringing it all together for you



Automotive intelligence dashboard

We bring all of these descriptive and predictive analytics together in a hosted dashboard created specifically for you.

- States and zip codes that index highest for auto brands
- Psychographic types that are a best fit for auto brands
- Correlation factors and brands by geography
  - Off-road enthusiasts
  - 4X4 buyers
  - Perception on US vs. Foreign quality
  - Hundreds of other factors for exploration

Benefits of having A1 Analytics build and host:

- Deep analytics expertise
- Descriptive, predictive, and prescriptive intelligence
- Fresh updates on a regular basis
- All your business intelligence in one location
- Permission based view and edit
- Economical pricing structure