

HEALTH & WELLNESS



US Consumer Trends Report

Analyzing social media data to uncover emerging trends in health, entertainment, technology and transportation

MEDIA & ENTERTAINMENT



TECHNOLOGY



TRANSPORTATION



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Methodology

For this report, we analyzed Crimson Hexagon's library of more than one trillion posts from sources like Twitter, Facebook, Tumblr, Reddit and forums between 2010 and 2016. We also used data from non-social sources like Nielsen, Bureau of Labor Statistics, United States Department of Agriculture, and others.

By analyzing historical social media data about the four industries that make up this report — health, media, personal tech and transportation —we were able to track emerging trends and evolving consumer sentiment.

Key Findings

Health & Wellness



Whole Lotta Social Conversation

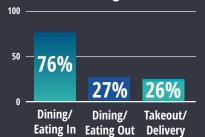
Whole Foods is discussed on social more than all other national grocers combined.

Old Produce?

71% of consumers who discuss farmers markets on social are over 35, while only 35% of those talking about grocery stores are over 35.



'Joyful' Conversation About Eating Habits



Love That Home Cooking

76% of the conversation about eating at home is joyful. Dining out and Delivery trail far behind.

What Happened to Zumba?

In 2011, Zumba made up almost 25% of the overall exercise conversation. Today it's down to less than 10%.

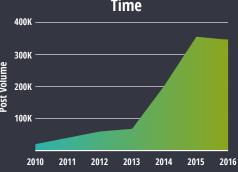


Media & Entertainment

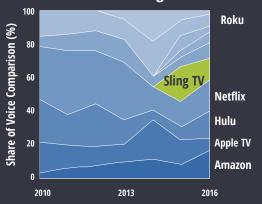
Cord-Cutting Conversation Over Time

Goodbye Cable

Conversations around cord-cutting have soared since 2013.



Share of Voice of Top Mentioned Non-Cable Services Among Cord-Cutters



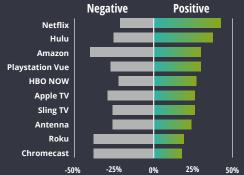
Sling for the Fences

Sling TV has surged in social conversation since it arrived on the cord-cutting scene in 2014.

Netflix and Thrilled

Netflix elicits more positive (and less negative) conversation on social than any other streaming option.

Streaming Video Services Sentiment in 2016

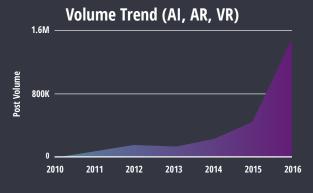


Key Findings (cont'd)

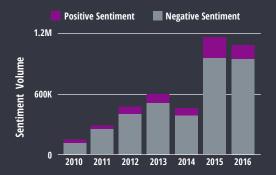
Technology

Rise of the Machines

Conversation around AI, VR and AR has increased 7x in just the last two years.



Consumer Privacy Sentiment Trend

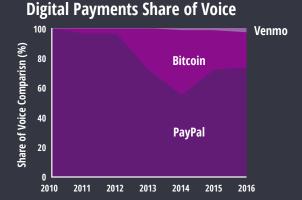


Privacy Protection

Since 2010, the conversation around privacy has grown almost 10x, and has become more negative.

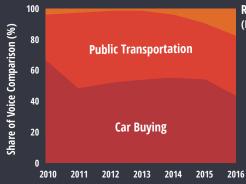
No Love for Venmo?

Despite growing popularity, Venmo significantly trails PayPal and Bitcoin in terms of social conversation.



Transportation

Transportation Methods in United States Discussion Trends



Ridesharing (Lyft and Uber)

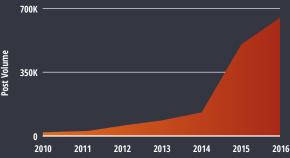
Uber is Arriving

Ridesharing has become a major topic of conversation in major cities, eating away at public transportation and cabs.

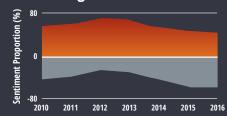
Self-Driving Cars Discussion Trends

Who's at the Wheel?

The social conversation around self-driving cars is dominated by anger and fear.



Ridesharing Sentiment Over Time



One-Star Rating

Consumer sentiment around ridesharing services has tanked since 2012.











The Health of The Nation

Farmers Markets, FitBits and Other Wellness Trends in the US

Healthy Body, Healthy Mind

If you are what you eat, then what you eat really matters.

The rising consciousness for food activism in the recent years has expanded both demand and supply for organic, ethically produced food. As of 2016, the organic products market in the US was valued at \$39 billion, and the US Department of Agriculture has pumped in a billion dollars in 40,000 regional food businesses and the infrastructure to support them since 2009. Healthy living has become an integrated habit for many Americans dictated by eating right and exercising regularly.

The statistics are promising, and we unearthed the story behind the numbers using social media conversations.

Where do Americans buy their daily bread? Do they care about how it gets made? Who is driving the 'organic' bandwagon? Are farmers markets still thriving? What is America's favorite exercise? How much money do people spend on a fitness regime?

We had the same questions and we trusted consumer conversations to lead us to answers. We used Crimson Hexagon to analyze social media dialogue about food and wellness, particularly for answers to three main questions:

- Where Americans buy their food
- How and where they eat
- How they get fit

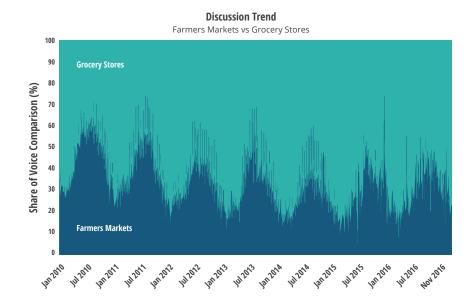
Healthy Body, Healthy Mind

Once confined to the margins of the American food conversation, organic has officially taken center stage in the US¹. Americans are increasingly concerned about the origins, sources, and ingredients of the food they eat. And massive food brands are catching up.

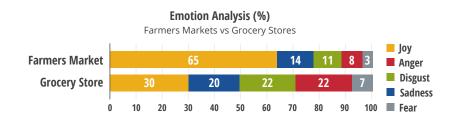
In 2015, wholesale retail chain Costco², nudged by overwhelming demand for organic produce, started lending money to farmers to buy more equipment and land to increase production.

As such, farmers markets have become a major player in the social conversation surrounding food, albeit seasonally. In the chart below, you can see that grocery stores own more of the social conversation, but, during the summer, farmers markets make a surge.

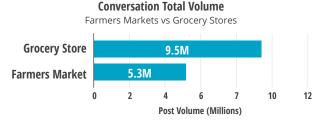
The clincher here is in knowing how people feel about the two.

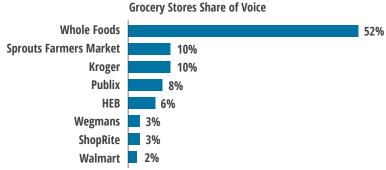


¹USDA Reports Record Growth In U.S. Organic Producers ²Costco Is Selling So Much Organic Produce, Farmers Can't Keep Up



Consumers may be talking about grocery stores more, but farmers markets bring them more joy with better quality food at cheaper prices. Supporting local markets also seems to evoke a positive sense of community building. On the next page we will dive deep into the social conversation comparing grocery stores and farmers markets.





1% of Conversation: Giant Eagle, WinCo Foods, Albertsons, Hy-Vee, Market Basket, Price Chopper

<1% of Conversation: Save Mart Supermarkets, SUPERVALU, Ahold USA, State Bros. Markets, Southeastern Grocers

Next, let's look at the most common conversation topics for both grocery stores and farmers markets.

Conversation Trends: Farmers Markets vs Grocery Stores

Farmers Markets

Support Local Farms (685K)

Consumers love to shop at farmers markets because they know they're supporting their local economy, community, and farmers.

Organic, Fresh, & Cheaper Options (680K)

Food from the farmers market is considered far superior in quality than food at the grocery store. Consumers can find organic, fresh food at reasonable prices.

Community Building (212K)

Beyond a place to buy healthy food, farmers markets are events that build communities, a quality not usually experienced at major grocery stores.

Grocery Stores

Unaffordable (256K)

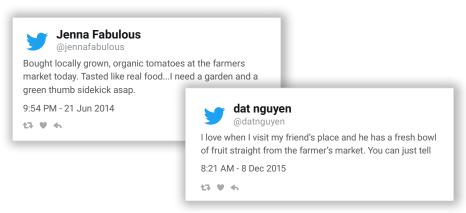
Grocery store prices can be unaffordable to some, especially organic foods. Whole Foods in particular receives critism for exorbitant prices.

Unhealthy Options (21K)

People express a desire for access to more healthy food in grocery stores. Oftentimes they wish there was a local farmers market.

Inaccessible (3K)

Some people lack easy access to grocery stores. In regions defined as food deserts, convenience stores provide food, but the food is high in calories and lacking in nutrients.







Ashton Irwin

@Ashton5SOS

The fact that we can't escape genetically modified foods in this day and age unless you have money is insane. They are feeding us chemicals.

4:39 PM - 10 Apr 2015

41 8 4



Jameson Cunningham

@JamesonDC

MT .@RachelLoki: There are no national grocery chains in the city of Detroit. A Whole Foods is coming, but most people can't afford it #Wow

12:40 PM - 26 Oct 2012

17 ♥ ₼



Michael Mann

@UnholySpire

@jackielong_77 whole foods is super popular, but too expensive. Farmers Markets are still cheaper and you meet the producer.

4:31 PM - 18 Oct 2013

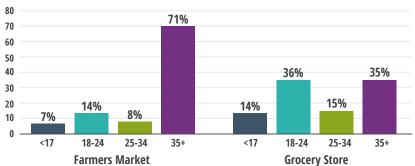
Insights into Action

Is Whole Foods in danger of losing millennial shoppers?

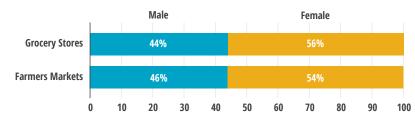
Who shops where?

As we understand why farmers markets elicit more positive responses, it's interesting to see who is steering the discussion in that direction. The demographic differences between farmers markets and grocery stores are stark.





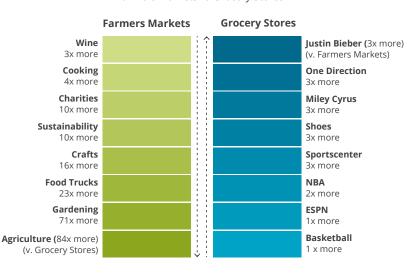
Gender DistributionFarmers Markets vs Grocery Stores



Farmers markets tend to be more popular among older women, whereas younger males discuss grocery stores more often.

A deeper exploration into consumers' likes and dislikes reveals a lot about their affinities. For instance, those who talk about farmers markets tend to be interested in agriculture, gardening, and sustainability, and those discussing grocery stores lean more towards pop culture and sports.

AffinitiesFarmers Markets vs Grocery Stores

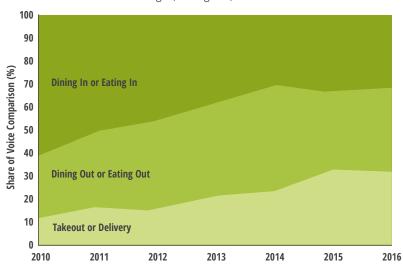


Understanding where Americans buy their groceries is important for mapping the overall consumer food landscape, but it is only part of the picture. Americans are increasingly relying on prepared meals. How do Americans think about eating out versus eating in?

Diving into the Dining Conversation

Discussion Trends

Dining In, Dining Out, Takeout



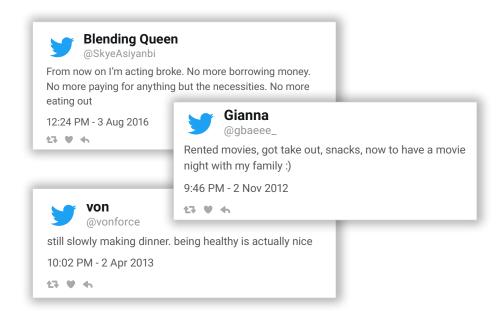
Dining out was discussed more frequently from 2010 until 2015, but over the last year, staying in and ordering takeout was talked about most. And once again, sentiment analysis helps us understand this better, where the joys of eating in are associated with time well spent with family, and the added perk of eating healthy.

Emotion Analysis (%)

Dining In, Dining Out, Takeout



Choosing to eat in could not have come at a more opportune time—food at home prices declined 1.9%⁴ over 2016, with a 4.9% decrease in fruits and vegetables index. During the same time, index for food away from home climbed 2.4%.

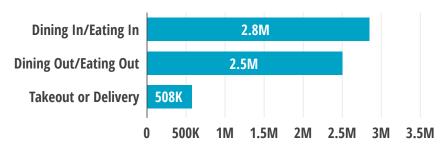


⁴Consumer Price Index Summary Bureau of Labor Statistics

Conversation Trends: Dining In, Dining Out, and Takeout

When people post about their dining habits, what do they talk about? Below we've broken out the most prominent topics for dining in, eating out, and delivery.

Total VolumeDining/Eating In, Dining/Eating Out, Takeout/Delivery



Dining In/Eating In

Time Spent with Loved Ones (500K)

Dining in typically means spending time with family, friends, or loved ones. Many express their gratitude of cooking and sharing meals together in their homes, bringing them happiness and relaxation.

Healthier Meals (4K)

One of the perceived benefits of dining in is eating healthier. People prefer to cook healthier foods, regardless of how long it takes them.

Dining Out/Eating Out

The "Sick", Unhealthy Feeling From Eating Out (900K)

Although dining out can be a treat, most people express feeling sick after going to a restaurant. This sick sensation primarily stems from people feeling unhealthy, overeating, or simply going out too often. And fast food is not to blame, only contributing to about 1% of conversation.

Too Expensive (120K)

Eating out habits are one of the first things budget-minded people reevaluate when looking to cut back on expenses. Many feel they need to cook more and spend less on dining out.

Convenient Habit (17K)

People love the convenience of going out to eat. They also have formed habits around the dining out experience, whether it's enjoying the traditional dinner date or trying to cut back.

Takeout or Delivery

Delivery Delays and Messed Up Orders (105K)

Extra long wait times, delayed deliveries, and order mistakes cause disappointment and frustration for consumers, and prompt them to vent about these negative experiences.

The Movie Night Experience (28K)

Similar to dining in, people enjoy spending time with loved ones where ordering takeout is nearly synonymous with movie nights.

Unhealthy Perception (3K)

Similar to dining out, there is an unhealthy perception surrounding takeout. While people will order takeout, they admit that it's not the most healthy option.

Convenient Habit (3K)

People enjoy the opportunity to leave cooking to the professionals, whether it's for a date night or a family meal.

Of course, eating is only half of the health equation. Exercising is just as important and, unsurprisingly, US consumers regularly take to social to express their opinions about the latest fitness trends.

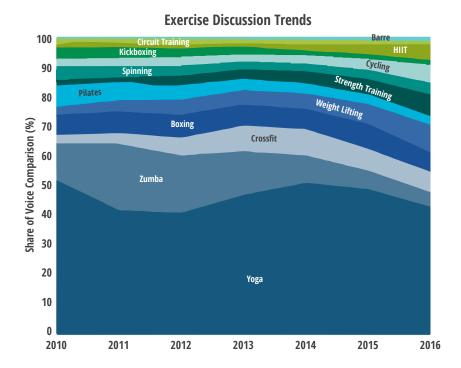
Sweat..eat..rinse..repeat

What is America's favorite go-to fitness activity?

Don't hold your breath..it's yoga.

In 2012, there were 20.4 million yoga practitioners in the country. That number took an 80% jump to 36.7 million as of 2016⁵. Americans spend \$16 billion per year on classes, equipment and gear, which is a sharp rise from \$10 billion in 2012.

Social testifies for the trend—yoga has been the most talked about fitness activity since 2012 by both men and women. While men tend to discuss CrossFit more than women, pilates, Zumba and High Intensity Interval Training (HIIT) are some popular topics among women.





Activities like weightlifting, strength training, and HIIT have also been gaining traction, stealing some momentum from the yoga conversation.

As the forms of exercise have evolved (and fragmented), the tools and methods for tracking them have similarly diversified.

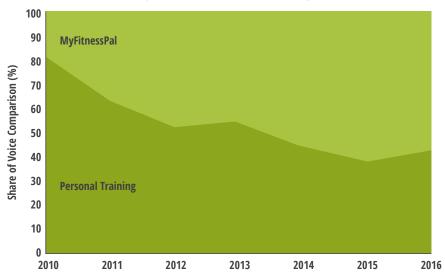
Is your personal trainer inside your phone?

Remember the personal trainer at the gym who everyone loves to hate? Is it possible that the fitness tracking app on your phone will replace the energetic coach that pushes you until you drop? Do people feel more accountable when tracking their exercise and diet routines digitally than in a community setting?

What we do know is that people love to post about their fitness successes on social media, and apps like MyFitnessPal have helped make it easier for exercisers to stay accountable.

Discussion Trends

MyFitnessPal vs Personal Training



The chart alludes to that trend, showing a decline in personal training conversation and an increase is MyFitnessPal discussion over the past six years.

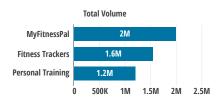
Research shows that an average user will spend \$20 on fitness apps in 2017 and the fitness and nutrition apps industry will make \$526 million in revenues this year.⁶

Discussion Trends

Personal Training vs MyFitnessPal vs Fitness Trackers

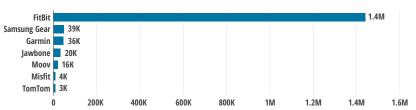


But it's not just apps that threaten to oust the personal trainer—wearables like FitBit and Jawbone that track progress and goals have also come to take a special place in personal fitness category.



The fitness tracker discussion grew from 10% of share of voice in 2012 to over 50% in 2016, with FitBit leading in conversation volume.

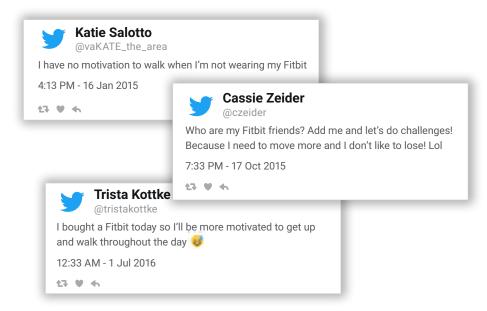




Fitting the bit

What makes wearables work?

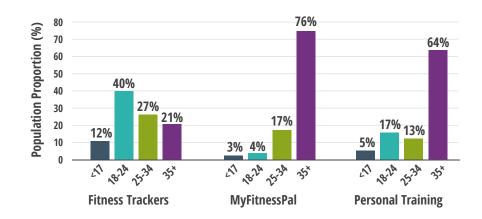
Motivation, accountability, and the community of users. People discuss how fitness trackers, particularly Fitbits, motivate and inspire them to exercise. The community aspect of challenges with friends and family encourage people to stay fit while having fun.



While people recognize the exclusivity, attention, and the personal touch trainers bring, they often wonder if it's worth the cost. There is also some convergence in the audience that discusses personal training and MyFitnessPal—women above 35.

Age Distribution

Personal Training vs MyFitnessPal vs Fitness Trackers



Gender Distribution (%)

Personal Training vs MyFitnessPal vs Fitness Trackers



Insights into Action

Is there a gender gap in the fitness world?



I needed a personal trainer to teach me how to use certain machines AND to get a set of routines I could do for a month or two. With 5-6 sessions, I had all major body parts covered. I also got into a strict diet (though lately it's been very relaxed) and I've noticed big changes.

Forum post, 2014



FensterV @FensterV

signing up for some free personal training sessions in July. Hope that I get more than what I paid for.

10:06M - 27 Jun 2013

13 9 6

Fitness Trackers

Motivation and Challenges (88K)

Fitness trackers, particularly
FitBits, motivate and inspire
people to exercise. The
community aspect of challenges
with friends and family
encourage people to stay fit while
having fun.

Syncing Malfunctions (60K)

Syncing delays and glitches are the biggest complaint and frustration for people trying to keep records of their workout routines and fitness goals only to find out their progress was lost.

MyFitnessPal

Broken App (75K)

Similar to fitness trackers, bugs within the app frustrate users. App crashes and user unfriendliness when it comes to syncing the app with third-party devices are common complaints.

Community Support and Accountability (70K)

Similar to fitness trackers, the appeal of using an app to track eating habits and exercise routines and share those experiences with others encourages motivation and accountability.

Personal Training

The Personal Touch (43K)

As the name alludes to, personal training is all about the customized, personal touch. People sign up for personal training in hopes of achieving their goals in a program that is specifically tailored for them.

Worth the Expense? (36K)

The personal touch of a trainer comes with a price tag. Some think paying for a personal trainer is simply too expensive while others wonder if the price is really worth it.

Conclusion

Health and fitness trends are notoriously fickle; what is in vogue one month is often passé the next. But understanding consumer opinions about wellness is essential for brands in countless industries—from grocers and gyms to clothiers and retailers.

Probing social media data can answer a very crucial question: What will consumers buy next? This insight into consumer intent can help brands steer their strategy so it better aligns with evolving consumer priorities and preferences.

Should big-box retailers go greener? What will farmers markets of tomorrow look like? What food experiences do users value and what are they willing to compromise on? Is there room for more growth in the farm-to-table segment? What are the differences between a Whole Foods and a Wal-Mart shopper?

But it's not just questions about health and wellness—social media data can help uncover answers about every sector of public life.

In the next section of this report, we analyze social conversations around media and entertainment to better understand topics like:

- The end of cable
- The rise of streaming video on demand
- · Live events vs. streaming











The Future of Home Entertainment

Cord-cutting, live-streaming, and other trends upending media and entertainment

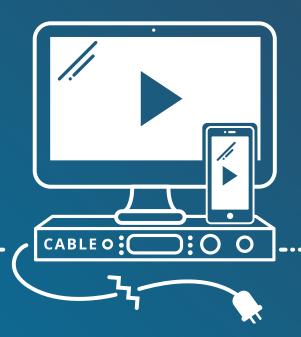
"Who needs cable?"

The answer to this question appears to be 'fewer and fewer people every day.' Research shows that by 2025, 50% of adults under 32 will not pay for cable. And older Americans are increasingly moving in the same direction.

Why are these consumers ditching cable? And where are they going?

As the cord-cutting trend gains momentum, we decided to analyze the social media conversations around this topic to see what we could learn about consumer preferences and the future of home-based entertainment. This report dives into three prominent social media conversations about the evolving landscape of home entertainment:

- The shift away from cable TV
- The switch to streaming services
- The rise of streaming live events



Cable is dying; its funeral was on social media

The current media and entertainment landscape in the US looks a lot like the Earth following the extinction of the dinosaurs— a dominant force is losing primacy and quickly being replaced by a swarm of smaller, more nimble competitors.

So what is causing cable's slipping hold on American consumers?

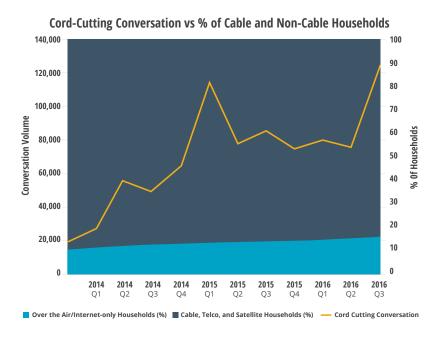
Two main groups are hurrying cable's demise, and will largely determine its future: **cord-cutters**, who have given up on traditional pay-TV, and **cord-nevers**, who have never subscribed to cable at all.

These two groups, which represent a large (and growing) segment of the American consumer base, will have a large impact on the future of advertising, Hollywood, and much more. Getting inside their heads is incredibly important for brands in many different industries.

Luckily cord-cutters and cord-nevers¹ are a vocal bunch.

The cord-cutting conversation on social media

Ditching cable is a popular topic on social



Conversation about cord-cutting has consistently climbed in the last three years, from around 20,000 posts in 2013 to over 120,000 in 2016². And although it's a little more conversation than action, the trend helps track evolving consumer sentiment, which is often the path to decision making.

According to data from Nielsen (in the table on the right), since Q4 of 2013, U.S. residential households that use only an over-the-air antenna, broadband, or both have increased 50% while U.S. households that have a paid TV subscription with a cable, satellite, or telephone company have decreased 4%.

For an industry that makes \$19.5 billion³ from set-top boxes alone, this is a substantial loss. Three years ago, one in ten households cut the cord, and in 2016, that became one in five⁴ households and studies show that by 2025, half the adults⁵ under the age of 32 will not pay for cable TV.

Quarter	Cable/Telco/Satellite Households (Millions)	Over-the-Air/Internet-Only Households (Millions)
2013 Q4	102,767	12,559
2014 Q1	101,832	13,244
2014 Q2	100,935	14,091
2014 Q3	100,596	14,739
2014 Q4	100,796	15,301
2015 Q1	100,774	15,626
2015 Q2	100,440	15,959
2015 Q3	100,006	16,395
2015 Q4	99,440	16,960
2016 Q1	99,225	17,175
2016 Q2	98,690	17,710
2016 Q3	98,218	18,848

In the third quarter of 2015, the cable industry lost 486,000 subscribers. A year later, it was another 486,000. According to Nielsen, in just one year from Q3, 2015 to Q3 2016, over the air/broadband only households increased by an additional 2.5 million while Pay TV households dropped by 1.8 million.

If conversation volume is any indicator, this trend will only accelerate in the coming years.

But before we get to the post-cable world, it's important to analyze the cord-cutting conversation on social and how it has evolved.

Are there patterns in this discussion? Can it help uncover trends about why people are ditching cable and where they are going?

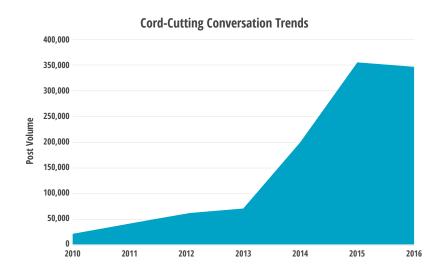
²Nielsen

³Groups Aim to Make it Easier to Own a Cable TV Box Instead of Renting ⁴Cable Cord-Cutting Reaches 1 in 5 US Households ⁵By 2025, 50% Of Adults Under Age 32 Will Not Pay For TV

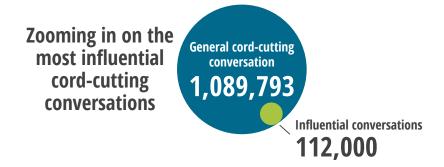
The overall cord-cutting conversation

Unsurprisingly, there has been a lot of social conversation about cordcutting since 2010. And, also unsurprisingly, that conversation has steadily grown over the years, especially between 2013 and 2015.

Not all of that conversation is meaningful, when it comes to discussing the cord-cutting trend, though. Like most of the conversations on social media, the cord-cutting discussion included a lot of noise — news articles, jokes, asides, etc.



All told, there about one million cord-cutting-related posts. But because we wanted to separate the signal from the noise and zoom in just on the posts that were emblematic of trends, we knew we need to filter the conversation.



We used Crimson Hexagon to surface the most influential topics in the cord-cutting conversation to help us better understand the emerging trends.

Within this influential circle, the largest conversation topic was about how to cut the cord. Let's look at that first.

Did social media help spread the cord-cutting trend?

As cord-cutting first became a substantial trend among US consumers, social media became the go-to place for people to share tips and tricks for ditching cable.

Indeed, as social media swarmed with people wanting to learn how to cut the cord, it's likely that the conversation created more cord cutters. The DIY tutorials, guides and resources shared on social media with best practices on how to nix cable that dominated bulk of cord-cutting conversation, carrying the message—anyone can now be a cord cutter.

All the social conversation surrounding DIY cord-cutting tips (which was present in more than 53,000 social posts) suggests that a major shift away from cable is underway.



But aside from sharing tips about how to cut the cord, what are consumers saying on social about their reasons for ditching cable?

Why are people ditching cable?

Not Worth the Expense (34K)

Tapping into social media conversations tells us that for most users, cable is just not a worthy expenditure, especially when the quality of content is perceived as being poor.

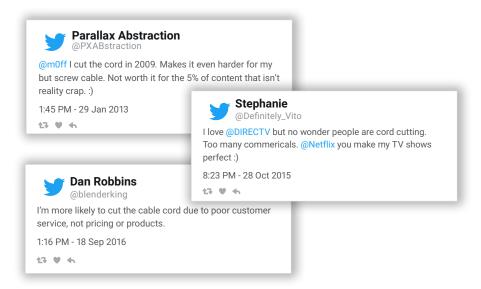
Commercials (23K)

Pay-TV providers have always had to fight with the age old annoyance of too-many-adson-TV. Users are less willing to put up with interrupted content when non-cable services let users choose the content they want to watch, uninterrupted.

Poor Customer Service (2K)

This should come as no surprise to anyone who has dealt with cable companies. Although not a top reason for cord-cutters, poor customer service definitely causes frustration among users and nudges them a step closer to ditching cable.

We've discussed the main reasons people are leaving cable, but an important question remains: Where are they going?



Insights into Action

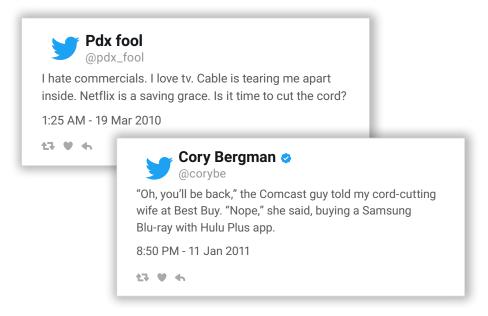
Can cable companies combat streaming services?

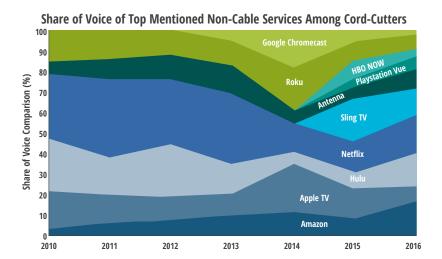
Where are cable-ditchers going?

Consumers cutting the cable cord are increasingly turning to a variety of streaming options

Cord cutters are moving to more customizable options of non-cable streaming services like Netflix, Hulu, Apple TV and Amazon Fire TV.

To users, streaming services represents everything cable is not. The chart below shows an uptick in conversation volume since 2013, concurrent with the growth in cord-cutting conversation.



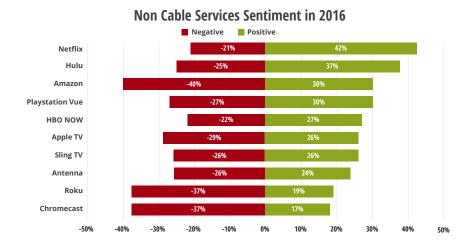


The chart above shows how the conversation among cord-cutters breaks down. When consumers talk about cord-cutting options, these are the most common alternatives they discuss.

Even here, it's worth taking note of this market becoming more fragmented as it grows. While Netflix still dominates the segment in social media conversation and has seen solid growth in subscriber base —7.05 million subscribers as of Q4 2016—competitors like Sling TV and Hulu are eating into its share of the pie.

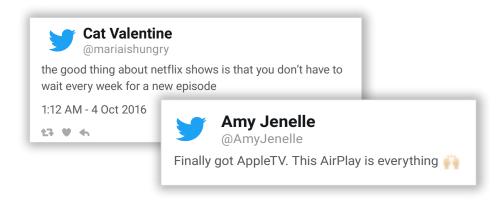
How do consumers feel about the growing field of streaming options?

While it is interesting to know how how much conversation different streaming options are getting, it is ultimately more important to know what kind of social conversation they are eliciting.



The multitude of choices lead to preferences, and studying those preferences leads us to insights that help us determine why users like or dislike a certain service. Social media is also where brand perceptions are born, dovetailing on consumer sentiment. The popularity of Netflix here, is noteworthy. Conversation around the service has become synonymous with relaxing home entertainment that is sweetened with high-quality content and original shows.

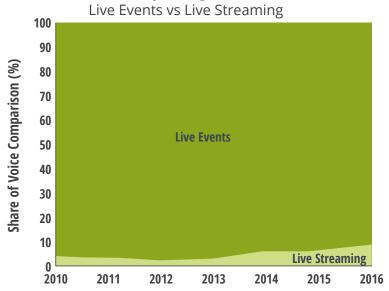
The growing variety of streaming options signals an emerging market of streamers. And it's important to note that US consumers aren't only streaming TV and movies—they are also increasingly streaming live events.



Live Events vs. Streaming

In 2015, Forrester Research estimated that 7% of cord-nevers are between 18 and 31, more than the estimated 6% who were cord cutters. Cord-nevers are a generation that turns to the internet for everything, even live events such as concerts, sports and festivals.

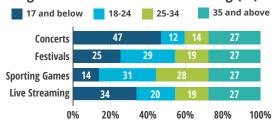
Conversation Volume of Concerts, Festivals, and Sporting Events



Crimson Hexagon data shows that audience for live streaming events skews younger—teens who are inhibited from attending events due to costs and location.

Concerts are the most popular event to stream, followed by sports.

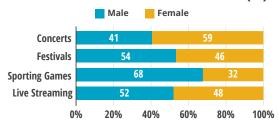
Age Distribution for Live Streaming (%)



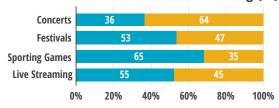
Age Distribution for Live Events (%)



Gender Distribution for Live Events (%)



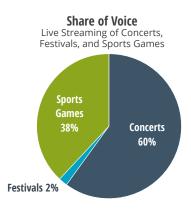
Gender Distribution for Live Streaming (%)



Live Streaming (cont'd)

INDEX

Roughly 20% of consumers on social say they love to live stream because of the experience it gives them by connecting them to their favorite artist. Streaming services like YouTube, Ustream, Concert Window and Justin.tv have built fan communities around live concert



streaming, and even establishing brand partnerships with music festivals like Coachella.

Social data also gives us insight into what else this demographic tends to like, what shows they like to watch and their favorite platform to consume content from. Below is an affinities chart that highlights the differences between live-streamers and event-goers.

Live Streaming vs Live Events Affinities



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Conclusion

Whether looking at social media data or cable and subscription data, one thing is clear: Americans are increasingly streaming their entertainment.

While this growing change has obvious implications for cable companies, internet providers, and streaming services, it also has an enormous impact on almost every other element of the media and entertainment landscape. What does the future of advertising look like? Who will be making television shows in the coming years? How will livestreaming affect concerts, sports, and other live events?

These trends are still evolving, so it can be hard to know, but there is no denying that social media offers the best lens through which to track, measure, and interpret the rise of streaming and the death of cable. There was a time when brands went great lengths to understand what consumers value. Today, we have that data knocking at the door. Companies no longer have to wait for experts to predict and portend consumer behavior, the social web can bring these insights to brands.

But are they paying attention?

In the next section, we analyze the social media conversations about consumer technology to understand topics like:

- Virtual reality and augmented reality
- Mounting privacy concerns
- Digital payements











Rise of the Machines?

Virtual reality, digital payments, and other consumer tech trends

Browse like everybody's watching

We live in a time when we can pay rent over a text message or order groceries from our gadgets at the gym.

But on the other hand—cars can drive and crash themselves, creepy hackers can sing lullabies to sleeping babies through monitors, and Pokemon hunters stumble onto real-world crime scenes¹.

Today, our interaction with technology is as complicated as it is convenient, as risky as it's exciting. This dichotomy can make it hard for businesses to understand how consumers really feel about the latest tech advances. How can brands understand what people like about new technologies, and what scares them?

Unsurprisingly, social media is the perfect window into this conversation, and offers clues into consumers' real-time feelings about technology—Bitcoin triggers more joy than anger, people do not trust the government to protect their privacy.

In this report, we'll explore three emerging tech topics and how consumers are responding to them:

In this report, we'll use this data to explore topics like:

- Virtual reality and augmented reality
- Consumer privacy
- Digital payments

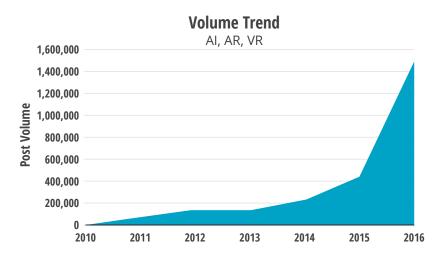
¹Pokemon Go leads teen to dead body

One 'Reality' At a Time

The rise of AI, AR and VR

"Anything humans can do, machines can do better" has been the foundational idea behind technology that gave birth to concepts like artificial intelligence, virtual reality, and augmented reality.

As companies clamor to incorporate these technologies into their products and services, we listened to social conversations to see how people really feel about these shiny new objects.



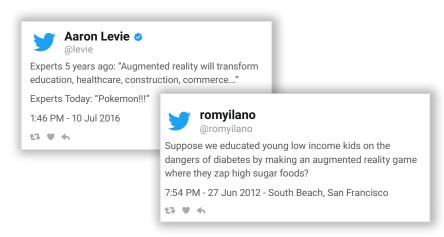
From practically zero discussion volume in 2010, the artificial intelligence, augmented reality and virtual reality conversation steadily grew in the following years, but it wasn't until 2015 that conversation took off. These technologies pushed the boundaries of what was perceived as possible. 2015² was touted as the year of artificial intelligence—image recognition got better, speech translation made leaps, and tech behemoths including Google and Facebook doubled down on Al research.

Unsurprisingly, Al was, by far, the most discussed topic of the three.

2,500,000 — 2,000,000 — 2,000,000 — 2.4M — 1,000,000 — 500,000 — 134K — 47K —

We trust artificially intelligent software to take us places, organize our lives in a calendar, and alert us if money gets stolen from our bank accounts. But the merits of this technology can be extended for social good. For example, in healthcare, professionals can conduct virtual simulations for medical training and education in a cost-effective way.

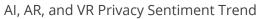
People may acknowledge technology's applications in social good but it's easy to distract them with games—conversation volumes for the category including artificial intelligence, virtual reality and augmented reality hovered around 2.5 million posts, almost a fifth of which were about gaming. Oculus Rift, Google Cardboard, Pokemon Go and HTC Vive were some favorites.

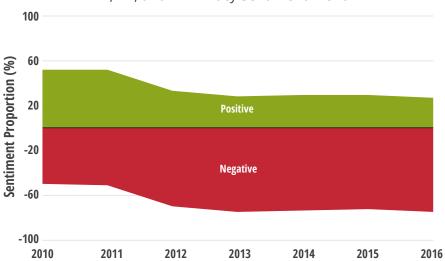


The rise of AI, AR and VR (cont'd)

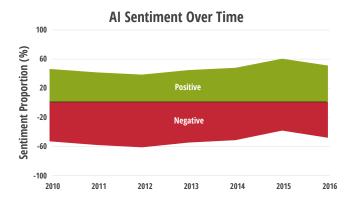
But high conversation volume doesn't imply positive sentiment. In this case, quite the opposite. Driven by privacy concerns, the sentiment surrounding AI/AR/VR has steadily grown more negative. And although there are AI tools that protect consumer privacy, people are increasingly associating AI tools and apps with an invasion of privacy.

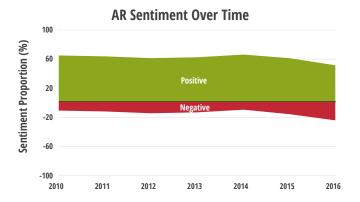
Sentiment Trend

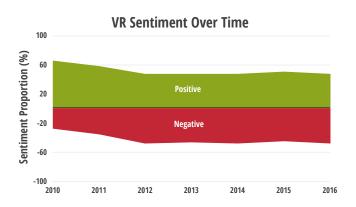




Breaking down this data further reveals the negative sentiment is largely being driven by AI.







Who's leading the discussion?

We may think that AI, AR and VR are topics most relevant to younger consumers, but the data suggests otherwise—increasingly, Americans 35 and above are the most vocal participants in tech-focused conversations. Additionally, females 35³ and above discussing these topics outnumber males 17 and below by 4.85 times. This aligns with studies that revealed that adult women outnumber teenage boys as the largest demographic in gaming.

"In 2017, almost a quarter of everyone on the planet will be over the age of 50, a record number," said Euromonitor research, suggesting brands focus away from millennials and turn their attention to consumers above 50^4 , or the "longevity economy," where economic activity worth \$7.6 trillion.

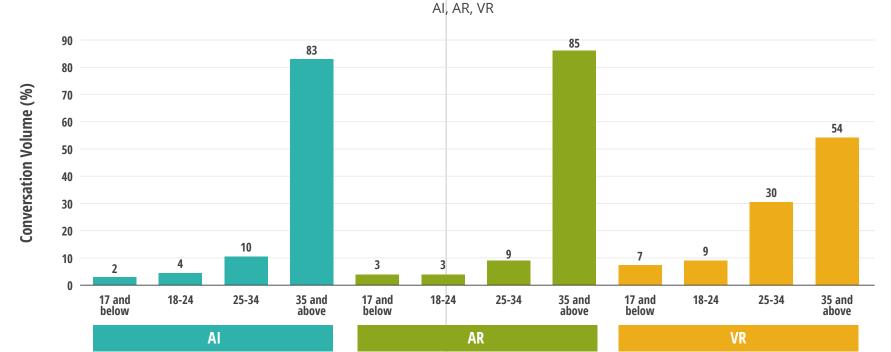
Recognizing the value of Al-powered applications in day-to-day activities, companies ranging from gaming to digital payment clamor to incorporate Al technology into their products and services.

And social media conversations help put that in perspective by giving visibility into what excites an audience or makes them anxious; to discover what acts as an impediment to adoption and what can be an impetus.

But the development of more sophisticated technologies has also caused growing concerns over privacy. In the next section we explore consumers' responses to these concerns.

³Adult Women Gamers Outnumber Teenage Boys, So Lady Nerds FTW ⁴Ageing: A Changing Narrative

Age Distribution



Insights into Action

The anatomy of the Pokémon Go launch

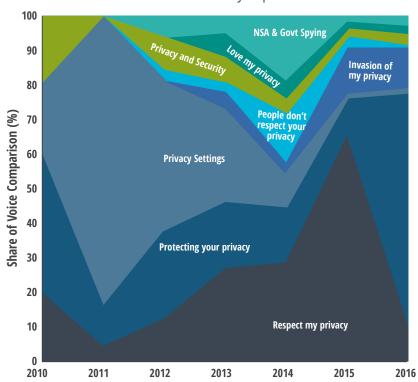
You Snoop, You Lose

The growing anger over privacy concerns

Privacy concerns are increasingly important to US consumers, especially when it comes to personal technology and electronic payments. In conversations focused solely around consumer privacy, security, and information, we found that people associate violations of privacy as disrespectful, accentuated by looming government distrust.

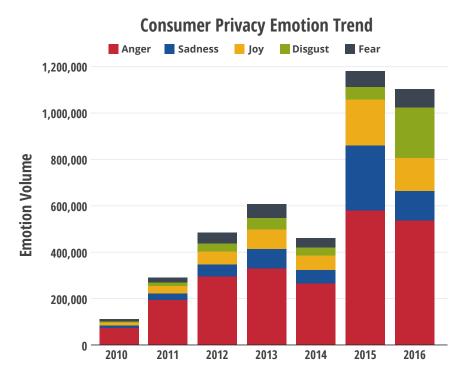
Consumers have discussed many privacy-related topics since 2010—some that were connected to specific world events and others that are more general concerns.

Share of Voice TrendConsumer Privacy Topics



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Privacy, in general, has received much more attention on social since 2010. While it has always been a mostly negative conversation, recent years have witnessed a surge of angry, sad posts.



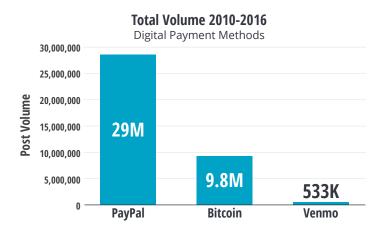
The chart above tracks the swelling anger among consumers discussing privacy-related topics, over time.

Not only is the conversation surrounding privacy issues growing rapidly, it is becoming more dominated by anger, sadness and disgust. These concerns have also spilled over to digital payments, which we will discuss in more depth in the next section.

Show Me Your Money

What consumers are saying about digital payments

Anger over privacy concerns takes a new dimension with digital payments. Money magnifies data security concerns. Turns out, the convenience and ease of digital payment methods is not enough to offset the nervousness around the security of sensitive personal information. The digital payments topic is dominated by three big players—Bitcoin, PayPal and Venmo.



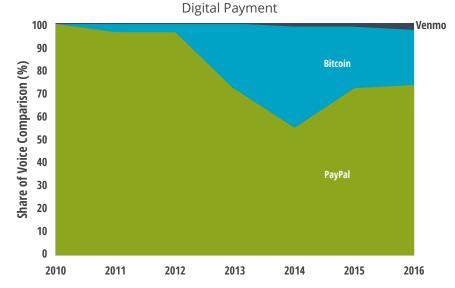
PayPal leads in terms of conversation volume but a substantial amount of those discussions (**380k**) were about the data breach the company was exposed to, in 2014, inciting vigilance about data protection. People also discussed shopping (**600k**) and donating to charity (**120k**) with PayPal.

Bitcoin is a strong contender in this landscape and has earned a reputation of being more private and secure than its alternatives.





Share of Voice

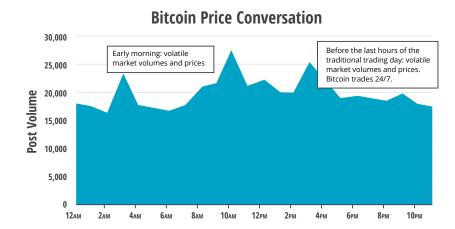


Bitcoin cut into PayPal's share of conversation volume significantly in 2014 when Mt. Gox, the largest Bitcoin exchange, filed for bankruptcy after hackers stole \$460 million⁶ from the exchange. As the Bitcoin hype died down, PayPal regained some share of voice, with Venmo sneaking in an appearance.

While Venmo makes up only a small fraction of the overall conversation, it is growing fast, largely spurred by a younger audience, which we will dive into more fully later in the report.

⁶The Inside Story of Mt. Gox, Bitcoin's \$460 Million Disaster

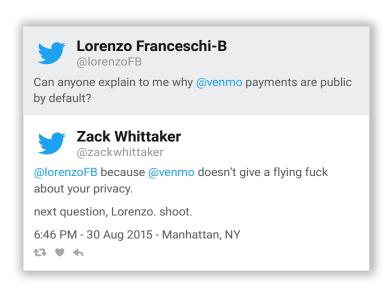
Digital payments (cont'd)



Of the **9.8 million** posts about Bitcoin, **1.6 million** were about following the price. People discussed Bitcoin like stocks, tracking fluctuations, scrutinizing its performance, and discussing buy and sell strategies. People also discussed the currency as a viable alternative to credit cards and services like PayPal. Bitcoin evangelists can give themselves a pat on the back for positioning the cryptocurrency as the "better alternative"—a substantial amount of posts (200k) were about people being wary about government regulations impeding bitcoin use and innovation.

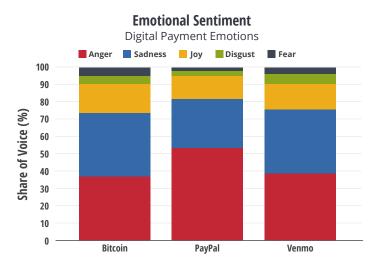
Launched in 2009, money transfer app Venmo has changed hands a couple of times. The company was bought by payment processor Braintree for \$26.2 million in 2012 and a year later, PayPal bought Braintree, taking Venmo into its fold. Between 2015 and 2016, Venmo's payment volume grew 154%.

Venmo may lack critical mass in social conversations, but the service is quite popular among its target group⁷—millennials who appreciate its seamless peer to peer money transfer interface. Most discussions (29k) about Venmo were related to this feature. The app received flak (2k) for its public feeds, which continues to be a sore point for users.



Mad Over Money

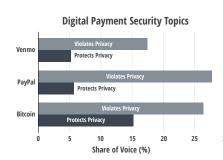
Irrespective of the popularity of the product, it's been hard for digital payment companies to win over the social audience.



While users acknowledged Bitcoin's flaws, social data indicates that consumers view the currency as a better choice for secure transactions.

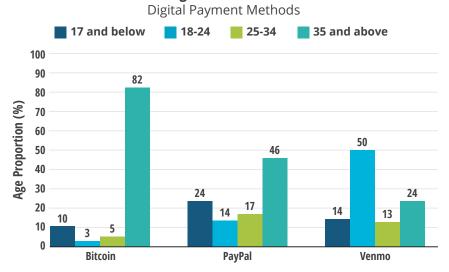
Sentiment analysis of the three services helps explain this by showing that consumers' anger is driven by skittishness around privacy violation and data protection. Here, Bitcoin proves to be an outlier where more people expressed joy. While users acknowledged Bitcoin's flaws, the currency is known for being a better choice for secure transactions.

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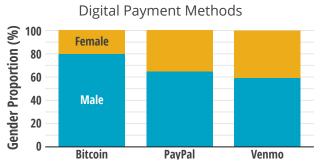
Indeed, when we break down the conversation surrounding the payment options into two categories—protects privacy and violates privacy—we see that all of the major players elicit conversation about violating privacy, but Bitcoin has the most even balance.

Age Distribution



The demographic split of the three services is noteworthy. Bitcoin is most popular with the 35+ crowd, Venmo is preferred by millennials, and PayPal is the most evenly spread of all the forms of digital payments. The conversation skews male overall.

Gender Distribution



PayPal user versus Venmo user

A quick study of Affinities of PayPal and Venmo users revealed that those discussing Venmo tend to be younger, and have interests common among millennials—high school, college, and Snapchat and enjoy the social experience it brings to transactions. PayPal users, on the other hand, tend to be older, with interests in gaming and large technology companies.

AffinitiesPayPal vs Venmo



Conclusion

Steve Jobs famously said that he doesn't rely on marketing research because "people don't know what they want until you show it to them."

Unfortunately, not everyone has the instincts of Steve Jobs. More often than not, brands need to hear directly from consumers to understand how they feel about new technologies.

In the previous section we discussed what consumers are talking about in terms of new technologies, but there's another industry that is facing a similar sea change: transportation.

In the next section, we analyze the social media conversation surrounding transportation to understand:

- The future of car buying
- The rise of ridesharing
- The sentiment around self-driving cars

READ BLOG











The Uberization of Transportation

Changing trends in US transit

The transformation of transportation

Over the last decade, American transportation has transformed. Ridesharing apps like Uber and Lyft have already largely displaced taxis, and self-driving cars have started to hit the road in some cities.

But the real question is how these developments have affected the US consumer. Has easy (and relatively affordable) access to ridesharing options affected how Americans feel about buying a car? Are consumers ready for driverless cars? How has sentiment toward public transportation evolved in major cities?

These questions are essential for understanding how automakers, dealerships, transportation services, and others think about the future of transportation. We analyzed millions of social media posts to isolate the most important trends impacting the industry.

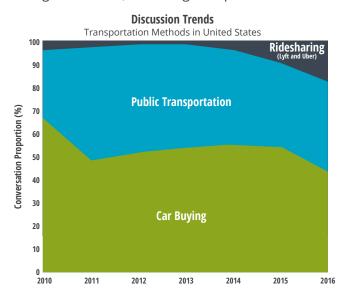
In this report, we'll use this data to explore topics like:

- The future of car buying
- The rise of ridesharing
- The sentiment around self-driving cars

Is Car Buying Hitting a Roadblock?

The impact of ridesharing on car ownership

2016 was a record year for car sales, but 2017 is shaping up to be a different story¹. After selling 17.5 million light vehicles to Americans who drove 1.58 trillion miles in six months, automakers are starting to see that trend go in reverse, according to experts.



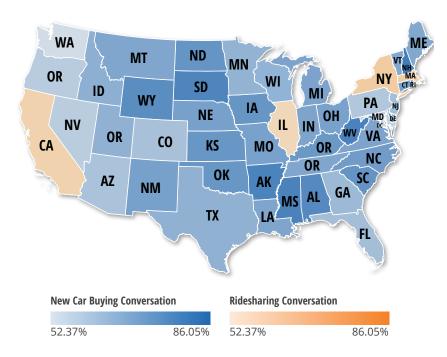
Why are car-buying prospects so gloomy? What is going on in consumers' minds (or wallets) that is leading them to hold off on buying that next car?

Social media offers some important clues about why car ownership might be going in reverse.

The first thing to note is that car buying remains the most discussed transportation method. But within the overall transportation discussion, we see that its hold may be slipping—especially in cities.

Where do people talk about car buying?

The map below tells us that states without a comprehensive public transit system or that are located in more rural areas rely more on cars.



But in metropolitan areas, the wheels may be starting to come off, thanks largely to the rise in ridesharing. In major cities the conversation about ridesharing started growing significantly around 2014, increasing from 5% to nearly 20%.

To get a clearer picture, let's dive into the conversation surrounding car buying.

Car Buying Conversation Topics







The talk of car-buying on social was dominated by first-time car buyers (25k) expressing joy as they hit the first-car milestone. Many (5k) expressed desire to purchase a used car, and discussed the cost effectiveness of buying a high quality used car versus a new car.

The more somber conversations, however, were around the realities of car ownership, especially related to the financial difficulties associated with low credit scores, monthly payments, and auto loans (2k).

Americans will not abandon car-ownership completely, but social data suggests that the idea has begun to gain traction and people see the merits of not owning a car—on an average, car buyers paid \$34,077² last year, and insurance prices shot up 7.2%, the largest annual increase³ since October 2003.

Car Buying

Buying a new car (25k)

People share their joy after buying a new car, express desire to purchase a new car, and discuss family and friends' experiences with new car-buying.

Buying a used car (5k)

People express desire to purchase a used car, many discussing the cost effectiveness of buying a high quality used car, as opposed to a new car. Additionally, plenty of jokes surround "buying a used car," a euphemism for low quality.

Buying the first car (3k)

Car-buying is a milestone for many, who excitedly share their joy on social media. It is a symbol of transition into adulthood.
Others discuss intent to purchase their first car.

Auto loans needed for car buying (2k)

People discuss taking out loans for a new car. Many concerns are centered around not being taught the importance of loans in high school.

Celebrating homeownership (2k)

Many express aspirational desire to buy a car after buying a home. In many cases, home and car ownership are closely related with family planning.

Credit score concerns (1k)

People worry about low credit scores negatively impacting their ability to buy a car, while others rejoice high credit scores. Others lament not being taught the value of a credit score and its impact on car buying in high school.

²Car buyers in 2016 paid an average of \$34,077, a record high

³Auto insurance rates rising at fastest rate in almost 13 years

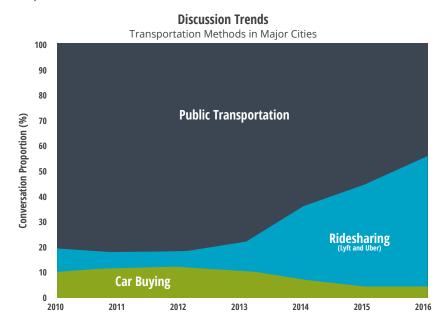
Car(e) to Share?

Ridesharing is changing the way major cities operate

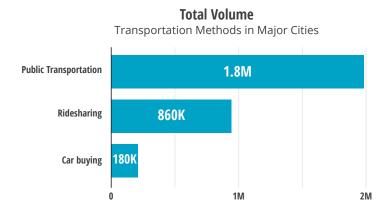
With car ownership costs increasing, it's not surprising that many consumers are starting to consider other transportation options. Chief among them is ridesharing, which has surged in social conversation for several years, especially in major cities.

The major cities we analyzed (listed on the next page) talk quite a bit about ridesharing.

This is a relatively new phenomenon. Analyzing how the discussion of these transportation methods has changed over the past six years within these major cities, we found that ridesharing conversation, specifically about Lyft and Uber, has grown from 10% to nearly 50% of share of voice since 2013. That momentum is cutting into car buying and public transit conversation volumes.

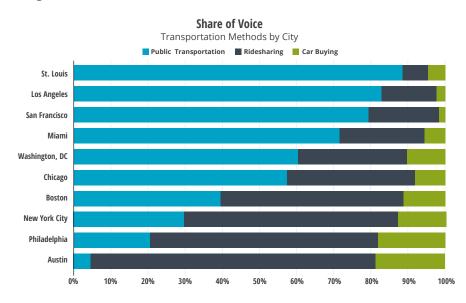


Ridesharing hasn't yet outpaced public transportation in terms of pure conversation volume, but it is bridging the gap.



These conversations are not evenly distributed throughout the country. Unsurprisingly, discussions about ridesharing and public transit are more common in major cities.

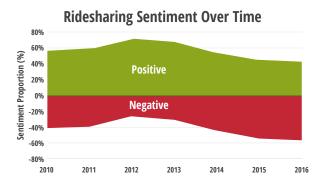
Austin, Philadelphia, and New York are the three cities that discuss ridesharing the most, whereas residents in St. Louis, Los Angeles, and San Francisco discuss public transit considerably more than other regions.

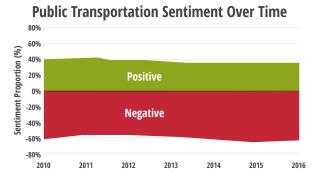


Transportation Method Consumer Sentiment

Conversation volume on social can tell us a lot, but it is also important to look at the tone of these discussions.

A check on consumer sentiment for transportation revealed that people consistently (and perhaps unsurprisingly) do not think highly of the public transit infrastructure. The surprising finding, though, is the shifting sentiment of ridesharing, which has grown more negative as it has become more popular.







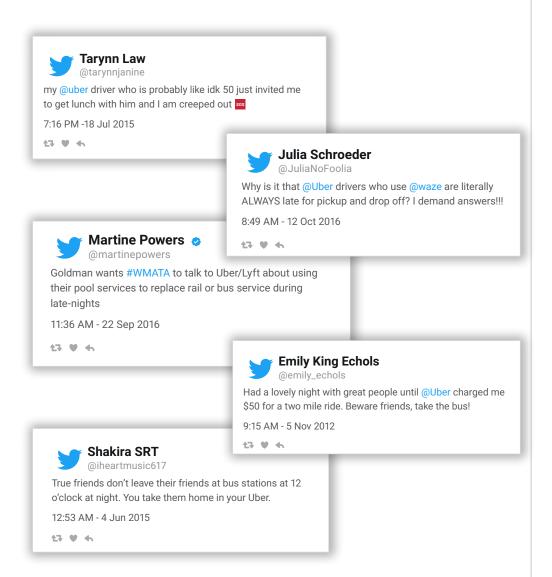
Car buying conversation has remained fairly flat over the past six years. But Crimson Hexagon's analysis revealed correlations between car buying and ridesharing in cities like Austin and Philadelphia, which have fewer public transportation options. In those cities, ridesharing conversation and car-buying conversation tend to rise in tandem. The interesting question here is: Are these city residents buying cars to cash in on the lucrative market of offering ridesharing services?

The economic benefits of ridesharing need no further advocacy. However, the dialogue on social media leaned towards the social aspect of 'riding,' with posts about interaction with drivers (260k) where people shared a combination of entertaining stories and complaints. People also take to social media to air their grievances about drivers arriving late, picking wrong routes, and general driving mistakes (8k). Close to 4k posts were about assault, unwelcome advances and drivers making riders uncomfortable.

A recent study estimated that it would take only 650 "shared cars" to replace all of San Francisco's cabs. True as that might be, ridesharing is still miles away from replacing public transit altogether. And people recognize and acknowledge that on social. About **21k** posts on ridesharing were people lamenting about how ridesharing services such as Uber and Lyft have not yet proven themselves as viable substitutes for public transportation.

⁴All of SF cabs could be replaced with just 650 ride-share vehicles, new report says

The Social Conversation Around Ridesharing



Ridesharing

Interaction with ridesharing drivers (260k)

Interactions with Uber and Lyft drivers are often the source for entertaining stories and complaints, which are shared on social media.

Night rides (21k)

Ridesharing services such as
Uber and Lyft have not yet
proven themselves substitutes
for public transportation services.
As complements to public
transportation, ridesharing
services are frequently used at
night, after public transportation
has been shut down.

Price (19k)

The average ride for Uber is \$13.36. For Lyft it is \$12.53. People use social media to complain about the high costs for relatively short rides.

uberPOOL and Lyft Line (13k)

Frequently using Uber and Lyft can take a toll on one's wallet.
People discuss popular pooling services offered by Uber and Lyft, a cheaper alternative to the standard services offered.

However, people express grievances like faulty pickup algorithms, which can be problematic when dealing with multiple riders.

Ruined a ride (8k)

Wrong routes, lateness, and general driving mistakes concern many ridesharing users.

Drivers and rider ratings (7k)

Ratings are the subject of concern for Uber riders, who choose drivers with high ratings to service them and hope that drivers rate them highly. People discuss the steps drivers take to generate a higher rating for themselves. People also discuss reasons to rate a driver lowly.

Creepy drivers (4k)

Assault, unwelcome advances, and drivers making riders feel uncomfortable comprise a sizable amount of the ridesharing conversation about drivers.

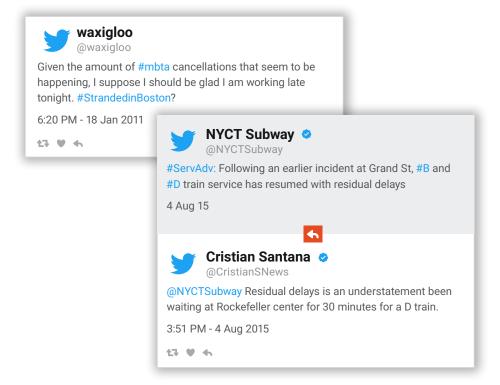
Is Uber at strike two?

The Social Conversation Around Public Transportation

Car buying is not the only industry affected by the rise of ridesharing. The conversation surrounding public transportation has also changed dramatically in the last few years.

It's easy to see how failings of the public transit system would cause people to discuss alternatives. Most posts **(130k)** about the public transport system expressed anger about delays and cancellations.

And then, of course, there is exasperation towards the flailing state of infrastructure. People discussed both the lack of infrastructure improvements and the inconveniences caused by repairs, which often cause delays or force riders into alternative routes.





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I'm predicting that the MTA is going to think we all forgot about the G train and never repair it. Some #1984ness right there

9:15 AM - 5 Nov 2012

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Public Transit

Delays and cancellations a cause for grievances (130k)

Delays and cancellations are the subject of ire for many who hope for a seamless ride to school, to work, and more.

Interaction with public transit workers and workers' rights (34k)

People discuss their interactions with public transportation workers and workers' strikes.

Public transportation a subject for lament (28k)

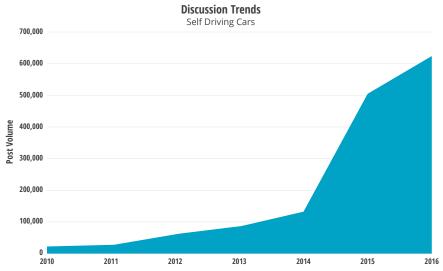
People express negative feelings about public transportation, citing inconveniences public transportation has caused them.

Infrastructure fixes (7k)

Infrastructure, crumbling or otherwise, is the subject of controversy for public transportation riders, both for the lack of infrastructure improvements and for the inconveniences caused by infrastructure fixes, which oftentimes cause delays or force riders into alternative routes.

Consumers anxiety over autonomous vehicles

The appeal of any futuristic technology is its ability to tickle our imagination—future holds a shiny promise, while the present wrestles with reality. The concept of self-driving cars is a case in point where people see its perils before potential.



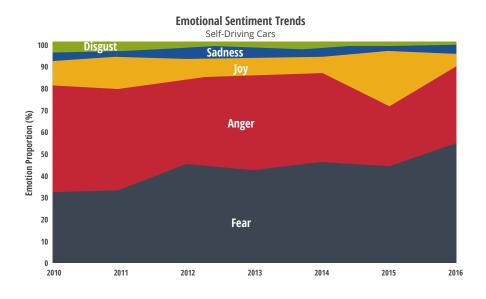
As discussion about self-driving cars gained momentum, opinions polarized. Fear and anger emerged as the most prominent emotions for self-driving cars, but fear has increased from 30% in 2010 to 50% in 2016. And knowledge only leads to more apprehension.

Why So Scared?

Most people fear that self-driving cars will be susceptible to hacker attacks.

And the fear only increases when people see hackers show off some mean tricks by remotely⁵ accelerating a jeep and slamming the brakes at high speeds.

While many rational fears can be allayed, fear of technological change cannot. Self-driving cars are exciting to some, and to some others, they signify an impending apocalypse, doomsday and the destruction of humanity. This is a part of the larger trend of consumers fearing technological change.

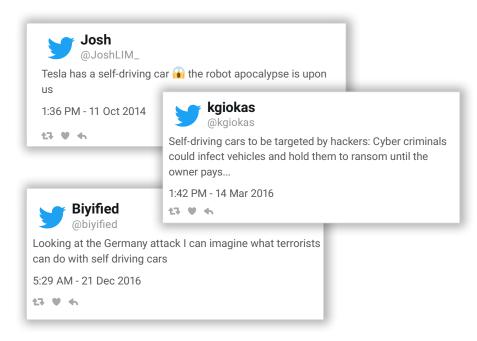


⁵Hackers Remotely Kill a Jeep on the Highway—With Me in It

Insights into Action

The Social Conversation Around Self-Driving Cars

Tech enthusiasts who welcome change are excited to see self-driving cars lead the technological revolution. These folks look forward to driverless cars cutting down on traffic and road rage (7k). for self-driving cars, but fear has increased from 30% in 2010 to 50% in 2016. And knowledge only leads to more apprehension.



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Self-Driving Cars

Hacker Concerns (18k)

People fear that self-driving cars will be susceptible to hacker attacks. News organizations such as The Wall Street Journal play a significant role in circulating stories that discuss self-driving car safety.

Doomsday (17k)

While self-driving cars are exciting to some, they signify the apocalypse, doomsday and the destruction of humanity to others. This is a part of the larger trend that fears technological change.

Technology revolution (6k)

Tech enthusiasts see self-driving cars as a leader in a technological revolution that harnesses big data and machine learning.

Solution to Traffic Congestion (7k)

Traffic and road rage induce anger, and people take to social media to vent about solutions to congested roads and highways—this discussion prominently features self-driving cars.

Innovation (4K)

People discuss how they are in awe of the entrepreneurial companies spearheading self-driving cars.

Economic Implications (3K)

The future (mass) adoption of self-driving cars spells the end of some occupations—drivers at ridesharing companies Uber and Lyft, and their taxi competitors.

Conclusion

Technology will determine what roads of the future will look like. From the Chevy Bel Air convertible to Tesla—consumer preferences and rapidly improving technology are driving the market to evolve. But the key to succeeding in this market lies in accurately predicting the direction it will take.

Looking at the market from the vantage point of social media conversations can help automakers take stock of how they need to prepare for the future and preempt solutions for problems.

Can technology cut down travel time further? What information could drivers use to optimize routes better? What kind of culture does ridesharing create? How will road manners evolve with self driving cars?

Consumer conversations are littered with answers to these questions and more. And now, we know how to turn data into insights.

Afterword

Consumer insights are perhaps the most important ingredient in any brand or agency's strategy. How can you make sure you're engaging consumers and tapping into their likes and desires if you don't know what's on their minds? This is especially true for trends, fads and emerging preferences that are notoriously difficult to pin down before they're already obsolete.

Social media analytics can help brands and agencies do just that. Social media data can serve as a window into the minds of millions of consumers, and when it's analyzed well, it can help you understand:

- The emerging trends in any industry
- How different audience segments feel about a given topic
- Consumer preferences and how they've changed over time



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