The Internet of Things

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Intro and Objectives

The IAB commissioned Maru VCR&C to conduct a consumer study to gain visibility into consumer adoption of Connected Devices and the Internet of Things in order to inform the industry about this exciting new technology and emerging market.

The study was conducted among 1200 consumers, representative of the US adult population, in order to understand who uses connected devices, which devices, how they use them, how often they use them and how frequently, if at all, they engage these devices with their smartphones, tablets and computers. The devices examined included connected cars, internet-enabled home control devices/systems, internet-enabled appliances, smart watches, wearable health trackers, internet-enabled voice command systems, connected/smart TVs, VR headsets and smart glasses.

The research further sought to discover how owners of these devices learned about them and how receptive they are to advertising on their devices or potentially on the devices they connect to.

Among those who don’t own a connected device, the research sought to gain interest in how many of them have heard of each device, how interested they are in the devices and how they perceive the devices.

The study also aimed to reveal consumer interest in upcoming technologies like self-driving cars and wearable fabrics as well as existing technologies like smartphone voice control systems, store apps and beaconing, smart labels and, of course, Pokémon Go.
The IAB (Interactive Advertising Bureau) wanted to better understand the Internet of Things in 2016. More specifically, the IAB wanted to gauge awareness and use of devices within the Internet of Things, interest in emerging new devices and receptivity to potential advertising applications.

The IAB partnered with MARU VCR&C on this quantitative research. Research was conducted among MARU VCR&C’s Springboard America online panel (~250,000 US members) using an online survey.

- n=1,200 representative of US 18-74 year-olds
- The survey was fielded 8/3/2016-8/8/2016

Notes: Significance testing at 95% confidence intervals are denoted as follows:

- M/F = significant among gender
- 18-34/35-54/55-74= significant versus other two age breaks
- Ethnicity= significant versus all others
Consumers were asked if they were aware of, owned or were interested in purchasing any of the following devices. The examples below were given to consumers when asking about their awareness, ownership and interest in them:

- Connected car (with internet access - not just Bluetooth - that can be used with other devices)
- Internet-enabled home control devices/systems (Nest, home security, etc.)
- Internet-enabled appliances (smart refrigerator, washer/dryer, etc.)
- Smart watch (Apple Watch, etc.)
- Wearable health tracker (FitBit, JawBone, etc.)
- Internet-enabled voice command systems (Amazon Echo, etc.)
- Connected/Smart TV OR streaming device connected to TV
- VR headsets (Google Cardboard, Samsung Gear VR, etc.)
- Smart glasses (Google Glass, etc.)
Key findings from the study reveal:

- 62% of US adults own at least one connected device. Among those who don’t own a connected device, nearly all have heard of connected devices and 65% are interested in purchasing one.
- Connected/Smart TVs are the most popularly owned connected devices; Nearly half of US adults own one.
- Nearly all have heard of connected devices, especially smart watches, connected TVs, fitness tracker and home control systems.
- Over one-third of US adults are interested in buying a connected TV or connected car.
- Digital media plays an important role in consumers’ discovery and seeking more information about connected devices. Roughly 1 in 4 first heard about smart glasses, VR headsets or voice command systems from any digital source (desktop or mobile display ad, article, video, video ad or social media). 1 in 3 sought out more information about VR headsets from digital sources.
- Top 3 methods of learning more about connected devices include TV commercials, word of mouth and online articles, providing opportunities for native advertising and other online advertising.
- The connected devices with the strongest adoption thus far share usefulness as their top attribute.
- The average connected device owner tends to be a college educated parent between the ages of 18-34 with above average income who tends to be willing to receive ads on the device. Owners of most connected devices tend to be male except for owners of wearable health trackers.
Those interested in buying a connected device vary in age and gender by device but tend to be college educated, excited about technology and receptive to potential IoT ads.

Nearly all Internet-enabled home devices/systems/appliances are currently connected to the internet.

Wearables and connected home devices are used at least once a day.

Most connected devices are used in conjunction with a smartphone/computer/tablet on a daily basis or more frequently, especially owners of smart watches, connected cars and health trackers.

Most wearable device owners have received notifications about their devices on smartphones/computers/tablets.

Almost two-thirds (62%) of connected device owners report having seen an ad on their device.

More than half (55%) of consumers are willing to receive ads on their devices in exchange for coupons/discounts, extra features or access to exclusive games. 65% of device owners are willing to receive such ads.

The affluent (69% who earn $100k or more) and young (68% of 18-34 year olds) are more likely to see the value exchange of receiving such ads on their devices.

A majority of consumers (54%) feel good about technology – led by younger Males.
Connected Device Awareness, Ownership & Interest
62% of US adults own at least one connected device

Among those who don’t own a connected device, nearly all have heard of connected devices and about two-thirds are interested in purchasing one

Connected Device Ownership
Among Total US Adults 18 and older
(Connected cars, wearables, fitness trackers, smartwatches, VR headsets, smart glasses, connected/smart TVs, internet-enabled voice command, home control systems or appliances)

- 62% own a connected device

Connected Device Awareness & Interest
Among Total US Adults 18 and older who don’t own a connected device

- 97% have heard of connected devices
- 65% are interested in purchasing a connected device

Text next to the numbers indicates that that group over indexes on that attribute. For ex., M = more likely among men, W = more likely among women, Asian = more likely among Asians, 18-34 = more likely among 18-34 year olds, 35-54 = more likely among 18-34 year olds, 55+ = more likely among 55 year olds and older.

Q1. Which of the following have you heard of and do you personally own?
Base: Total, n=1209. US Adults 18+

Q2. How interested are you in purchasing each of these devices?
Base: Floating – aware but don’t own device.

Most consumers have heard of these connected device types especially smart watches, connected TVs, fitness tracker and home control systems.

Q1. Which of the following have you heard of and do you personally own?

- Smart watch
- Connected/Smart TV/Streaming Device
- Wearable health tracker
- Internet-enabled home control devices/systems
- Internet-enabled appliances
- Connected Car
- Smart glasses
- Internet-enabled voice command systems
- VR Headsets

Base: Total, n=1209. US Adults 18+

Text next to the numbers indicates that that group over indexes on that attribute. For ex., M = more likely among men, W = more likely among women, Asian = more likely among Asians, 18-34 = more likely among 18-34 year olds, 35-54 = more likely among 35-54 year olds, 55+ = more likely among 55 year olds and older.

Connected/Smart TVs are the most popularly owned connected devices; Nearly half of US adults own one

- Nearly one in four own a wearable fitness tracker
- Males and 18-34 year olds are most likely to own a connected device

Q1. Which of the following have you heard of and do you personally own?
Base: Total, n=1209. US Adults 18+ US Adults 18+

Over one-third of US adults are interested in buying a Connected TV or Connected Car

Purchase interest for most connected devices is also higher among Males and 18-34 year olds.

<table>
<thead>
<tr>
<th>Connected Device Purchase Interest (Very/Somewhat Interested)</th>
<th>Connected TV/Streaming Device</th>
<th>Connected Car</th>
<th>Wearable health tracker</th>
<th>Internet-enabled home control devices/systems</th>
<th>Internet-enabled voice command systems</th>
<th>Internet-enabled appliances</th>
<th>VR Headsets</th>
<th>Smart watch</th>
<th>Smart glasses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Among those who are aware of but don't own the device</td>
<td>39%</td>
<td>37%</td>
<td>32%</td>
<td>31%</td>
<td>31%</td>
<td>30%</td>
<td>30%</td>
<td>27%</td>
<td>21%</td>
</tr>
<tr>
<td>Connected Device Purchase Interest</td>
<td>18-34</td>
<td>18-34</td>
<td>18-34</td>
<td>18-34</td>
<td>18-34</td>
<td>18-34</td>
<td>18-34</td>
<td>18-34</td>
<td>18-34</td>
</tr>
</tbody>
</table>

Q2. How interested are you in purchasing each of these devices?
Base: Floating – aware but don’t own device.

Text next to the numbers indicates that that group over indexes on that attribute. For ex., M = more likely among men, W = more likely among women, Asian = more likely among Asians, 18-34 = more likely among 18-34 year olds, 35-54 = more likely among 18-34 year olds, 55+ = more likely among 55 year olds and older
Digital media plays an important role in consumers’ discovery and seeking more information about connected devices

- Roughly 1 in 4 first heard about smart glasses, VR headsets or voice command systems from any digital source (desktop or mobile display ad, article, video, video ad or social media)
- 1 in 3 sought out more information about VR headsets from digital sources

### How First Heard About and How Learned More About Connected Devices

Among those who own or are aware of the device

<table>
<thead>
<tr>
<th>Device</th>
<th>First Heard About</th>
<th>Learned More About</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart glasses</td>
<td>26%</td>
<td>28%</td>
</tr>
<tr>
<td>VR Headsets</td>
<td>25%</td>
<td>28%</td>
</tr>
<tr>
<td>Internet-enabled voice command systems</td>
<td>23%</td>
<td>27%</td>
</tr>
<tr>
<td>Smart watch</td>
<td>21%</td>
<td>28%</td>
</tr>
<tr>
<td>Wearable health tracker</td>
<td>20%</td>
<td>27%</td>
</tr>
<tr>
<td>Internet-enabled appliances</td>
<td>19%</td>
<td>27%</td>
</tr>
<tr>
<td>Connected Car</td>
<td>18%</td>
<td>26%</td>
</tr>
<tr>
<td>Internet-enabled home control devices/systems</td>
<td>18%</td>
<td>26%</td>
</tr>
<tr>
<td>Connected/Smart TV/Streaming Device</td>
<td>17%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Q. How did you first hear about each device?
Q. How did you get more information about each device – including its features, companies that provide it, etc.?

Base: Floating - Aware of each device.

Text next to the numbers indicates that that group over indexes on that attribute. For ex., M = more likely among men, W = more likely among women, Asian = more likely among Asians, 18-34 = more likely among 18-34 year olds, 35-54 = more likely among 35-54 year olds, 55+ = more likely among 55 year olds and older.
Specifically, top methods of learning more about connected devices include TV commercials, word of mouth and online articles

- Roughly 15% learn more about connected devices by reading online articles, providing opportunities for native advertising and other online advertising
- Online articles are the #1 means to learn more about VR and Smart Glasses and the #2 method to learn more about Home Control Devices and Appliances

### How Learned More About Connected Devices

Among those who are aware of the device (sorted by device purchase interest)

<table>
<thead>
<tr>
<th>Device</th>
<th>Learned more from WOM</th>
<th>Learned more from TV commercial</th>
<th>Learned more from Online Article</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connected/Smart TV/Streaming Device</td>
<td>19%</td>
<td>14%</td>
<td>16%</td>
</tr>
<tr>
<td>Connected Car</td>
<td>21%</td>
<td>14%</td>
<td>12%</td>
</tr>
<tr>
<td>Wearable health tracker</td>
<td>24% (F)</td>
<td>16% (M)</td>
<td>14%</td>
</tr>
<tr>
<td>Internet-enabled home control devices/systems</td>
<td>21%</td>
<td>14%</td>
<td>13% (M)</td>
</tr>
<tr>
<td>Internet-enabled voice command systems</td>
<td>22%</td>
<td>14%</td>
<td>13%</td>
</tr>
<tr>
<td>Internet-enabled appliances</td>
<td>24% (F)</td>
<td>15% (M)</td>
<td>11%</td>
</tr>
<tr>
<td>VR Headsets</td>
<td>16%</td>
<td>13%</td>
<td>11%</td>
</tr>
<tr>
<td>Smart watch</td>
<td>19% (F)</td>
<td>14%</td>
<td>16%</td>
</tr>
<tr>
<td>Smart glasses</td>
<td>16%</td>
<td>13%</td>
<td>12%</td>
</tr>
</tbody>
</table>

Q2d. How did you get more information about each device – including its features, companies that provide it, etc.?  
Base: Floating - Aware of each device.

Text next to the numbers indicates that that group over indexes on that attribute. For ex., M = more likely among men, W = more likely among women, Asian = more likely among Asians, 18-34 = more likely among 18-34 year olds, 35-54 = more likely among 18-34 year olds, 55+ = more likely among 55 year olds and older.
The connected devices with the strongest adoption thus far share usefulness as their top attribute

The most popularly owned devices are also described as Convenient and Innovative

### Top 3 Connected Device Attributes

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Usefulness</th>
<th>Convenient</th>
<th>Innovative</th>
<th>Cool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connected/Smart TV/Streaming Device</td>
<td>41%</td>
<td>38%</td>
<td>36%</td>
<td></td>
</tr>
<tr>
<td>Wearable Health Tracker</td>
<td>Useful</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet-enabled Home Control Devices</td>
<td>46%</td>
<td></td>
<td>Innovative</td>
<td></td>
</tr>
<tr>
<td>Connected Car</td>
<td>41%</td>
<td>36%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smart Watch</td>
<td>13%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet-enabled Appliances</td>
<td>Luxury item</td>
<td>37%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet-enabled Voice Command Systems</td>
<td></td>
<td>Innovative</td>
<td>32%</td>
<td></td>
</tr>
<tr>
<td>VR Headsets</td>
<td>Fun</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smart Glasses</td>
<td></td>
<td></td>
<td>10%</td>
<td>7%</td>
</tr>
<tr>
<td>VR Headsets</td>
<td>32%</td>
<td>31%</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Luxury item</td>
<td>36%</td>
<td>37%</td>
<td>32%</td>
<td></td>
</tr>
<tr>
<td>Innovative</td>
<td>32%</td>
<td>35%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cool</td>
<td>30%</td>
<td>32%</td>
<td>27%</td>
<td></td>
</tr>
</tbody>
</table>

Among those aware of the device. Devices ranked on ownership

Text next to the numbers indicates that that group overindexes on that attribute. For ex., M = more likely among men, W = more likely among women, Asian = more likely among Asians, 18-34 = more likely among 18-34 year olds, 35-54 = more likely among 18-34 year olds, 55+ = more likely among 55 year olds and older

Q2a. Based on what you know or have heard, which of the following words/statements do you feel describe each of these devices?

Base: Floating – Aware of each device.

The typical IoT device owner is...

**Young**
- Connected Device Owner
  - 18-34: 41%
  - 35-54: 41%
  - 55+: 18%
- Total: 33%

**Higher Income**
- 18-34: 41%
- 35-54: 41%
- 55+: 18%
- Total: 33%

**College Educated**
- 18-34: 58%
- 35-54: 56%
- 55+: 50%
- Total: 50%

**Excited About Tech**
- Total: 58%
- Own a Connected Device: 67%

**Parent**
- Earn $50k+
  - Male: 67%
  - Female: 58%

**Open to Ads**
- Males More Likely to Own These IoT Devices:
  - Smartwatch, Smart glasses
  - VR Headsets, Connected Car, Internet-Enabled Voice Command, Home Control or Appliances

**Q1. Which of the following have you heard of and do you personally own?**

Base: Total, n=1209. US Adults 18+
Owners of most connected devices tend to be college educated male parents between the ages of 18-34 with above average income who tend to say they are willing to receive ads.

They also tend to be ‘Tech Junkies’ who are excited about technology and already own a connected TV.

<table>
<thead>
<tr>
<th>Device Owned</th>
<th>Own Any IoT Device</th>
<th>Wearable health tracker</th>
<th>Smart watch</th>
<th>Smart glasses</th>
<th>VR Headsets</th>
<th>Internet-enabled voice command</th>
<th>Internet-enabled home control</th>
<th>Internet-enabled appliances</th>
<th>Connected/Smart TV</th>
<th>Connected Car</th>
</tr>
</thead>
<tbody>
<tr>
<td>M/F Skew</td>
<td>50% M/F</td>
<td>52% F</td>
<td>65% M</td>
<td>70% M</td>
<td>63% M</td>
<td>66% M</td>
<td>61% M</td>
<td>65% M</td>
<td>52% M</td>
<td>61% M</td>
</tr>
<tr>
<td>Age Skew</td>
<td>41% 18-34, 41% 35-54</td>
<td>50% 18-34</td>
<td>57% 18-34</td>
<td>66% 18-34</td>
<td>53% 18-34</td>
<td>52% 18-34</td>
<td>50% 18-34</td>
<td>61% 18-34</td>
<td>41% 35-54</td>
<td>51% 18-34</td>
</tr>
<tr>
<td>Make 50K +</td>
<td>67%</td>
<td>76%</td>
<td>80%</td>
<td>76%</td>
<td>78%</td>
<td>78%</td>
<td>80%</td>
<td>79%</td>
<td>69%</td>
<td>82%</td>
</tr>
<tr>
<td>Have kids in HH</td>
<td>49%</td>
<td>57%</td>
<td>71%</td>
<td>84%</td>
<td>80%</td>
<td>69%</td>
<td>67%</td>
<td>77%</td>
<td>51%</td>
<td>64%</td>
</tr>
<tr>
<td>Completed some college or more</td>
<td>63%</td>
<td>92%</td>
<td>93%</td>
<td>89%</td>
<td>95%</td>
<td>88%</td>
<td>93%</td>
<td>93%</td>
<td>89%</td>
<td>91%</td>
</tr>
<tr>
<td>Employed F/T</td>
<td>59%</td>
<td>72%</td>
<td>81%</td>
<td>78%</td>
<td>78%</td>
<td>77%</td>
<td>75%</td>
<td>75%</td>
<td>61%</td>
<td>73%</td>
</tr>
<tr>
<td>Tech Junkies</td>
<td>34%</td>
<td>44%</td>
<td>63%</td>
<td>78%</td>
<td>68%</td>
<td>66%</td>
<td>57%</td>
<td>73%</td>
<td>35%</td>
<td>60%</td>
</tr>
<tr>
<td>Excited About Tech</td>
<td>63%</td>
<td>72%</td>
<td>79%</td>
<td>87%</td>
<td>82%</td>
<td>82%</td>
<td>75%</td>
<td>82%</td>
<td>65%</td>
<td>74%</td>
</tr>
<tr>
<td>Receptive to IoT advertising</td>
<td>65%</td>
<td>72%</td>
<td>86%</td>
<td>95%</td>
<td>89%</td>
<td>84%</td>
<td>78%</td>
<td>89%</td>
<td>66%</td>
<td>87%</td>
</tr>
<tr>
<td>Highest device crossover</td>
<td>N/A</td>
<td>Connected TV 69%</td>
<td>Connected TV 78%</td>
<td>Internet-Enabled Home Control 82%</td>
<td>Connected TV 79%</td>
<td>Connected TV 82%</td>
<td>Connected TV 75%</td>
<td>Connected TV 76%</td>
<td>Wearable health tracker 35%</td>
<td>Connected TV 71%</td>
</tr>
<tr>
<td>2nd highest device crossover</td>
<td>N/A</td>
<td>Internet-enabled Home Control 38%</td>
<td>Internet-enabled Home Ctrl 58%</td>
<td>Smartwatch, Connected TV, Internet-enabled Appliances 76%</td>
<td>Internet-enabled Home Control 61%</td>
<td>Internet-enabled Home Control 66%</td>
<td>Wearable health tracker 52%</td>
<td>Internet-enabled Home Control 69%</td>
<td>Internet-enabled Home Control 28%</td>
<td>Internet-enabled Home Control 55%</td>
</tr>
</tbody>
</table>
Those interested in buying a connected device vary in age and gender by device but tend to be college educated, excited about technology and receptive to IoT ads.

They also tend to be ‘Tech Junkies’ who already own a connected TV.

<table>
<thead>
<tr>
<th></th>
<th>Wearable health tracker</th>
<th>Smart watch</th>
<th>Smart glasses</th>
<th>VR Headsets</th>
<th>Internet-enabled voice command</th>
<th>Internet-enabled home control</th>
<th>Internet-enabled appliances</th>
<th>Connected/Smart TV</th>
<th>Connected Car</th>
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<tbody>
<tr>
<td><strong>M/F Skew</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>M/F Skew</td>
<td>53% F</td>
<td>53% M</td>
<td>69% M</td>
<td>65% M</td>
<td>59% M</td>
<td>57% M</td>
<td>55% M</td>
<td>52% F</td>
<td>51% M</td>
</tr>
<tr>
<td><strong>Age Skew</strong></td>
<td></td>
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<tr>
<td>Age Skew</td>
<td>43% 35-54</td>
<td>47% 18-34</td>
<td>48% 18-34</td>
<td>47% 18-34</td>
<td>46% 35-54</td>
<td>44% 35-54</td>
<td>44% 35-54</td>
<td>43% 35-54</td>
<td>43% 35-54</td>
</tr>
<tr>
<td><strong>Make 50K +</strong></td>
<td></td>
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<td>65%</td>
<td>62%</td>
<td>67%</td>
<td>64%</td>
<td>67%</td>
<td>52%</td>
<td>62%</td>
</tr>
<tr>
<td><strong>Have kids in HH</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have kids in HH</td>
<td>51%</td>
<td>54%</td>
<td>59%</td>
<td>55%</td>
<td>53%</td>
<td>51%</td>
<td>58%</td>
<td>39%</td>
<td>51%</td>
</tr>
<tr>
<td><strong>Completed some college or more</strong></td>
<td></td>
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<td>Completed some college or more</td>
<td>84%</td>
<td>84%</td>
<td>87%</td>
<td>84%</td>
<td>87%</td>
<td>88%</td>
<td>89%</td>
<td>80%</td>
<td>86%</td>
</tr>
<tr>
<td><strong>Employed full-time</strong></td>
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<td></td>
</tr>
<tr>
<td>Employed full-time</td>
<td>55%</td>
<td>56%</td>
<td>66%</td>
<td>64%</td>
<td>61%</td>
<td>59%</td>
<td>64%</td>
<td>49%</td>
<td>61%</td>
</tr>
<tr>
<td><strong>Tech Junkies</strong></td>
<td></td>
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</tr>
<tr>
<td>Tech Junkies</td>
<td>36%</td>
<td>45%</td>
<td>57%</td>
<td>51%</td>
<td>44%</td>
<td>38%</td>
<td>44%</td>
<td>29%</td>
<td>37%</td>
</tr>
<tr>
<td><strong>Excited About Tech</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Excited About Tech</td>
<td>66%</td>
<td>75%</td>
<td>83%</td>
<td>80%</td>
<td>77%</td>
<td>72%</td>
<td>76%</td>
<td>60%</td>
<td>73%</td>
</tr>
<tr>
<td><strong>IoT Ad Receptivity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IoT Ad Receptivity</td>
<td>72%</td>
<td>74%</td>
<td>85%</td>
<td>77%</td>
<td>75%</td>
<td>73%</td>
<td>77%</td>
<td>66%</td>
<td>70%</td>
</tr>
<tr>
<td><strong>Top Device Already Owned</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top Device Already Owned</td>
<td>Connected TV 56%</td>
<td>Connected TV 59%</td>
<td>Connected TV 66%</td>
<td>Connected TV 64%</td>
<td>Connected TV 61%</td>
<td>Connected TV 59%</td>
<td>Conn. TV 66%</td>
<td>Wearable Health Tracker 20%</td>
<td>Connected TV 59%</td>
</tr>
<tr>
<td>2nd Likeliest Device Owned</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd Likeliest Device Owned</td>
<td>Connected home control devices/sys 18%</td>
<td>Wearable Health Tracker 33%</td>
<td>Wearable Health Tracker 38%</td>
<td>Wearable Health Tracker 34%</td>
<td>Wearable Health Tracker 36%</td>
<td>Wearable Health Tracker 29%</td>
<td>Wearable Health Tracker 33%</td>
<td>Connected Car 14%</td>
<td>Wearable Health Tracker 27%</td>
</tr>
</tbody>
</table>
Connected Device Usage & Interactions with Smartphones/Tablets/Computers
Nearly all Internet-enabled home devices/systems/appliances are currently connected to the internet.

**Device Connection to Internet**

Among device owners

- **88%** Internet-enabled voice command systems
- **80%** Internet-enabled home control devices/systems
- **69%** Internet-enabled appliances

Text next to the numbers indicates that that group over indexes on that attribute. For ex., M = more likely among men, W = more likely among women, Asian = more likely among Asians, 18-34 = more likely among 18-34 year olds, 35-54 = more likely among 18-34 year olds, 55+ = more likely among 55 year olds and older
Wearables and Connected Home Devices are used at least once a day

Frequency Of Connected Device Use
Among device owners

Q20 How often do you use your connected device(s)?
Base: Floating - own device.

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Owners of smart watches, connected cars and health trackers are more likely to connect their devices to their smartphone, computer or tablet at least once a day.

**Interaction Of Connected Devices With Smartphone/Computer/Tablet at Least Once a Day**

Among device owners

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart watch</td>
<td>68%</td>
</tr>
<tr>
<td>Connected Car</td>
<td>65%</td>
</tr>
<tr>
<td>Wearable health tracker</td>
<td>64%</td>
</tr>
<tr>
<td>Internet-enabled home control devices/systems</td>
<td>60%</td>
</tr>
<tr>
<td>Internet-enabled appliances</td>
<td>56%</td>
</tr>
<tr>
<td>Smart glasses</td>
<td>54%</td>
</tr>
<tr>
<td>VR Headsets</td>
<td>46%</td>
</tr>
<tr>
<td>Internet-enabled voice command systems</td>
<td>46%</td>
</tr>
<tr>
<td>Connected/Smart TV/Streaming device</td>
<td>46%</td>
</tr>
</tbody>
</table>

Q3. [NET: Once a day or more] How often, if ever, do you use your smartphone, computer or tablet to interact with each connected device?

Base: Floating - own device.

Text next to the numbers indicates that that group over indexes on that attribute. For ex., M = more likely among men, W = more likely among women, Asian = more likely among Asians, 18-34 = more likely among 18-34 year olds, 35-54 = more likely among 18-34 year olds, 55+ = more likely among 55 year olds and older.
Most wearable device owners have received notifications about their devices on smartphones/computers/tablets

Smart watch owners most likely to have received such cross-device notifications

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Percentage</th>
<th>18-34 (%)</th>
<th>Gender (M)</th>
<th>Age (18-34)</th>
<th>Asian (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smart watch</td>
<td>70%</td>
<td><strong>58</strong></td>
<td><strong>52</strong></td>
<td><strong>49</strong></td>
<td><strong>52</strong></td>
</tr>
<tr>
<td>Wearable health tracker</td>
<td>58%</td>
<td><strong>52</strong></td>
<td><strong>50</strong></td>
<td><strong>48</strong></td>
<td><strong>45</strong></td>
</tr>
<tr>
<td>Smart glasses</td>
<td>50%</td>
<td><strong>49</strong></td>
<td><strong>48</strong></td>
<td><strong>45</strong></td>
<td><strong>37</strong></td>
</tr>
<tr>
<td>Internet-enabled home control devices/systems</td>
<td>49%M</td>
<td><strong>48</strong></td>
<td><strong>45</strong></td>
<td><strong>37</strong></td>
<td><strong>27</strong>M</td>
</tr>
<tr>
<td>Connected Car</td>
<td>45%M</td>
<td><strong>45</strong></td>
<td><strong>37</strong></td>
<td><strong>27</strong></td>
<td><strong>18</strong></td>
</tr>
<tr>
<td>Internet-enabled appliances</td>
<td>37%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet-enabled voice command systems</td>
<td>27%M, 18-34</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q4. Have you ever received a notification on your smartphone, tablet or computer about any of your connected devices?

Base: Floating- Own the device

Text next to the numbers indicates that that group over indexes on that attribute. For ex., M = more likely among men, W = more likely among women, Asian = more likely among Asians, 18-34 = more likely among 18-34 year olds, 35-54 = more likely among 18-34 year olds, 55+ = more likely among 55 year olds and older
Connected Device Advertising
Almost two-thirds (62%) of connected device owners report having seen an ad on their device.

More than half (55%) of consumers are willing to receive ads on their devices in exchange for coupons/discounts, extra features or access to exclusive games.

65% of connected device owners are willing to receive such ads.

Q5. Have you ever seen an ad on any of the following devices?

Q7. Some internet-enabled devices might offer advertising in exchange for extra features, deals, etc. Would you be willing to receive advertising on these devices for any of the following? Base: Total

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Those willing to receive ads in exchange for coupons, extra features or games are likely to be younger, affluent.

Those who are willing to receive ads skew…

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>107</td>
</tr>
<tr>
<td>18-34</td>
<td>124</td>
</tr>
<tr>
<td>Married</td>
<td>110</td>
</tr>
<tr>
<td>With kids</td>
<td>132</td>
</tr>
<tr>
<td>College-educated</td>
<td>105</td>
</tr>
<tr>
<td>Employed full-time</td>
<td>116</td>
</tr>
<tr>
<td>Earn $50K+</td>
<td>110</td>
</tr>
</tbody>
</table>

Among those who are willing to receive ads…

69% earn $100k or more
68% are 18-34 years old

Top devices owned:

- Connected/Smart TV: 57%
- Wearable health tracker: 31%
- Internet-enabled home control devices: 25%
- Connected car: 25%

S1. What is your gender?
S2. What is your age?
D1. What is your marital status?
D2. Are there any children under the age of 18 living in your household?
D3. What is the highest level of education you have completed?
D4. Which of these best describes your current employment status?
D5. What is your family household income before taxes?
Base: Q9 ≠ equal ”I would rather not see advertising,” n=659.

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Interest in Other Connected Technologies and Future Connected Devices
Voice-Controlled Digital Assistant: 43% Use a Voice Controlled Assistant and nearly half (45%) of them use it daily+

Use a Voice-Controlled Digital Assistant
Among Total

- Yes, 43%
  - M, Hisp
- No, 48%
  - 55-74
  - Don’t have a Smartphone, 9%

Use Frequency
Among Those who use a voice-controlled digital assistant

- More than once a day: 24%
- Once a day: 21%M
- About once a week: 28%
- About once a month: 15%F
- About once every few months or less: 12%

Q3b Do you ever use a voice controlled digital assistant (e.g., Siri or Alexa) on your smartphone?
Base: Total, n=1209. US Adults 18+

Q3c How often do you use your voice controlled digital assistant (e.g., Siri or Alexa) on your smartphone? Base: Uses voice-controlled digital assistant.
Base: Uses voice-controlled digital assistant, n=522.

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18-34 = more likely among 18-34 year olds, 35-54 = more likely among 18-34 year olds, 55+ = more likely among 55 year olds and older

Store Apps: 42% use store apps and most of them have received offers, which they are largely receptive to

**Currently Use Store App**

42% (18-34, Hisp) use store apps

**Have Received Offers When Near Store**

70% have received coupons, promotions, info when nearby

---

### Response to Receiving Coupons, Promos, Info When Near A Store

- **Among those who use**
  - Appreciative of the information: 71%, F
  - Impressed with the technology: 64%
  - Think it's cool: 65%

- **Among those who don't use**
  - Appreciative of the information: 34%
  - Impressed with the technology: 31%
  - Think it's cool: 29%

---

Q10. Do you currently use any such store apps (e.g., for Starbucks, Macys, American Eagle, McDonalds, or Shopkick)? Base: Total, n=1209. US Adults 18+

Q10a1. Have you ever received coupons, store promotions or info about the store when near it? Base: Use store app, n=511.

Q10a2. [Top 2 Box] Please tell us how much you agree or disagree with the following statements about receiving coupons, store promotions or info about the store while you are near the store. Base: Use store app, n=511.

Q10a3. [Top 2 Box] Please tell us how much you agree or disagree with the following statements describing how you would feel about receiving coupons, store promotions or info about a store while near it. Base: Don't use store app, n=698.
Q10 Many stores now offer apps that will send you store promotions and information when you are near or in the store. This involves you downloading an app, signing up, and the store using GPS tracking to know you are nearby. Do you currently use any such store apps (e.g., for Starbucks, Macy’s, American Eagle, McDonald’s, or Shopkick)?

Q10a How interested would you be in signing up for a store app like this (again)? Base: Total

Store App Interest: 18% of those who don’t use a store app are interested in them

Store App Usage
Among Total

- Use a Store App, 42% 18-34, Hisp.
- Don’t Use Store App, 55% 55-74

Store App Interest
Among those who don’t currently use a store app

18%

- 5% Very interested
- 13% Interested
- 27% Somewhat interested
- 16% Neutral
- 39% Not interested

5 - Very interested
4
3
2
1 - Not at all interested
Smart Labels: 19% have interacted with a Smart Label and 28% who haven’t are interested in doing so

Smart Label Usage
Among Total

Yes 19%
- M, 18-34, Hisp

No, 81%
- F, 55-74

Smart Label Interest
Among those who haven’t used smart label products

28%
- 8% 5 - Very interested
- 20% 4
- 25% 3
- 16% 2
- 31% 55-74 1 - Not at all interested

Q11 Some brands now include “smart labels” on their product packaging. For instance, scanning a beer bottle’s smart label with your smartphone could give you access to online games and prizes. Have you ever used any such “smart labels”? Base: Total, n=1209. US Adults 18+
Q11a How interested would you be in scanning and interacting with a product or brand this way? Base: Don’t Use Smart Label, n=975.

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Pokémon Go: 18% Play Pokémon Go and 66% of players are interested in a peripheral

Pokémon Go Play
Among Total

18%
M, 18-34

Yes, play Pokémon Go

Pokémon Go Peripheral Interest
Among Pokémon Players

66%M
Interested

12% F, 55-74
8%

27%

14%

39%M

5 - Very interested
4
3
2
1 - Not at all interested

Q18 Do you play Pokémon Go?
Base: Total, n=1209. US Adults 18+.
Q19 How interested would you be in buying a Pokémon Go Plus, a standalone peripheral that lets you play without having to look at your phone's screen the entire time?
Base: Pokémon Go players, n=214.

*Survey was fielded shortly after Pokémon Go was launched
### Interest in Self-Driving Car

<table>
<thead>
<tr>
<th>Interest</th>
<th>Total, n = 1209</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very interested</td>
<td>34%</td>
</tr>
<tr>
<td>Somewhat interested</td>
<td>26%</td>
</tr>
<tr>
<td>Not at all interested</td>
<td>40%</td>
</tr>
</tbody>
</table>

#### Breakdown of Interest

- **26%** M, 18-34, Hisp.
- **11%** M, 55-74

### Interest in Devices that Interact on Their Own

<table>
<thead>
<tr>
<th>Interest</th>
<th>Total, n = 1209</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very interested</td>
<td>55%</td>
</tr>
<tr>
<td>Somewhat interested</td>
<td>24%</td>
</tr>
<tr>
<td>Not at all interested</td>
<td>21%</td>
</tr>
</tbody>
</table>

#### Breakdown of Interest

- **34%** M, 18-34, Hisp.
- **14%** M, 55-74

### Interest in Interactive Clothes

<table>
<thead>
<tr>
<th>Interest</th>
<th>Total, n = 1209</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very interested</td>
<td>54%</td>
</tr>
<tr>
<td>Somewhat interested</td>
<td>27%</td>
</tr>
<tr>
<td>Not at all interested</td>
<td>19%</td>
</tr>
</tbody>
</table>

#### Breakdown of Interest

- **26%** M, 18-34, Hisp.
- **13%** M, 55-74

---

Q12 Some manufacturers are making cars that can drive themselves. These cars don’t have a steering wheel, gas pedal, or brake pedal. How interested would you be in purchasing a self-driving car?

Q13 In the future, devices may be able to share information with each other without your involvement. For instance, a wearable health tracker could let your internet-enabled thermostat know you are heading home from a run, triggering the air conditioning to turn on. How interested would you be in having devices that can interact without your involvement?

Q14 Some manufacturers are weaving internet connectivity into fabrics. This means that you may be able to make a phone call by touching your jeans in a certain way; or that your shirt could tell you your heart rate. How interested would you be in having clothes that can interact with your devices?

Base: Total n = 1209.

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A majority of consumers (54%) feel good about technology – led by younger Males

Overall Feelings About Technology
Among total

- 54% Good (M, 18-34)
- 25% (M)
- 29%
- 33% (F, 55-74)
- 8% (55+)
- 5% (5- '

Q15. Now, thinking about all of the new technology becoming available, how do you feel about technology overall? Please use a scale from 1 to 5, where 1 means “Very bad” and 5 means “Very good.” Overall, I feel this new technology is…

Q16. How much do you agree or disagree with the following statements:

Base: Total, 1209.

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The Internet of Things
IAB

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