Spotify Teardown



Professor Pelle Snickars Department of Culture and Media Studies / Humlab Umeå University

IASPM Norden

Music, digitalisation and democracy Åbo Akademi University, December 13-14, 2018

Financials

QUARTERLY RESULTS

SEC FILINGS

FINANCIAL RELEASES

	2018	2016	
Press Release	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	
Financial Statements	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	
Earnings Webcast	Q1 Q2 Q3 Q4	Q1 Q2 Q3 Q4	



November 1, 2018

Dear Shareholders,

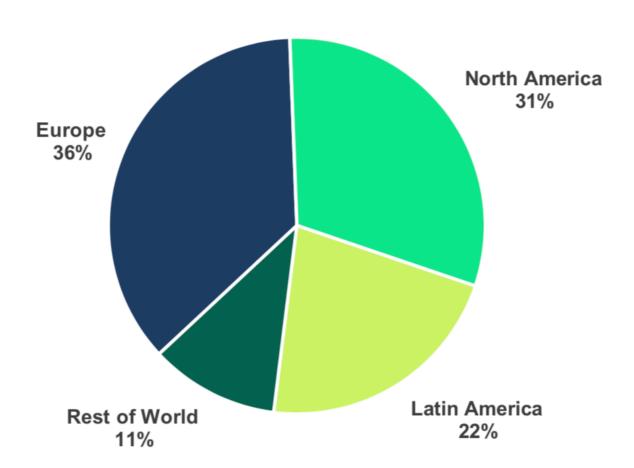
Today Spotify is reporting results for Q3 2018. The quarter was largely in line with our expectations and our guidance range, except that Operating Margin outperformed our forecast.

SUMMARY USER AND FINANCIAL METRIC						
				% Change		
USERS (M)	Q3 2017	Q2 2018	Q3 2018	Y/Y	Q/Q	
Total Monthly Active Users ("MAUs")	150	180	191	28%	6%	
Premium Subscribers	62	83	87	40%	5%	
Ad-Supported MAUs	91	101	109	20%	8%	
FINANCIALS (€M)						
Premium	923	1,150	1,210	31%	5%	
Ad-Supported	109	123	142	30%	16%	
Total Revenue	1,032	1,273	1,352	31%	6%	
Gross Profit	230	329	342	49%	4%	
Gross Margin	22.3%	25.8%	25.3%			
Operating Loss	(73)	(90)	(6)	(92%)	(93%)	
Operating Margin	(7.1%)	(7.1%)	(0.5%)			
Net cash flows from operating activities	(81)	30	80		167%	
Free Cash Flow ¹	(89)	18	33		83%	

MONTHLY ACTIVE USERS

MAUs grew 28% Y/Y to 191 million at the end of Q3. Growth in our emerging regions of Latin America and Rest of World continues to outpace growth in our more established markets.

Total MAUs by Region

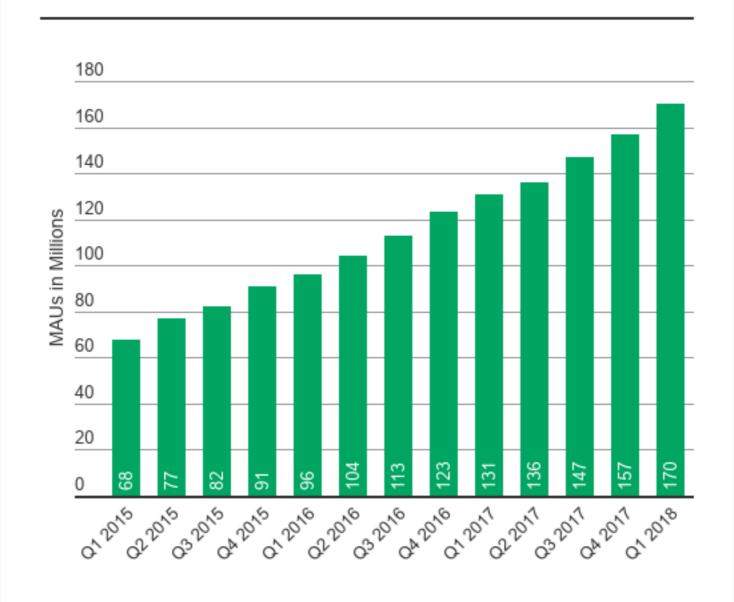


Ad-Supported MAUs totaled 109 million at the end of the quarter, up 20% Y/Y. Earlier this year we began rolling out a new user interface for our Ad-Supported tier of service, the first major revision since our mobile product was introduced in 2014. We expect this new user interface to drive improvements in engagement and retention.

"We continue to work to identify and remove users that we consider to be 'fake' from our reported metrics. This includes, but is not limited to, bots and other users who aim to manipulate stream counts for purposes of royalty calculations. Such users are removed from our metrics in a timely fashion once they are discovered. However, some such users may remain in our reported metrics because of the limitations of our ability to identify their accounts."



Spotify Total Monthly Active Users









HOME > MUSIC > NEWS AUGUST 16, 2018 9:45AM PT

Fraud Has Become the Latest Hurdle for Music Streaming

By CHERIE HU 🔁













CREDIT: PETE RYAN FOR VARIETY

Twitter's recent housecleaning of some 70 million fake and automated accounts illuminates just how pervasive audience manipulation has become in the digital era. For Twitter, the fake accounts can create a shadow army of followers that has comparatively little monetary effect. But perform the same manipulation with music streams, and it constitutes fraud.

HOME > MUSIC > NEWS AUGUST 16, 2018 9:45AM PT

Fraud Has Become the Latest Hurdle for Music Streaming

By CHERIE HU 🔁













CREDIT: PETE RYAN FOR VARIETY

Twitter's recent housecleaning of some 70 million fake and automated accounts illuminates just how pervasive audience manipulation has become in the digital era. For Twitter, the fake accounts can create a shadow army of followers that has comparatively little monetary effect. But perform the same manipulation with music streams, and it constitutes fraud.



Read Next: The 9 Best Gifts For 'Star Wars' Fans

"It's pretty easy to buy guides online on how to stream your own content repeatedly."

CHRISTINE BARNUM, CD BABY DIRECTOR OF FINANCE

Two months later, YouTube acknowledged, "Loop videos that feature misleading and inaccurate metadata violate YouTube policies, and we are actively working to have them removed."

But earlier this week, the New York Times published a piece titled "The Flourishing Business of Fake YouTube Views" in which it contended that "tens of millions of fake views" make it through the platform's anti-fraud detection triggers daily.

Spotify has kicked outlets like Spotlister off its platform on a case-by-case basis — standalone sites like Social Media Experts, Streamify and StreamKO offer "Spotify promotion" with prices ranging from \$5 to \$995 — but concerns remain about whether that enforcement is being replicated meaningfully across entire platforms. And if not, are the labels or the streamers themselves complicit in royalty fraud by transferring payouts? The legal consequences for fraud convictions, and even of conspiracy to defraud, include hefty fines and up to five years in prison.

"We're seeing an uptick in the type of fraud where people are distributing their content through us and signing up with a legitimate credit card, but then their intent is to manipulate streams and rip off a [digital service provider]," Christine Barnum, director of finance at CD Baby, tells *Variety*. "It's pretty easy to buy guides online on how to stream your own content repeatedly. There are also more instances of well-meaning artists accidentally signing up for some sort of 'marketing service' that's actually committing fraud."



https://www.youtube.com/watch?v=KXvncV79LXk





MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY

I.—COMPUTING MACHINERY AND INTELLIGENCE

By A. M. TURING

1. The Imitation Game.

I PROPOSE to consider the question, 'Can machines think?' This should begin with definitions of the meaning of the terms 'machine' and 'think'. The definitions might be framed so as to reflect so far as possible the normal use of the words, but this attitude is dangerous. If the meaning of the words 'machine' and 'think' are to be found by examining how they are commonly used it is difficult to escape the conclusion that the meaning and the answer to the question, 'Can machines think?' is to be sought in a statistical survey such as a Gallup poll. But this is absurd. Instead of attempting such a definition I shall replace the question by another, which is closely related to it and is expressed in relatively unambiguous words.

The new form of the problem can be described in terms of a game which we call the 'imitation game'. It is played with three people, a man (A), a woman (B), and an interrogator (C) who may be of either sex. The interrogator stays in a room apart from the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman. He knows them by labels X and Y, and at the end of the game he says either 'X is A and Y is B' or 'X is B and Y is A'. The interrogator is allowed to put questions to A and B thus:

C: Will X please tell me the length of his or her hair?

Now suppose X is actually A, then A must answer. It is A's

28

433

MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY

I.—COMPUTING MACHINERY AND INTELLIGENCE

By A. M. TURING

1. The Imitation Game.

I PROPOSE to consider the question, 'Can machines think?' This should begin with definitions of the meaning of the terms 'machine' and 'think'. The definitions might be framed so as to reflect so far as possible the normal use of the words, but this attitude is dangerous. If the meaning of the words 'machine' and 'think' are to be found by examining how they are commonly used it is difficult to escape the conclusion that the meaning and the answer to the question, 'Can machines think?' is to be sought in a statistical survey such as a Gallup poll. But this is absurd. Instead of attempting such a definition I shall replace the question by another, which is closely related to it and is expressed in relatively unambiguous words.

The new form of the problem can be described in terms of a game which we call the 'imitation game'. It is played with three people, a man (A), a woman (B), and an interrogator (C) who may be of either sex. The interrogator stays in a room apart from the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman. He knows them by labels X and Y, and at the end of the game he says either 'X is A and Y is B' or 'X is B and Y is A'. The interrogator is allowed to put questions to A and B thus:

C: Will X please tell me the length of his or her hair?

Now suppose X is actually A, then A must answer. It is A's

433

object in the game to try and cause C to make the wrong identification. His answer might therefore be

'My hair is shingled, and the longest strands are about nine inches long.'

In order that tones of voice may not help the interrogator the answers should be written, or better still, typewritten. The ideal arrangement is to have a teleprinter communicating between the two rooms. Alternatively the question and answers can be repeated by an intermediary. The object of the game for the third player (B) is to help the interrogator. The best strategy for her is probably to give truthful answers. She can add such things as "I am the woman, don't listen to him!' to her answers, but it will avail nothing as the man can make similar remarks.

We now ask the question, 'What will happen when a machine takes the part of A in this game?' Will the interrogator decide wrongly as often when the game is played like this as he does when the game is played between a man and a woman? These questions replace our original, 'Can machines think?'

2. Critique of the New Problem.

As well as asking, 'What is the answer to this new form of the question', one may ask, 'Is this new question a worthy one to investigate?' This latter question we investigate without further ado, thereby cutting short an infinite regress.

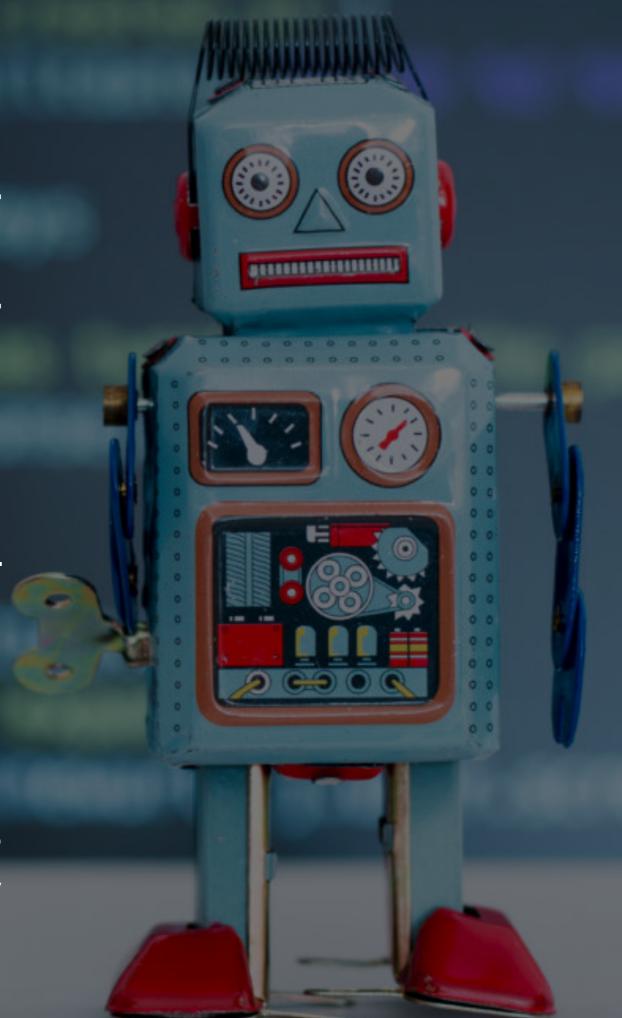
The new problem has the advantage of drawing a fairly sharp line between the physical and the intellectual capacities of a man. No engineer or chemist claims to be able to produce a material which is indistinguishable from the human skin. It is possible that at some time this might be done, but even supposing this invention available we should feel there was little point in trying to make a 'thinking machine' more human by dressing it up in such artificial flesh. The form in which we have set the problem reflects this fact in the condition which prevents the interrogator from seeing or touching the other competitors, or hearing their voices. Some other advantages of the proposed criterion may be shown up by specimen questions and answers. Thus:

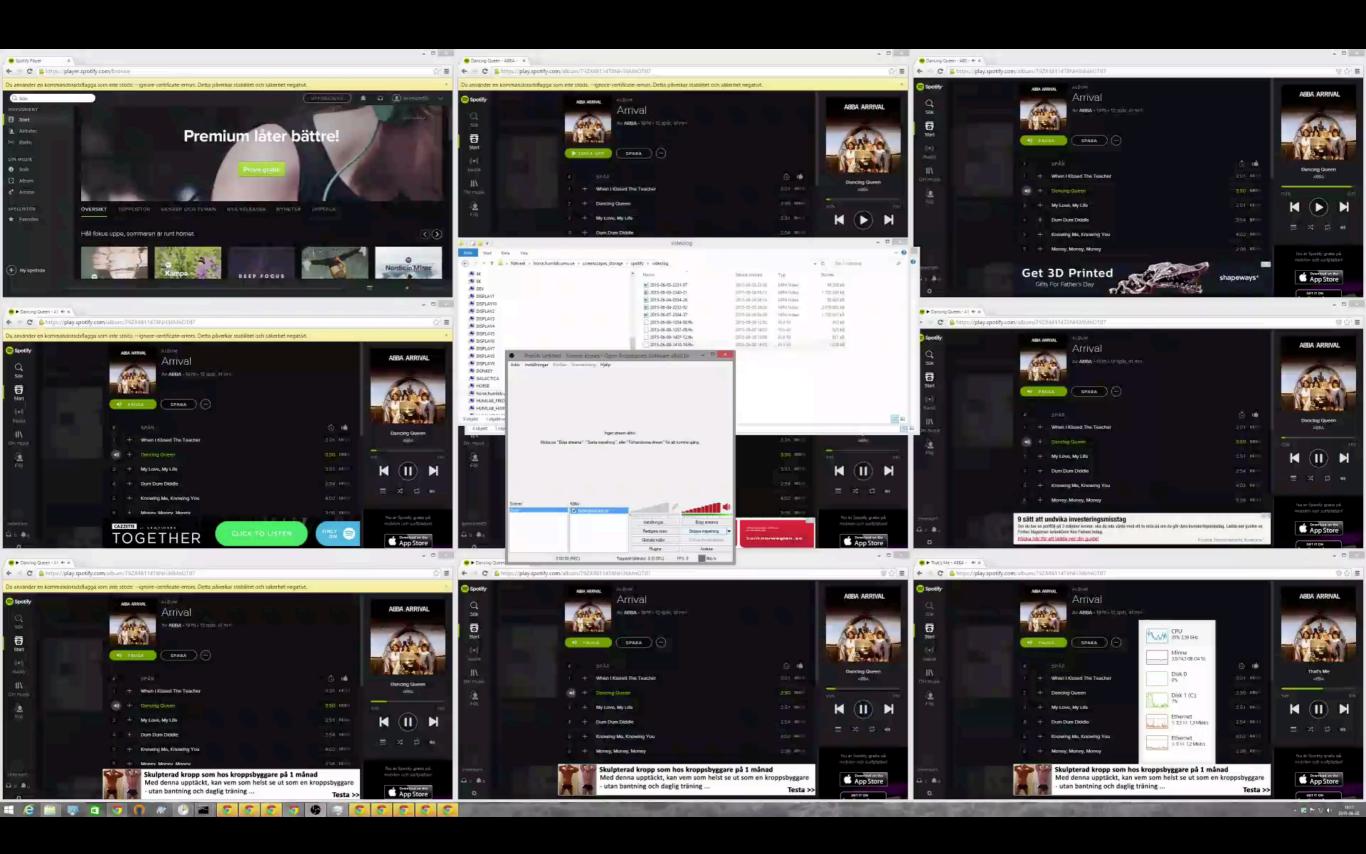
- Q: Please write me a sonnet on the subject of the Forth Bridge.
- A: Count me out on this one. I never could write poetry.
- Q: Add 34957 to 70764
- A: (Pause about 30 seconds and then give as answer) 105621.
- Q: Do you play chess?
- A: Yes.

The SpotiBot intervention was set up at Humlab, Umeå University. Via multiple bots running in parallel our idea was to examine if it is possible to provoke—or even undermine—the Spotify business model. Essentially, the experiment resembled a Turing test, where we asked ourselves what happens when—not if—streaming bots approximate human listener behavior in such a way that it becomes impossible to distinguish between a human and a machine.

Implemented in the Python programming language, and using a web UI testing frameworks, our SpotiBot engine automated the Spotify web client by simulating user interaction within the web interface.

The SpotiBot engine was instructed to play a single track repeatedly—both self-produced music and Abba's "Dancing Queen"—during less and more than 30 seconds, and with a fixed repetition scheme running from 100 to *n* times simultaneously with different Spotify Free 'bot accounts'.





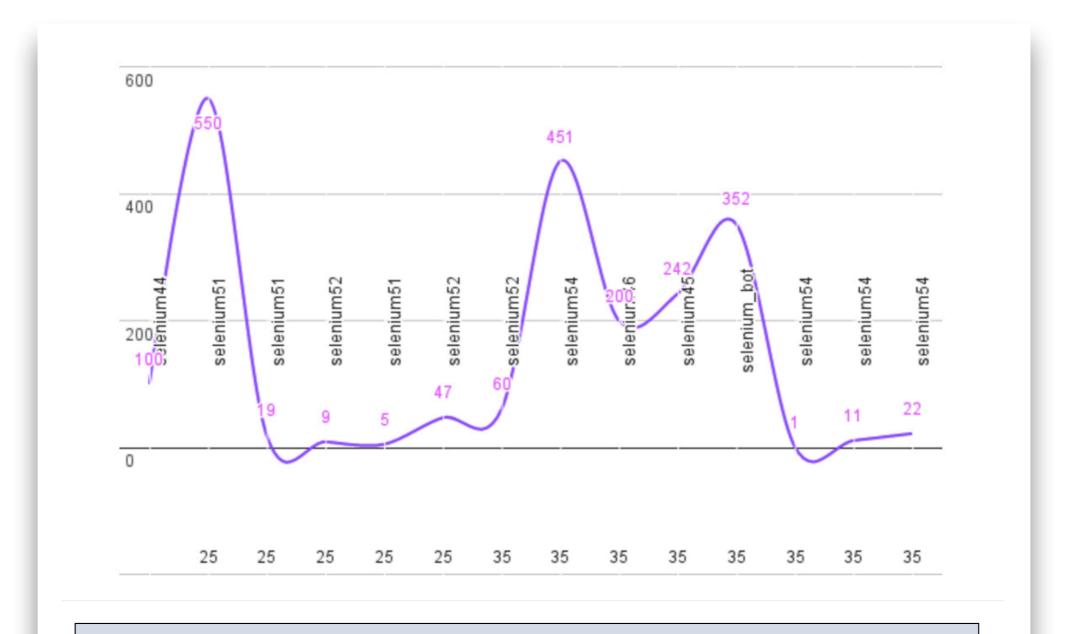


Figure 3. Multiple SpotiBots playing ABBA's "Dancing Queen", simultaneously and repeatedly for 25 or 35 seconds (never mind negative results)

digital humanities quarterly

submissions about dhq dhq people contact Search

2018 Volume 12 Number 1

2018 12.1 | XML | Discuss (0 Comments)

SpotiBot — Turing Testing Spotify

Pelle Snickars <pelle dot snickars at umu dot se>, Umeå University Roger Mähler <roger dot mahler at umu dot se>, Umeå University

Abstract

Even if digitized and born-digital audiovisual material today amounts to a steadily increasing body of data to work with and research, such media modalities are still relatively poorly represented in the field of DH. Streaming media is a case in point, and the purpose of this article is to provide some findings from an ongoing audio (and music) research project, that deals with experiments, interventions and the reverse engineering of Spotify's algorithms, aggregation procedures, and valuation strategies. One such research experiment, the SpotiBot intervention, was set up at Humlab, Umeå University. Via multiple bots running in parallel our idea was to examine if it is possible to provoke — or even undermine — the Spotify business model (based on the so called "30 second royalty rule"). Essentially, the experiment resembled a Turing test, where we asked ourselves what happens when — not if — streaming bots approximate human listener behavior in such a way that it becomes impossible to distinguish between a human and a machine. Implemented in the Python programming language, and using a web UI testing frameworks, our so called SpotiBot engine automated the Spotify web client by simulating user interaction within the web interface. The SpotiBot engine was instructed to play a single track repeatedly (both self-produced music and Abba's "Dancing Queen"), during less and more than 30 seconds, and with a fixed repetition scheme running from 100 to *n* times (simultaneously with different Spotify Free 'bot accounts'). Our bots also logged all results. In short, our bots demonstrated the ability (at least sometimes) to continuously play tracks, indicating that the Spotify business model can be tampered with. Using a single virtual machine — hidden behind only one proxy IP — the results of the intervention hence stipulate that it is possible to automatically play tracks for thousands of repetitions that exceeds the royalty rule.

Introduction

Digitized and born-digital audiovisual material today amounts to a steadily increasing body of data to research — and do research with [Brügger 2016]. Yet, other media modalities than text is still relatively poorly represented in the field of DH. As is well known, the focus on the modality of text is (and has remained) strong; textual scholarship has been the discipline's core concern — from Busa's concordances, to various text encoding initiatives and distant *reading*. Naturally, there are a number of exceptions, especially regarding visual culture, and the way that images as datasets have been researched within major frameworks as cultural analytics, or the abilities to algorithmically use computers to read and analyze a film's formal elements. Then again, most analytical DH-frameworks are derived from text, and it remains illustrative that as late as 2014, a special interest group focusing on "audiovisual material in digital humanities" was set up within ADHO. Its

1

SPOTIFY

TEARDOWN

Inside the Black Box of Streaming Music

/ Maria Eriksson / Rasmus Fleischer / Anna Johansson / Pelle Snickars / Patrick Vonderau





A

Volumes

Advance Access

Aims & Scope

Indexing

Ethics

Instruction for Authors

Editorial

Copyright

Contact

Statistics

Current Issue

Back Volume and Themes

Volume 9, Issue 2, 2017

🔼 Complete issue

DOI: 10.3384/cu.2000.1525.1792

Editorial

Discovering Spotify – A Thematic Introduction

Rasmus Fleischer and Pelle Snickars

Culture Unbound: Journal of Current Cultural Research 2017 9(2): 130-145

T fulltext

Discovering Spotify

If the Song has No Price, is it Still a Commodity? : Rethinking the Commodification of Digital Music

Rasmus Fleischer

Culture Unbound: Journal of Current Cultural Research 2017 9(2): 146-162



Tracking Gendered Streams

Maria Eriksson and Anna Johansson

Culture Unbound: Journal of Current Cultural Research 2017 9(2): 163-183

Ifulltext

More of the Same - On Spotify Radio

Pelle Snickars

Culture Unbound: Journal of Current Cultural Research 2017 9(2): 184-211

T fulltext

Studying Ad Targeting with Digital Methods: The Case of Spotify

Roger Mähler and Patrick Vonderau

Culture Unbound: Journal of Current Cultural Research 2017 9(2): 212-221

I fulltext

The Spotify Effect: Digital Distribution and Financial Growth

Television & New Media 2019, Vol. 20(1) 3–19 © The Author(s) 2017 Article reuse guidelines: sagepub.com/journals-permissions DOI: 10.1177/1527476417741200 journals.sagepub.com/home/tvn



Patrick Vonderau

Abstract

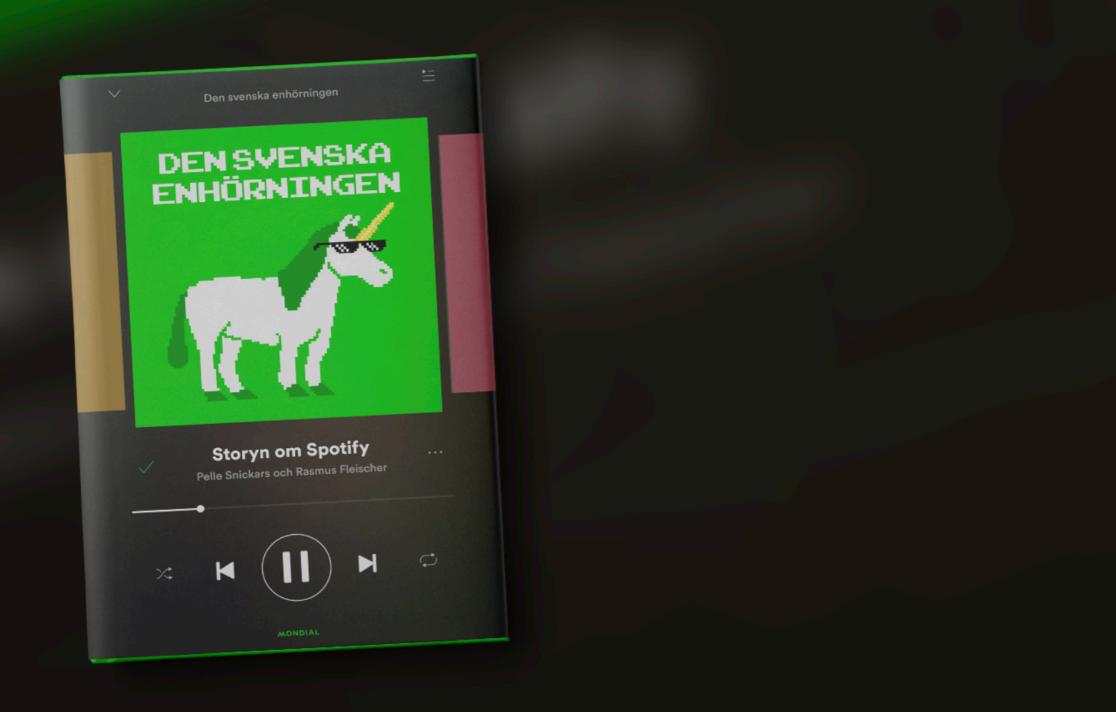
This article analyzes Spotify as a media company that operates at the intersection of advertising, technology, music, and finance. In doing so, this article contributes to media industry studies as a field that investigates the relation between various industrial and economic actors. Given that the media industries, as any other industry, can be defined as a set of markets, one of which is the leading market, and to which other markets are auxiliary, the question asked is what market is leading in the case of Spotify. What the article describes as the "Spotify effect" is the company's ability to fold markets into each other: to make disappear an aggressive financial growth strategy and business set-up based on ad tech engineering by creating an aura of Nordic cool and public benefit around its use of music. Spotify's financial strategy has implications for the digital distribution of cultural content more generally.

Keywords

advertising, media infrastructure, financialization, digital distribution, Spotify, programmatic advertising, streaming, platform, digital methods

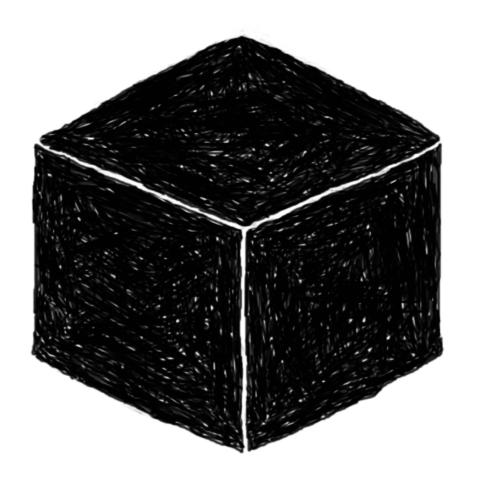
Swedish music streaming service Spotify's story has been recounted as one of unprecedented growth. In June 2016, Spotify was described as the "biggest streaming platform in the world," with more than a hundred million active monthly users. One year later, that number had increased by another forty million; with more than fifty million subscribers, the company also outpaced its closest rival, Apple Music. In 2017, Spotify was valued at \$13 billion, making it the highest valued venture-capital-backed company in Europe (e.g., Murgia 2016). What we know about this company has largely been conveyed through such numerical increases of users and funding rounds.

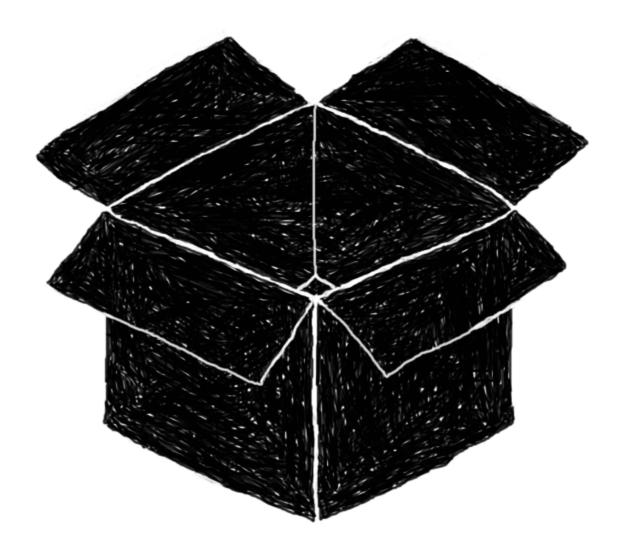
Stockholm University, Sweden



entions

& digital methods







Thanks, 2016. It's been weird.

Spotify

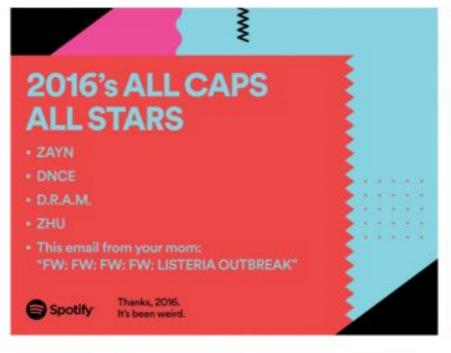








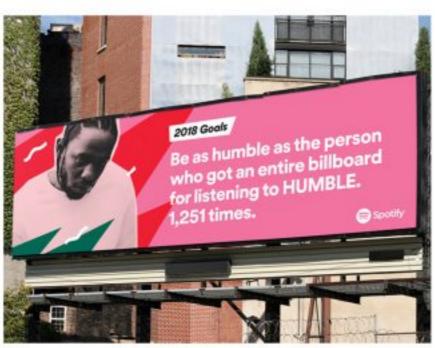














But how to acquire data for academic research?

Record Label Set Up



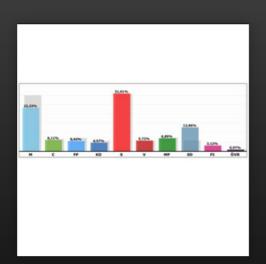
Record Label Set Up

The intervention was aimed at studying the back end of streaming services and different music aggregation processes by way of launching a record label—and self-produced 'music'—for research purposes.



Record Label Set Up

By producing and distributing our own music we investigated how sounds gets inserted into streamed distribution circuits—and what happens to the music once it's there.



ALBUM

Election Music

By Heinz Duthel

2014 • 13 songs, 11 min

PLAY

SAVE



#		TITLE	Ŀ	
1	+	Riket	0:46	
2	+	Biskopsgården N	1:10	
3	+	Täby	0:44	
4	+	Spökparken	0:46	
5	+	Rinkeby	1:12	
6	+	Hörken	0:50	
7	+	Knäred	0:48	
8	+	Mullsjö	0:44	

DELIVERY

Getting your music on Spotify.

First things first: Getting your music on Spotify is easy. If you have a label or aggregator, they'll get your music on Spotify for you. If you don't, we have deals in place with a number of companies who can deliver your music to us and collect royalties for you.

- AWAL
- CD BABY
- DISTROKID
- EMU BANDS
- RECORD UNION
- SPINNUP
- TUNECORE

If you're using Distrokid or CD Baby as your music distributor, you get instant access to Spotify for Artists. Just log into your account on their site and follow the steps!

These services handle the licensing and distribution of your music and also pay you royalties when your fans stream your music on Spotify. There's usually a small fee or percentage cut involved. Each service is unique, so be sure to do a little homework before picking one.

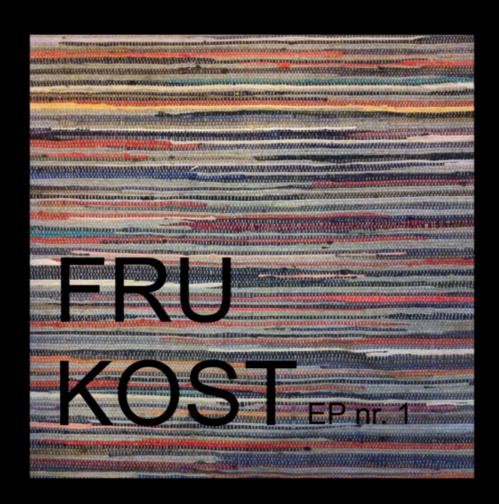
YOUR MUSIC

DELIVERY

SPOTIFY FOR ARTISTS

PROMOTION

PLAYLISTS



Hi there,

Thanks for the form, I¹m afraid this isn¹t the kind of content we¹re looking to sign up currently. Sorry about that.

We wish you all the best.

Cheers,

SUPPLE

And the second

Client Services Manager

Awal Digital Limited

Registered in England & Wales Company Registration: 4430703 VAT Registration: GB774150334

Registered Office: 4 Valentine Place, London, SE1 8QH

www.awal.com

Från: @@routenote.com

Ämne: FRUKOST Disapproved
Datum: 20 oktober 2014 19:02
Till: strokultarv@gmail.com

Hi FruKost,

We're sorry, your release FRUKOST has had to be disapproved by RouteNote for the following reason(s):

RouteNote only distributes music content, we cannot distribute silent tracks etc.

This release has been cancelled and will need to be re-uploaded after the specified changes have been made

If you have any problems regarding this album please do not hesitate to contact our team at support@routenote.com. Make sure you include your username and UPC of the release you are inquiring about

Many warm regards,

The RouteNote Team



ARTIST

Fru Kost

PLAY

FOLLOW



MONTHLY LISTENERS

^

OVERVIEW

ABOUT

CONCERTS

Popular

UK 1	+	Kaffe	6,983
FR 2	+	Avplock	< 1,000



Sales performance report

This document contains an overview of your sales based on the data and filter outlined below.

Check the sheets in the document for different breakdowns.

Sales period

From January 2011

To August 2018

Your selection

Music All

Country All

Stores & Services All

Account information

Username Fru Kost

Sales per song

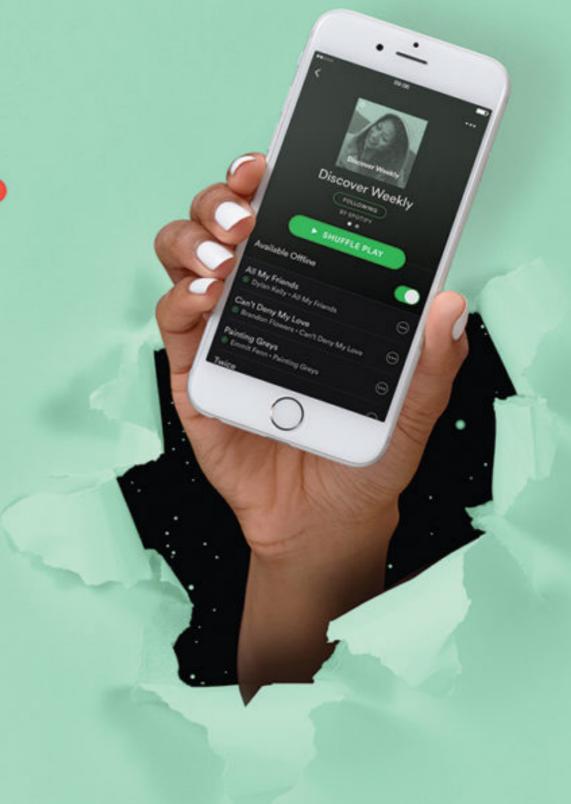
Sales broken down by individual songs.

Song	Track ISRC	Song downloads	Streams	Total earned
Kaffe	SEYOK1427065	0	6 336	\$ 6,53
Avplock	SEYOK1427064	0	151	\$ 0,28
	Total	0	6 487	\$ 6,82
			-	·

Okay, here's an ad.

"Why am I just learning about your DiscoverWeekly playlist, @Spotify?? You should def promote it more tbh."







Okay, here's an ad.

"Why am I just learning about your DiscoverWeekly playlist, @Spotify?? You should def promote it more tbh."

y @thisiscol

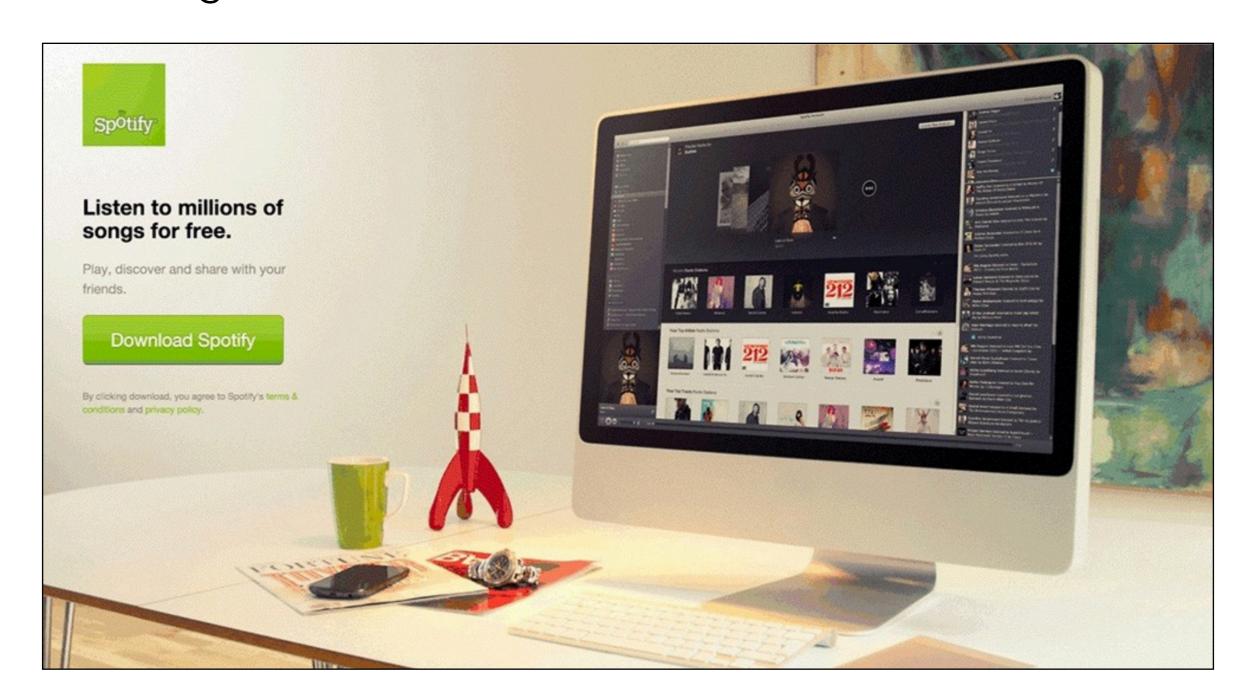
What is advertisment according to Spotify?





Spotify ads

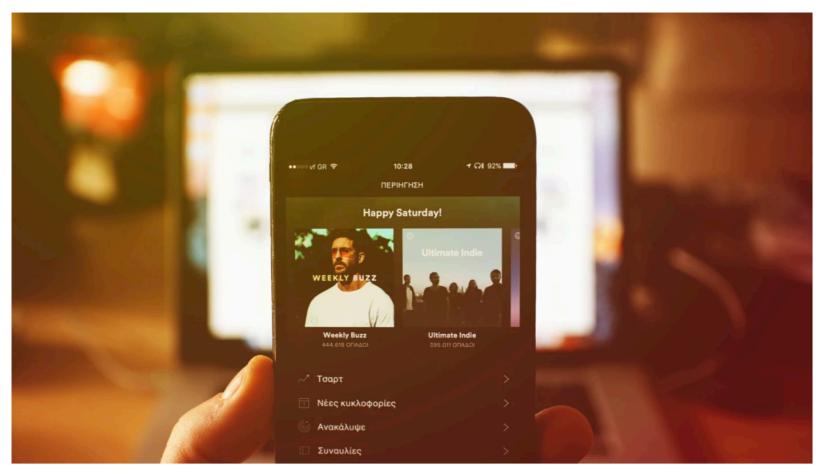
A decade ago Spotify was intended to become a **platform for selling advertisment**—with music as the bait for attracting users.



03.26.18



Millions of people blocked Spotify ads without paying for the premium service



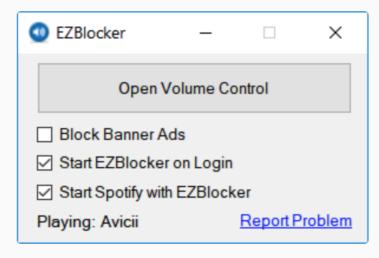
[Photo: John Tekeridis/Pexels]

EZBlocker – Spotify Ad Blocker

EZBlocker is a simple-to-use ad blocker/muter for Spotify. EZBlocker will attempt to block ads on Spotify from loading. If an ad does load, EZBlocker will mute Spotify until the ad is over.

There are no fancy features, just pure ad blocking. When an ad is blocked, only Spotify is muted, so no other sounds will be affected. EZBlocker aims to be the most stable and reliable ad blocker for Spotify.

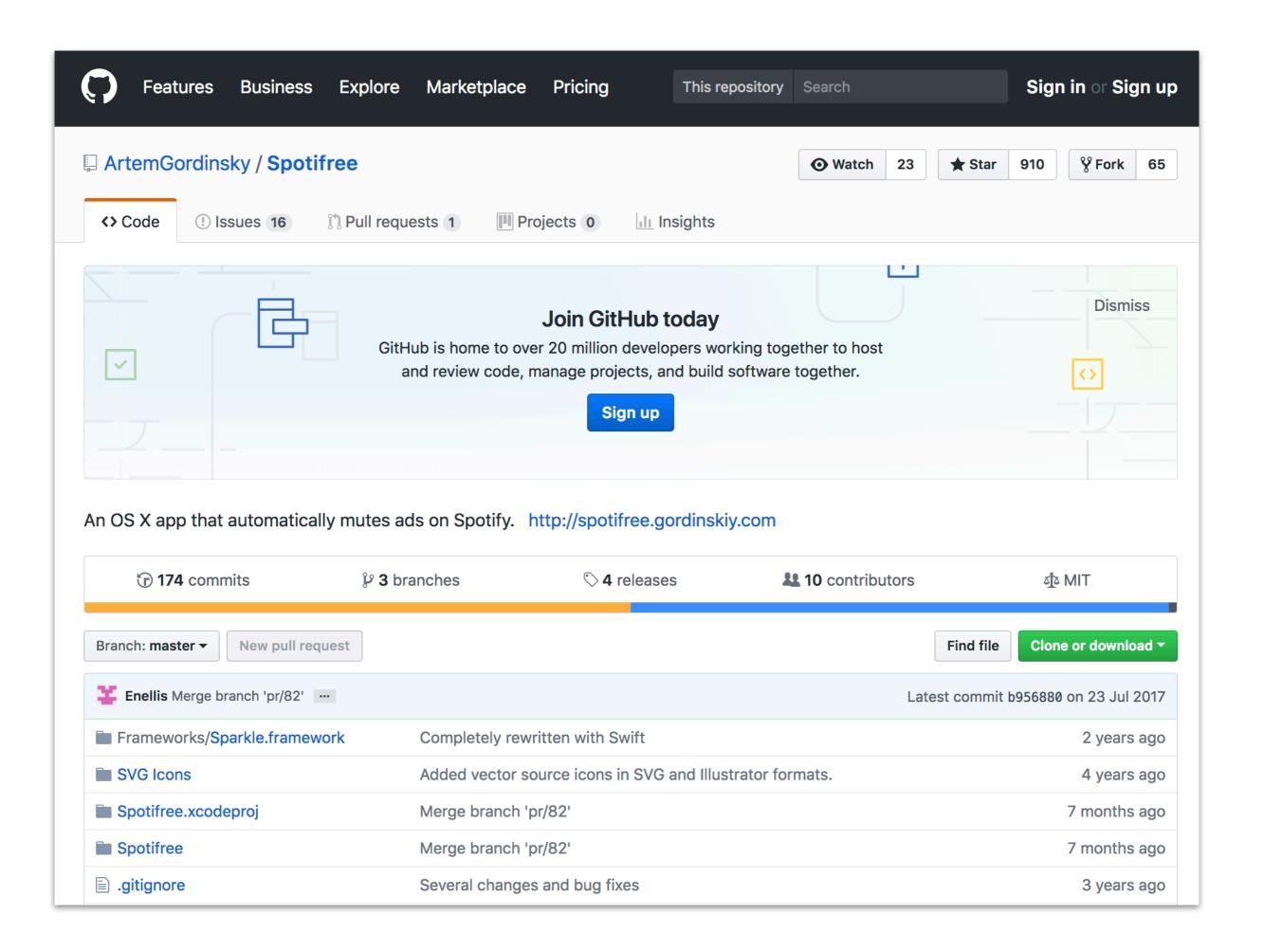
There's no setup required - just drag it into any folder and run. To upgrade your EZBlocker, simply replace the executable file.

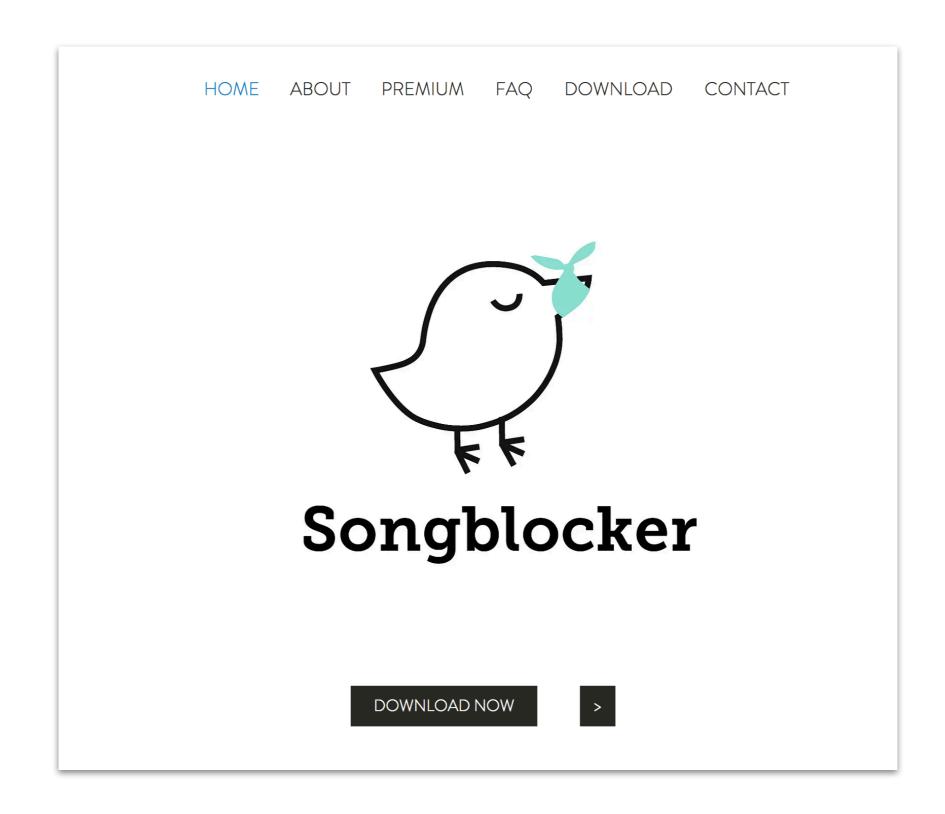


Download

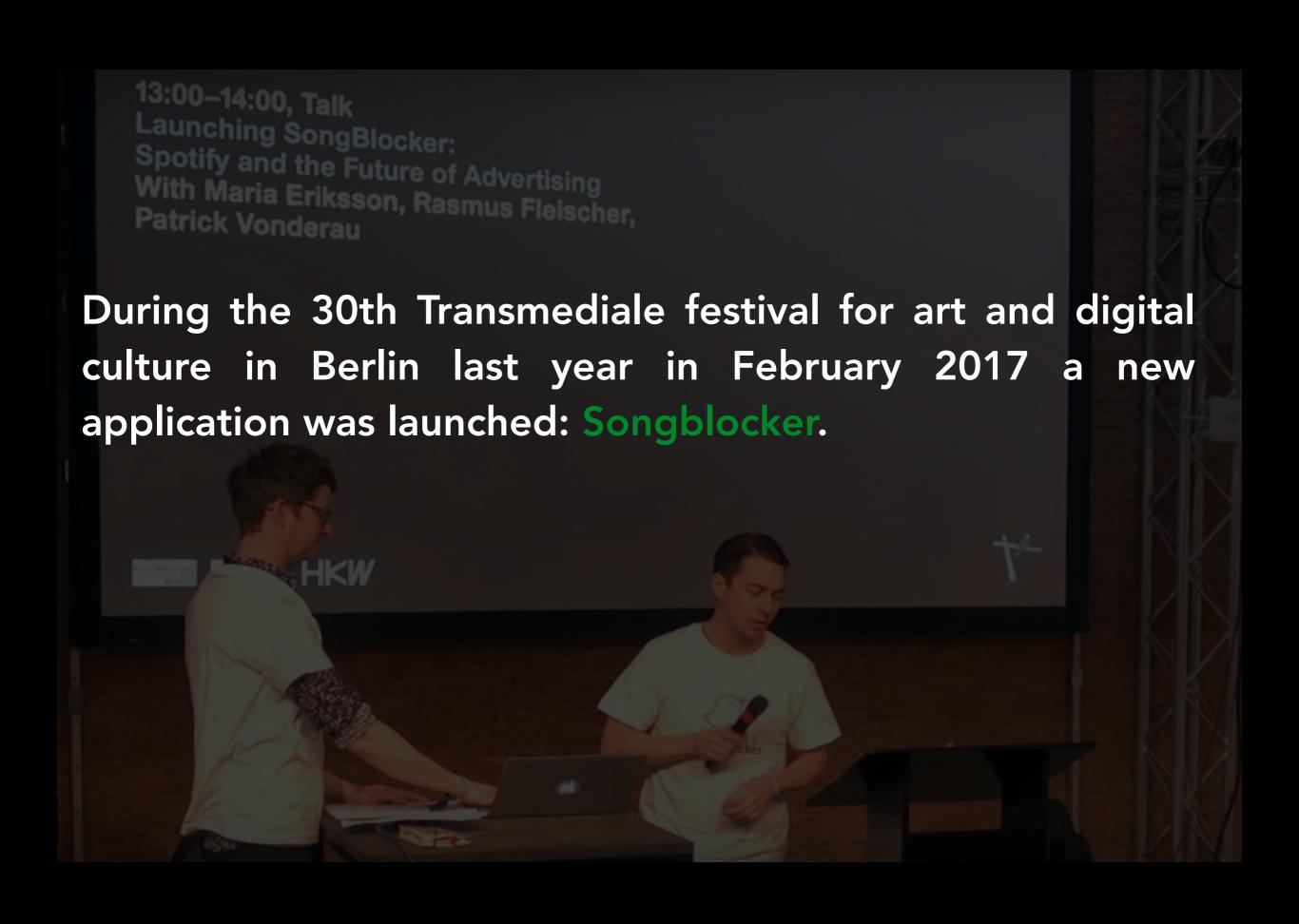
Latest: Download v1.7.3 (October 20, 2018)

Changelog and Previous Versions







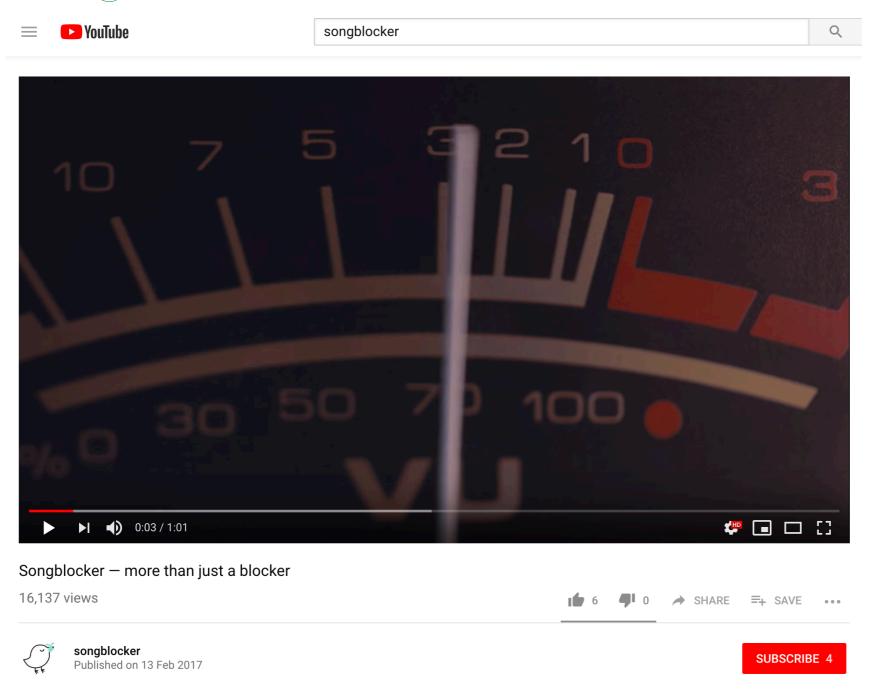




Songblocker

The songblocker intervention was a technographic speculation—a fictitious startup designed by us researchers to intervene, discuss, and problematize some of the moral imperatives that have emerged around online content and its monetization by ads.

Songblocker

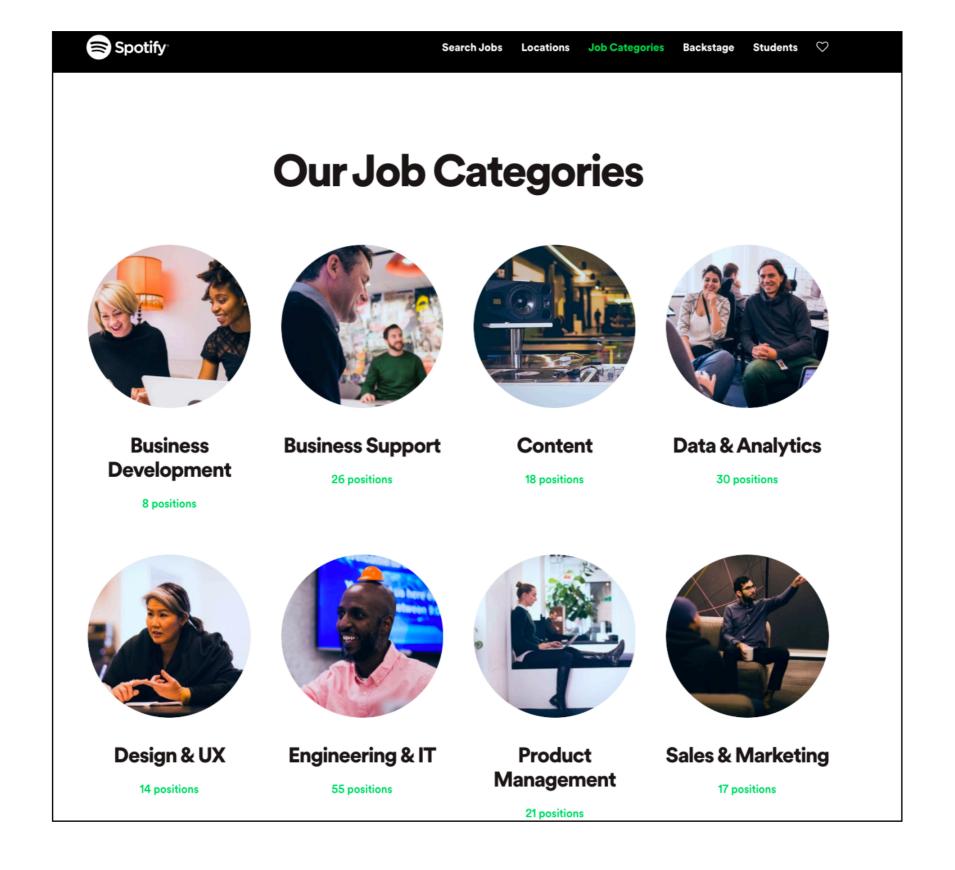


The 16,000 views on the YouTube promotion video were also fake, obtained by buying fake likes and views from specially selected click-farms in Indonesia.

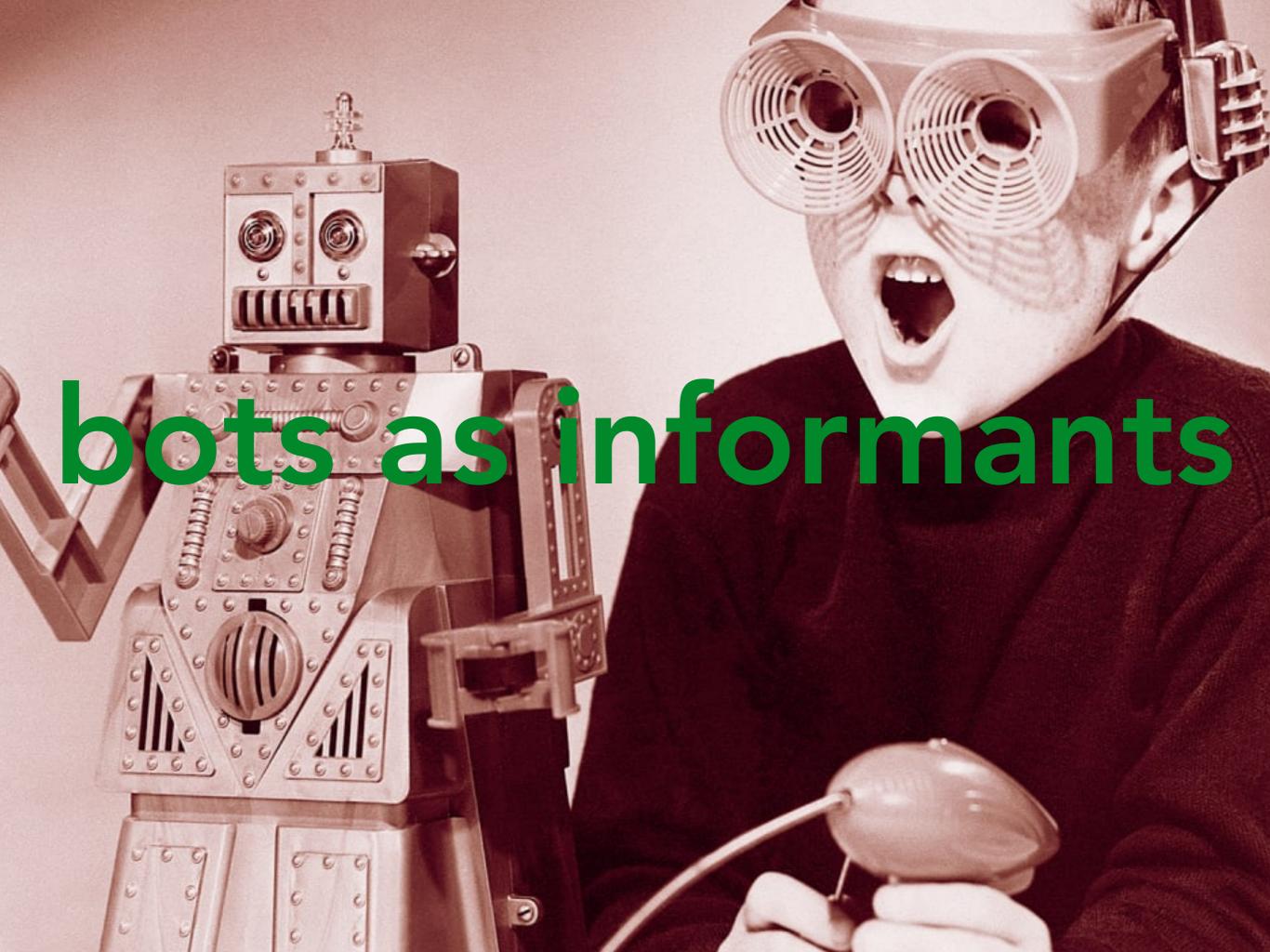




2016 #backaspotify Twitter scraping intervention

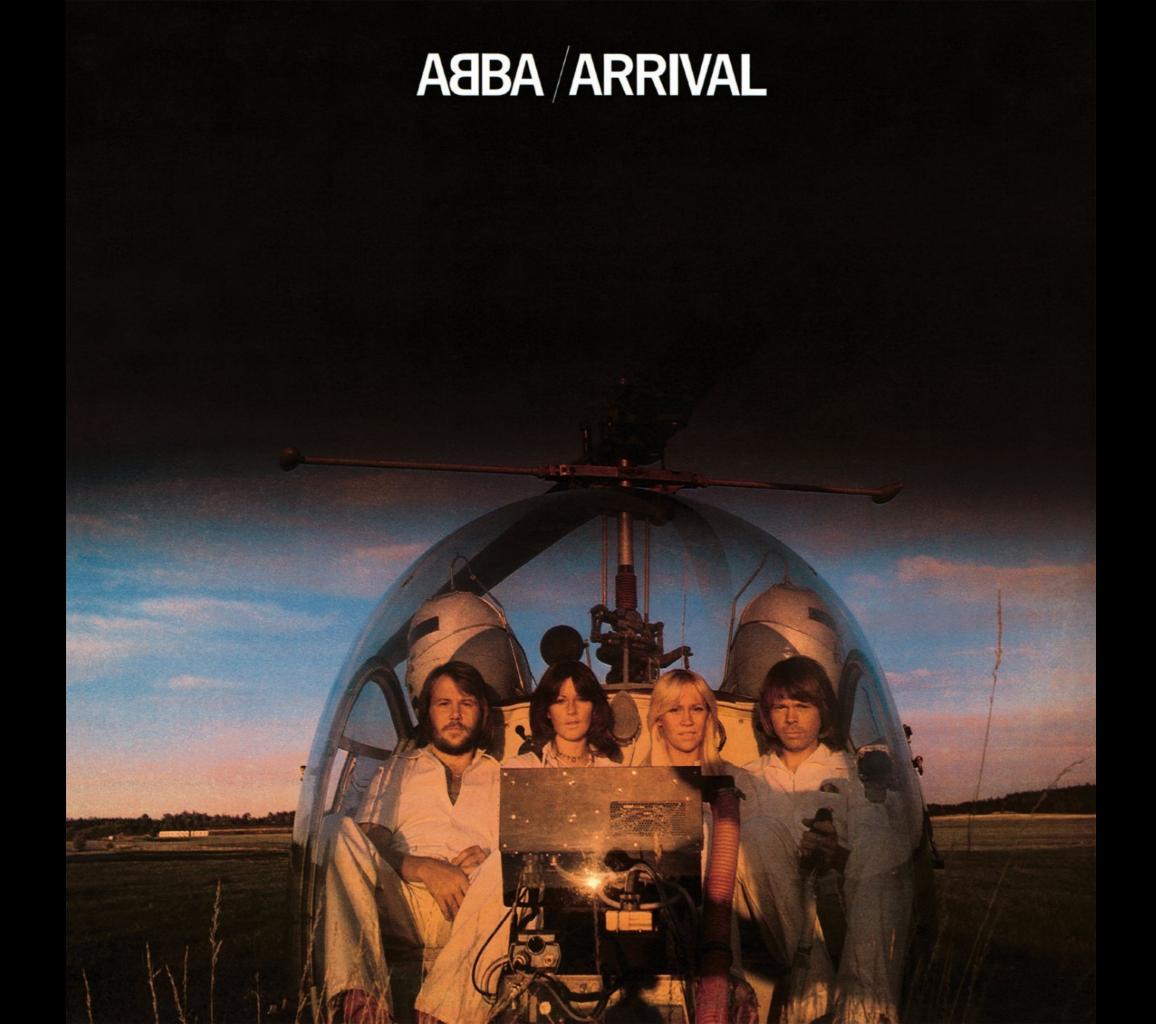


Corporate lingo & Spotify job scraping intervention



Bots as Informants

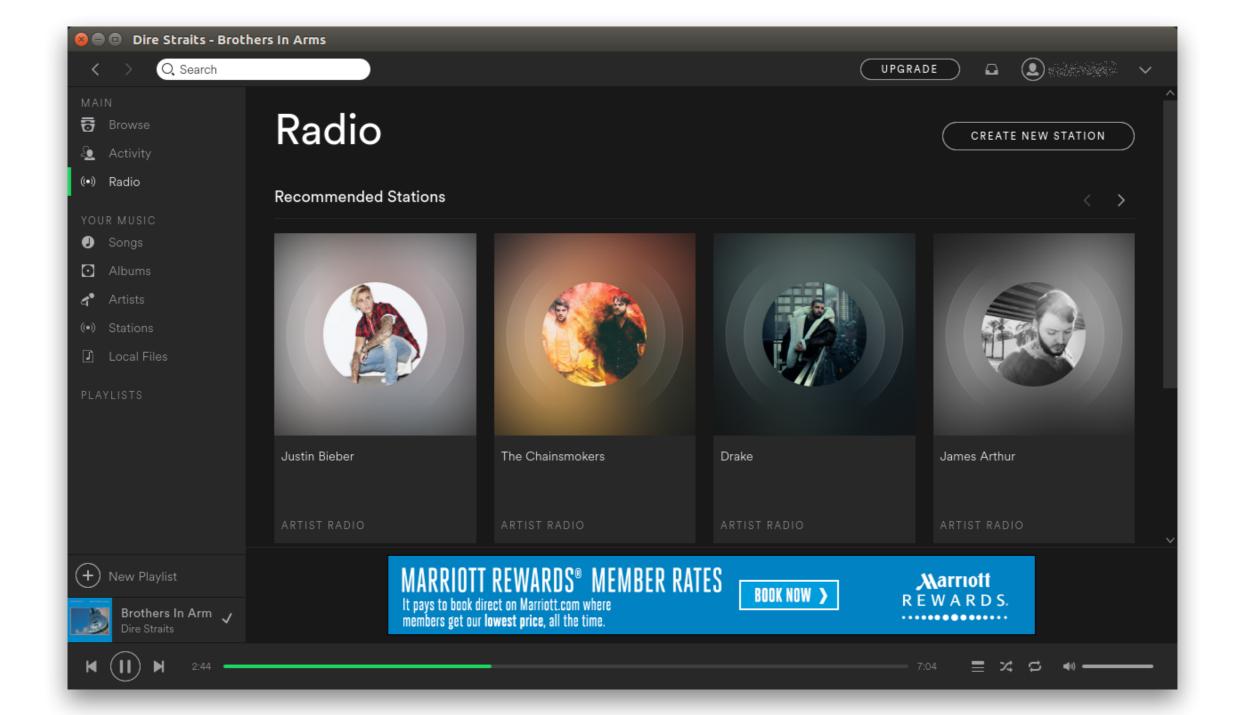
Since Spotify user data has not been available, we have compiled it through other means in order to perform research—by deploying bots as research informants.



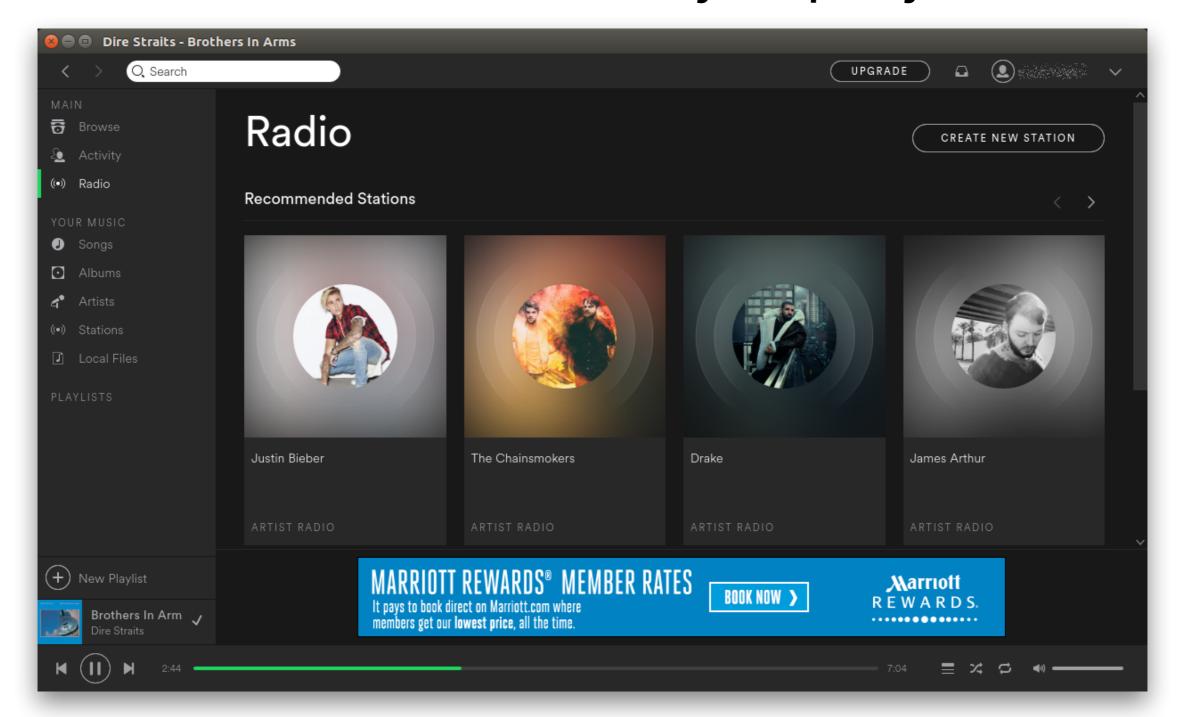
Bots as Informants

Essentially, our bots (software robots) have been programmed as scripted algorithms that exhibit human-like behavior (in one way or the other) when 'listening' to music.

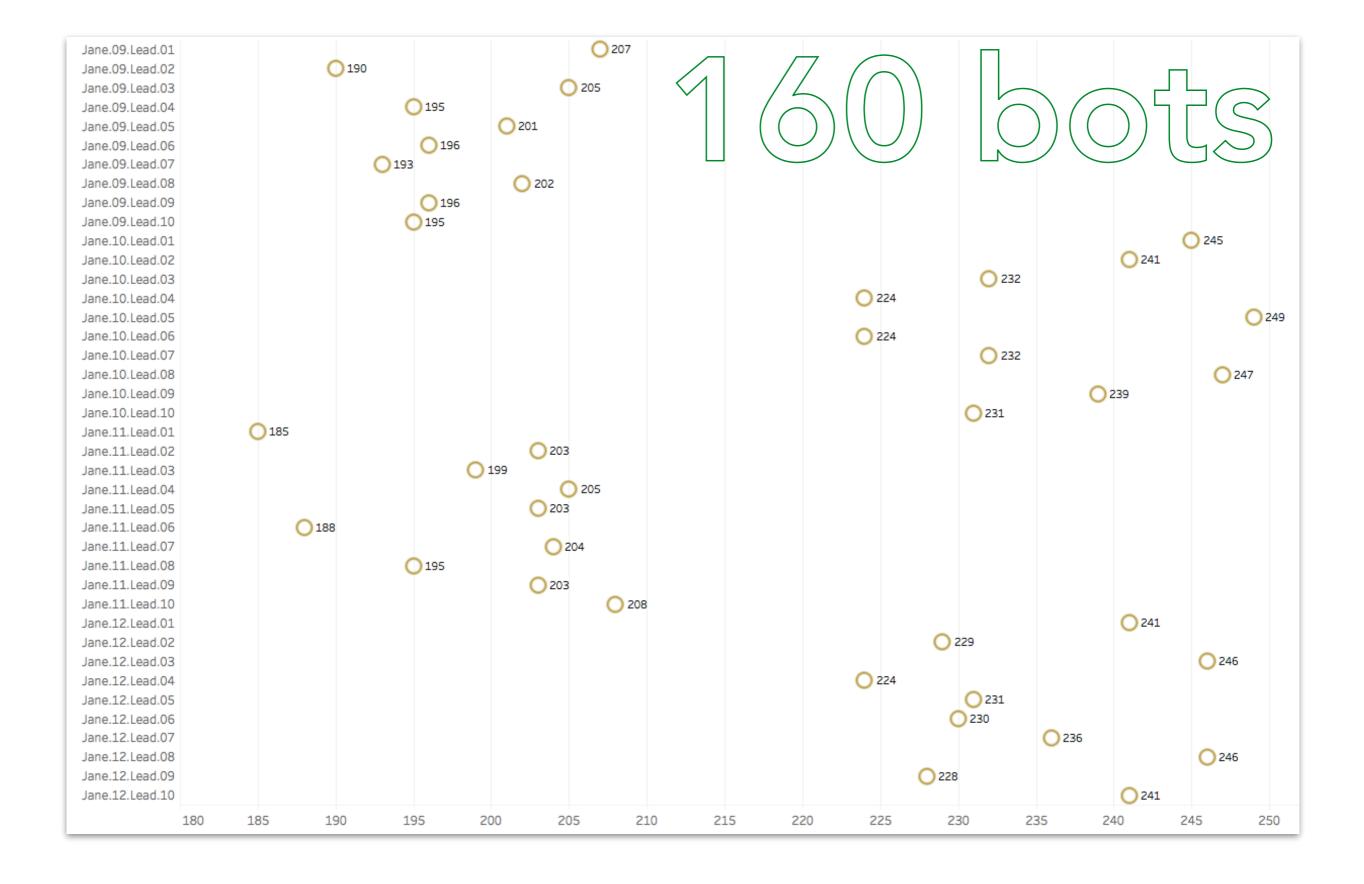
A bots is a software applications written to perform **specific** and repetitive tasks—like checking the prices on a website every minute or post a new comment every hour. The type of task defines if the bot is "good or bad".



The experiment used bots as research informants and seeked to critically investigate the prospective lure of infinite archives via the radio functionality at Spotify.



For commercial reasons Spotify Radio claims to be both personalized and never-ending. Our hypothesis, however, was that Spotify Radio did not consist of an infinite series of songs. Rather music seemed to be delivered in limited loop patterns.



```
A Strainger Heart) - Remastered Version all Son Forger Your Porton
                                                                                                                 Bonnie Tyler - Say Goodbye - Classish Carlotte Ballston Half the World
Pet Shop Boys - Se A Vida é (That's The Way Life Bland Of Agents 1988-99 - Megamix 1995
                                                                                                                                            Kim Wilde - You'll Wever Be So Wrong Bonnie Tyler - All Meed Is Love - Live
                                                                                                                           Jennifer Rush - Ave Maria (Survivors Of A Different Kind) Alex Mattson Forget You
                                                                                                                                             Alex Mattsor Forget You
                                                                                                                                                                                                              Kim Wilde - Wotch Gonna Do - B-Side
                                                                                                             Paul Young - Love Will Tear Us Apart - 2008 Re-Master Version
                                                                                                                                                                                                                           Jennifer Rus - Surrender
                                                                                                                               Belinda Carlisle - Nobody Owns Me
                                                                                                                                                                                                                      Belinda Carlisle We Can Change
                                                                                                            Tony Christie - I Did What I od For Maria - Single Version Stars On 45 - Hooray For Hollowood - Original Single version
                                                                                                                             Jennifer Rush - Never Say Never
                                                                                                                                                                                                                     Bonnie Tyler - Holding Out for a Hero
                                                                                                                                                                                                                                     MØ - Final Song
                                                                                                                                Alex Mattson Forget You
                                                                                                                                                                                                                 Gloria Gaynor - Never Can Say Goodbye
                                                                                       Santa Esmeralda - The House of the Rieing Sun / Quasimodo Suite - Disco Mix
                                                                                                                                                                                                                          Jennifer Rush Same Heart
                                                                                                                         Phil Collins - Youll Be In My Heart
                                                                                                                                                                                                                       Belinda Carlisle - In Too Deep
                                                                                                                        Belinda Carlisle - Circle in the Sand
                                                                                                                                                                                                                       T'Pau - Friends Like These
                                                                                                                         Tony Christie - Calypso And Rum
                                                                                                                                                                                                                             MØ - Final Song
                                                                                                                                                                                                              Simply Red - The Ghost Of Love
                                                                                                                                        Stars On 45 - 45
                                                                                                                                                                     Stars On 45 - The Greatest Rock'n Roll Band In The World - Original Single Version
                                                                                                                                         IKEA - Kiicka Här!
                                                                                                                                                                                                          Jennifer Rush d Come Undone
                                                                                                                                Bryan Adams - So Down Rockin'
                                                                                                                                                                                                            Bonnie Tyle - Bitterblue
                                                                                                                                     Bonnie Tyler - lide Your Heart
                                                                                                                                                                                                               MØ - Final Song
                                                                                                                                     Belinda Carlisle Little Black Book Belinda Carlisle - I Ple d Insanity (Single Mix)
                                                                                                                                                                                                    ABBA - Homey, Honey
                                                                                                                                             Jennifer Rush Down To You
                                                                                                                                                                                      Kim Wilde - Love in The Natural Way
                                                                                                                                                          IKEA - Kiicka Härbonnie Tyler - Rejiel Without a Clue
                                                                                                                                     Paul Young - What Becomes Of The Broker Fine Long

    What Becomes Of The Broken Hearted

                                                                                                                                       Stars On 45 - The Beatle
                                                                                                                                                                                                                                                                                                                                                                      vier of ost in France
IKEA - Kiicka Här!
                                                                                                                                                                                                                                                                                                       - 2001 Remastered Version
                                                                                                   Stars On 45 - Volume 2 (St
                                                                                                                                                                                                                                                                                         - Original 12 Inch Version
                                                                                                                                                                                                                                                                                                                                                    Stars On 45 - The Star Gisters - Megamix 1995
                                                                                                                         Bonnie Tyler - Dean
                                                                                                                                                                                                                                                                                                                                                   Paul Young - Ku Ku Kurama - 2008 Re-Master Version
                                                                                                                       Tony Christie - Dive Safety Darlin
                                                                                                             Tony Christie - Diive Safely Darillisus - Tony Christie - Darillisus - Dari
                                                                                                                                                                                                                                                                                                                                                                          Belinda Carliste - I Feel Free
                                                                                                                                                                                                                                                                                                                                                                      Bryan Adams - Do What Ya Gotta Do
                                                                                                                                                                                                      I Feel? (Single Edit)
                                                                                                                                                                                                                                                                                                                                                                                       IKEA - Kiicka Här!
                                                                                                                                                                                                                                                                                                                                                                                Jennifer Rush Down To You
                                                                                                      Eurythmics - There Must Be an Angel Playing with My ready in The World
                                                                                                                                                                                                                                                                                                                                                              Stars On 45 - The Supremes - Original Album Track
                                                                                                                             Bonnie Tyler - All Littleed Is Love - Live
                                                                                                                             Stars On 45a Solume 3 (Star Wars And Other Hits) - Jorigifeed Rushingh Liver shore
                                                                                                                                                                                                                                                                                                                                                                                      F.R. David - Words
                                                                                         Stars On 45 - The Beatles (Part 2) - Original Album Track
                                                                                                                                                                                                                                                                                                                                                     Paul Young - Love Will Tear Us Apart - 2008 Re-Master Version
                                                                                                                                                                                                                   Bonnie Tyler - ws a Heartache
                                                                                                       Jennifer Rush - Stronghold
                                                                                                                                                                        MØ - Final Song
                                                                                                                                                                                                                                                                                                                                                                                    IKEA - Koncka Här!
                                                                                                                                                                                                           Belinda Carlisle - A Prayen for Everyone (Radio Edit)
                                                                                       Belinda Carlisle Sircle in the Sand
                                                                                                                                                                                                                                                                                                                                                                         Belinda Carlis - In Too Deep
                                                                                            MØ - Final Song
                                                                                                                                                                                                                                  Bryan Adams
                                                                                                                                                                                                                                                        o Down Rockin'
                                                                                                                                                            Jennifer Rush Echoes Lowe Eurythmics - There Must Be an Angel (Phating with My Heart) - Remastered Version
                                                         Paul Young - What Becomes Of The Broken Hearted
                                                                                                                                                                                                                                                                                                                                                                 Bonnie Tyler - Redel Without a Clue
                                                                             Boney Mar Sunny
                                                                                                                                                                                                                                                                                                                                                                           Kim Wilde - Stone
                                                                                                                                                                                                                                                              MØ - Floal Song
                                                                                                                                                 Gloria Gaynor - Never Can Say Goodbye
                                                                 Bonnie Tyler - Bitterblue
                                                                                                                                                                                                                                                                                                                                                                       MØ - Final Song
                                                                                                                                                                                                                                                      Bonnie Tyler - All Meed Is Love - Live
                                                                                                                                                                                                                                                                                                                                             Jennifer Rush - Corpe Give Me Your Hand
ABBA - Ring, Ring Swedish Version
diste - Live Your Up Be Free (Single Edit)
                                                                Stars Of 45 - 45
                                                                                                                                                                                                                                                Stars On 45 - The Beatles (Part 2) - Original Album Track
                                                                                                                                                      Belinda Carlisle - In Too Deep
                                                           MØ - Final Song
                                                   T'Pau - On The Wing
                                                                                                                                  Paul Young - I Close My Eges and Count to Ten - Live
                       Belinda Carlisle - Live You Life Be Free (Single Edit)
                                                                                                                                                          MØ - Final Song
                                    Jennifer Rush - Midnight Mirage
                               Bonnie Tyler - Reel Without a Clue
                                                                                                                                             Eurythmics - Missionary Man
                                           MØ - Fi∎al Song
                                                                                                                                              ABBA - Honey, Honey
                                 Paul Young - O-V-E (Love)
                                                                                                                                  Jennifer Rush - Come Undone
                         Kim Wilde - Wotch Gonna Do - B-Side
                                                                                                                                   Tom Jones Hit Or Miss
                      Stars On 45 - The Star Gisters - Megamix 1995
                                                                                                                      Belinda Carlisle - Nobody Owns Me
Santa Esmeralda - The House of the Riging Sun / Quasimodo Suite - Disco Mix
                                                                                                                               MØ - Firal Song
                                                 MØ - Final Song
                                                                                                                    T'Pau - Bridge Of Spies
                                              Jennifer Russ tals (SWers - The Greatest Rock'n Roll Bend In The World - Original Single Version Belinda Carlishe: Vision of You Kim Wilde - Love of The Natural Way ABBA - Ring, Ring, Swedish Version MO - Final Song
```

The logs the bots produced made it possible to empirically sustain claims of repetitiveness within Spotify Radio, and prove that artist iterance was quite striking. Music loops were definitively not endless. On the contrary, if a 'radio loop' started with "Dancing Queen", after some 50 tracks (or so) it was played again by the Spotify Radio algorithm(s).

Gendered Music

Another experiment—with numerous bots—investigated **gendered patterns** in music recommendations.

In short, the experiments showed that Spotify's music recommendations were heavily geared towards recommending music by male artists.

Gendered Music

Another experiment—with numerous bots—investigated **gendered patterns** in music recommendations.

In short, the experiments showed that Spotify's music recommendations were heavily geared towards recommending music by male artists.



Tracking Gendered Streamsⁱ

By Maria Eriksson & Anna Johansson

Abstract

One of the most prominent features of digital music services is the provision of personalized music recommendations that come about through the profiling of users and audiences. Based on a range of "bot experiments," this article investigates if, and how, gendered patterns in music recommendations are provided by the streaming service Spotify. While our experiments did not give any strong indications that Spotify assigns different taste profiles to male and female users, the study showed that male artists were highly overrepresented in Spotify's music recommendations; an issue which we argue prompts users to cite hegemonic masculine norms within the music industries. Although the results should be approached as historically and contextually contingent, we argue that they point to how gender and gendered tastes may be constituted through the interplay between users and algorithmic knowledge-making processes, and how digital content delivery may maintain and challenge gender relations and gendered power differentials within the music industries. Seen through the lens of critical research on software, music and gender performativity, the experiments thus provide insights into how gender is shaped and attributed meaning as it materializes in contemporary music streams.

Our mission. Unlock the potential of human creativity by giving a million creative artists the Opportunity to live off their art and billions of fans the or cortunity to enjoy and be inspired by t e creators.

Our mission. Unlock the potential of human creativity billions of fans the or cortunity to enjoy and be inspired by the creators. Conclusion - proprietary data & digital methods

Algorithmic auditing

Algorithmic auditing

An emerging area of scholarly research which investigates algorithms 'from the outside' testing them for problems and harms without the co-operation of online platform providers.

Research has for example, investigated systems that handle recommendations, prices, news, commenting, search—while examining these for **individually and societally undesirable** consequences such as racism or fraud.

Algorithmic auditing

Apart from regularly scraping and crawling platforms such as Facebook, Google, or Twitter, researchers have also engaged with critical issues such as **algorithmic bias** that require systematic approaches.

For example, platform audit research of hotel-rating platform Booking.com revealed an "algorithmic system bias" based on the confluence of inputs and users, resulting in good reviews for bad hotels (Eslami 2017).

Motahhare Eslami et al, "Be Careful, Things Can Be Worse Than They Appear: Understanding Biased Algorithms and Users' Behavior around Them in Rating Platforms," Proceedings of the 11th International Conference on Web and Social Media, ICWSM 2017, 62–71.

Algorithmic auditing

Other researchers have **established fake user profiles** as inputs to algorithms as a form of audit. One example of this work employed **simulated users** in order to detect **gender bias** in online advertising (Datta 2015). Another have conducted experiments to analyze the Uber surge pricing algorithm by **emulating Uber accounts** (Chen et. al. 2015)—and yet another created multiple Airbnb accounts in order to identify **racial discrimination** against Black users (Edelman et. al. 2017)

A. Datta, M.C. Tschantz, and A. Datta, "Automated Experiments on Ad Privacy Settings," *Proceedings on Privacy Enhancing Technologies* 1 (2015): 92–112; L. Chen, A. Mislove, and C. Wilson, "Peeking Beneath the Hood of Uber," *Proceedings of the 2015 ACM Conference on Internet Measurement Conference*; B.G. Edelman, M. Luca, and D. Svirsky, "Racial Discrimination in the Sharing Economy: Evidence from a Field Experiment," working paper 16-069, Harvard Business School (2016).

digital methods initiative

wibi

Digital Methods

Summer School 2018

About

People

FAQ Tools

Projects by Theme

Research Protocols

Summer School

Winter School

Papers and Publications

Course

The Link

The Website

The Engine

The Spheres

The Webs

Post-demographics

Networked Content

The Social Lives of Digital Methods: Encounters, Experiments, Interventions

Digital Methods Winter School, Data Sprint and Mini-Conference 2018













Digital Methods Winter School, Data Sprint and Mini-Conference 2018 8–12 January 2018

Everyday location

Digital Methods Initiative

University of Amsterdam

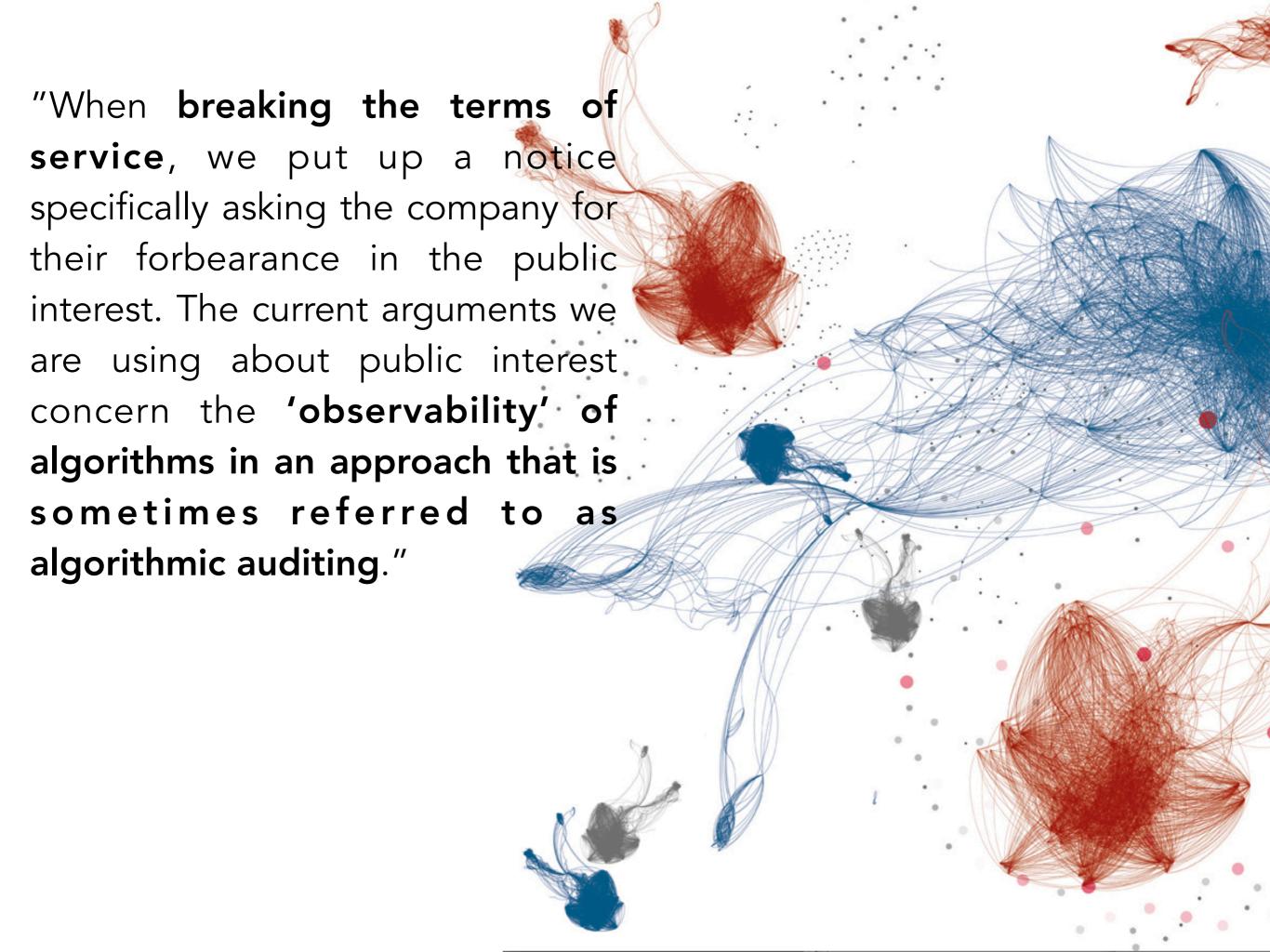
Turfdraagsterpad 9, 1012 XT Amsterdam

https://wiki.digitalmethods.net/Dmi/WinterSchool2018

bit.ly/dmi18-ws-call

Important Links

<u>Shortlinks</u>	<u>Description</u>
bit.ly/dmi18-ws-call	Call for participation and general information.
bit.ly/dmi18-ws-welcome- bit.ly/dmi18-ws-welcome- folder	Main welcome package documents. This includes: a welcome note, general information, the day-to-day schedule, and a map of venue locations, coffee, and lunch places.
bit.ly/dmi18-ws-schedule	Day-to-day schedule for the Winter School.
bit.ly/dmi18-ws-reader bit.ly/dmi18-ws-reader-folder	Reader for the Winter School (for participants and students) and a folder with PDF files.
bit.ly/dmi18-ws-projects	Descriptions of projects to be pitched on the opening day.
bit.ly/dmi18-ws-facebook	Face book of all participants.



Research ethics

SPOTIFY TEARDOWN

Inside the Black Box of Streaming Music

/ Maria Eriksson / Rasmus Fleischer

/ Anna Johansson / Pelle Snickars / Patrick Vonderau



Research ethics



Inside the Black Box of Streaming Music

Yes, we have broken Spotify's Terms of Service.

And yes—our bot listeners interfered with Spotify's royalty system. In all perhaps 25,000 songs were "listened" to in the Radio loop experiment for example, equaling a few euros in payment...





I want to make clear that neither the aim, methods nor results of our project were in any way designed or used to cause harm to Spotify or any of its users—or to benefit commercially from nonauthorized access to the service's proprietary data. I want to make clear that neither the aim, methods nor results of our project were in any way designed or used to cause harm to Spotify or any of its users—or to benefit commercially from nonauthorized access to the service's proprietary data.

Our results do not reveal any detailed information about Spotify's proprietary algorithms or software, or disclose information that might be harmful if it ends up in the hands of Spotify's competitors. Our scientific research and its scholarly findings are not a competitive threat to Spotify as a company.

I want to make clear that neither the aim, methods nor results of our project were in any way designed or used to cause harm to Spotify or any of its users—or to benefit commercially from nonauthorized access to the service's proprietary data.

Our results do not reveal any detailed information about Spotify's proprietary algorithms or software, or disclose information that might be harmful if it ends up in the hands of Spotify's competitors. Our scientific research and its scholarly findings are not a competitive threat to Spotify as a company.

We have never violated the integrity of any Spotify user, or collected any personal data related to Spotify users, or illegally shared copyrighted content via Spotify.

Benjamin Helldén-Hegelund

(Ämne saknas)

Till: pelle.snickars@umu.se





Siri hittade ny kontaktinformation i det här brevet: Benjamin Helldén-Hegelund benjaminh@spotify.com

lägg till i Kontakter...

Pelle

Vi kontaktar dig angående projektet "Streaming heritage: 'Following files' in Digital Music Distribution" ("projektet").

Spotify ser positivt på det ökade intresset kring strömmande media men är bekymrat över uppgifter som framkommit avseende de metoder den ansvariga forskningsgruppen använder sig av i projektet. Nämnda uppgifter ger vid handen att forskningsgruppen systematiskt brutit mot Spotifys användningsvillkor ("Användningsvillkoren") genom att bland annat söka att artificiellt öka antalet spelningar och manipulera Tjänsterna med hjälp av script eller andra automatiserade processer. Spotify noterar att forskningsgruppen varit medveten om att nämnda aktiviteter står i uttrycklig strid med Användningsvillkoren och sökt dölja villkorsbrotten medelst tekniska åtgärder.

I ljuset av det ovanstående ombeds du härmed att senast den 26 maj 2017 skriftligen bekräfta mottagande av detta brev samt att forskningsgruppen upphört med sådana aktiviteter som strider mot Användningsvillkoren och inte avser att framdeles vidta dylika åtgärder. Notera härvidlag att brott mot Användningsvillkoren kan medföra ansvar för skada som uppstår som en följd därav.

Med vänlig hälsning

Benjamin Helldén-Hegelund Legal Counsel benjaminh@spotify.com | T: +46 (0)730 719 091 Birger Jarlsgatan 61, 113 56 Stockholm

Hej Kerstin,

Vi kontaktar dig angående projektet "Streaming Heritage: 'Following Files' in Digital Music Distribution" under ledning av Pelle Snickars vid Umeå Universitet ("projektet"). Såvitt Spotify förstår har projektet erhållit finansiellt stöd från Vetenskapsrådet.

Spotify är synnerligen bekymrat över uppgifter som framkommit avseende forskningsgruppens metoder i projektet. Nämnda uppgifter ger vid handen att forskningsgruppen uppsåtligen vidtagit åtgärder som står i uttrycklig strid med Spotifys Användningsvillkor och medelst tekniska metoder sökt dölja dessa villkorsbrott.* Forskningsgruppen har vidgått att den bland annat sökt att artificiellt öka antalet spelningar och manipulera Spotifys tjänster med hjälp av script eller andra automatiserade processer.

Spotify förutsätter att nämnda systematiska villkorsbrott inte varit kända för Vetenskapsrådet och är övertygat om att Vetenskapsrådet vinnlägger sig om att den forskning som bedrivs med stöd från Vetenskapsrådet i alla avseenden uppfyller etiska riktlinjer samt utförs redligt och i enlighet med gällande rätt.

Spotify inbjuder Vetenskapsrådet att kontakta Spotify för en diskussion kring ovanstående ärende. Det är Spotifys förhoppning att Vetenskapsrådet agerar resolut i syfte att säkerställa att oredliga eller villkorsstridiga metoder upphör omedelbart.

Spotify emotser Vetenskapsrådets skyndsamma återkoppling.

Med vänliga hälsningar

Benjamin Helldén-Hegelund Legal Counsel benjaminh@spotify.com | T: +46 (0)730 719 091 Birger Jarlsgatan 61, 113 56 Stockholm



* Se bl.a. Pelle Snickars – SpotiBot: "In addition, since our bot experiments violated (some of) Spotify's user agreements, a VPN connection was used that hid the running clients behind a public proxy IP outside of the university network." http://pellesnickars.se/wordpress/wp-content/uploads/2016/07/snickars_talk_DH16.pdf.

"It is Spotify's hope that the Swedish Research Council acts resolutely in order to ensure that Vi kontaktar dig angående projektet "Streaming Feritage: 'Following Files' in Digital Music Distribution' under unrully av Pollo Smitllegal University ("Ctilice") Savitt Crease immediately.

Spotify vinanticipate's son the unit Swedish pper Research council su immediate at forskningsgruppen uppsatingen vidlagit atgarder son start uttryckil / Trid ned Spotifys Arrändningsvillkor och medelst tekniska metoder sökt dölja dessa villkorsbrott.*

Council su immediate response ka antalet spelningar och manipulera Spotifys tjänster med hjälp av script eller andra automatiserade processer.

Spotify förutsätter att nämnda systematiska villkorsbrott inte varit kända för Vetenskapsrådet och är övertygat om att Vetenskapsrådet vinnlägger sig om att den forskning som bedrivs med stöd från Vetenskapsrådet i alla avseenden uppfyller etiska riktlinjer samt utförs redligt och i enlighet med gällande rätt.

Spotify inbjuder Vetenskapsrådet att kontakta Spotify för en diskussion kring ovanstående ärende. Det är Spotifys förhoppning att Vetenskapsrådet agerar resolut i syfte att säkerställa att oredliga eller villkorsstridiga metoder upphör omedelbart.

Spotify emotser Vetenskapsrådets skyndsamma återkoppling.

Med vänliga hälsningar

Benjamin Helldén-Hegelund Legal Counsel benjaminh@spotify.com | T: +46 (0)730 719 091 Birger Jarlsgatan 61, 113 56 Stockholm



* Se bl.a. Pelle Snickars – SpotiBot: "In addition, since our bot experiments violated (some of) Spotify's user agreements, a VPN connection was used that hid the running clients behind a public proxy IP outside of the university network." http://pellesnickars.se/wordpress/wp-content/uploads/2016/07/snickars_talk_DH16.pdf.



2017-10-04

Diarienummer 2013-1139

FF-2017-322

Ert Dnr FS 1.6.6-1058-17

Handläggare
Anna Hörnlund

Umeå universitet Att: Chatarina Larson

901 87 Umeå

Avskrivning av ärende Dnr 2013-1139

Beslut

Vetenskapsrådet avskriver ärende med diarienummer 2013-1139, i den del som avser fråga om brott mot Vetenskapsrådets villkor, från vidare handläggning.

Bakgrund

Spotify har vänt sig till Vetenskapsrådet och anfört att Pelle Snickars, Umeå universitet, bland annat brutit mot Spotifys användarvillkor. Vetenskapsrådet har den 8 juni 207 anmodat Umeå universitet att yttra sig över vad Spotify anfört samt att bevara vissa frågor. Umeå universitet har i skrivelse daterad den 19 juni 2017 yttrat sig i ärendet.

Skäl för beslutet

Vetenskapsrådet har prövat om det föreligger sådant brott mot Vetenskapsrådets villkor för forskningsbidraget att det finns grund för att avbryta fortsatt utbetalning av bidraget. Vetenskapsrådet har inte funnit att sådant skäl föreligger och avskriver därför ärendet i denna del från vidare handläggning.

Beslut i ärendet har fattats av avdelningschefen Maria Thuveson i närvaro av chefsjuristen Anna Hörnlund, föredragande. I den slutliga handläggningen har huvudsekreteraren Kerstin Sahlin deltagit.

VETENSKAPSRÅDET SWEDISH RESEARCH COUNCIL

Postadress/Postal address Box 1035 SE-101 38 Stockholm Sweden

Besöksadress/Visiting address Västra Järnvägsgatan 3

Tel: +46-(0)8-546 44 000 Fax: +46-(0)8-546 44 180

Org. nr/Vat No 202100-5208

vetenskapsradet@vr.se www.vr.se Maria Thuveson Avdelningschef

Anna Hörnlund Chefsjurist

Kopia till: Pelle Snickars

Av: Simon Campanello ## 2017-10-06 12:35

Spotify försökte stoppa svenskt forskningsprojekt – "hotar fri forskning"

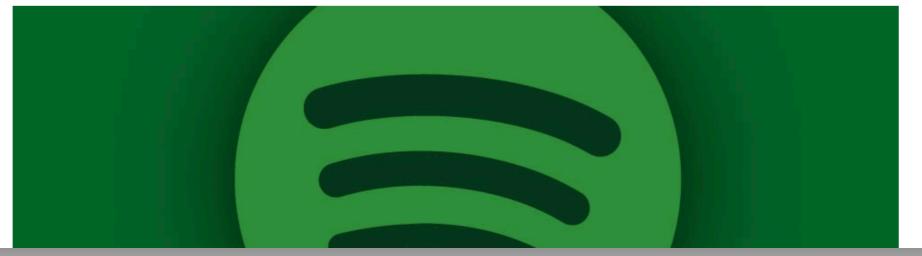


Det svenska bolaget anklagas för att ha försökt få Vetenskapsrådet att dra in bidragen till ett forskningsprojekt som kartlägger hur musiktjänstens algoritmer fungerade. Ett hot mot fri forskning, säger forskarna själva.





artiklar om EU:s nya datalagstiftning



Spotify Threatened Researchers Who Revealed 'Pirate' History

BY ANDY ON OCTOBER 6, 2017

C: 42

A team set to publish a book on the untold history of Spotify were threatened by the company, one of its researchers has revealed. Earlier this year, Rasmus Fleischer, who was also one of the early figures at The Pirate Bay, said that Spotify used 'pirate' MP3s to launch its beta. Soon after, the researchers were contacted by a lawyer, with strong suggestions to stop what they're doing.

As one of the members of Sweden's infamous Piratbyrån (Piracy Bureau), Rasmus Fleischer was also one of early key figures at The Pirate Bay. Over the years he's been a writer, researcher, debater, and musician, and in 2012 he finished his PhD thesis on "music's political economy."

A Research Group Says They Have Evidence That Spotify Broke the Law — and Were Bullied to Withhold It

▲ Daniel Sanchez ② October 8, 2017 ♀ 5



Spotify's lawyers are accused of leveling threats after a Swedish researcher tied the company to piracy.

Anna Hörnlund, General Councel of The Swedish Research Council (VR), in Computer Sweden:

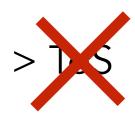
"It happens that we get input from the outside of things we need to investigate, but I have never experienced this before."

- That a company tries to get VR to withdraw funding?
- No. I can not say it has never happened, but I've never encountered it before."

Three levels of jurisdiction

- > ToS
- > Research ethics
- > The law

Three levels of jurisdiction



> Research ethics

> The law

Three levels of jurisdiction

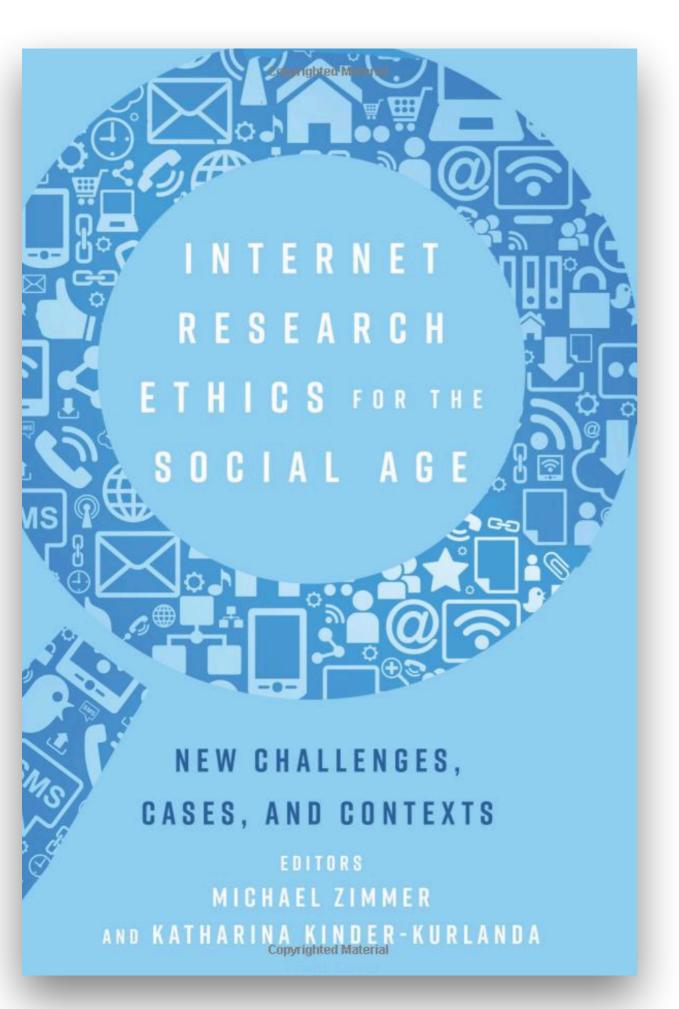
> The law

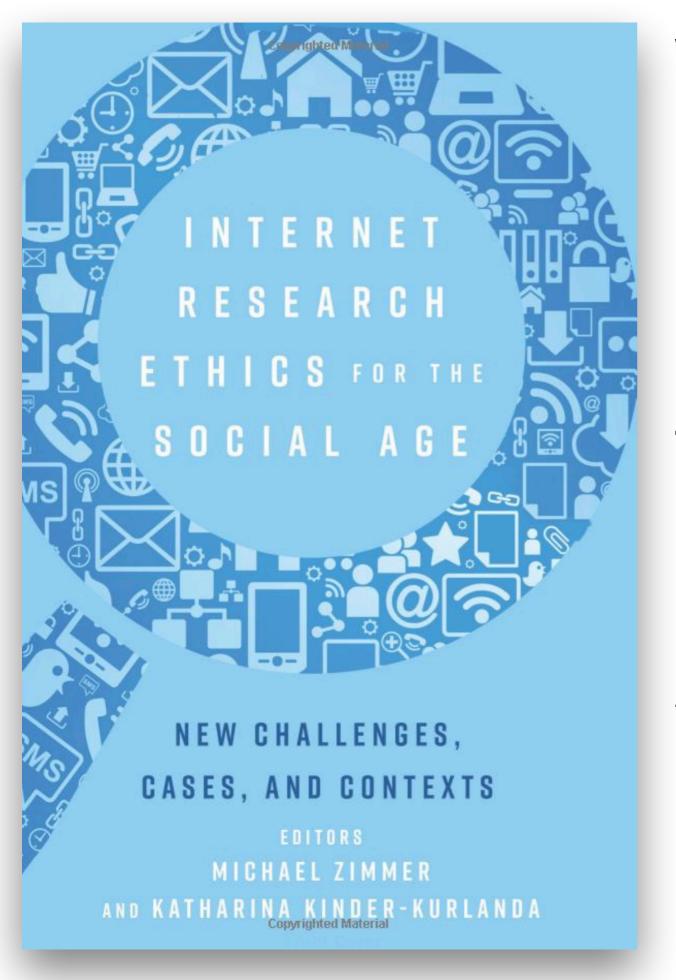
The law and ToS are two entirely different things (at least in Europe). **ToS are not laws**, they are **corporate statements**. And they are often **altered** by corporations.

It should also be noted that the **legal status of ToS is often unclear**, and hence that a company's **ToS (as Spotify) does not at all constitute, or equal, (in our case) national Swedish law**.

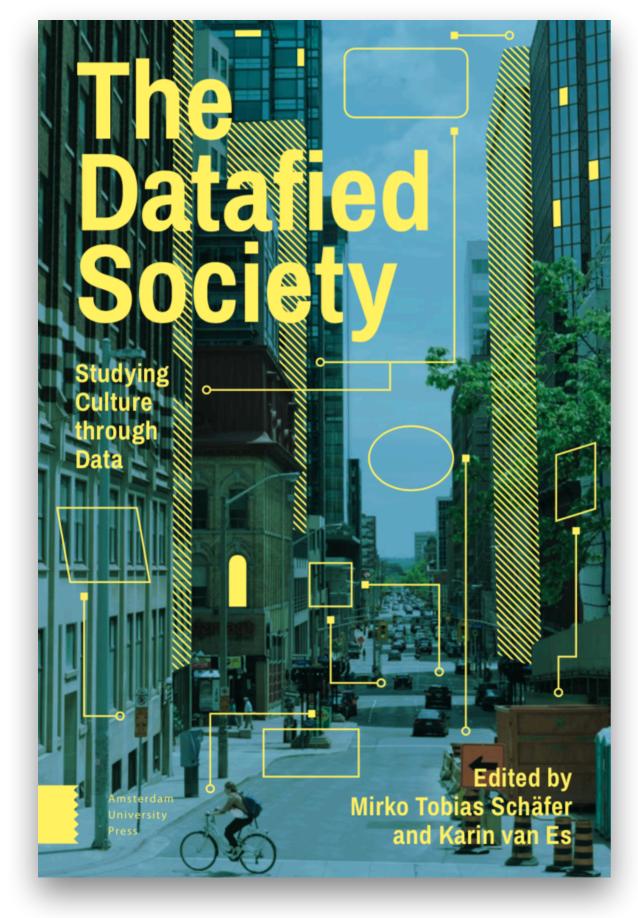
Research ethics

In terms of research ethics our Spotify project could hardly be accused of violating existing norms—since such norms do not really exist. Internet research ethics and its guidlines are currently being debated and negotiated. Some scholars argue that academics need to comply with ToS—others don't.





With the growing control of platforms such as Facebook, Spotify, or Google over the infrastructure enabling the recording and analyzing of social and cultural life the question has been raised "how researchers are to maintain rigorous standards of scientific integrity, objectivity, accuracy, and so on, vis-à-vis corporate and government agendas that may run contrary to these standards."



"To ensure that future research with new tools can be carried out in an ethical way, we need to experiment not only with methods but also with ethical frameworks. In order for us to find practices to protect research integrity we need to get our hands dirty."

