Holiday insights:
Hardware & Software

July, 2020
### Key findings and next steps

<table>
<thead>
<tr>
<th>Search volume is projected to increase</th>
<th>Changes to conversion funnel post-COVID-19</th>
<th>Software and Hardware metrics are correlated</th>
<th>The effects of the pandemic on brand vs. nonbrand</th>
<th>Age and device type shifts post-COVID-19</th>
<th>Product ad and mobile searches are increasing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forecasts show positive momentum in search traffic through 2020 for both Hardware and Software, with both trending above normal seasonality due to COVID-19. This suggests holiday traffic could be at or above that of previous years, and advertisers should plan to meet this demand.</td>
<td>The conversion funnel length for Hardware is 3X shorter post-COVID-19, while Software conversion length has increased (by an average of 2 days). <strong>Account for consumers taking longer to convert on Software searches, which could appear to impact return on investment (ROI) in the shorter term.</strong> <strong>Take advantage of high volume-low cost-per-click (CPC) gaps during key months (see slides 40-41)</strong></td>
<td>Hardware and Software conversions are moderately correlated, and even more correlated post-COVID-19. Hardware and Software searches are slightly correlated and are more strongly correlated post-COVID-19 than they were pre-COVID-19. Despite this, correlation during the 2019 holiday season was weak (Software traffic tends to slow earlier). <strong>Expect Hardware and Software conversions to spike together throughout the year, but not necessarily during the holiday months.</strong></td>
<td>Post-COVID-19, Software nonbrand conversions increased, while Hardware brand conversions went up. <strong>Monitor trends to see how brand and nonbrand searches shift as the year progresses. Both are projected to see an upward trend through the holiday season.</strong> <strong>In the meantime, increase bidding on nonbrand terms for Software in particular.</strong></td>
<td>Software saw an increase in searches from the Gen Z and Millennial populations post-COVID-19. Both Hardware and Software saw an increase in searches on PC devices post-COVID-19. During the last holiday season, those aged 50+ were more likely to search for Hardware than Software; this is the opposite for those below 50. <strong>Target demographics for Hardware and Software accordingly.</strong></td>
<td>Product ad clicks for both Software and Hardware have been above average since April. Mobile ads have seen more volatility but have mostly remained above average post-COVID-19. <strong>Take advantage of increased traffic for mobile searches and product ads.</strong></td>
</tr>
</tbody>
</table>
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The changing consumer landscape
How might shifts in the market and consumer behavior impact Holiday 2020?
Most U.S. consumers plan to alter their holiday shopping habits in various ways

51% of respondents expect to begin holiday shopping earlier than normal this year, likely due to expectations for slower or delayed deliveries.

76% of respondents say they intend to purchase more than half of their gifts online (with 62% saying this includes stocking stuffers and last-minute gifts).

57% say gifts will be shipped directly to recipients, more so than last year.

Voxware, June 2020; survey of 500 U.S. consumers
Technology hardware market forecast for 2020

Forecast for U.S. consumer electronic sales for 2020

2020 forecast (in units)

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<tr>
<th></th>
<th>Low</th>
<th>High</th>
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</thead>
<tbody>
<tr>
<td>Laptops</td>
<td>46-51M</td>
<td></td>
</tr>
<tr>
<td>TVs</td>
<td>34-37M</td>
<td></td>
</tr>
<tr>
<td>Smartphones</td>
<td>138-153M</td>
<td></td>
</tr>
</tbody>
</table>

Estimates are that over 1/3 of iPhones used globally are in “upgrade-window”, something Apple are very excited about given increased savings combined with the release of 5G products this Fall.

- www.marketwatch.com

Source: Statista 2020
PC demand surged in Q1, but shipments lagged due to supply issues; further drop in sales expected

- Shipment dropped 8% despite surge in demand for new PCs – the worst since a 12% drop in 2016
- The slowdown in supply is met with accelerated demand for remote employees and students
- Only Dell projected positive growth with a modest 1.1% annual rate
- Canalys predicts the rest of the year will see a drop in sales as companies cut back on purchases
Software interest is rising across the board, with the top categories including telemedicine, e-signature and web conferencing.
Holiday trends and projections
What trends have we seen in previous holiday seasons, and how might things change?
Older age groups (50+) are more likely to search for Hardware than Software; this is the opposite for younger age groups (below 50)

Age group and device type for holiday 2019, Hardware vs. Software
Apple, Samsung, Xbox products, and “best” terms were most popular searches in the 2019 holiday season
Top hardware queries by search volume in the 2019 holiday season
Google, Microsoft, Adobe, and photo/video editing software terms were most popular searches in the 2019 holiday season

Top software queries by search volume from the 2019 holiday season

**Software brand queries**

**Software non-brand queries**
Hardware saw a steady increase in search volume post-COVID-19, on par with holiday spikes in 2019

Brand vs. non-brand search volume, Hardware

See slide 31 for a comparison of search volume to seasonal trends.
While Hardware searchers search on both weekdays and weekends, advertisers should target brand Software searchers on weekdays based on weekly volume fluctuations.

Brand vs. non-brand search volume, Software

Proprietary Microsoft Advertising Source Data

See slide 31 for a comparison of search volume to seasonal trends.
Hardware clicks rise towards the end of the year (post-device launch), while Software clicks begin to spike in August.

Clicks by month, Hardware vs. Software (average per Month, 2018 - 2020)

Spike due in part to COVID-19
Product Ad clicks for both Hardware and Software have been above average since April, particularly for Hardware.

Clicks on Product Ads over time, Hardware vs. Software

Pre-COVID-19  Post-COVID-19

Average


Hardware  Software
Mobile clicks for Software have mostly remained above average post-COVID-19, with Hardware seeing some dips but still above average.

Mobile clicks over time, Hardware vs. Software
Forecasting search traffic for Hardware and Software, brand and non-brand
Hardware search traffic is projected to increase through the end of the year, spiking close to the holidays. Combined brand and non-brand searches relating to hardware forecasted through the end of 2020.

Even if the post-COVID-19 surge does not continue at its current pace, previous year trends suggest that the year will still finish out with positive momentum.

Projected 2020 year-over-year (YoY) change from 2019 holiday season:
+83%

Disclaimer: Forecasts should be used as directional only and to gauge where volume will be based on the current state of the market. Due to COVID-19 and market volatility, changes to this projection are highly likely.

Holiday Season: Week Start 10/5/2019 – 1/31/2020
Hardware brand search traffic is projected to continue its upward trajectory through the end of the year.

Hardware brand searches forecasted through the end of 2020.

**Forecast**

- **2020 Actuals**
- **2019 Actuals**
- **2018 Actuals**
- **Forecast**

**2020 Actuals**

**+79%**

Projected 2020 YoY change from 2019 holiday season.

**Disclaimer:** Forecasts should be used as directional only and to gauge where volume will be based on the current state of the market. Due to COVID-19 and market volatility, changes to this projection are highly likely.

**Comparing the 2018 and 2019 holiday seasons**

- **+17%** YoY click growth
- **+30%** Product Ad YoY click growth
- **+3%** Mobile YoY click growth
Non-brand Hardware searches should continue their momentum through the holidays and the end of the year.

Hardware non-brand searches forecasted through the end of 2020.

Disclaimer: Forecasts should be used as directional only and to gauge where volume will be based on the current state of the market. Due to COVID-19 and market volatility, changes to this projection are highly likely.
Software searches spiked and dipped post-COVID-19, but are expected to increase again along with previous year trends. Software brand and non-brand searches forecasted through the end of 2020.

Disclaimer: Forecasts should be used as directional only and to gauge where volume will be based on the current state of the market. Due to COVID-19 and market volatility, changes to this projection are highly likely.
Software brand searches peaked post-COVID-19 but are projected to see positive momentum again. Software brand searches forecasted through the end of 2020.

**Disclaimer:** Forecasts should be used as directional only and to gauge where volume will be based on the current state of the market. Due to COVID-19 and market volatility, changes to this projection are highly likely.

**2020 Actuals**
- Projected 2020 YoY change from 2019 holiday season
- +10%

**2019 Actuals**

**Forecast**
- +13% YoY click growth
- +50% Product Ad YoY click growth
- +4% Mobile YoY click growth

Comparing the 2018 and 2019 holiday seasons.
Software non-brand searches peaked post-COVID-19 but are projected to increase again through the end of the year. Software non-brand searches forecasted through the end of 2020.

**2020 Actuals**

**2019 Actuals**

**2018 Actuals**

**Forecast**

**+66%**

Projected 2020 YoY change from 2019 holiday season.

**Disclaimer:** Forecasts should be used as directional only and to gauge where volume will be based on the current state of the market. Due to COVID-19 and market volatility, changes to this projection are highly likely.
Relationship between Hardware and Software
How will Hardware trends impact Software, and vice versa?
Hardware and Software conversions are correlated and thus likely to trend together; this correlation is even stronger post-COVID-19.

Moderate positive correlation (0.51)
Stronger correlation post-COVID-19 (0.62)
Hardware and Software search volume is slightly correlated, but less than conversions; this correlation is stronger post-COVID-19, but weak during the holiday season.
Most often, Hardware and Software appear in the same query path due to operating system or when choosing browsers to download.

Query Network, color-coded by community:

- Photo and Video Editing software, including Photoshop
- Adobe products (Premiere, Acrobat, etc.)
- Zoom, Microsoft Office downloads
- Google Chrome, iPad, Lenovo, Internet Explorer
- Samsung smart watches
- Dell, HP, and “best” or “on sale” laptops
- Various Apple products (Apple is in multiple communities)
- Samsung Phones, Google, iPhones
- Microsoft (365, Teams, Edge, Surface, Xbox, Outlook), Dropbox

Proprietary Microsoft Advertising Source Data
Computer Hardware brands like Dell and HP, although not in the same community as software tools, are connected to searches for various Microsoft products as well as to Zoom; Samsung devices are connected to iPhone (cross-shopping) and Google via Android, and Chrome connects to various devices such as iPad and Lenovo.
Impact of COVID-19
Software and Hardware searches are both trending above normal seasonality and have been since March.

Normal search seasonality: Software vs. Hardware

![Graph showing 2020 searches vs. range of normal seasonality for Software and Hardware.](image)

Search % Difference from Normal Seasonality

Proprietary Microsoft Advertising Source Data
B2B Software searches have also experienced a post-COVID-19 lift above seasonal averages

Normal search seasonality: B2B Software
Post-COVID-19, Software saw an increase in Gen Z/Millennial searchers; both Hardware and Software saw an increase in searches via PCs.

Age group and device type for holiday 2019, Hardware vs. Software

**Percent search volume by age group**

**No significant change**

Hardware pre-COVID-19: 18-24 Years: 7%, 25-34 Years: 9%, 35-49 Years: 15%, 50-64 Years: 8%, 65+ Years: 7%

Hardware post-COVID-19: 18-24 Years: 29%, 25-34 Years: 22%, 35-49 Years: 37%, 50-64 Years: 20%, 65+ Years: 22%

Software pre-COVID-19: 18-24 Years: 8%, 25-34 Years: 9%, 35-49 Years: 20%, 50-64 Years: 9%, 65+ Years: 8%

Software post-COVID-19: 18-24 Years: 22%, 25-34 Years: 29%, 35-49 Years: 31%, 50-64 Years: 18%, 65+ Years: 22%

**Post-COVID increase in Gen Z/Millennial Software searchers**

Hardware pre-COVID-19: 18-24 Years: 7%, 25-34 Years: 9%, 35-49 Years: 15%, 50-64 Years: 8%, 65+ Years: 7%

Hardware post-COVID-19: 18-24 Years: 29%, 25-34 Years: 22%, 35-49 Years: 37%, 50-64 Years: 20%, 65+ Years: 22%

Software pre-COVID-19: 18-24 Years: 8%, 25-34 Years: 9%, 35-49 Years: 20%, 50-64 Years: 9%, 65+ Years: 8%

Software post-COVID-19: 18-24 Years: 22%, 25-34 Years: 29%, 35-49 Years: 31%, 50-64 Years: 18%, 65+ Years: 22%

**Percent search volume by device type**

**Post-COVID increase in Hardware searches**

Hardware pre-COVID-19: PC: 0.3%, Mobile: 0.2%, Tablet: 0.1%

Hardware post-COVID-19: PC: 99.5%, Mobile: 0.2%, Tablet: 0.1%

**Post-COVID increase in Software searches**

Software pre-COVID-19: PC: 84.2%, Mobile: 6.7%, Tablet: 0.2%

Software post-COVID-19: PC: 99.7%, Mobile: 0.2%, Tablet: 0.1%
Hardware and Software conversions have grown significantly in 2020 and spiked post-COVID-19

Convertions over time

Pre-COVID-19 | Post-COVID-19


Hardware
Software

Proprietary Microsoft Advertising Source Data
The conversion funnel length for Hardware is 3X shorter post-COVID-19, while Software conversion length has increased.

**Average user path length in days**

<table>
<thead>
<tr>
<th></th>
<th>Pre-COVID-19</th>
<th>Post-COVID-19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Software</td>
<td>8</td>
<td>7</td>
</tr>
</tbody>
</table>

**Average number of user searches in path**

<table>
<thead>
<tr>
<th></th>
<th>Pre-COVID-19</th>
<th>Post-COVID-19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Software</td>
<td>6</td>
<td>10</td>
</tr>
</tbody>
</table>

Proprietary Microsoft Advertising Source Data
Post-COVID-19, users are more likely to convert on ads lower than position one (main line 1); for Hardware, they are 25% more likely to convert on an ad beyond position 4

Converting ad position, Hardware and Software, pre vs. post-COVID-19

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Position</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4-9</td>
</tr>
<tr>
<td>Software</td>
<td>84.0%</td>
<td>82.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardware</td>
<td>71.5%</td>
<td>67.3%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Post-COVID-19 increase (57%) in 2nd and 3rd ad position conversions

Post-COVID-19 increase (25%) in conversions for ads in position 4 or greater

Proprietary Microsoft Advertising Source Data
Post-COVID-19, Software nonbrand conversions increased, while Hardware brand conversions went up
Converting query is brand vs. non-brand

<table>
<thead>
<tr>
<th></th>
<th>Brand</th>
<th>Nonbrand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Software pre-COVID-19</td>
<td>69%</td>
<td>31%</td>
</tr>
<tr>
<td>Software post-COVID-19</td>
<td>63%</td>
<td>37%</td>
</tr>
<tr>
<td>Hardware pre-COVID-19</td>
<td>41%</td>
<td>59%</td>
</tr>
<tr>
<td>Hardware post-COVID-19</td>
<td>49%</td>
<td>51%</td>
</tr>
</tbody>
</table>
Post-COVID-19, Software saw fewer paths that both started and ended with brand terms, while Hardware had more.

Most common converting query sequences:

- **Software pre-COVID-19**
  - Start non-brand, end non-brand: 56%
  - Start brand, end non-brand: 13%
  - Start non-brand, end brand: 4%
  - Start brand, end brand: 18%

- **Software post-COVID-19**
  - Start non-brand, end non-brand: 45%
  - Start brand, end non-brand: 18%
  - Start non-brand, end brand: 8%
  - Start brand, end brand: 14%

- **Hardware pre-COVID-19**
  - Start non-brand, end non-brand: 27%
  - Start brand, end non-brand: 18%
  - Start non-brand, end brand: 14%
  - Start brand, end brand: 51%

- **Hardware post-COVID-19**
  - Start non-brand, end non-brand: 32%
  - Start brand, end non-brand: 16%
  - Start non-brand, end brand: 7%
  - Start brand, end brand: 44%
Opportunities for holiday 2020
Timing opportunities for Hardware: December, January, April, and May provide the most advantageous volume-CPC gaps.
Timing opportunities for Software: August, September, and April provide the most advantageous volume-CPC gaps

Proprietary Microsoft Advertising Source Data
Utilizing audience groups will increase likelihood of searchers clicking through ads, as CTR improves by nearly 20% with audience targeting.

Click-through rate for Hardware and Software (combined), with vs. without Audience Targeting.
Microsoft Audience Network metrics for Hardware have improved significantly across the board, and continue to show upward momentum.

Microsoft Audience Network growth, Hardware.
Microsoft Audience Network performance for Software has improved as well, and continues to show positive momentum.

Microsoft Audience Network growth, Software
Target Overlapping Audiences For More Volume

Consumers In-Market For Your Product...
1.93M
users who are In-Market for
/Computers & Peripherals/Computers/Laptops & Notebooks

...Are Also In-Market For Others

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Category</th>
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</thead>
<tbody>
<tr>
<td>45.70%</td>
<td>/Home &amp; Garden</td>
</tr>
<tr>
<td>40.76%</td>
<td>/Apparel &amp; Accessories/Clothing</td>
</tr>
<tr>
<td>36.63%</td>
<td>/Sports &amp; Fitness</td>
</tr>
<tr>
<td>36.58%</td>
<td>/Travel</td>
</tr>
<tr>
<td>34.16%</td>
<td>/Arts &amp; Entertainment/Movies &amp; Films</td>
</tr>
</tbody>
</table>
Target Overlapping Audiences For More Volume

Consumers In-Market For Your Product...

339.97K
users who are In-Market for

/Consumer Electronics/Mobile Phones

...Are Also In-Market For Others

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>32.14%</td>
<td>/Computers &amp; Peripherals</td>
</tr>
<tr>
<td>29.28%</td>
<td>/Home &amp; Garden</td>
</tr>
<tr>
<td>24.01%</td>
<td>/Telecom/Mobile Phone Service Providers</td>
</tr>
<tr>
<td>20.75%</td>
<td>/Apparel &amp; Accessories</td>
</tr>
<tr>
<td>19.15%</td>
<td>/Travel</td>
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</table>
Target Overlapping Audiences For More Volume

Consumers In-Market For Your Product...

7.17M

users who are In-Market for

/Software

...Are Also In-Market For Others

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>34.05%</td>
<td>Hobbies &amp; Leisure/Toys &amp; Games</td>
</tr>
<tr>
<td>29.77%</td>
<td>Apparel &amp; Accessories/Women's Apparel</td>
</tr>
<tr>
<td>27.73%</td>
<td>Consumer Electronics</td>
</tr>
<tr>
<td>24.19%</td>
<td>Business Services/Building Construction &amp; Maintenance</td>
</tr>
<tr>
<td>22.09%</td>
<td>Financial Services</td>
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</table>
Strategies and recommendations

Learn immediate and recovery-phase strategies, and how to approach new opportunities and optimize account health in the Digital Advertiser's Guide to COVID-19
Appendix
Query networks, explained

Community detection algorithms have color-coded queries by **community**

Queries that interact with each other more frequently within the same consumer search path are coded with the same color.
While 45% of U.S. consumers reported in April that they don't expect their shopping habits to change long term, nearly a third (31%) expect to make more online purchases than they did before the pandemic.

About 50% of customers are shopping on digital channels for products they've never bought online before.
Brand loyalty may be impacted as consumers switch from previously preferred brands

75% of Americans have bought from retailers beyond their preferred brand and/or retailer due to COVID-19, with many turning to different brands and shopping new websites for basics.

and...

70% of consumers surveyed expect to continue integrating their new choice after. This is a great opportunity for brands to acquire new audiences and earn their loyalty.
What will it take to get shoppers back in stores?

Customers sentiment on when shopping will resume at local stores

- Available vaccine and/or drugs to treat: 91%
- No new cases in my country: 91%
- Number of new cases in my country slows: 74%
- Government removes restrictions: 62%
- I'm already comfortable doing this or will be as soon as they reopen: 33%
- I would never do this, even after we return to "normal" times: 4%

Source: Statista April 2020
While Hardware Product Ad clicks increase towards the end of the year, Software sees an increase towards the beginning of the year.

Clicks on Product Ads by month, Hardware vs. Software (average of 2018 and 2019)
Product Ad trends: Hardware

![Graphs showing trends for Impressions, Clicks, Click Through Rate (CTR), and Cost Per Click (CPC) from July 2018 to July 2020.](Image)

Proprietary Microsoft Advertising Source Data
Product Ad trends: Software

<table>
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<th>Clicks</th>
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<td><img src="image2" alt="Clicks Graph" /></td>
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<table>
<thead>
<tr>
<th>Click Through Rate (CTR)</th>
<th>Cost Per Click (CPC)</th>
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<tbody>
<tr>
<td><img src="image3" alt="CTR Graph" /></td>
<td><img src="image4" alt="CPC Graph" /></td>
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Proprietary Microsoft Advertising Source Data