

# The New York Times

## *How Smart TVs in Millions of U.S. Homes Track More Than What's On Tonight*

By Sapna Maheshwari

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The growing concern over online data and user privacy has been focused on tech giants like Facebook and devices like smartphones. But people's data is also increasingly being vacuumed right out of their living rooms via their televisions, sometimes without their knowledge.

In recent years, data companies have harnessed new technology to immediately identify what people are watching on internet-connected TVs, then using that information to send targeted advertisements to other devices in their homes. Marketers, forever hungry to get their products in front of the people most likely to buy them, have eagerly embraced such practices. But the companies watching what people watch have also faced scrutiny from regulators and privacy advocates over how transparent they are being with users.

Samba TV is one of the bigger companies that track viewer information to make personalized show recommendations. The company said it collected viewing data from 13.5 million smart TVs in the United States, and it has raised \$40 million in venture funding from investors including Time Warner, the cable operator Liberty Global and the billionaire Mark Cuban.

Samba TV has struck deals with roughly a dozen TV brands — including Sony, Sharp, TCL and Philips — to place its software on certain sets. When people set up their TVs, a screen urges them to enable a service called Samba Interactive TV, saying it recommends shows and provides special offers “by cleverly recognizing onscreen content.” But the screen, which contains the enable button, does not detail

how much information Samba TV collects to make those recommendations.



Samba TV declined to provide recent statistics, but one of its executives said at the end of 2016 that more than 90 percent of people opted in.

Once enabled, Samba TV can track nearly everything that appears on the TV on a second-by-second basis, essentially reading pixels to identify network shows and ads, as well as programs on Netflix and HBO and even video games played on the TV. Samba TV has even offered advertisers the ability to base their targeting on whether people watch conservative or liberal media outlets and which party's presidential debate they watched.

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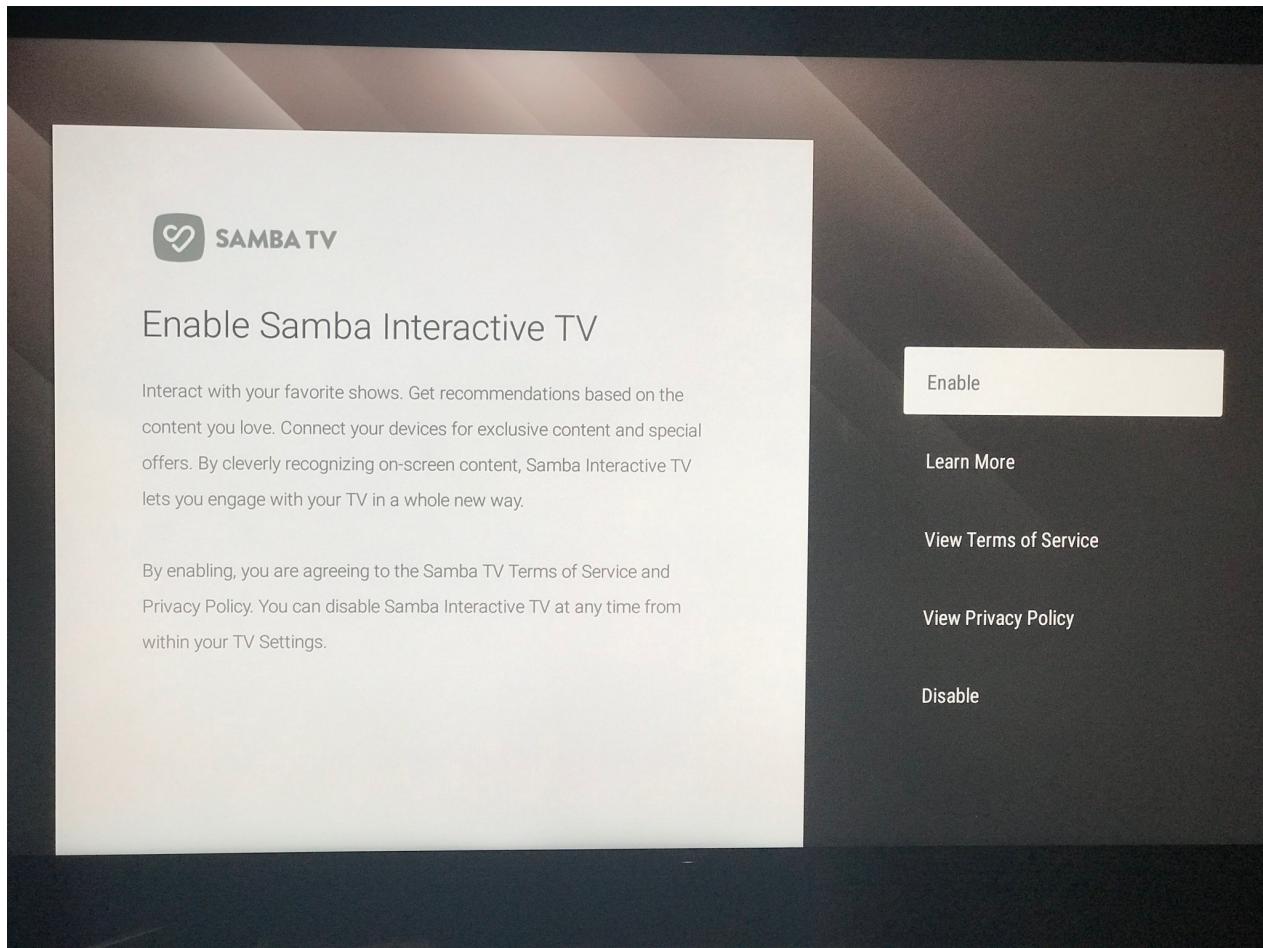
The big draw for advertisers — which have included Citi and JetBlue in the past, and now Expedia — is that Samba TV can also identify other devices in the home that share the TV's internet connection.

Samba TV, which says it has adhered to privacy guidelines from the Federal Trade Commission, does not directly sell its data. Instead, advertisers can pay the company to direct ads to other gadgets in a home after their TV commercials play, or one from a rival airs. Advertisers can also add to their websites a tag from Samba TV that allows them to determine if people visit after watching one of their commercials.

If it sounds a lot like the internet — a company with little name recognition tracking your behavior, then slicing and dicing it to sell ads — that's the point. But consumers do not typically expect the so-called idiot box to be a savant.

“It’s still not intuitive that the box maker or the software embedded by the box

maker is going to be doing this," said Justin Brookman, director of consumer privacy and technology policy at the advocacy group Consumers Union and a former policy director at the Federal Trade Commission. "I'd like to see companies do a better job of making that clear and explaining the value proposition to consumers."



The opt-in screen for Samba Interactive TV that many users see when setting up their smart TVs. They need to click through to another screen for the terms of service, which exceed 6,500 words, and the privacy policy, more than 4,000 words. Chris Heinonen/Wirecutter, a The New York Times Company

About 45 percent of TV households in the United States had at least one smart TV at the end of 2017, IHS Markit data showed. Samba TV, which is based in San Francisco and has about 250 employees, competes against several companies,

including Inscape, the data arm of the consumer electronics maker Vizio, and a start-up called Alphonso.

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It can be a cutthroat business. Samba has sued Alphonso for patent infringement. Last year, Vizio paid \$2.2 million to settle claims by the Federal Trade Commission and the state of New Jersey that it was collecting and selling viewing data from millions of smart TVs without the knowledge or consent of set owners. In December, The New York Times reported that Alphonso was using gaming apps to gain access to smartphone microphones and listen for audio signals in TV ads and shows.

Samba TV's language is clear, said Bill Daddi, a spokesman. "Each version has clearly identified that we use technology to recognize what's onscreen, to create benefit for the consumer as well as Samba, its partners and advertisers," he added.

Still, David Kitchen, a software engineer in London, said he was startled to learn how Samba TV worked after encountering its opt-in screen during a software update on his Sony Bravia set.

The opt-in read: "Interact with your favorite shows. Get recommendations based on the content you love. Connect your devices for exclusive content and special offers. By cleverly recognizing onscreen content, Samba Interactive TV lets you engage with your TV in a whole new way."

The language prompted Mr. Kitchen to research Samba TV's data collection and raise concerns online about its practices.

Enabling the service meant that consumers agreed to Samba TV's terms of service and privacy policy, the opt-in screen said. But consumers couldn't read those unless they went online or clicked through to another screen on the TV. The privacy policy, which provided more details about the information collected through the software, was more than 4,000 words, and the terms exceeded 6,500 words.



“What you’re really opting into is pervasive monitoring on your TV,” said David Kitchen, center, a software engineer in London, who researched Samba TV’s data collection after encountering its opt-in screen on his TV. Tom Jamieson for The New York Times

“The thing that really struck me was this seems like quite an enormous ask for what seems like a silly, trivial feature,” Mr. Kitchen said. “You appear to opt into a discovery-recommendation service, but what you’re really opting into is pervasive monitoring on your TV.”

Ashwin Navin, Samba TV’s chief executive, said that the company’s use of data for advertising is made clear through the reference to “special offers,” and that the opt-in language “is meant to be as simple as it possibly can be.”

“It’s pretty upfront about the fact that this is what the software does — it reads

what's on the screen to drive recommendations and special offers," Mr. Navin said. "We've taken an abundance of caution to put consumers in control of the data and give them disclosure on what we use the data for."

Jeffrey Chester, executive director of the Center for Digital Democracy, said few people review the fine print in their zeal to set up new televisions. He said the notice should also describe Samba TV's "device map," which matches TV content to mobile gadgets, according to a document on its website, and can help the company track users "in their office, in line at the food truck and on the road as they travel."

Mr. Brookman of the Consumers Union, who reviewed the opt-in screen, said the trade-off was not clear for consumers. "Maybe the interactive features are so fantastic that they don't mind that the company's logging all the stuff that they're watching, but I don't think that's evident from this," he said.

Citi and JetBlue, which appear in some Samba TV marketing materials, said they stopped working with the company in 2016 but not before publicly endorsing its effectiveness. JetBlue hailed in a news release the increase in site visits driven by syncing its online ads with TV ads, while Christine DiLandro, a marketing director at Citi, joined Mr. Navin at an industry event at the end of 2015. In a video of the event, Ms. DiLandro described the ability to target people with digital ads after the company's TV commercials aired as "a little magical."

The Times is among the websites that allow advertisers to use data from Samba to track if people who see their ads visit their websites, but a Times spokeswoman, Eileen Murphy, said that the company did that "simply as a matter of convenience for our clients" and that it was not an endorsement of Samba TV's technology.

Companies like Samba TV are also a boon for TV makers, whose profit margins from selling sets can be slim. Samba TV essentially pays companies like Sony to include its software. Samba TV said "our business model does subsidize a small piece of the television hardware," though it declined to provide further details.

Smart TV companies aren't subject to the stricter rules and regulations regarding viewing data that have traditionally applied to cable companies, helping fuel "this rise of weird ways to figure out what someone's watching," said Jonathan Mayer, an assistant professor of computer science and public affairs at Princeton University and a former technology adviser at the Federal Communications Commission.

The smart TV companies are overseen by the Federal Trade Commission, Mr. Mayer said, meaning that "as long as you're truthful to consumers, even if you make it really hard to exercise choices or don't offer choices at all, you probably don't have much of a legal issue."

Mr. Daddi said the trade commission had held up Samba TV as "an exemplary model of data privacy and opt-in policies," pointing to its participation in a smart TV workshop the agency held in late 2016. A commission spokeswoman said that it invited a diverse array of panelists to events and that "an invitation to participate in an F.T.C. event does not convey an endorsement of that company or organization." She added that the agency does not "endorse or bless companies' practices."

Mr. Daddi added: "We have millions of viewers who have explicitly opted into our service and have continued to use it for years. So it is a fair argument to make that far more consumers are satisfied with Samba than surprised by it."

Some worry, more broadly, about the TV industry's increasing ability to use and share information about what people are watching with the internet ad ecosystem.

"I think people have rebelled to the online targeted ad experience," Mr. Brookman said, "and I think they wouldn't necessarily expect that from their TV."

**Correction:** July 4, 2018

*An earlier version of this article misidentified one of the investors that contributed venture funding to Samba TV. It was Time Warner, not Time Warner Cable.*

Kevin Roose contributed reporting.



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