



Roku



tvOS

GLOBAL CONNECTED TV (CTV) AD SUPPLY CHAIN TRENDS NORTH AMERICA REGION

Q1.2024

An analysis of the state of open programmatic CTV advertising, including top devices, trending categories, and ad fraud risk



Table of Contents

TABLE OF CONTENTS

Key stats and trends.....	4-8
CTV device trends.....	9-11
CTV store and category trends.....	12-17
CTV operating system share.....	18-19
Methodology and glossary.....	20-23

ABOUT THIS REPORT:

Pixalate’s data science team analyzed programmatic advertising activity across over 94 thousand Connected TV (“CTV”) apps and nearly 6 billion global open programmatic ad transactions in Q1 2024 to compile this research. Pixalate's datasets consist predominantly of buy-side open auction programmatic traffic sources.

Pixalate is sharing this data not to impugn the standing or reputation of any person, entity or app, but instead, to render opinions and report trends pertaining to CTV programmatic advertising activity in the time period studied.



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Q1 2024 CTV Supply Chain Trends: North America

North America CTV open programmatic **ad spend increased 3% YoY in Q1 2024**, a moderate increase compared to the -5% YoY decrease in ad spend between Q1 2022 and Q1 2023.



North America invalid traffic is at 12%, down from 15% last quarter (Q4 2023). This North America Q1 IVT rate matches the global open programmatic CTV IVT rate of 12% in Q1 2024.



Apple TV gained +58% YoY device market share in North America, while Roku maintained the highest device market share at 48% in Q1 2024 (-0.2% decrease YoY for Roku).



Hulu is the top grossing CTV app in North America for Q1 2024, grossing an estimated **\$419M open programmatic ad spend** across Roku, FireTV, tvOS and Samsung app stores.



Samsung and Fire OS hover around 10% CTV operating system market share in North America, as compared to Roku's dominance with 48% share of voice in Q1 2024.



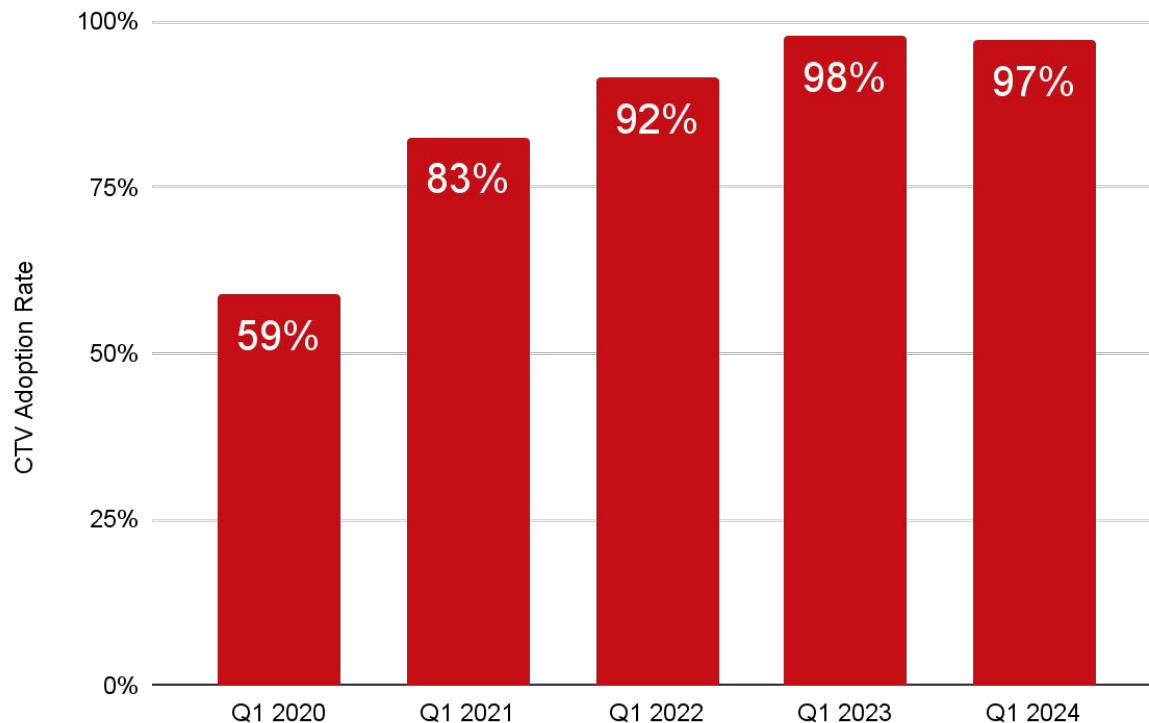


97%

overall percentage of internet-connected U.S. households that were reachable via open programmatic CTV ads in Q1 2024, according to Picalate's data.

U.S. Household Reach: 97% Reachable via Programmatic CTV Advertising

Estimated % of U.S. internet-connected households reachable by open programmatic CTV advertising as of Q1 2024; as measured by Picalate



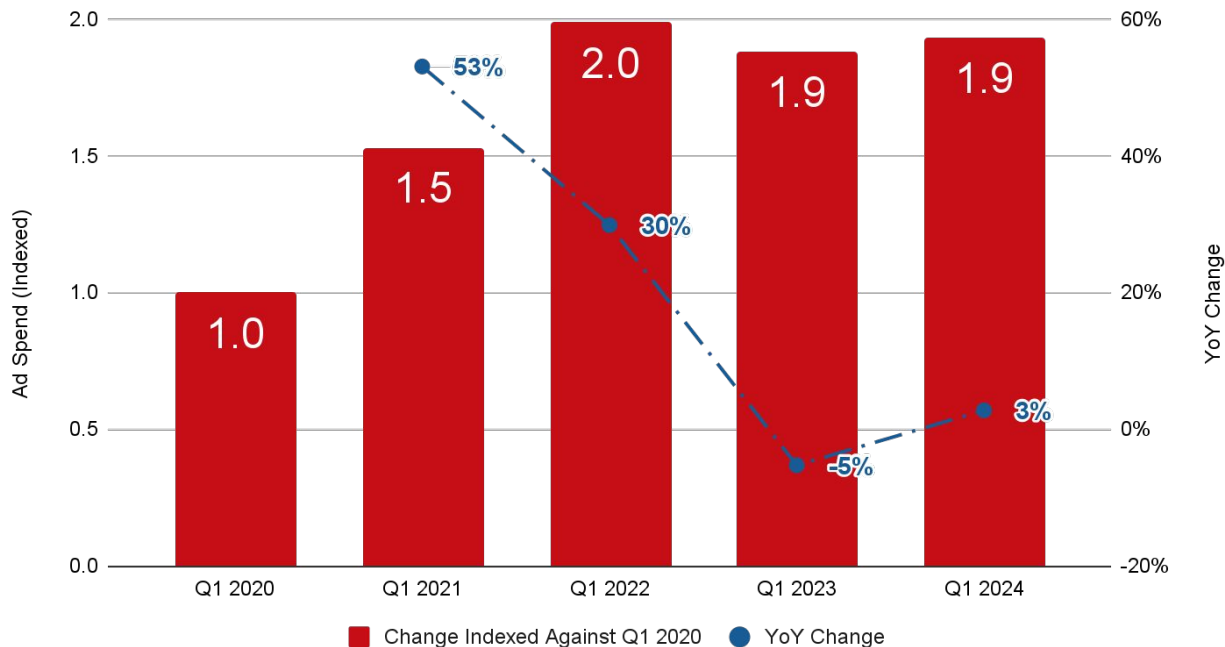


3%

CTV open programmatic ad spend in North America increased by 3% YoY, according to Pixalate's data.

North America: Estimated Open Programmatic CTV Ad Spend

Open programmatic ad sales proxied for ad spend, North America Q1 2024, as measured by Pixalate



CTV Ad Spend: Top Grossing CTV Apps in North America, Q1 2024

Top 5 grossing CTV apps per platform based on estimated open programmatic advertising in North America Q1 2024, as measured by Picalate

	Rank	Name	Ad Spend
	1	Hulu	\$241M
	2	Pluto TV - It's Free TV	\$12M
	3	Sling TV - Live Sports, News, Shows + Freestream	\$11M
	4	Xumo Play	\$5M
	5	Philo	\$5M
	1	Hulu	\$39M
	2	Pluto TV - It's Free TV	\$6M
	3	HD Video For YouTube	\$2M
	4	Max	\$2M
	5	Spider Solitaire	\$2M
	1	Hulu: Watch TV shows & movies	\$34M
	2	Fubo: Watch Live TV & Sports	\$1M
	3	Bally Sports	\$1M
	4	Atmosphere™	\$1M
	5	Atmosphere TV	\$920K
	1	Hulu	\$105M
	2	SAMSUNG TV PLUS	\$7M
	3	Xumo Play	\$2M
	4	NBC	\$2M
	5	Fubo: Watch Live TV & Sports	\$1M

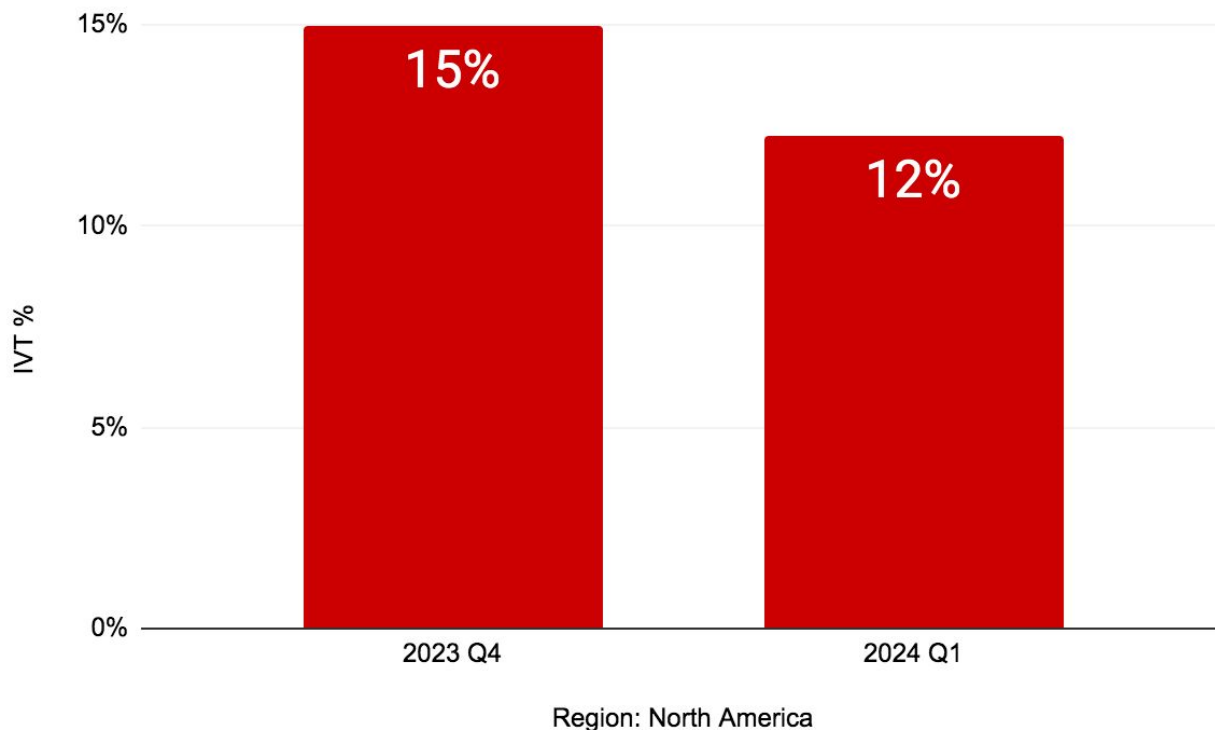


-18%

open programmatic CTV invalid traffic in North America (IVT, including ad fraud) rate was 12% in Q1 2024, an 18% decrease QoQ, according to Pixalate's data.

Quarterly CTV Invalid Traffic Rates (IVT - Inclusive of Ad Fraud)

Invalid traffic ("IVT" - inclusive of ad fraud) by quarter in open programmatic CTV; North America; as measured by Pixalate



CTV DEVICES

MARKET SHARE TRENDS BY DEVICE

Roku | Amazon Fire TV | Apple TV | Samsung | LG | Smart TVs





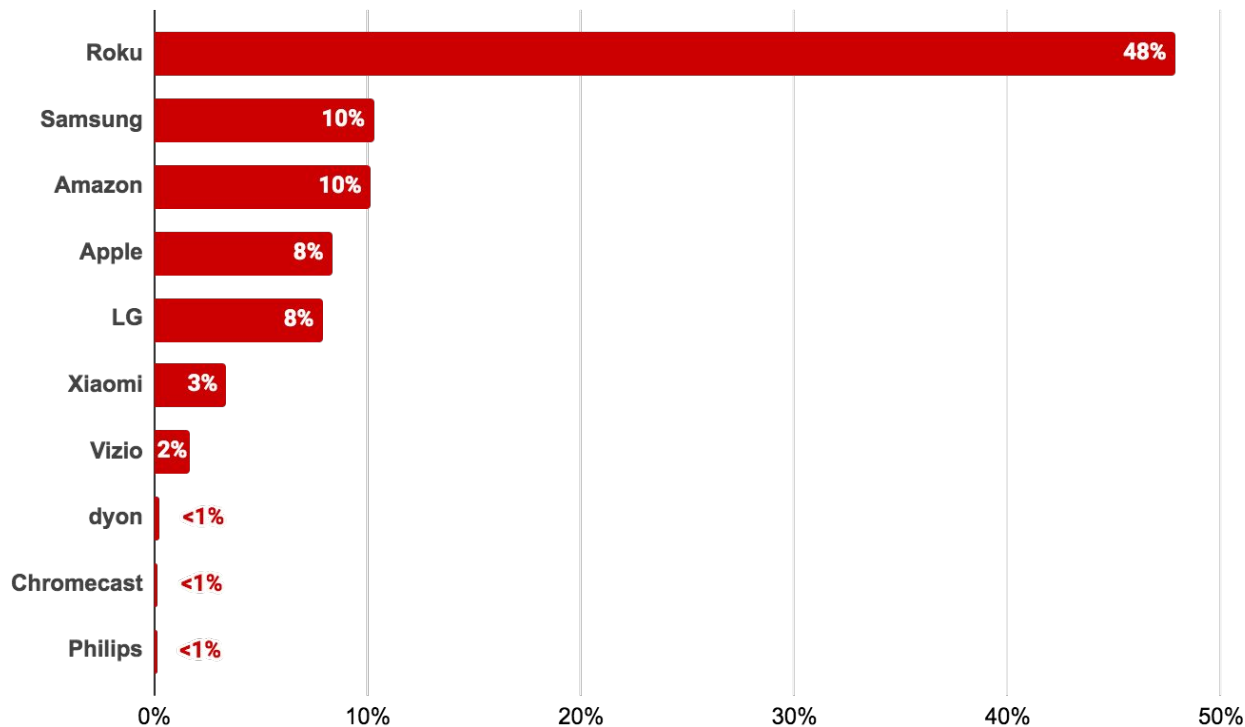
48%

estimated CTV device market share in North America for **Roku** devices, nearly 5x more than any other device, according to Pixalate's data.

What this stat means: 48% of all open programmatic CTV ads were delivered to Roku devices not inclusive of IVT, as measured by Pixalate.

CTV Device Market Share in North America

Share of voice of open programmatic ads sold by device type; North America; Q1 2024; as measured by Pixalate





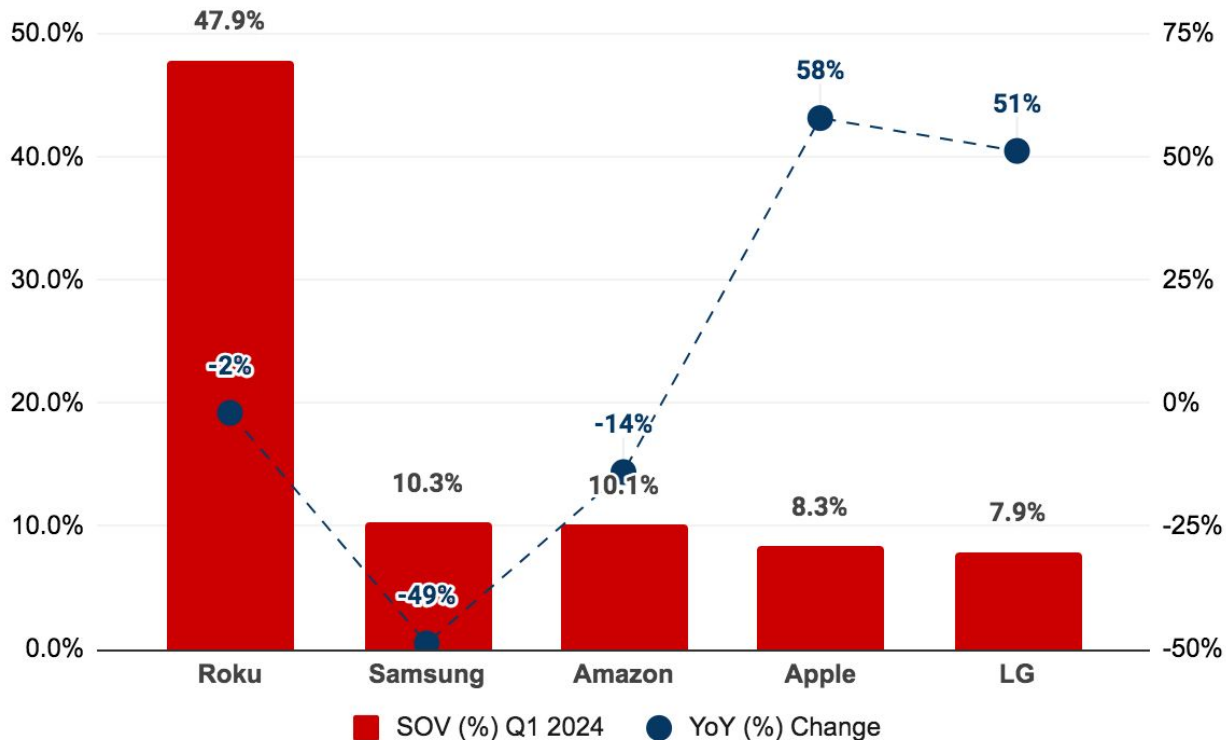
+58%

Apple TV gained 58% YoY CTV device market share in North America.

Samsung Smart TV dropped -49% YoY device market share, according to Pivalate's data.

YoY Change in CTV Device Market Share in North America, Top 5 Devices

% change in SOV of open programmatic CTV ads sold from Q1 2023 to Q1 2024 by device type; North America; as measured by Pivalate





OPEN PROGRAMMING AD TRENDS

App Growth | Open Programmatic Ads | App Categories



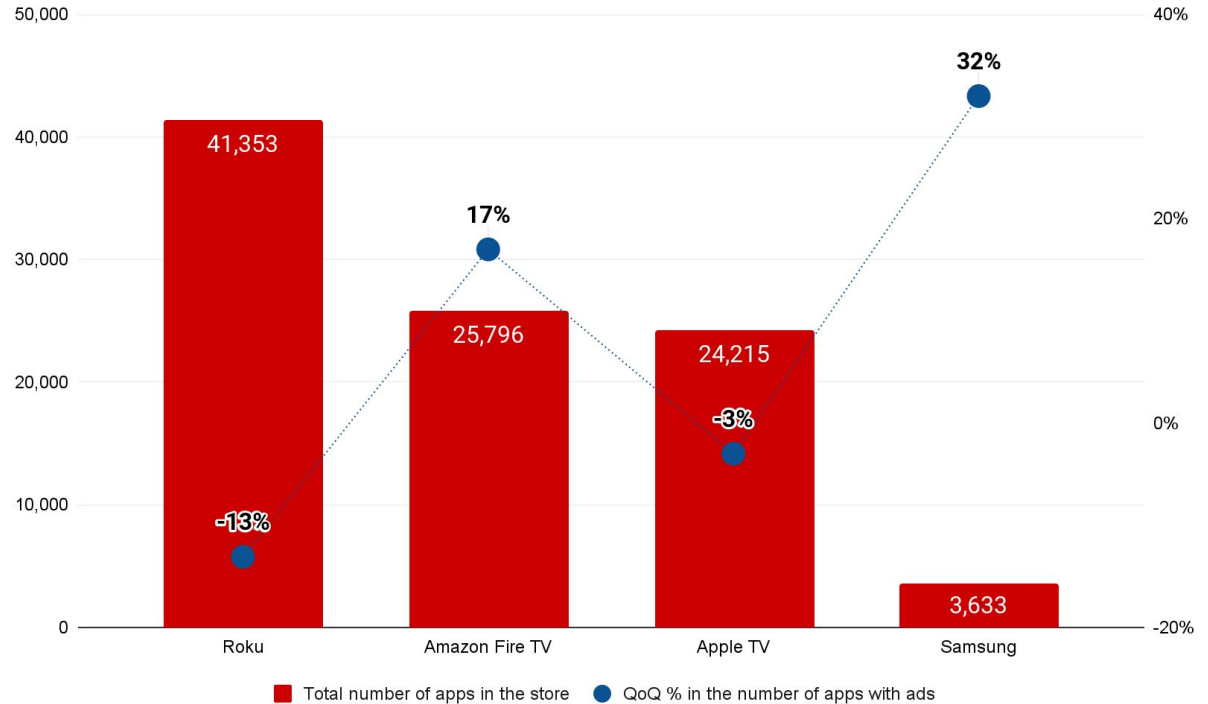


+32%

The number of apps with ads in **Samsung Smart TV** increased 32% QoQ, according to Pivalate's data.

Number of Apps and Apps with Programmatic Advertising in Q1 2024

of total apps and apps w/open programmatic ads (>= 50 IVT-free ads sold) Global in Q1 2024 vs. Q4 2023; as measured by Pivalate



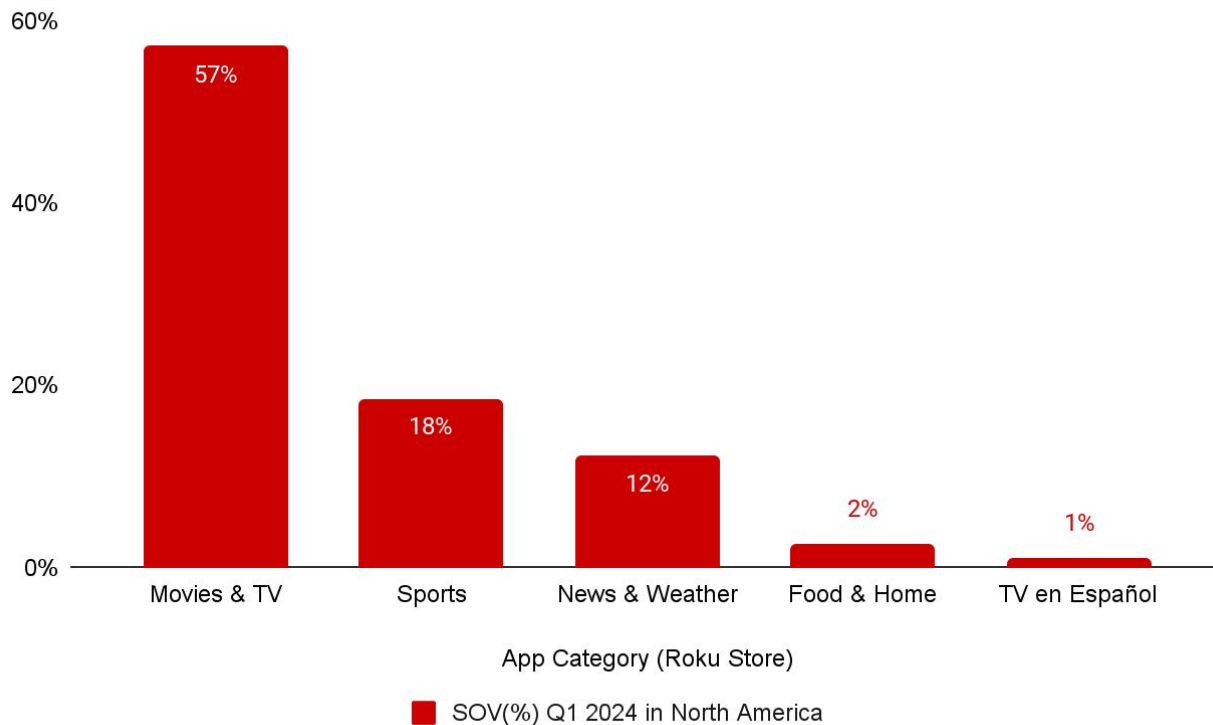


57%

estimated category share of voice (SOV) for Roku apps in the “**Movies & TV**” app category, according to Pivalate’s data.

Roku App Categories: Open Programmatic Advertising SOV

Open programmatic advertising SOV among top five app categories; Q1 2024; North America; as measured by Pivalate



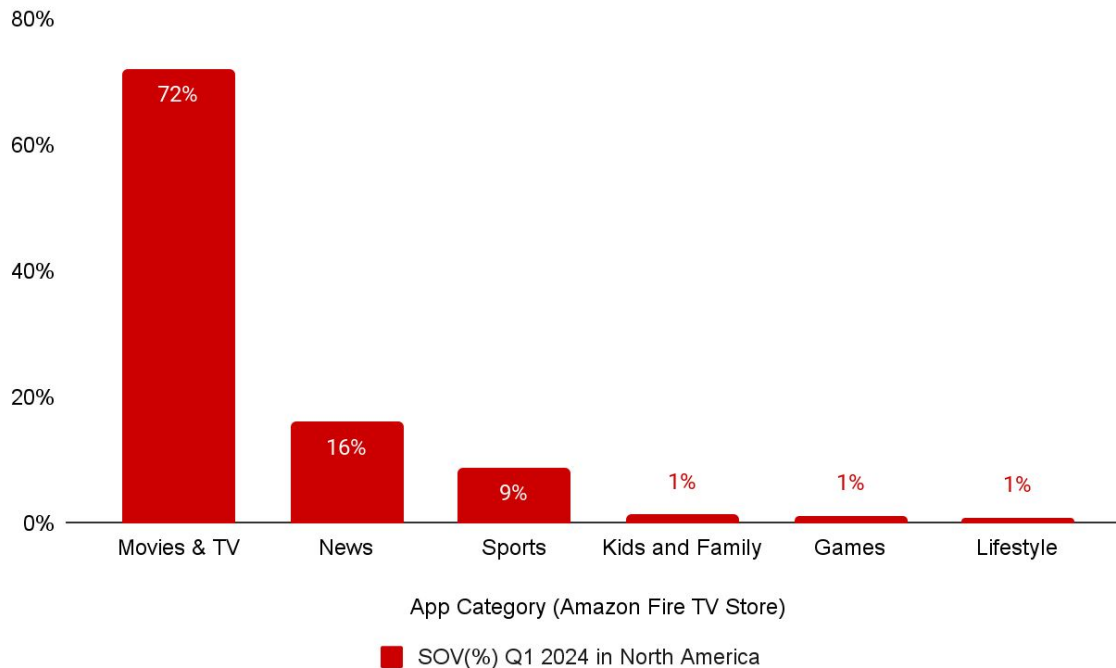


72%

estimated category share of voice (SOV) in North America for Amazon Fire TV apps in the **“Movies & TV”** app category, according to Picalate’s data.

Amazon Fire TV App Categories: Open Programmatic Advertising SOV

Open programmatic advertising SOV among top five app categories; Q1 2024; North America; as measured by Picalate

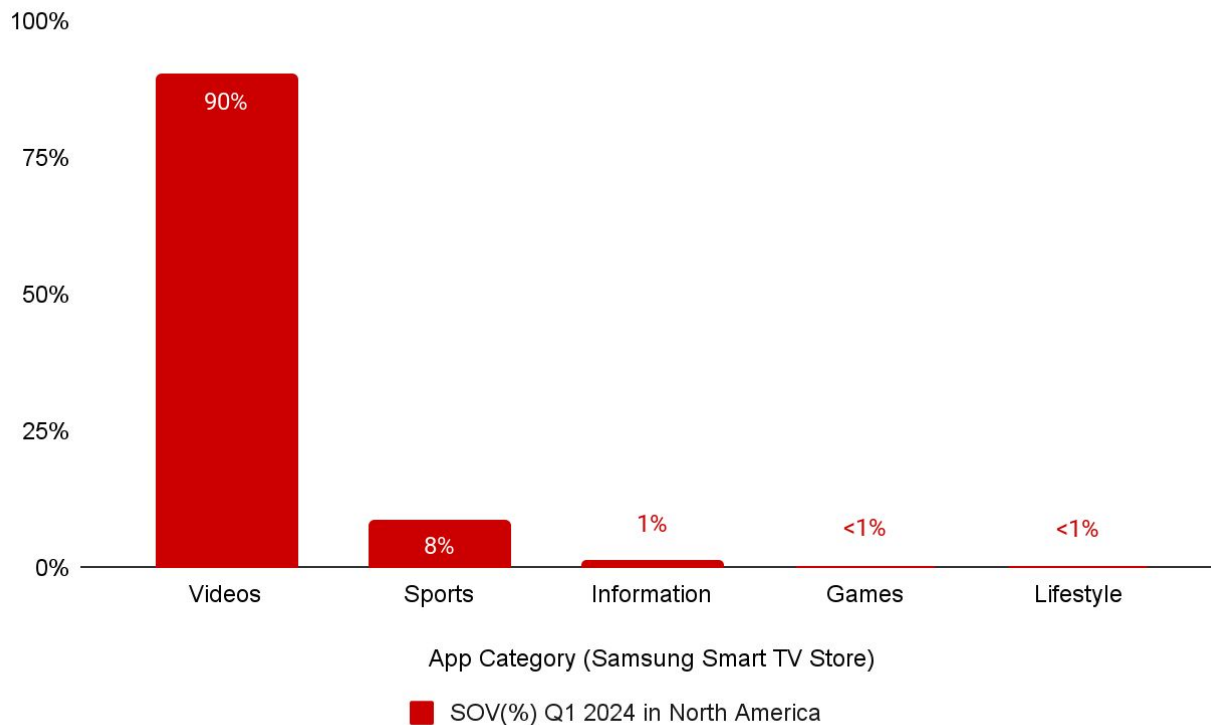


90%

estimated category share of voice (SOV) in North America for Samsung Smart TV apps in the “Videos” app category, according to Pixalate’s data.

Samsung Smart TV App Categories: Open Programmatic Advertising SOV

Open programmatic advertising SOV among top five app categories; Q1 2024; North America; as measured by Pixalate



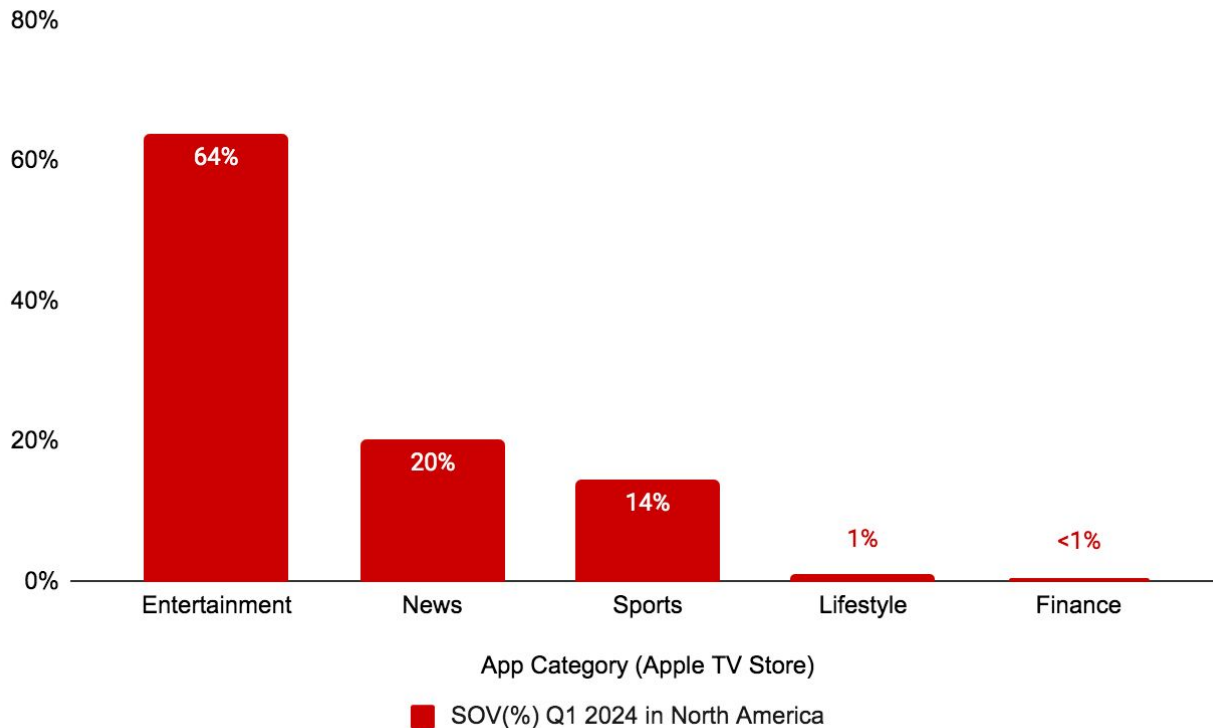
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64%

estimated category share of voice (SOV) in North America for Apple TV apps in the “**Entertainment**” app category, according to Pivalate’s data.

Apple TV App Categories: Open Programmatic Advertising SOV

Open programmatic advertising SOV among top five app categories; Q1 2024; North America; as measured by Pivalate



CTV OPERATING SYSTEMS

AD SPEND TRENDS BY OS

Roku | Android | tvOS | Tizen | Windows | Linux | SONY



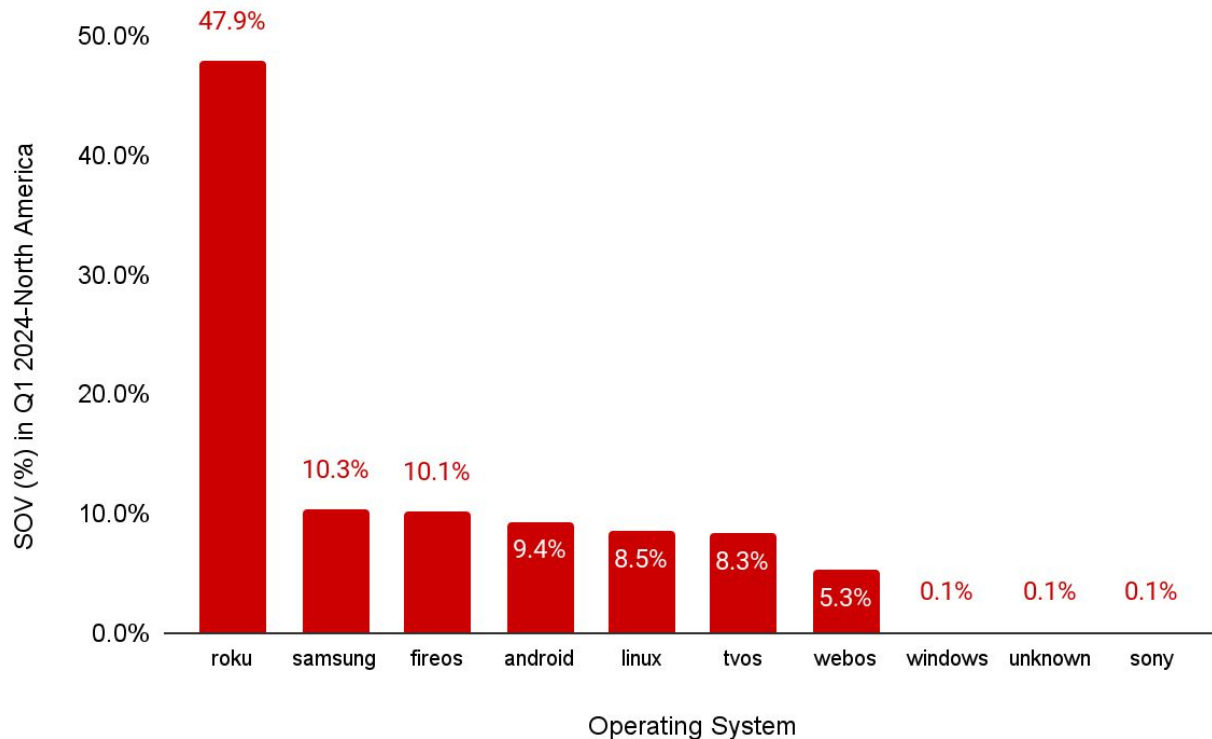


48%

CTV OS market share for **Roku** Q1 2024 in North America, according to Pixalate's data.

Q1 2024 CTV Operating System (OS) Market Share

Share of voice of open programmatic ads sold by operating system; North America; Q1 2024; as measured by Pixalate





METHODOLOGY, DISCLAIMER & GLOSSARY

Methodology

Pixalate's data science team analyzed programmatic advertising activity across over 94 thousand Connected TV (“CTV”) apps and nearly 6 billion global open programmatic ad transactions in Q1 2024 to compile this research. Pixalate's datasets consist predominantly of buy-side open auction programmatic traffic sources.

In the context of this report, programmatic ad transactions, as measured by Pixalate, are proxied for ad spend. The report examines global programmatic advertising activity. Pixalate's datasets — which are used exclusively to derive these insights — consist predominantly of buy-side open auction programmatic traffic sources.

Global Ad Spend Estimates

Pixalate global open programmatic CTV ad spend figures (page 6) were estimated using the following methodology:

- Total estimated global digital ad spend: \$668 billion ([Statista](#))
- CTV's estimate share: 10% ([eMarketer](#))
- Upfronts' estimate share: 34% ([eMarketer](#))
- Open programmatic estimated share: 50% ([Simplifi](#))
- Estimated yearly share of spend by quarter (Pixalate):
 - Q1: 20%
 - Q2: 21.7%
 - Q3: 26.3%
 - Q4: 32.1%

Glossary

Ad market share / share of voice (SOV): This is based on 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 36 of 120 total ads the next quarter, its market share would have increased by 50% (from 20% to 30%). This is not inclusive of invalid traffic.

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

Apps: An app is also sometimes called a “channel” when discussing CTV advertising. This report uses the term “app” for consistency. “Apps with programmatic ads” are based off app Bundle IDs in the ecosystem across all CTV app stores.

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

Household adoption: This includes the estimated percentage of U.S. households that are reachable via any non-CTV form of programmatic advertising (such as mobile in-app), as measured by Picalate that are also reachable via CTV programmatic advertising, as measured by Picalate. Invalid traffic (IVT) is removed.

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

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 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 entity, person or app, but, instead, to report findings and trends pertaining to the time period studied.

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." Certain 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.

ABOUT PIXALATE

Pixalate is a global platform for privacy compliance, ad fraud prevention, and data intelligence in the digital ad supply chain. Founded in 2012, Pixalate's platform is trusted by regulators, data researchers, advertisers, publishers, ad tech platforms, and financial analysts across the Connected TV (CTV), mobile app, and website ecosystems. Pixalate is MRC-accredited for the detection and filtration of Sophisticated Invalid Traffic (SIVT).



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