Internet Association

IA Industry Indicators™

Data And Analysis For The U.S. Internet Industry
Q1 2019 Data, Q3 2019 Release
August 2019

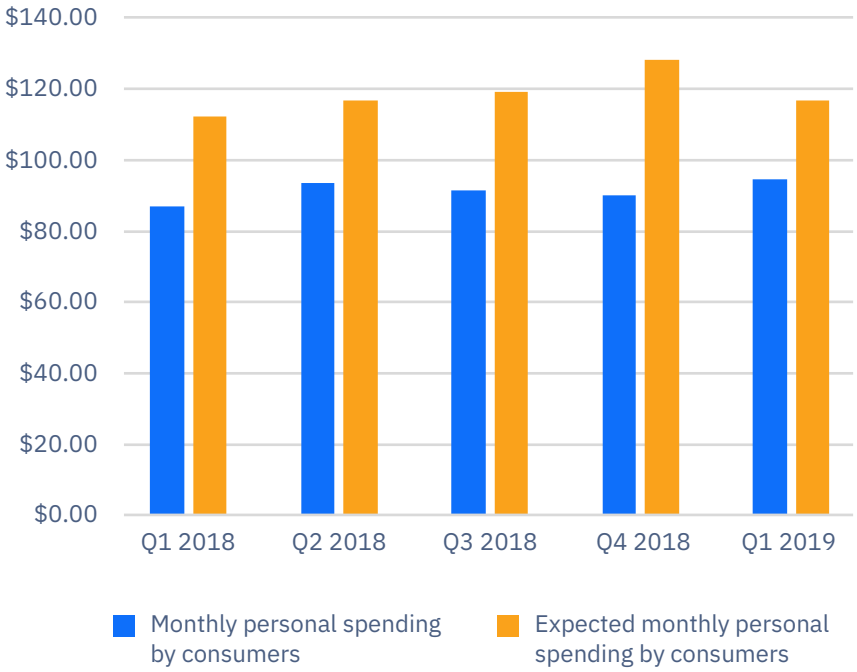
Q3 Industry Report

With trillions of dollars in market value, hundreds of billions in revenue, and millions of employees throughout every state, the internet sector represents a significant driver of the U.S. economy. IA's quarterly Internet Industry Indicators Report provides new metrics and analysis of the internet sector – America's fastest growing sector.

KEY INTERNET SECTOR TAKEAWAYS:

- ↓ Hiring is down **27.3%** QoQ
- ↓ Job openings are down **18.5%** QoQ
- ↓ Separations are down **0.88%** QoQ
- ↑ CapEx is up **27.7%** QoQ
- ↑ Total revenue is up **7.4%** YoY
- ↑ Monthly personal spending by consumers is up **5.0%**
- ↓ Expected monthly personal spending by consumers is down **9.1%**

CONSUMERS ARE SPENDING MORE - AND PLANNING TO SPEND MORE - ONLINE



KEY TAKEAWAYS

→ **In Q1 2019, Americans spent the most money per month on the internet since IA began collecting data.** The average person spent $94.48 per month at the start of the year.

→ **Individuals are becoming more comfortable with internet commerce** and increasingly view internet-based businesses as good places to spend their hard-earned money.

IA has developed a measure of inflation for internet goods and services known as the digital price index (DPI). It's a first of its kind measure that uses a 3-month average of monthly prices for a basket of consistent services and products available since 2013.

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IA Industry Indicators™

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Chief Economist's Insight

This is Internet Association's fourth *IA Internet Indicators* (3I) Quarterly Report, which tracks proprietary and unique data on the internet industry. The 3I Quarterly Report is a one-of-a-kind resource for those interested in the internet sector and its impact on the economy.

With this issue, we are excited to launch year-over-year examinations of our Internet User Sentiment Survey, which tracks internet usage and consumer preferences between internet-based services and traditionally-delivered services. We are also excited to announce the recent launch of our complementary monthly *IA Industry Indicators: Jobs* or 3I Jobs Report, which debuted in July and which now offers additional insights on the internet's role in the economy.

We focus in this issue on consumer preferences in our Industry Leader section, examining, for the first time, a full year's worth of data. We see a strong, steady growth in consumer usage of and preference for internet-based services over older, legacy services. Online meeting forums (including meet-up sites, dating sites, and more) rose 0.116 index points over 2018 in IA's unique index while ridesharing apps now clearly lead ahead of taxis as the preferred transportation option.

The broader goal of the *3I data series* is to improve our understanding of the internet as an economic sector. We know the internet contributes massively to the U.S. and other economies around the globe, but we are just starting to piece together the details of the story – what drives the industry, how are people using the internet, how broader trends impact the internet, etc. Numerous governments and other stakeholders are grappling with the same questions and issues and IA provides this report (along with its data) to help shed light on this dynamic sector.

The *3I Quarterly Report* offers information from five perspectives: Macroeconomic Indicators based on US government datasets; Microeconomic Indicators based on publicly-traded internet company data; a new of Digital Price Index measure based on common household digital goods; an internet Industry Risk Assessment on the major issues facing the internet industry; and an Internet Sentiment Survey, which offers insights into individual usership, expenditure, and preferences related to internet services and goods. Internet Association presents these data in a neutral manner through standardized tables and graphs, which will be repeated in every issue. IA also provides a short summary and Industry Focus section concentrating on a particular aspect of the data to start each issue.

As we continue to refine our understanding of the internet industry from a measurement standpoint, IA will also revise this report as necessary to ensure as accurate of information as possible. IA notes all changes and any caveats clearly throughout the document in the appropriate section.

And as we all read and learn more about the internet as an economic sector, IA will continue to engage with partners and other stakeholders to share valuable insights.

Christopher Hooton, Ph.D.
Chief Economist & Head Of Research
Internet Association

Summary & Highlights

Value & Investment

The internet sector experienced solid growth in its overall economic value, as measured by its Market Capitalization. Total sector market capitalization grew by 10.82 percent in the first quarter of 2019. The growth in value is reflected in the strong increase in investment among internet sector firms. Capital expenditures grew by approximately 35 percent and the number of employees in the sector grew by 7.64 percent in Q1 2019.

Openings & Hirings

The internet sector was not, however, immune to a tightening labor market. While overall employment grew, hiring went down both in terms of volume and rate. While the sector continued to hire and create more jobs, new hire levels decreased by over a quarter, 27.34 percent, and the hiring rate dropped by almost 400 percent. New job openings also decreased in the sector by 18.51 percent.

Sector Employment Stability

One bright spot for the internet sector are continued signs of employment stability in the sector. Despite the decreases in new hires and openings, separations (i.e. employees leaving their employer) ticked down about 0.9 percent in Q1 2019, while the year over year change was only about a 1 percent increase. These suggest less volatility in employment among internet firms.

Revenue

Revenue declined in Q1 2019 for the internet sector, both overall and across individual sources (businesses, government, and households). Total revenue decreased by 3.94 percent in the quarter. However, total revenue was up over 7 percent year-over-year.

Consistency In Risks

Meanwhile, internet sector firms maintained strong consistency in their assessments of market risk in Q1 2019 compared to the end of 2018. The top three risk factors cited among internet sector firms in Q1 2019 were the same as in Q4 2018: 1) “Product & Services Development” with 31 percent citation, 2) “Economic & Financial Conditions” with 21 percent citation, and 3) “Competition” with 19 percent citation. Compared with the previous year in Q1 2018, regulatory issues have dropped off as a concern for the internet sector while customer satisfaction has moved into a top five focus area, according to company filings.

Time & Money

The first quarter of 2019 also showed a very strong year for consumer trust in and usage of the internet. The internet sector gained in market preference and usage across all categories over the year 2018 and through Q1 2019. IA's proprietary Internet User Sentiment Survey, featured in this issue's Industry Leader and presented at the end of the report, showed consumers steadily increased their online expenditures, their time online, and their preference for internet-based services over traditional services.

Industry Leader: Changing Consumer Preferences

Working in tech within Washington, DC could be described as a bubble within a bubble. So, it is crucially important that internet sector stakeholders take a step back on occasion to better understand what individuals actually think about the internet sector, rather than relying on soundbites. And what do people actually think? The data show Americans increasingly trust and rely on the internet sector.

Across every category that we track, consumer preferences are shifting away from 'traditional' services in favor of internet-enabled services. There are two key takeaways:

→ **The average amount of money spent online by individuals increased nearly 9 percent over the past year, increasing to the highest amount recorded.**

→ **Across several key categories, individuals are increasingly moving to internet-enabled services. These are:**

- Online shopping vs brick & mortar stores
- Ridesharing vs taxis
- Streaming video vs cable/satellite
- Short-term rentals vs hotels
- Online banking vs brick & mortar banks
- Online meet-ups vs offline interactions

Online Spending

Few things are as powerful as voting with your checkbook. Market trends are one of the surest ways to truly understand what people think or why they make decisions.

In Q1 2019, Americans spent the most money per month on the internet since IA began collecting data. The average person spent $94.48 per month at the start of the year, an increase of over 5 percent over the previous quarter (despite the previous quarter being the holiday shopping season) and nearly 9 percent over the previous year. These data clearly show that individuals are becoming more comfortable with internet commerce and increasingly view internet-based businesses as good places to spend their hard-earned money.

Online Spending

Question	Q1 2019	Q4 2018	Q3 2018	Q2 2018	Q1 2018	Q-Over-Q Change	Y-Over-Y Change
For personal use, how much money do you spend on average per month on all internet-based goods and services of any type? Please consider subscriptions, apps, games, shopping, movies, music, etc.	$94.48	$89.97	$91.42	$93.41	$86.84	5.01%	8.80%
For personal use, how much money do you expect to spend on average per month on all internet-based goods and services over the coming 3 months?	$116.67	$128.31	$119.21	$116.67	$112.15	-9.08%	4.03%

Online Preferences

IA tracks consumer preferences between online and offline services in six categories using a simple index system from -1 to 1. A value of 1 signifies that consumers only prefer to use internet-enabled services in the respective category while a value of -1 signifies that consumers only prefer to use 'traditional' services instead. A value of 0 means the preferences are split evenly.

The table below shows the index values for six survey questions administered every quarter by IA and which correspond to the categories listed above. It shows that consumer preferences shifted toward internet-enabled options in each of the categories with the increases ranging from 0.04 to 0.15 index points over the past year.

Americans increasingly prefer to use the internet for many essential activities. This doesn't mean that consumers now only prefer internet-based services - you'll notice that the preference indeces are still negative in three categories (shopping, hotels, and meet-ups). However, it does mean that consumers are growing increasingly comfortable with using internet based services. This trend has been consistent throughout the past year and there is little reason to expect it to drop off in 2019.

These trends follow and reinforce the increase in online spending mentioned above. Together, they send a clear message that internet users increasingly have confidence in the array of services offered to them online.

Internet User Sentiment

Question	Q1 2019	Q4 2018	Q1 2018	Q-Over-Q Chg	Y-over-Y Chg
Do you spend more personal money shopping online or in ('brick and mortar'/physical) stores?	-0.023	-0.014	-0.111	-0.009	0.088
For personal use, do you use taxis more often or do you use ride-sharing apps like lyft, uber, via, and others?	0.070	0.088	0.030	-0.018	0.040
Do you spend more personal time watching movies, tv, and other videos online or watching them on cable/ satellite?	0.102	0.095	-0.045	0.007	0.147
Do you prefer staying in hotels or short-term rentals (e.g. Airbnb, homeaway, other vacation rentals) for personal trips?	-0.250	-0.254	-0.294	0.003	0.044
Do you prefer conducting your personal banking and attending to personal finances online or in a physical, 'brick-and-mortar' bank?	0.168	0.166	0.074	0.002	0.094
Do you prefer meeting new people through online platforms, such as match, tinder, etc., or through offline interactions, such as blind-dates or at parties? Please consider both romantic dating and friendships.	-0.420	-0.420	-0.537	0.000	0.116

Macroeconomic Indicators

Overview: *Tables 2 and 3 provide information on the internet industry derived from North American Industrial Classification System (NAICS) codes. IA identifies the appropriate NAICS codes for inclusion through an internal identification methodology for the internet industry and the tables summarize quarter-over-quarter and year-over-year aggregate changes. See the methodology note below for more detail.*

Table 2: Internet Industry Revenue

	Qtr-Over-Qtr Percent Change	Year-over-Year Percent Change
Total Revenue (Sum)	-3.94%	7.37%
Revenue from Businesses (Sum)	-3.97%	2.66%
Revenue from Government (Sum)	-9.26%	573.47%
Revenue from Households (Sum)	-1.19%	2.69%

Notes: Reports most recent quarterly figures available at time of collection. Quarterly figures for Q1 2019 over Q4 2018 changes. Annual figures for Q1 2019 over Q1 2018.

Table 3: Internet Industry Employment

	Qtr-Over-Qtr Percent Change	Year-over-Year Percent Change
Hires (Levels)	-27.34%	-0.87%
Hires (Rate)	-385.09%	44.81%
Job Openings (Levels)	-18.51%	-0.19%
Job Openings (Rate)	2470.83%	-4404.65%
Total Separations (Levels)	-0.88%	1.09%
Total Separations (Rate)	-88.66%	-110.2%

Notes: Reports most recent quarterly figures available at time of collection. Quarterly figures for Q1 2019 over Q4 2018 changes. Yearly figures for Q1 2019 over Q1 2018.

Microeconomic Indicators

Overview: *Table 4 provides information on the internet industry derived from information reported by publicly-traded internet companies. IA identifies the appropriate businesses through an internal identification methodology and the tables summarize quarter-over-quarter and year-over-year aggregate changes. See the methodology note below for more detail.*

Table 4: Internet Industry Financial Data, Annual

	Qtr-Over-Qtr Percent Change	Year-over-Year Percent Change
Capital Expenditures (Absolute Value)	27.66%	88.49%
Capital Expenditures (Sum)	35.05%	88.49%
Market Capitalization (Sum)	10.82%	-13.30%
Net Revenue (Sum)	-9.25%	-8.19%
Gross Revenue (Sum)	-9.18%	59.66%
Employees (Sum)	7.64%	-11.90%
Capital Expenditures (Average)	35.05%	93.09%
Market Capitalization (Average)	9.91%	-11.59%
Net Revenue (Average)	-9.33%	-6.22%
Gross Revenue (Average)	-9.18%	63.41%
Employees (Average)	5.01%	-9.75%
Capital Expenditures (Median)	-7.11%	-22.94%
Market Capitalization (Median)	14.29%	-13.78%
Net Revenue (Median)	1.71%	-32.54%
Gross Revenue (Median)	16.11%	-35.20%
Employees (Median)	55.35%	-35.38%

Notes: Reports most recent quarterly figures available at time of collection. Quarterly figures for Q1 2019 over Q4 2018 changes. Yearly figures for 2019 over 2018 change.

Digital Price Index

Overview: *Table 5 provides information on Internet Association's proprietary digital price index. The index tracks the prices of a typical basket of online, internet-based services and the table summarizes quarter-over-quarter and year-over-year aggregate changes. See the methodology note below for more detail.*

Table 5: Digital Price Index

	Year-Over-Year Percent Change	Qtr-Over-Qtr Percent Change
Digital Price Index	-6.1%	15.1%
National CPI	1.6%	0.8%

Notes: The DPI measure uses a basket of common household internet services and products for individual consumers for which price data was available since 2013. IA collected annual prices for 2013-2017 and collects quarterly data starting in Q1 2018.

The index does not account for quality changes of services and products over time. National inflation figures come from U.S. Bureau of Labor Statistics CPI-All Urban Consumers (Current Series).

Quarterly figures for Q1 2019 over Q4 2018 changes. Yearly figures for 2019 over 2018 changes.

Internet Industry Risk Assessment

Overview: *Table 6 provides information on Internet Association's assessment of internet industry risk factors. IA aggregates reported risks from its member companies that are publicly-traded using quarterly reports and the tables summarize reported risks for the previous quarter and year. See the methodology note below for more detail.*

Table 6: Most Commonly Cited Risks To Internet Sector Companies Q4 2018

Top 5 Internet Sector Risk Factors Q1 2019	Percent of Risk Factor Observations
Product & Services Development	31%
Economic & Financial Conditions	21%
Competition	19%
Market	15%
Customer Satisfaction & Subscription Rate	14%
Top 5 Internet Sector Risk Factors Q4 2018	**Percent of Risk Factor Observations**
Product & Services Development	49%
Economic & Financial Conditions	23%
Competition	19%
Security & Data Privacy	15%
Market	13%
Top 5 Internet Sector Risk Factors Q1 2018	**Percent of Risk Factor Observations**
Product & Services Development	28%
Competition	22%
Market	15%
Economic & Financial Conditions	14%
Laws & Regulation Restrictions	14%

Notes: Table shows the citation frequency of the five most commonly cited risk factors for Q1 2019 and Q4 2018 among the five most important risk factors of every individual company.

Internet User Sentiment

Overview: *Table 7 provides information on Internet Association's user sentiment survey. The table reports summarized responses from a U.S. national survey of internet users and presents information on the previous two quarters as well quarter-over-quarter changes.*

Table 7: Internet User Sentiment Responses

Q#	Question	Q1 2019	Q4 2018	Q1 2018	Qtr-Over-Qtr Chg	Y-Over-Y Chg
1^	For personal use (i.e. not for your job/ business/work), how much time on average per day do you spend using the internet?	171.65	175.45	159.15	-2.17%	7.85%
2^	For personal use, how much time on average per day do you expect to use the internet over the coming three months?	202.34	207.98	192.19	-2.17%	5.28%
8	Do you currently use online sites, platforms, or other internet tools to pursue passion projects and/or hobbies? Examples include self-publishing a novel, selling crafts/art that you create, etc.	38.15%	43.51%	29.40%	-5.36%	8.75%
9	Is the internet essential for you to pursue these passion project(s) and/or hobby(ies)?	34.99%	37.43%	24.15%	-2.44%	10.84%
10	For personal use, how much money do you spend on average per month on all internet-based goods and services of any type? Please consider subscriptions, apps, games, shopping, movies, music, etc.	$94.48	$89.97	$86.84	5.01%	8.80%
11	For personal use, how much money do you expect to spend on average per month on all internet-based goods and services over the coming 3 months?	$116.67	$128.31	$112.15	-9.08%	4.03%
Q#	**Question^^**	**Q1 2019**	**Q4 2018**	**Q1 2018**	**Qtr-Over-Qtr Chg**	**Y-Over-Y Chg**
4	Do you spend more time using the internet in your personal life or for your work?	0.202	0.190	0.279	0.012	-0.077
5	Do you spend more personal money shopping online or in ('brick and mortar'/ physical) stores?	-0.023	-0.014	-0.111	-0.009	0.088
6	For personal use, do you use taxis more often or do you use ride-sharing apps like Lyft, Uber, Via, and others?	0.070	0.088	0.030	-0.018	0.040
7	Do you spend more personal time watching movies, TV, and other videos online or watching them on cable/satellite?	0.102	0.095	-0.045	0.007	0.147
12	Do you prefer staying in hotels or short-term rentals (e.g. Airbnb, HomeAway, other vacation rentals) for personal trips?	-0.250	-0.254	-0.294	0.003	0.044
13	Do you prefer conducting your personal banking and attending to personal finances online or in a physical, 'brick-and- mortar' bank?	0.168	0.166	0.074	0.002	0.094

Q#	Question	Q1 2019	Q4 2018	Q1 2018	Qtr-Over-Qtr Chg	Y-Over-Y Chg
14	Do you prefer meeting new people through online platforms, such as Match, Tinder, etc., or through offline interactions, such as blind-dates or at parties? Please consider both romantic dating and friendships.	-0.420	-0.420	-0.537	0.000	0.116
15	How do you view the internet's contribution(s) to society?	0.419	0.419	0.371	0.000	0.048

Notes: Question 3 is a filter question to ensure quality of responses.

^Figures given in number of minutes.

^^Figures given as an index with values ranging from negative one to positive one (-1 to 1). A value of negative one (-1) indicates the worst (negative) outcome for the internet industry. A value of zero (0) indicates a neutral sentiment that is equally good and equally bad for the internet. A value of positive one (1) indicates the best (positive) outcome for the internet industry.

IA Industry Indicators (3I) Report – Methodology Notes

Overview

Identification methodologies for the internet industry, technology sector, digital economy, and other synonymous terms have received little attention from academic researchers. The primary approach used by groups to identify 'high-tech' industries and companies overwhelmingly rely on expert panels, where individuals subjectively select which companies/industries are or are not part of 'tech'.

IA's general identification methodology is primarily based on a set of NAICS codes developed by an expert panel at Economists Incorporated in 2015. The method is in line with other 'tech sector' and digital economy identification methodologies, such as those issued by BLS, Brookings Institute, and others. The Internet Industry Indicators Report is primarily based on that methodology with adjustments where needed, such as in the case of weighting and or lesser detail levels. Further details on each set of indicators included in the 3I report are given below:

Macroeconomic Data & Estimates

Macroeconomic data were derived from government datasets broken out by industry. IA utilized datasets for 3 to 6-digit NAICS codes based on IA's internal identification methodology, which was developed by Economists Incorporated in 2015 using 2012 data. IA aggregated across these industry codes to develop approximations of industry totals and trends with weighted adjustments where necessary and possible.

IA Identification Methodology – Relevant NAICS Codes

2012 NAICS Title	IA NAICS Codes
Electronic Shopping	45411
Electronic Auctions	454112
Wireless Telecommunications Carriers (except Satellite)	5172
Wired Telecommunications Carriers	5171
All Other Telecommunications	517919
Data Processing, Hosting, and Related Services	518210
Internet Publishing and Broadcasting and Web Search Portals	51913
Custom Computer Programming Services	54151
Computer Systems Design Services	
Computer Facilities Management Services	
Other Computer Related Services	

Microeconomic Data & Estimates

Microeconomic data were derived from publicly-traded internet companies and high-technology companies with significant internet-based revenues from a variety

of sources including financial account reports, annual reports, and quarterly reports. All public IA member companies are included in this list as well as a set of other internet companies determined by IA using expert input and market analysis. IA identified 40+ publicly-traded internet companies in total at the time of data collection, which begins in the sixth week of each quarter with a one-quarter lag.

Digital Price Index Data & Estimates

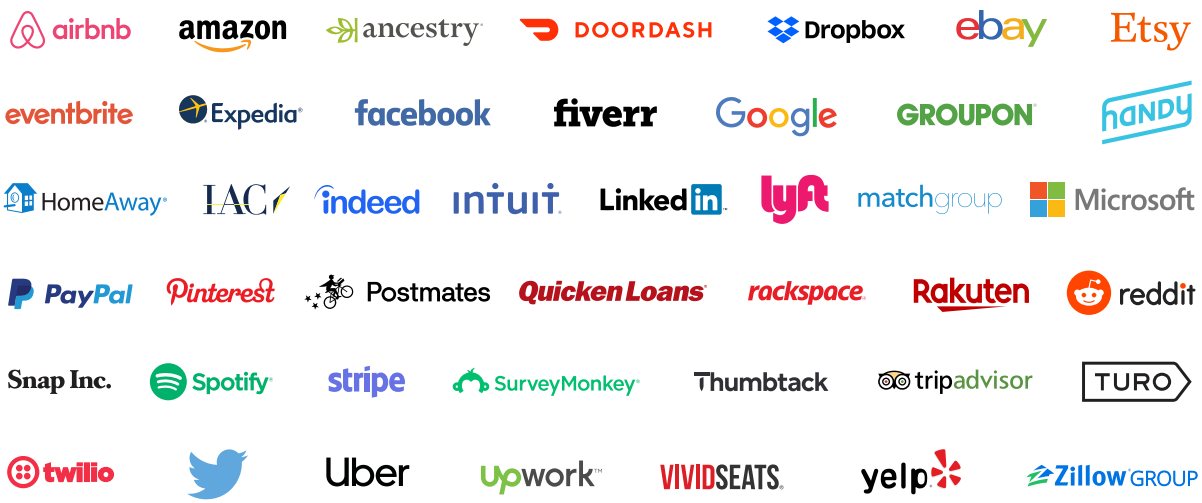
IA developed its Digital Price Index using a basket of 11 internet services for which it found price data dating back to 2013. IA documented prices through online visits to the pricing detail pages of each service site using searches from its headquarters in Washington, DC. All searches are conducted on the same business day using the same computer and carried out in the sixth week of each quarter with a one-quarter lag. IA uses a 3-month average of monthly prices for this basket for quarterly estimates. The index does not account for quality changes of services and products over time. Where there are free options available for a particular service/good, IA uses the cheapest, premium subscription or per unit cost. Where there are no free options available for a particular service/good, IA uses the cheapest subscription or per unit cost. IA selected services/goods from a range of online activities to reflect a spectrum of typical online activities engaged in by users. IA emphasizes the fact that these are premium options and that many of the documented services include basic, free options as well. The current basket of services includes: Amazon Prime, Blue Apron, DropBox, Hulu, iCloud Storage, LinkedIn Premium, Netflix, New York Times, OneDrive, Spotify Premium, and Wall Street Journal. National and quarterly inflation from US Bureau of Labor Statistics CPI-All Urban Consumers (Current Series). National Inflation reports annual average 12-month percent change for each year. Quarterly inflation reports aggregated 1-month percent change (not seasonally adjusted). Quarterly figures for quarter over quarter changes. Yearly figures for year over year changes.

Risk Assessment Data & Estimates

IA develops its risk assessment utilizing 10-K and 10-Q filings from each of the public internet companies included in its microeconomic dataset. IA aggregates risk assessments from each company filing and standardizes across uniform categories of risk.

Internet User Sentiment & Estimates

IA conducts a national survey of the US general population utilizing SurveyMonkey panel service. IA runs the survey using a representative, statistically significant national sample of 1600+ respondents with no segment/demographic targeting and a 3% error margin.



We are the unified voice of the internet economy

Internet Association is the only trade association that exclusively represents leading global internet companies on matters of public policy. Our mission is to foster innovation, promote economic growth, and empower people through the free and open internet. We believe the internet creates unprecedented benefits for society, and as the voice of the world's leading internet companies, Internet Association works to ensure legislators, consumers, and other stakeholders understand these benefits.