

STATE OF CONNECTED TV/OTT: AD SUPPLY TRENDS REPORT

Q3 2020

A CONNECTED TV/OTT ANALYSIS: Q1-Q3 2020

- Global and Regional OTT/CTV ad spend trends
- Programmatic market share by device & OS
- Top OTT/CTV apps and platforms
- Roku and Amazon Fire TV app store growth
- Invalid Traffic (IVT)

pixalate



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THE RISING TIDE OF OTT/CTV ADVERTISING

Connected TV (CTV) and over-the-top (OTT) advertising is on the rise. Per [eMarketer](#), total U.S. OTT/CTV ad spend will reach \$8.1 billion in 2020 and rise to \$18.3 billion by 2024.

Programmatic channels are used at an increasing rate within this booming OTT/CTV advertising ecosystem. Pixalate's data shows a 70% increase in global OTT/CTV programmatic ad spend in 2020 alone — despite the COVID-19 pandemic.

Pixalate believes the data in this report is reflective of programmatic ad activity across OTT/CTV apps during the time period studied. This reporting is not intended to impugn the standing or reputation of any person, entity or app.

Q1-Q3 2020: OTT/CTV AD SPEND UP 70%, BUT AD FRAUD STAYS AT 20%

As measured by Pivalate

+70%

OTT/CTV **ad spend increase**
in 2020 (Q1-Q3'20)

21%

ad fraud (invalid traffic) rate
in programmatic OTT/CTV (Q3'20)

+175%

increase in programmatic ad
market share for **Apple** devices
(Q1-Q3'20)

72%

OTT/CTV household adoption
rate in the U.S. (Q3'20)

+64%

programmatic ad market share
increase for **'Premium Services'**
apps on Roku (Q1-Q3'20)

49%

of programmatic OTT/CTV ads
go to **Roku devices** (Q3'20)

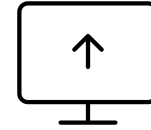
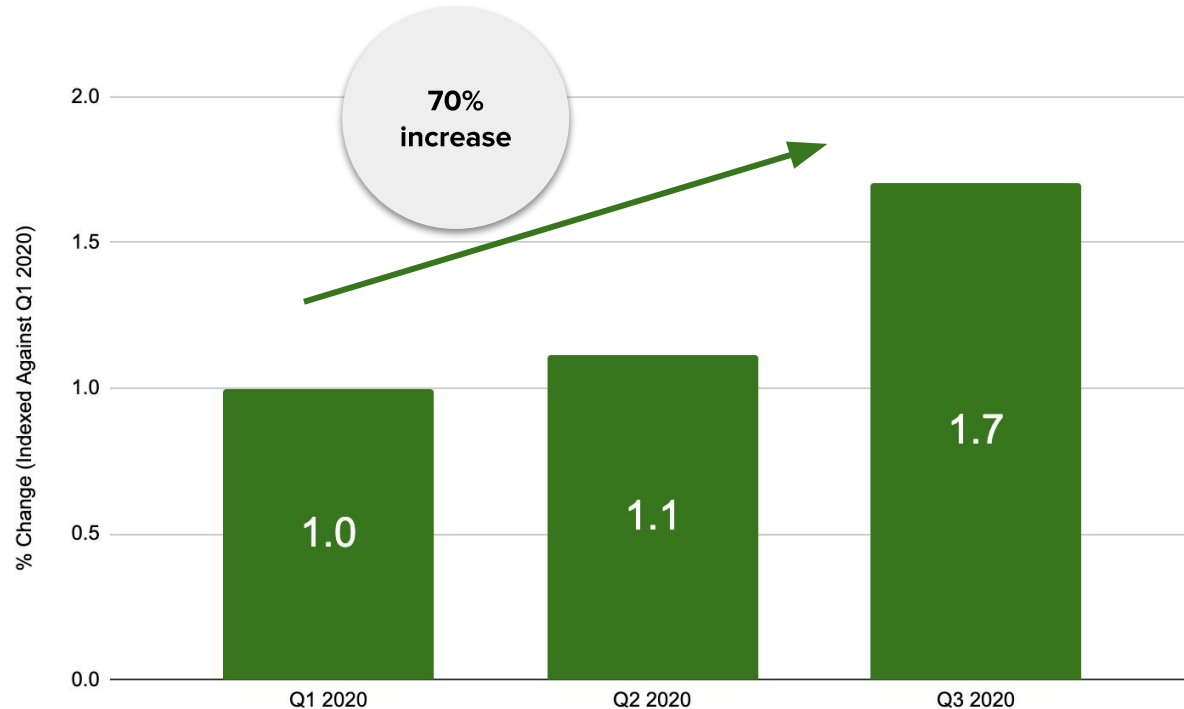
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STATE OF THE MARKETPLACE

*72% of U.S. households now reachable via
programmatic OTT/CTV advertising*

PROGRAMMATIC OTT/CTV AD SPEND UP 70% IN 2020 (GLOBAL)

Programmatic ad sales used as a proxy for ad spend; global; indexed against Q1 2020; as measured by Picalate

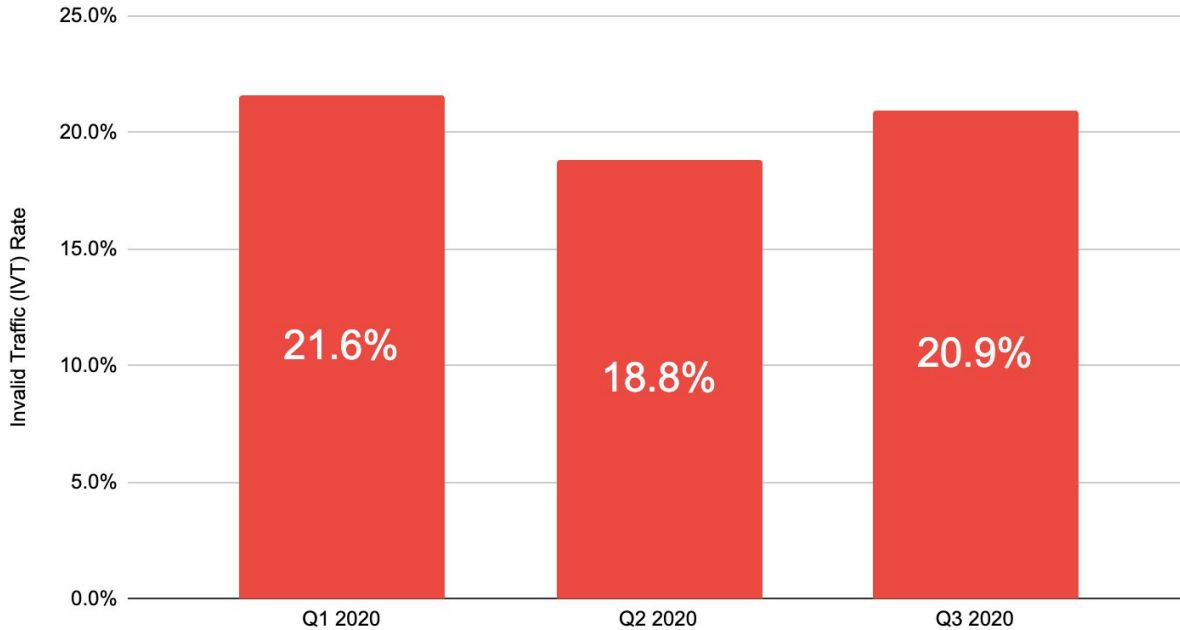


**Global OTT/CTV
programmatic ad
spend up 70% in 2020
& up 119% vs. Q3 2019**

Q3 2020

20% AD FRAUD RATE IN PROGRAMMATIC OTT/CTV

Ad fraud ("Invalid Traffic" (IVT)) in programmatic OTT/CTV advertising; as measured by Pivalate

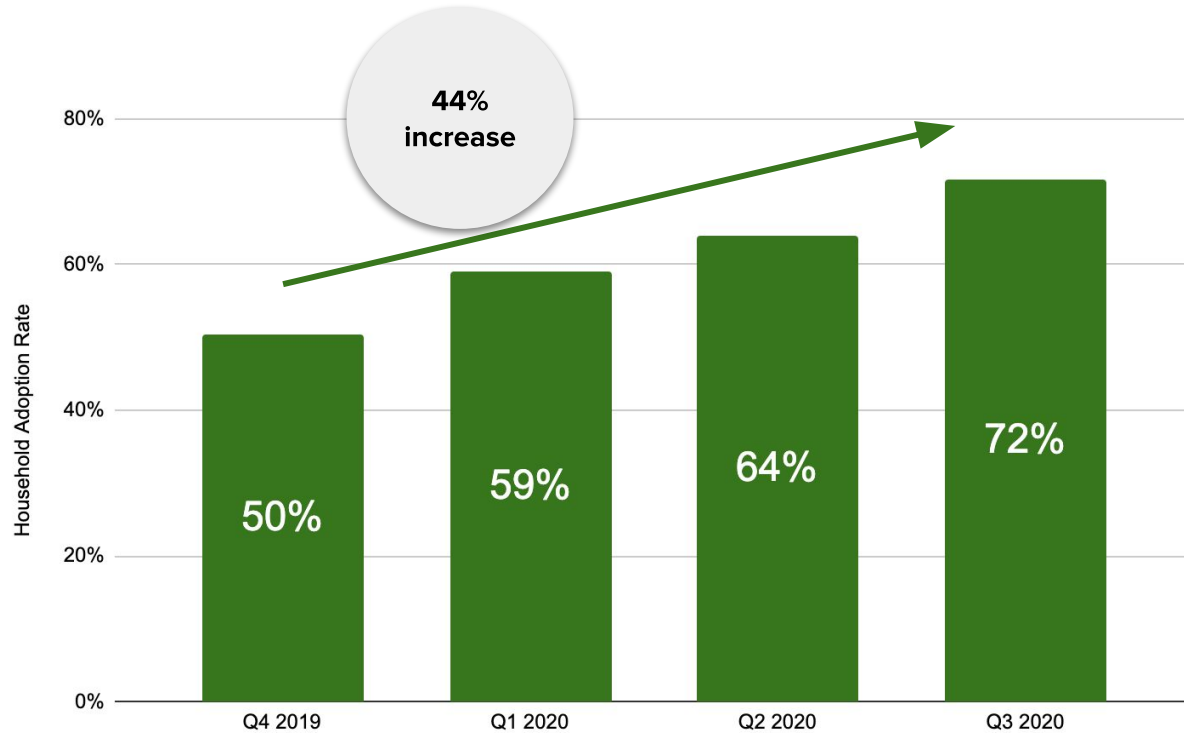


**Programmatic
OTT/CTV ad fraud
(IVT) hovers
around 20%**

Q1-Q3 2020

72% OF US HOUSEHOLDS REACHABLE VIA PROGRAMMATIC OTT/CTV

Percentage of U.S. households reachable by programmatic OTT/CTV advertising; as measured by Pixelate



**U.S. OTT/CTV
household adoption
rises to 72% — up
from 50% in Q4'19**

Q3 2020

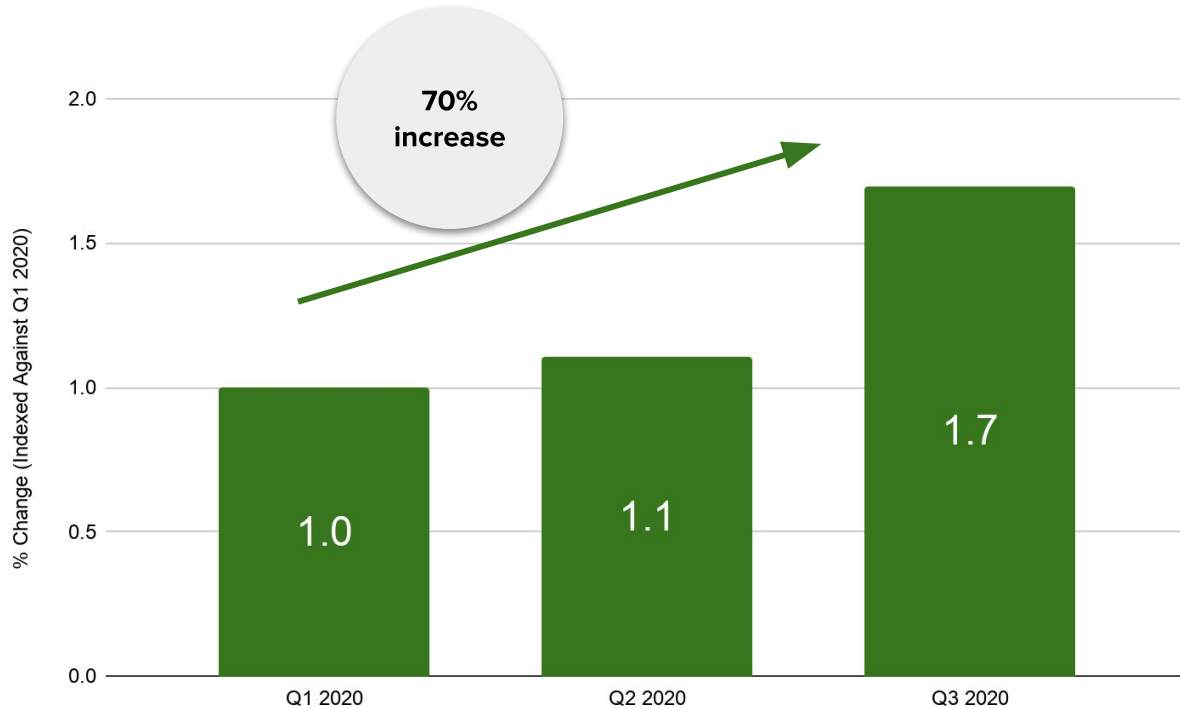
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CONNECTED TV/OTT AD SPEND TRENDS BY REGION

*70% increase in programmatic OTT/CTV
ad spend in North America (Q1-Q3 2020)*

NORTH AMERICA: PROGRAMMATIC AD SPEND UP 70%

Programmatic ad sales used as a proxy for ad spend; North America; indexed against Q1 2020; as measured by Pixelate

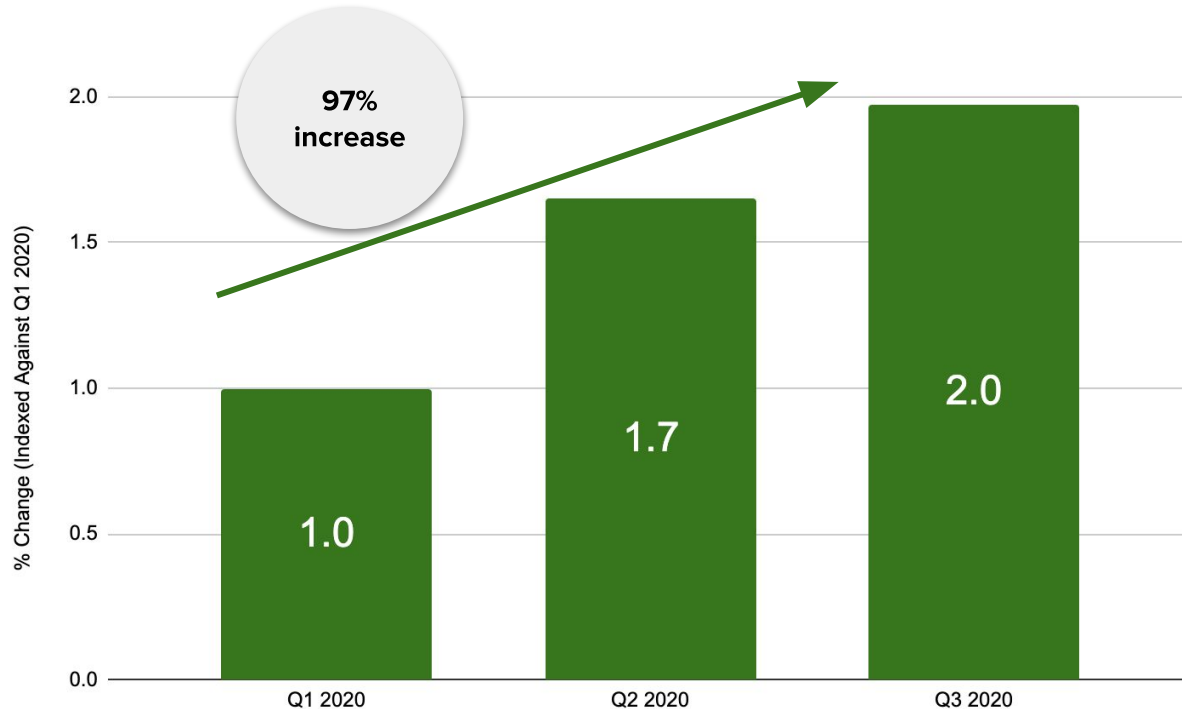


**North American
OTT/CTV
programmatic ad
spend rises 70%**

From Q1-Q3 2020

APAC: PROGRAMMATIC AD SPEND DOUBLES IN 2020

Programmatic ad sales used as a proxy for ad spend; APAC; indexed against Q1 2020; as measured by Pivalate

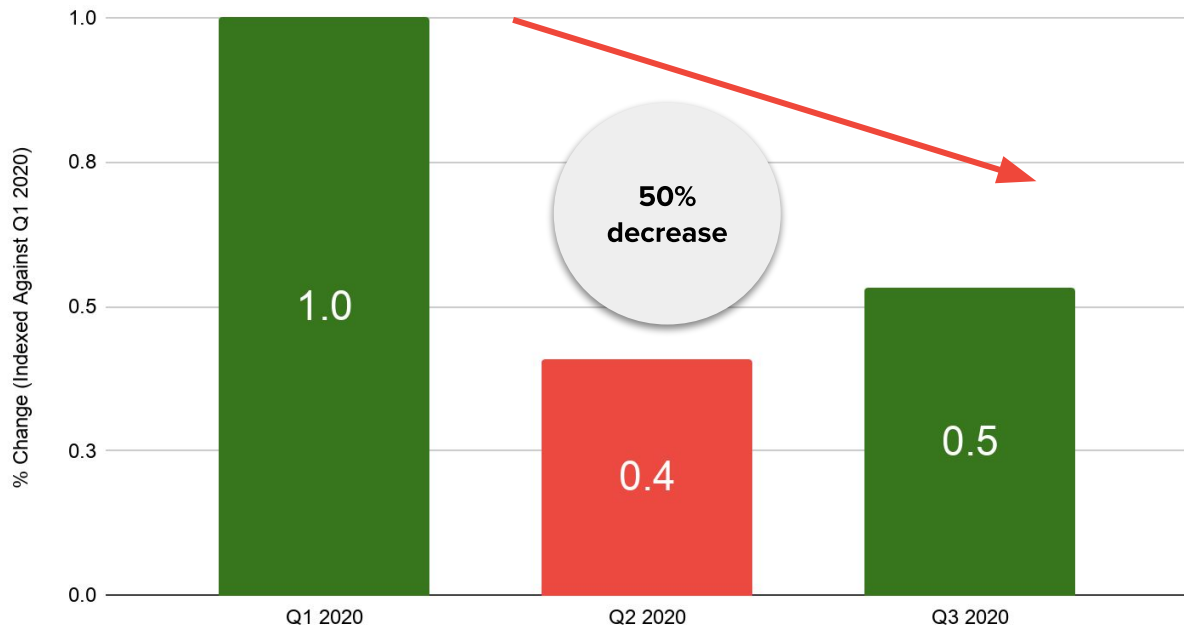


**APAC
OTT/CTV
programmatic ad
spend doubles**

From Q1-Q3 2020

EMEA: PROGRAMMATIC AD SPEND CUT IN HALF IN 2020

Programmatic ad sales used as a proxy for ad spend; EMEA; indexed against Q1 2020; as measured by Picalate

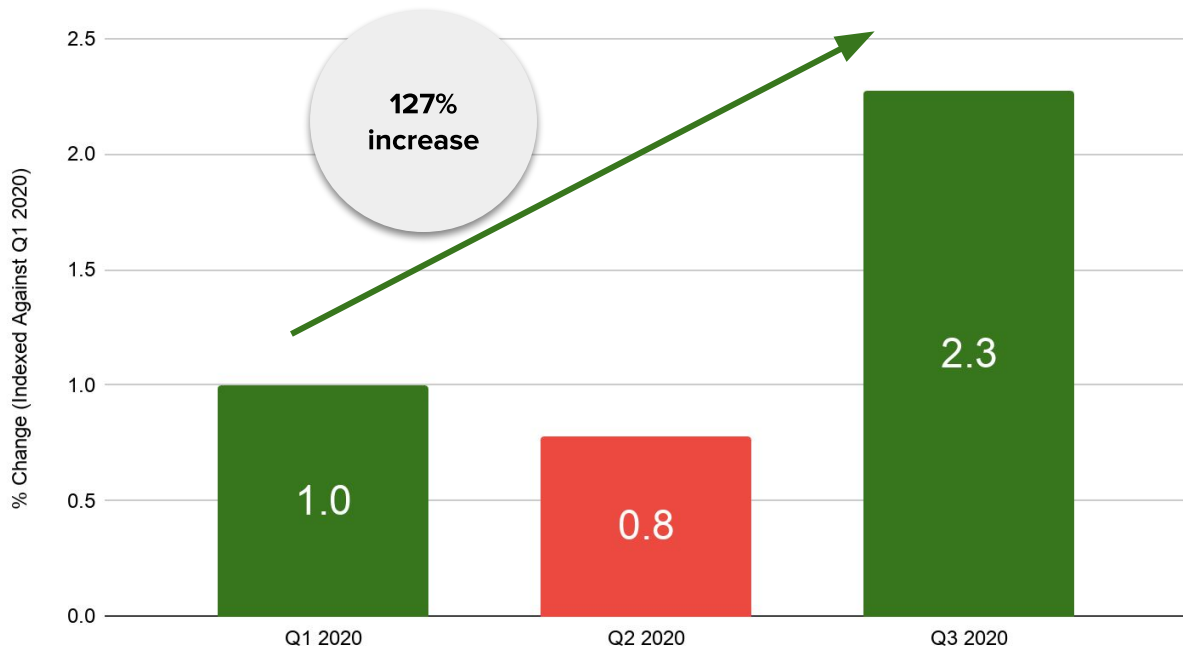


**EMEA
OTT/CTV
programmatic ad
spend drops amid
COVID-19**

From Q1-Q3 2020

LATAM: PROGRAMMATIC AD SPEND MORE THAN DOUBLES IN Q3

Programmatic ad sales used as a proxy for ad spend; LATAM; indexed against Q1 2020; as measured by Picalate



**LATAM
OTT/CTV
programmatic ad
spend recovers after
drop in Q2**

From Q1-Q3 2020

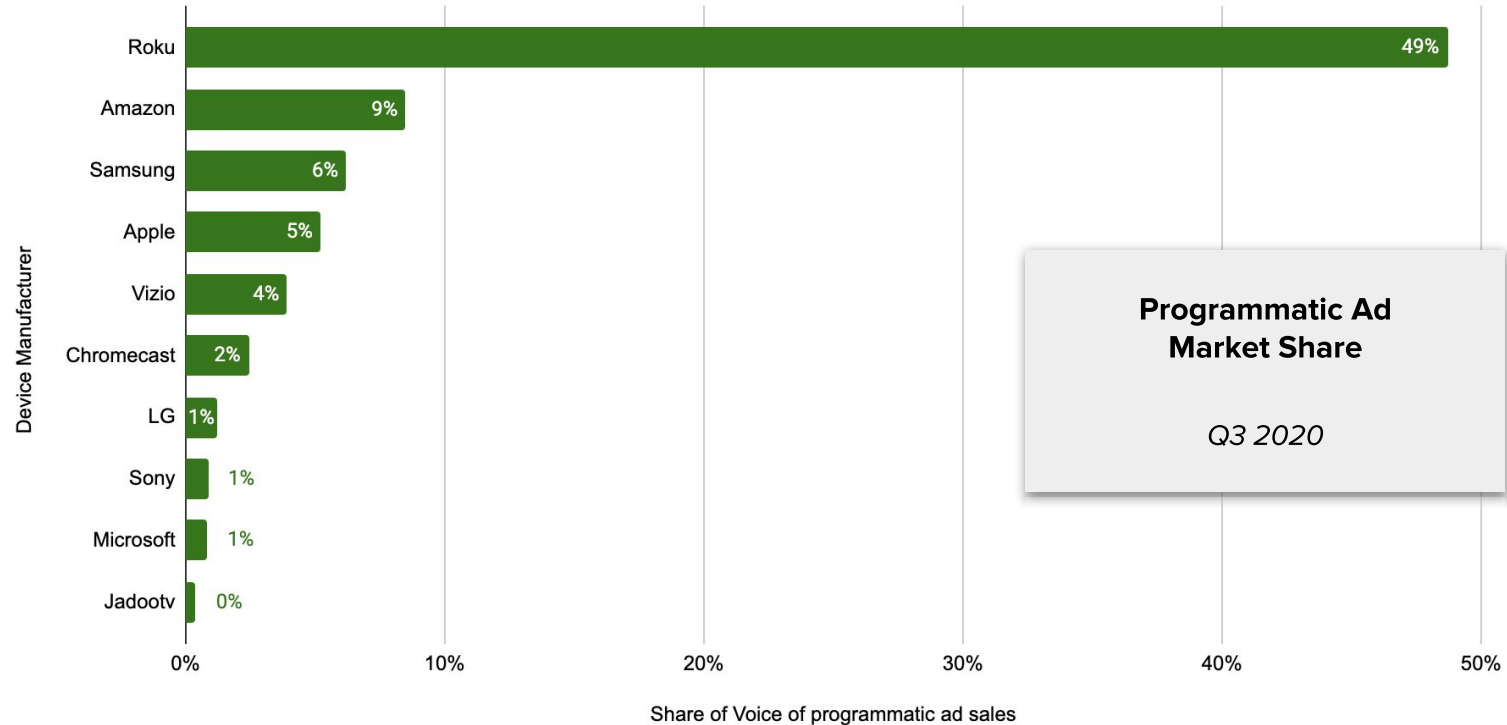
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OTT/CTV DEVICE TYPES

*Apple devices gain 175% programmatic
ad market share (Q1-Q3 2020)*

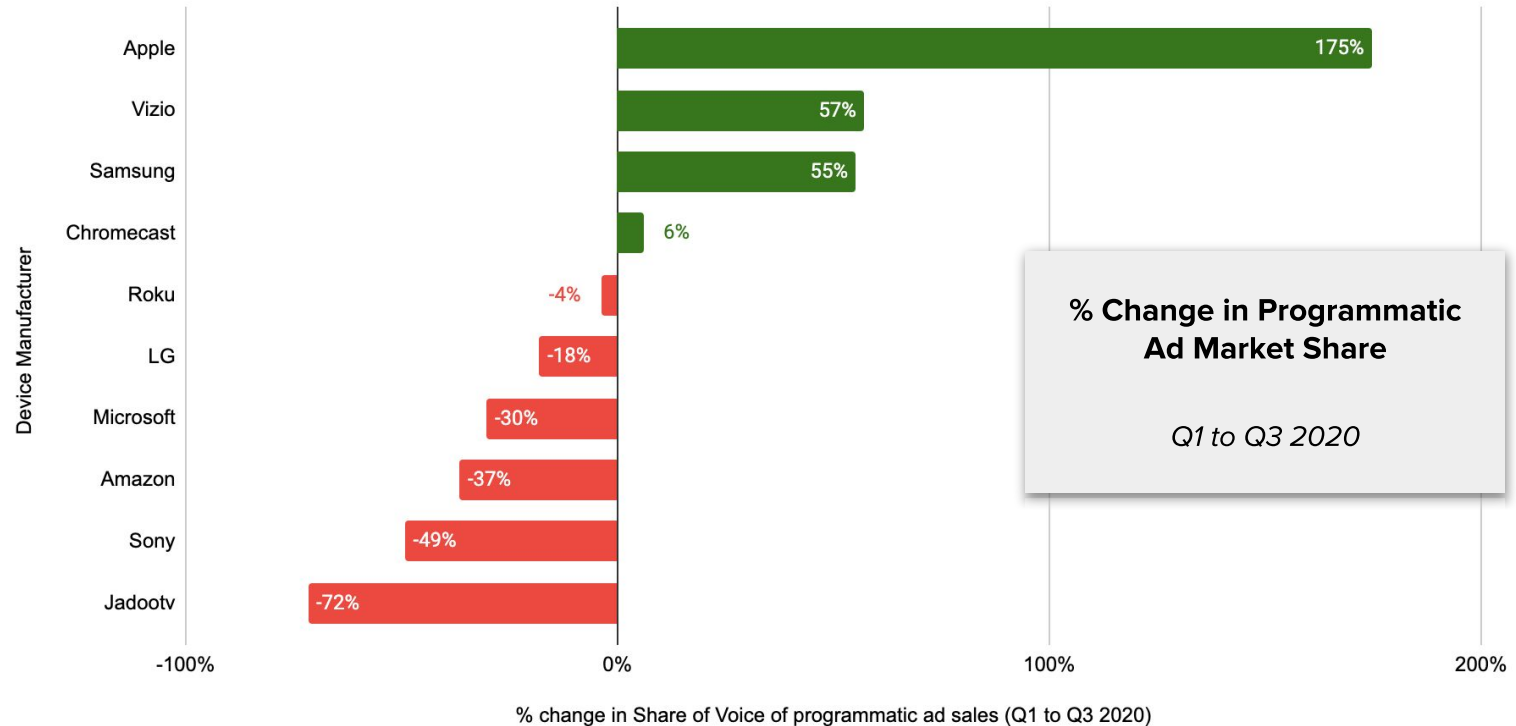
49% OF ALL PROGRAMMATIC OTT/CTV ADS GO TO ROKU DEVICES

Share of voice of programmatic ads sold by device type; global; Q3 2020; as measured by Pixelate



APPLE DEVICES GAIN 175% MARKET SHARE IN 2020

% change in share of voice of programmatic ads sold from Q1 to Q3 2020 by device type; global; as measured by Pivalate



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CTV APP STORE INSIGHTS

*23% rise in the number of apps
in the Roku app store*

TOTAL # OF OTT/CTV APPS REMAINS FLAT IN 2020

of OTT/CTV apps that support programmatic video advertising; global; indexed against Q1 2020; as measured by Pivalate

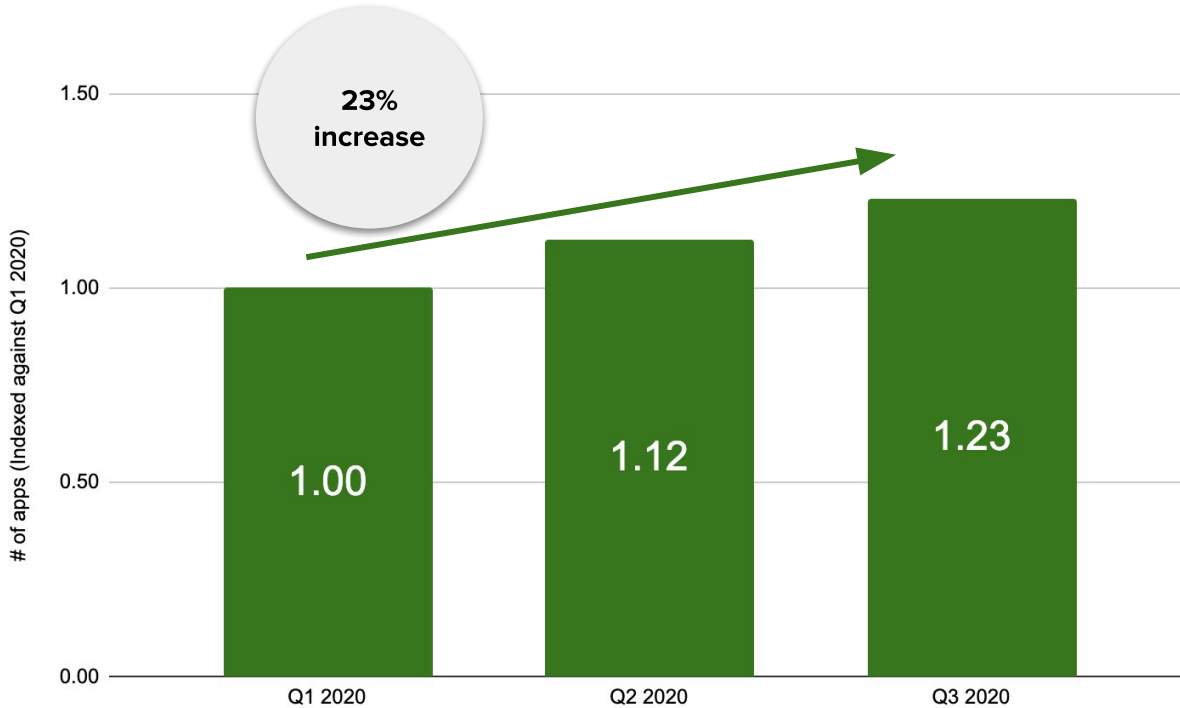


**# of OTT/CTV apps
remains unchanged
in 2020**

Q1-Q3 2020

OF APPS IN THE ROKU STORE INCREASE 23% IN 2020

of Roku apps; global; indexed against Q1 2020; as measured by Pivalate

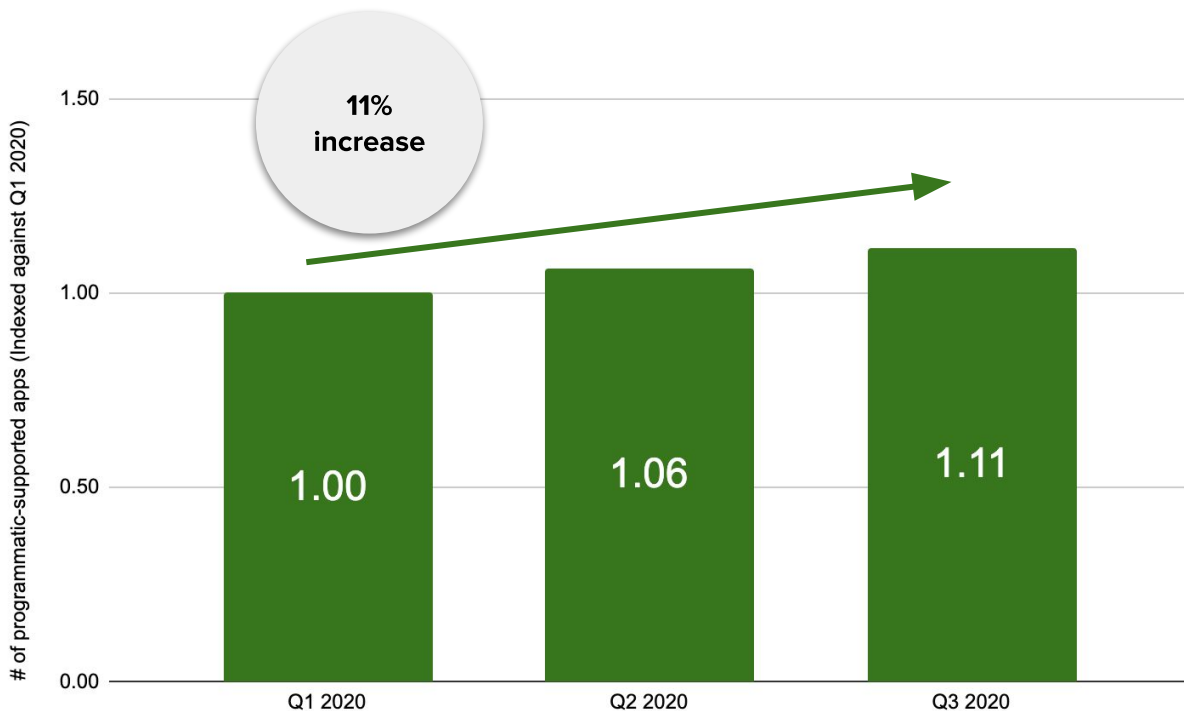


**23% increase in #
of Roku apps**

Q1-Q3 2020

OF PROGRAMMATIC-SUPPORTED ROKU APPS RISES 11%

of Roku apps that support programmatic video advertising; global; indexed against Q1 2020; as measured by Pivalate

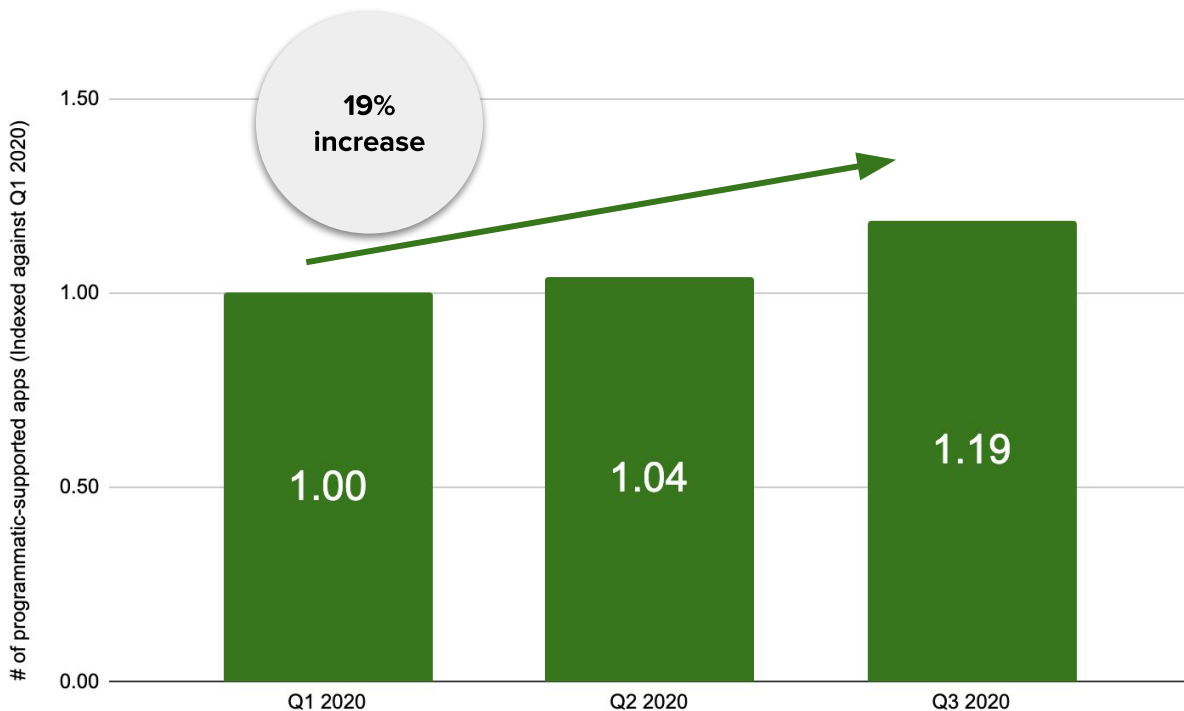


**11% increase in #
of Roku apps that
support programmatic**

Q1-Q3 2020

OF APPS IN THE AMAZON FIRE TV STORE UP 19% IN 2020

of Amazon Fire TV apps; global; indexed against Q1 2020; as measured by Pivalate



**19% increase
in # of
Amazon Fire TV apps**

Q1-Q3 2020

OF PROGRAMMATIC-SUPPORTED FIRE TV APPS STAYS FLAT

of Amazon Fire TV apps that support programmatic video advertising; global; indexed against Q1 2020; as measured by Pivalate



**No change in #
of Fire TV apps that
support programmatic**

Q1-Q3 2020

TOP CTV APPS

*Hulu, Sling TV, Pluto TV among the top apps
based on programmatic ad sales*

HULU, SLING TV THE TOP 2 ROKU APPS IN Q3 2020

Top 10 Roku apps based on Q3 2020 programmatic ads sold; global; as measured by Pivalate



1  **Hulu**
Hulu LLC 826,331 ratings

2  **Sling TV**
Sling TV LLC 382,987 ratings

3  **Pluto TV**
Pluto Inc. 144,306 ratings

4  **FilmRise**
FilmRise 52,062 ratings

5  **Tubi**
Tubi, Inc. 155,596 ratings

6  **Philo**
Philo 37,276 ratings

7  **NewsON**
NewsON 35,312 ratings

8  **WatchFreeFlix**
Digital Sylvania, LLC 38,946 ratings

9  **fuboTV**
fuboTV 25,685 ratings

10  **HappyKids.tv**
Future Today Inc. 53,558 ratings


SLING TV, PLUTO TV THE TOP 2 FIRE TV APPS IN Q3 2020

Top 10 Amazon Fire TV apps based on Q3 2020 programmatic ads sold; global; as measured by Pixelate



1  **Sling TV**
Sling TV LLC 52,495 ratings

2  **Pluto TV**
Pluto TV 232,094 ratings

3  **Tubi**
Tubi, Inc 183,086 ratings

4  **Philo**
PHILO 72,486 ratings

5  **FilmRise**
Future Today Inc 13,031 ratings

6  **Fawesome**
Future Today Inc 10,782 ratings

7  **Lifetime**
A&E Television Networks Mobile 42,177 ratings

8  **HISTORY**
A&E Television Networks Mobile 56,906 ratings

9  **HGTV GO**
Scripps Networks, LLC 36,395 ratings

10  **Travel Channel GO**
Scripps Networks, LLC 19,078 ratings

APP CATEGORY TRENDS

*'Premium Services' category on Roku sees 64%
programmatic ad market share increase (Q1-Q3 2020)*

'MOVIES & TV': ROKU'S TOP PROGRAMMATIC AD CATEGORY



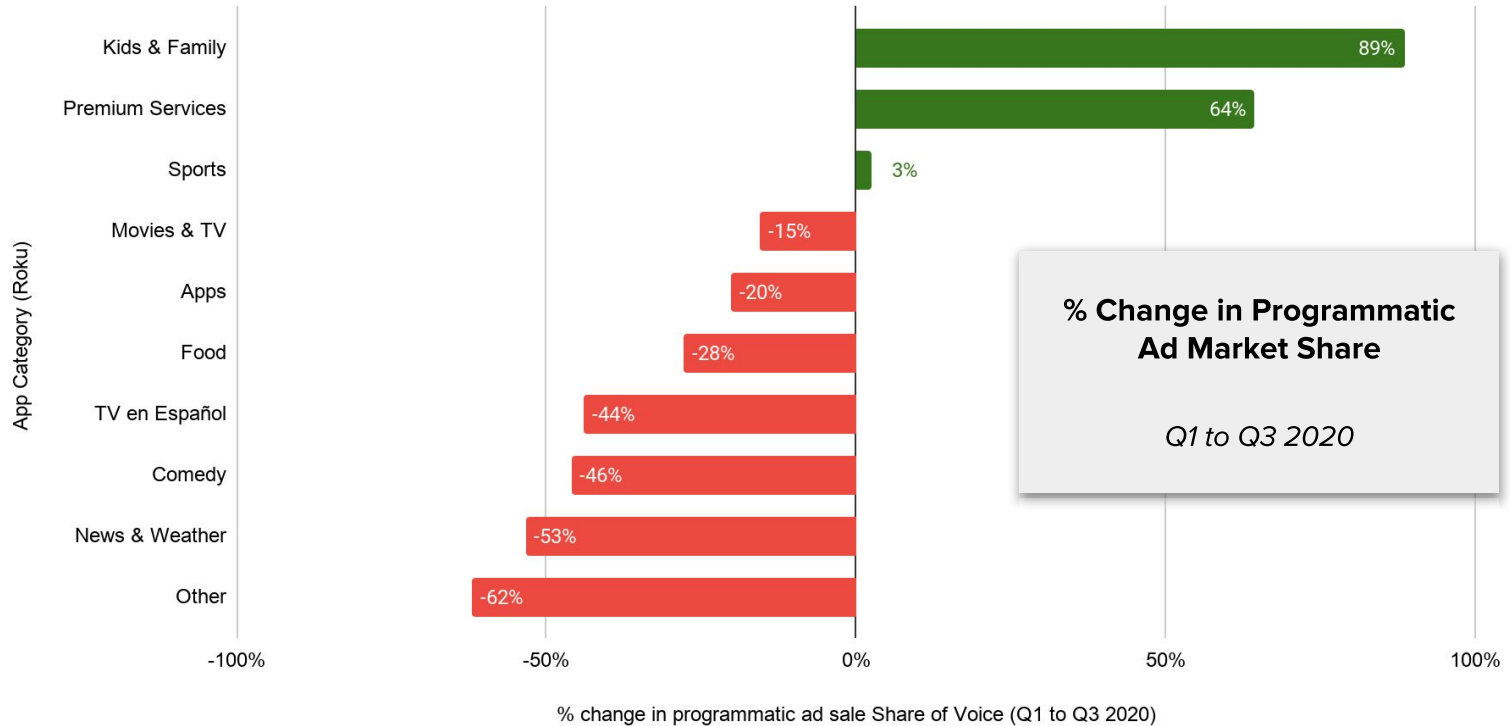
Top 10 Roku app categories based on Q3 2020 programmatic ads sold; global; as measured by Pivalate

- | | | | | | |
|---|--|------------------|----|--|---------------|
| 1 | | MOVIES & TV | 6 | | APPS |
| 2 | | PREMIUM SERVICES | 7 | | OTHER |
| 3 | | SPORTS | 8 | | KIDS & FAMILY |
| 4 | | NEWS & WEATHER | 9 | | TV EN ESPAÑOL |
| 5 | | FOOD | 10 | | COMEDY |

'PREMIUM SERVICES' ROKU APPS SEE 64% MARKET SHARE JUMP



% change in share of voice of programmatic ads sold from Q1 to Q3 2020; global; as measured by Pixelate



'MOVIES & TV' CATEGORY RANKS #1 ON AMAZON FIRE TV

Top 10 Amazon Fire TV app categories based on Q3 2020 programmatic ads sold; global; as measured by Pixelate



1  MOVIES & TV

6  NOVELTY

2  NEWS & WEATHER

7  FOOD

3  SPORTS

8  GAMES

4  WEATHER

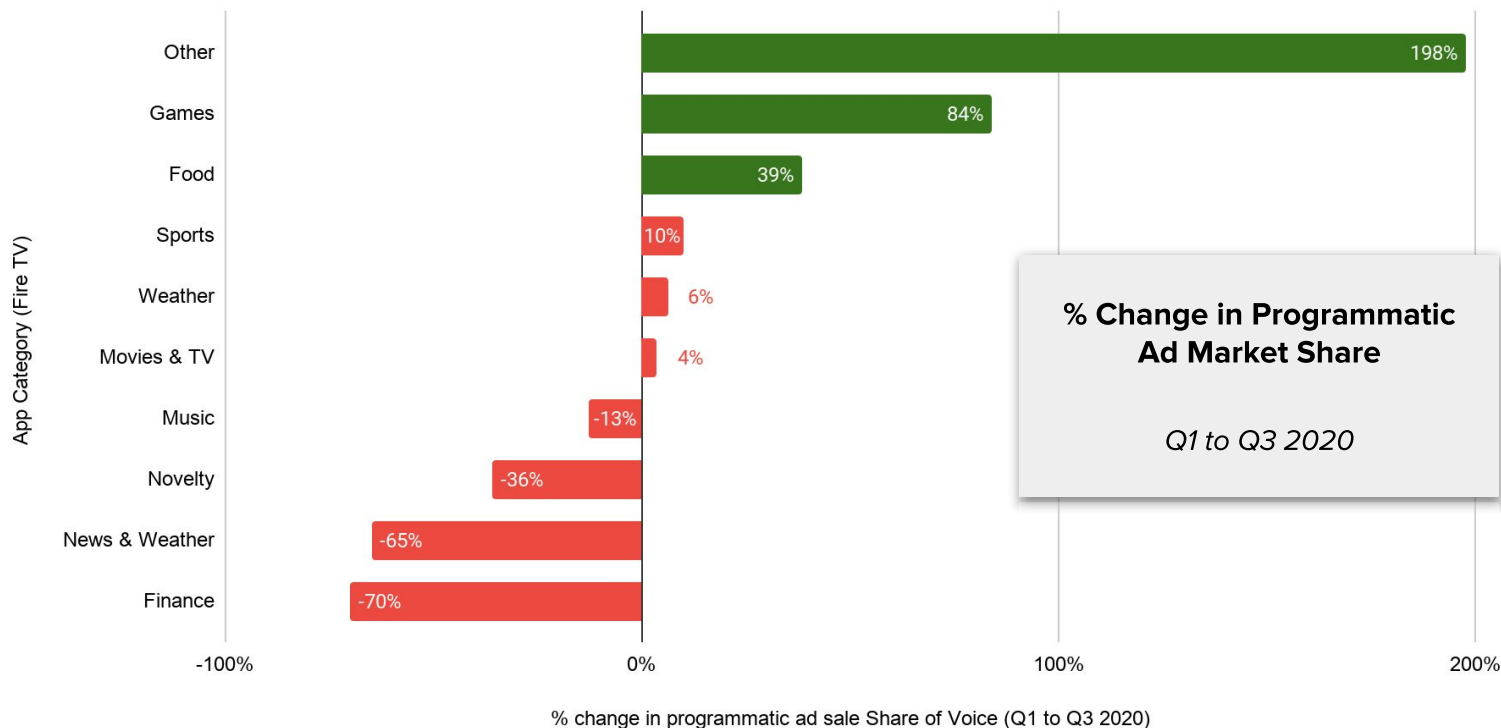
9  OTHER

5  FINANCE

10  MUSIC

FIRE TV 'GAMES' APPS SEE 84% MARKET SHARE INCREASE

% change in share of voice of programmatic ads sold from Q1 to Q3 2020; global; as measured by Pixelate



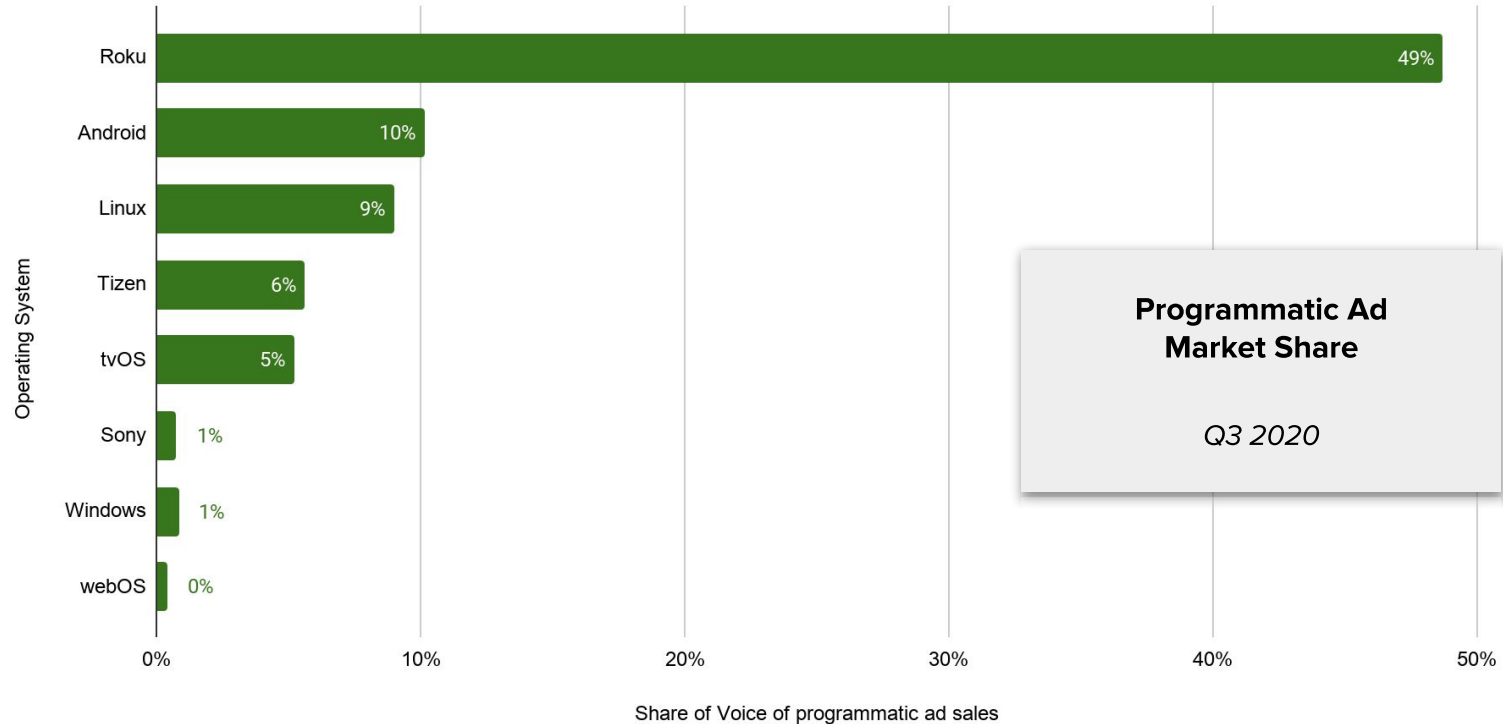
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OTT/CTV OPERATING SYSTEMS

*Android, Linux among most-used
OTT/CTV operating systems*

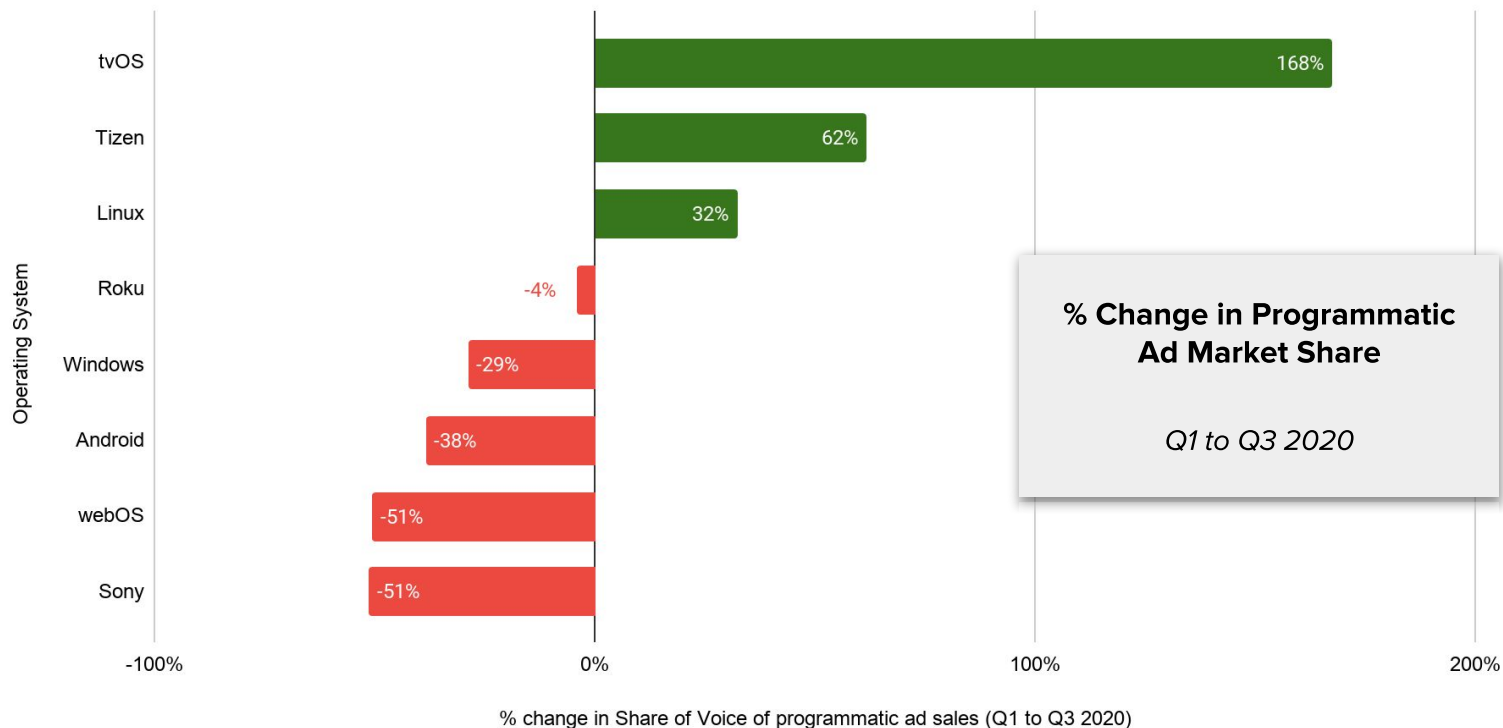
ANDROID, LINUX AMONG MOST-USED OTT/CTV OPERATING SYSTEMS

Share of voice of programmatic ads sold by operating system; global; Q3 2020; as measured by Pivalate



tvOS USE SKYROCKETS 168% AMID APPLE'S RISING MARKET SHARE

% change in share of voice of programmatic ads sold from Q1 to Q3 2020 by operating system; global; as measured by Pivalate



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SUPPLY CHAIN INTELLIGENCE

*The top SSPs for reaching OTT/CTV
viewers via programmatic*

TOP 12 SSPs FOR PROGRAMMATIC OTT/CTV SUPPLY

Top supply-side platforms (SSPs) based on programmatic OTT/CTV ads sold in alphabetical order; global; Q3 2020; as measured by Pivalate



GLOSSARY

Ad market share / share of voice (SOV): Based the proportion of sold programmatic ads that go to a certain device, operating system, category, etc. For example, if Device X received 20 of 100 total ads one quarter, its market share would be 20%. If Device X then received 30 of 100 total ads the next quarter, its market share would have increased by 50% (from 20% to 30%).

Ad spend: In the context of this report, programmatic ads sold, as measured by Picalate, are used as a proxy for ad spend.

App categories: Based on each app's primary app category, as displayed in the official Roku and Fire TV app stores.

App ratings: Based on each app's consumer ratings published on the official app stores as of November 11, 2020.

Apps: An app is also sometimes called a channel when discussing OTT/CTV advertising. This report uses the term "app" for consistency.

Connected TV/OTT: Also referred to as OTT/CTV in this report. Picalate defines OTT/CTV based on the device being used by the end-user. Examples of OTT/CTV devices include Apple TV, Roku, Chromecast, Amazon Fire TV, Smart TVs, and gaming platforms.

Household adoption: The percentage of U.S. households reachable via programmatic OTT/CTV advertising, using the total number of U.S.-based IP addresses as a baseline and removing invalid traffic (IVT), as measured by Picalate.

Invalid traffic (IVT): Per the [Media Rating Council \(MRC\)](#), "Invalid Traffic" is defined generally as traffic that does not meet certain ad serving quality or completeness criteria, or otherwise does not represent legitimate ad traffic that should be included in measurement counts. Among the reasons why ad traffic may be deemed invalid is it is a result of non-human traffic (spiders, bots, etc.), or activity designed to produce fraudulent traffic." IVT is also sometimes referred to as "ad fraud." Per the [MRC](#), "Fraud" is not intended to represent fraud as defined in various laws, statutes and ordinances or as conventionally used in U.S. Court or other legal proceedings, but rather a custom definition strictly for advertising measurement purposes.

Programmatic OTT/CTV: The report examines global programmatic advertising activity across OTT/CTV devices. Picalate's datasets consist predominantly of open auction programmatic traffic sources.

Top/trending apps/categories/SSPs: The terms 'top' or 'trending' refer solely to programmatic ad market share, as measured by Picalate (see Methodology on p. 36 for more on Picalate's data set).

METHODOLOGY

Pixalate's data science and analyst team analyzed programmatic advertising activity across over 300 million Connected TV/OTT devices to compile this research. The research contained herein represents data collected by Pixalate from October 1, 2019 through September 30, 2020.

In the context of this report, programmatic ad transactions, as measured by Pixalate, are used as a proxy for ad spend. The report examines global programmatic advertising activity. Pixalate's datasets consist predominantly of open auction programmatic traffic sources. Pixalate monitors over 30,000 programmatic-supported OTT/CTV apps, over 300 million OTT/CTV devices monitored, and billions of OTT/CTV programmatic advertising impressions.

App category information is derived from the Roku Channel Store and Amazon Fire TV app, respectively. Ad spend increases or decreases were calculated by comparing programmatic ad sales from Q1 2020 to Q3 2020.

In the context of this report, "top apps" or "top SSPs" refers solely to app's or supply-side platform's (SSP) market share of programmatic advertisements sold in a given time period, as measured by Pixalate. The list of top SSPs is based on Pixalate's objective data sets, which consist predominantly of buy-side open auction programmatic traffic sources.

Household reach represents the percentage of U.S. households reachable via programmatic OTT/CTV advertising, using the total number of U.S.-based IP addresses as a baseline and removing invalid traffic (IVT), as measured by Pixalate.

DISCLAIMER

The content of this report reflects Picalate's opinions with respect to the factors that Picalate believes can be useful to the digital media industry. Any proprietary data shared is grounded in Picalate's proprietary technology and analytics, which Picalate is continuously evaluating and updating. Any references to outside sources should not be construed as endorsements. Picalate's opinions are just that, opinions, which means that they are neither facts nor guarantees.

Picalate is sharing this data not to impugn the standing or reputation of any person, entity, or app, but, instead, to report data pertinent to programmatic advertising activity across Connected TV/OTT apps in the time period studied.

Per the [MRC](#), "'Fraud' is not intended to represent fraud as defined in various laws, statutes and ordinances or as conventionally used in U.S. Court or other legal proceedings, but rather a custom definition strictly for advertising measurement purposes. Also per the [MRC](#), "'Invalid Traffic' is defined generally as traffic that does not meet certain ad serving quality or completeness criteria, or otherwise does not represent legitimate ad traffic that should be included in measurement counts. Among the reasons why ad traffic may be deemed invalid is it is a result of non-human traffic (spiders, bots, etc.), or activity designed to produce fraudulent traffic."

ABOUT PIXALATE

Pixalate is a **global ad fraud intelligence and marketing compliance platform** that works with brands and platforms to prevent invalid traffic and improve ad inventory quality. We offer the only system of coordinated solutions across display, app, video, and OTT/CTV for better detection and elimination of ad fraud.

Pixalate is an **MRC-accredited service for the detection and filtration of sophisticated invalid traffic (SIVT)** across desktop and mobile web, mobile in-app, and OTT/CTV advertising.

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