CONSUMER ADOPTION OF DISRUPTIVE TECHNOLOGIES
New technologies and the companies that develop them have become deeply ingrained in popular culture. Product unveilings make front page news. Technology conferences are attended or live-streamed by thousands. Cryptic tweets and quotes from CEOs are dissected for days. Yet despite the intense interest in disruptive technologies, how commonplace are these game-changing products in our everyday lives?

In May 2019, we partnered with Engine, a leading market research provider, to survey 500 consumers about their adoption of new technologies ranging from electric vehicles to FinTech.
CONSUMER ADOPTION OF DISRUPTIVE TECH

TECHNOLOGIES REVIEWED

Electric Vehicles  Genomics
Ride-Share Apps  Robotics
E-Commerce  FinTech
Internet of Things

Key Takeaways

- Overall adoption and comfort level with many disruptive technologies remains low across generations. This could be due to consumers waiting for the technology to become more established, for prices to fall, or because they are simply entrenched in their current habits.

- Despite low current adoption, consumer interest in new technologies is high, indicating that these products are likely to be considered for future purchases. We believe this indicates strong growth is ahead for many of these products and the companies that make them.

- Among cohorts, the Millennial generation is likely to be the major driver of adoption, due to a unique affinity for tech-focused products.
CONSUMER ADOPTION OF DISRUPTIVE TECH

Electric Vehicles
While just 5% of consumers use an electric vehicle on a weekly or more frequent basis, 17% expect to purchase an EV in the next 5 years.

EXPECTED PURCHASE OF ELECTRIC VEHICLE (AMONG TOTAL)

- <1 Year: 4%
- 1-2 Years: 4%
- 2-3 Years: 5%
- 3-5 Years: 4%
- 5+ Years: 6%

Ride Sharing Apps
While 75% of consumers are users of ride sharing apps, less than 6% use them on a weekly or more frequent basis.

RIDE-SHARING APP (CURRENT USAGE FREQUENCY)

- Daily: 2%
- Weekly: 4%
- Less Than Weekly: 70%
- Not Familiar: 25%

E-Commerce
While over 40% of the population is comfortable buying smaller-ticket items online, like clothes, shoes, and cosmetics, less than 15% of the population is comfortable buying big-ticket items like fine jewelry, cars or other vehicles, or a home/apartment.
WHICH OF THE FOLLOWING, IF ANY, WOULD YOU BE WILLING TO PURCHASE ON THE INTERNET WITHOUT FIRST HAVING SEEN IT IN PERSON?

**INTERNET OF THINGS/SMART DEVICES**

77% of consumers are not using smart home devices like smart TVs or smart appliances.

**ONLINE PURCHASE ADOPTION**

<table>
<thead>
<tr>
<th>DEGREE OF USAGE</th>
<th>CONSIDERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>55%</td>
</tr>
<tr>
<td>Medium</td>
<td>43%</td>
</tr>
<tr>
<td>Low</td>
<td>34%</td>
</tr>
<tr>
<td>None</td>
<td>33%</td>
</tr>
</tbody>
</table>

**Consideration by Category**

- Clothes: 55%
- Shoes: 43%
- Cosmetics or personal care products: 34%
- Consumer Technology: 33%
- Pet and pet supplies: 28%
- Non-perishable groceries: 25%
- Medicine/pharmaceuticals: 12%
- Fine jewelry: 12%
- Fresh groceries: 7%
- Car or other vehicle: 5%
- Home/apartment: 5%
- None of these: 20%

**SMART HOME TECHNOLOGY ADOPTION**

<table>
<thead>
<tr>
<th>DEGREE OF USAGE</th>
<th>SMART TECHNOLOGY USAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>12%</td>
</tr>
<tr>
<td>Medium</td>
<td>8%</td>
</tr>
<tr>
<td>Low</td>
<td>7%</td>
</tr>
<tr>
<td>None</td>
<td>6%</td>
</tr>
</tbody>
</table>

**Smart Technology Usage**

- Television: 12%
- Home security system/cameras: 8%
- Lighting: 7%
- Climate control/AC: 6%
- Refrigerator/Stove/other kitchen appliances: 3%
- Washer/Dryer: 3%
- Vacuum: 2%
- None of these: 77%
Genomics
Comfort level with using genomics or DNA technology across various use cases remains low.

CONSUMER ADOPTION OF DISRUPTIVE TECH

COMFORT WITH TECHNOLOGY: GENE SEQUENCING/DNA
(EXTREMELY/VERY COMFORTABLE)

To analyze DNA found at a crime scene 56%
To discover genetic diseases or mutations during pregnancy 44%
To discover ancestry or lineage 43%
To identify non-medical or physical attributes 28%
To use as a unique identifier 19%

Robotics
Similarly, comfort level with incorporating robotics into everyday tasks remains low.

COMFORT WITH TECHNOLOGY: ROBOTICS (EXTREMELY/VERY COMFORTABLE)

Cleaning your home 34%
Doing your laundry 32%
Preparing food 21%
Athletic training/coaching 15%
Education your children 13%
Driving you to work 12%
Taking care of an elderly family member 11%
Driving your kids to school 11%
Managing investments/money 10%
Conducting a routine medical procedure or operation 9%
Flying a plane 7%
FinTech
Cash isn’t king; credit cards are, with 84% usage on a weekly basis. Comparatively, only 11% of consumers use mobile wallets on a weekly basis, and just 6% use peer-to-peer (P2P) payments at the same frequency, demonstrating low penetration of the latest FinTech innovations.

How often do you pay for something using the following?

<table>
<thead>
<tr>
<th>Form of Payment</th>
<th>More than Weekly</th>
<th>Less than Weekly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Card</td>
<td>84%</td>
<td>16%</td>
</tr>
<tr>
<td>Cash</td>
<td>62%</td>
<td>38%</td>
</tr>
<tr>
<td>Mobile Wallets</td>
<td>11%</td>
<td>89%</td>
</tr>
<tr>
<td>P2P Payments</td>
<td>6%</td>
<td>94%</td>
</tr>
</tbody>
</table>

Millennials will be the driving force of adoption
Much has been made about the different spending patterns of the Millennial generation versus older cohorts, particularly their affinity for technology. These unique preferences are apparent in our survey, as Millennials frequently indicated higher adoption, greater interest, and more comfort in new technologies than the next largest population group in the US, the Baby Boomers.
## Consumer Adoption of Disruptive Tech

### Millennials Will Be the Driving Force of Adoption

<table>
<thead>
<tr>
<th></th>
<th>Initial Usage (Among Total)</th>
<th>Current Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Early Adopters</td>
<td>Moderate Adopters</td>
</tr>
<tr>
<td><strong>Millennials</strong></td>
<td>10%</td>
<td>38%</td>
</tr>
<tr>
<td><strong>Baby Boomers</strong></td>
<td>8%</td>
<td>20%</td>
</tr>
</tbody>
</table>

### Expected Purchase (Among Total)

<table>
<thead>
<tr>
<th></th>
<th>Initial Usage (Among Total)</th>
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<tbody>
<tr>
<td></td>
<td>Early Adopters</td>
<td>Moderate Adopters</td>
</tr>
<tr>
<td><strong>Millennials</strong></td>
<td>7%</td>
<td>18%</td>
</tr>
<tr>
<td><strong>Baby Boomers</strong></td>
<td>2%</td>
<td>9%</td>
</tr>
</tbody>
</table>

### Online Purchase Behavior

<table>
<thead>
<tr>
<th></th>
<th>None</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Millennials</strong></td>
<td>15%</td>
<td>46%</td>
<td>37%</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Baby Boomers</strong></td>
<td>22%</td>
<td>36%</td>
<td>40%</td>
<td>2%</td>
</tr>
</tbody>
</table>

### Comfort with Technology (Extremely/Very Comfortable)

<table>
<thead>
<tr>
<th></th>
<th>Millennials</th>
<th>Baby Boomers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gene Sequencing/DNA</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To analyze DNA found at a crime scene</td>
<td>46%</td>
<td>64%</td>
</tr>
<tr>
<td>To discover genetic diseases or mutations during pregnancy</td>
<td>44%</td>
<td>43%</td>
</tr>
<tr>
<td>To discover ancestry or lineage</td>
<td>44%</td>
<td>42%</td>
</tr>
<tr>
<td>To identify non-medical or physical attributes</td>
<td>33%</td>
<td>22%</td>
</tr>
<tr>
<td>To use as a unique identifier</td>
<td>18%</td>
<td>17%</td>
</tr>
<tr>
<td><strong>Robotics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleaning your home</td>
<td>49%</td>
<td>28%</td>
</tr>
<tr>
<td>Doing your laundry</td>
<td>47%</td>
<td>25%</td>
</tr>
<tr>
<td>Preparing food</td>
<td>37%</td>
<td>12%</td>
</tr>
<tr>
<td>Educating your children</td>
<td>25%</td>
<td>6%</td>
</tr>
<tr>
<td>Driving you to work</td>
<td>24%</td>
<td>4%</td>
</tr>
<tr>
<td>Athletic training/coaching</td>
<td>24%</td>
<td>9%</td>
</tr>
<tr>
<td>Taking care of an elderly family member</td>
<td>21%</td>
<td>5%</td>
</tr>
<tr>
<td>Managing investments/money</td>
<td>19%</td>
<td>3%</td>
</tr>
<tr>
<td>Driving your kids to school</td>
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<td>5%</td>
</tr>
<tr>
<td>Conducting a routine medical procedure or operation</td>
<td>13%</td>
<td>4%</td>
</tr>
<tr>
<td>Flying a plane</td>
<td>11%</td>
<td>3%</td>
</tr>
</tbody>
</table>

### Mobile Wallets

<table>
<thead>
<tr>
<th></th>
<th>More than Weekly</th>
<th>Less than Weekly</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Millennials</strong></td>
<td>31%</td>
<td>69%</td>
</tr>
<tr>
<td><strong>Baby Boomers</strong></td>
<td>6%</td>
<td>95%</td>
</tr>
</tbody>
</table>

### P2P Payments

<table>
<thead>
<tr>
<th></th>
<th>More than Weekly</th>
<th>Less than Weekly</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Millennials</strong></td>
<td>27%</td>
<td>73%</td>
</tr>
<tr>
<td><strong>Baby Boomers</strong></td>
<td>1%</td>
<td>99%</td>
</tr>
</tbody>
</table>
CONCLUSION

While we frequently discuss new technologies like electric vehicles, smart devices, and FinTech, we are still early in their adoption cycle. Consumers are fickle and habit-forming, making it difficult for new technologies to replace the old guard. Yet despite these challenges, many of these innovations are starting to gain a foothold, driven by the consumption habits of the Millennial generation. As technology continues to progress and Millennial spending power increases, we believe that many of these disruptions will achieve widespread adoption.