

CROSSOVER

Are YouTube algorithms addicted to State-controlled media?

Authors

Check First

Nelly Pailleux
Amaury Lesplingart

EU DisinfoLab

Alexandre Alaphilippe

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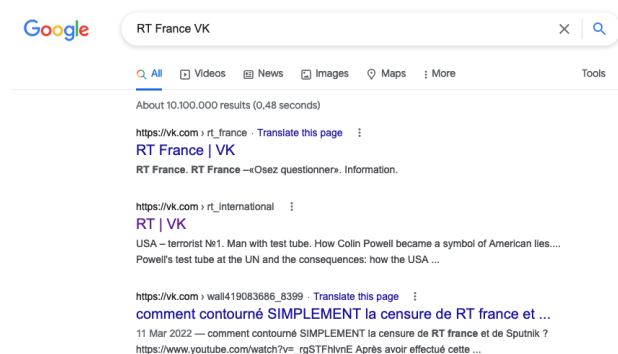
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On 1 March 2022 [the EU banned Russia Today and Sputnik](#) from its territory. Both of them were proven to be media outlets with strong ties to the Kremlin. The ban was ordered to stem disinformation and misinformation from Russia about the invasion of Ukraine, started on 24 February.

A few days earlier, the President of the EU Commission [Ursula von der Leyen promised that](#) « the state-owned Russia Today and Sputnik, and their subsidiaries, will no longer be able to spread their lies to justify Putin's war. We are developing tools to ban their toxic and harmful disinformation in Europe. »

This announcement led to the ban of the Russian state media from major social media platforms when accessed from EU member countries. From 1 March, users whose IP addresses

were geolocated in the EU couldn't access *RT France* on some platforms, such as Youtube, Facebook or Twitter. *RT France* broadcast news live and suddenly became widely less available. However, despite the ban by major platforms, *RT France* continued to produce content that was still available by, for instance, typing "*RT France VK*" into Google, which led directly to their VKontakte¹ page.



RT France remains available with a simple Google search

Technically, this ban means that content from *Sputnik* and *Russia Today* channels in English, German, French, Spanish and Arabic is no longer allowed to be broadcast on TV networks and the internet on the big US platforms in the EU. Each EU member state is responsible for the enforcement of the rule.

While this ban had an impact on the reach of the Youtube channels of *RT France* and *Sputnik* - [ISD has witnessed a clear activity and traffic drop on both websites' social media accounts](#)- It created a void to be filled by other content providers.

Focusing on search results and recommendation results provided by the YouTube algorithms, the CrossOver project looked at what information was available to Belgian users querying the keyword "Russie". We wanted to know what the unforeseen consequences of this ban could be. *RT* being highly recommended by algorithms, its legal ban could redistribute content origins in an unprecedented manner.

¹ Vkontakte, often named as VK is a Russian social media platform, with around one hundred million unique visitors per month, the overwhelming majority of whom are concentrated in Russia. It was bought by state-controlled oil company Gazprom in 2021. ([Source](#))

Key findings

Due to the war in Ukraine, the visibility of the *RT France*'s channel on YouTube became increasingly important starting from February.

Looking specifically at the keyword “Russie”, we could see that the ban of *RT* from YouTube was efficient, the channel was not visibly showing up in search results and recommendations just after the ban went into effect.

However, *RT France* left a void in the recommendation results. In a matter of weeks, this void was quickly filled by *CGTN Français*, a Chinese state international media channel.

We note that, focusing on the “Russie” keyword, not only did *CGTN Français* replace *RT France* in the amount of content presented, but it also took even more space in video ranking, number of views and overall success.

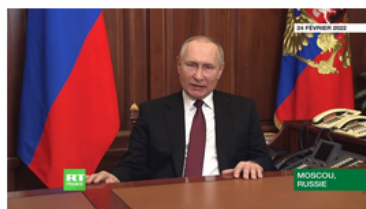
It seems that Russia-related videos of *CGTN Français* are more successful compared to the other type of content pushed by the Chinese media.

Context: banning *Russia Today*

On 21 February Russian president Vladimir Putin recognised the independence of separatist territories in Donbass. The US warned that 150,000 troops are gathered at the border with Ukraine. Three days later, Vladimir Putin launched an offensive on neighbouring Ukraine, which he promised to "demilitarise" and "denazify" on 24 February.

February was also when *RT France* gained the most video views and subscribers since at least May 2019 according [to data collected by SocialBlade](#). Between 21 and 28 February, their Youtube channel [gained 90 000 new subscribers](#) right before the ban.

Data displayed on the [Crossover Youtube search and suggest dashboard](#) using the Youtube API shows that *RT France* has had for a long time a privileged place in search results when people were looking for information about Russia, or in recommended content on that topic.



L'annonce de l'opération militaire dans le Donbass par Vladimir Poutine (version complète)

RT France

Published the 24 Feb 2022

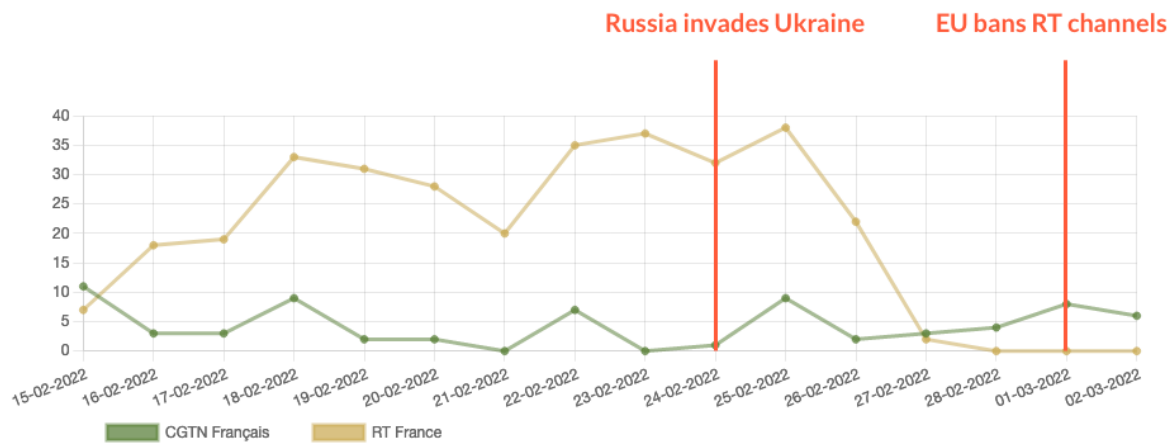
Recommended 18 times out of 24 (75%).

Averaged in 2th position on the recommendation list.

A few days before the Russian invasion of Ukraine, [according to the YouTube API data](#), *RT France* was the second most recommended channel for users in Belgium, right behind *France 24* on the topic of Russia. Their videos represented 14% of the overall videos appearing in the search results. On 25 February, the day after Vladimir Putin declared his "special military operation". *RT France* represented 20% of the most recommended channels after performing a search for the keyword "Russie". The video entitled 'Vladimir Putin's announcement of the military operation in Donbass (full version)' was recommended 18 times out of 24 (75%).

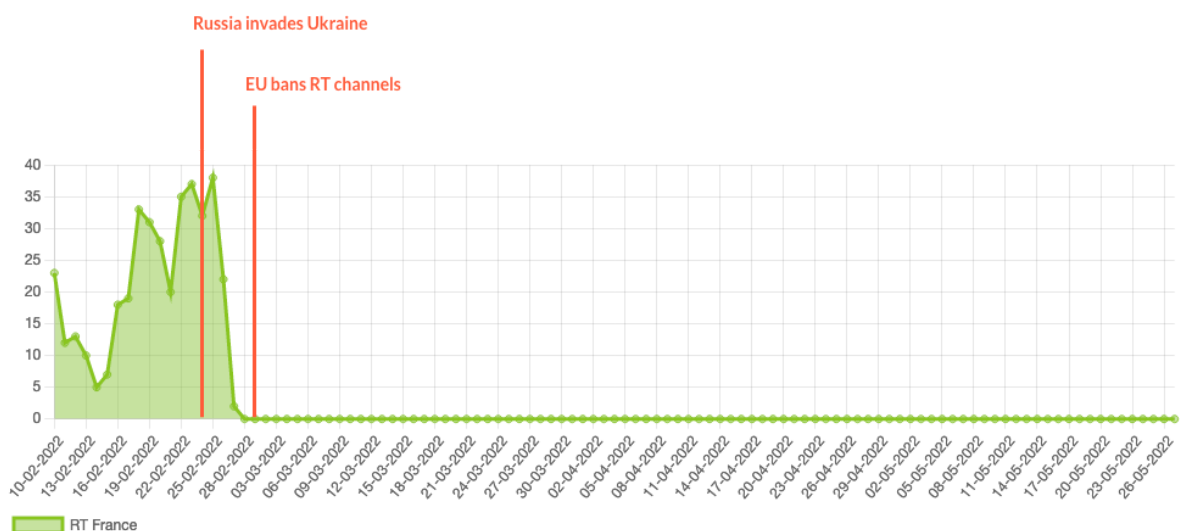
Vladimir Poutine full "military operation" announcement
recommended 18th times out of 24
On February 25th

Similarly, if a Belgian user typed "Russia" in their search bar on Youtube on 28 February, the first recommended video would likely be from *RT France*. Indeed, the channel appeared 3 times in the top 24 search results on 28 February, more specifically, in 1st, 4th and 19th position during the 2 data collections of the day. After this point *RT France* settled its position in the search results it is to note that the recommendation algorithm had already started to reduce the visibility of the channel (*RT France*'s videos appeared less in the recommendation results for that period).



RT France and CGTN Français videos recommendations from YouTube Data API for the keyword "Russie"

The ban happened on 1 March and we could see an immediate drop in RT's visibility in our dashboard.

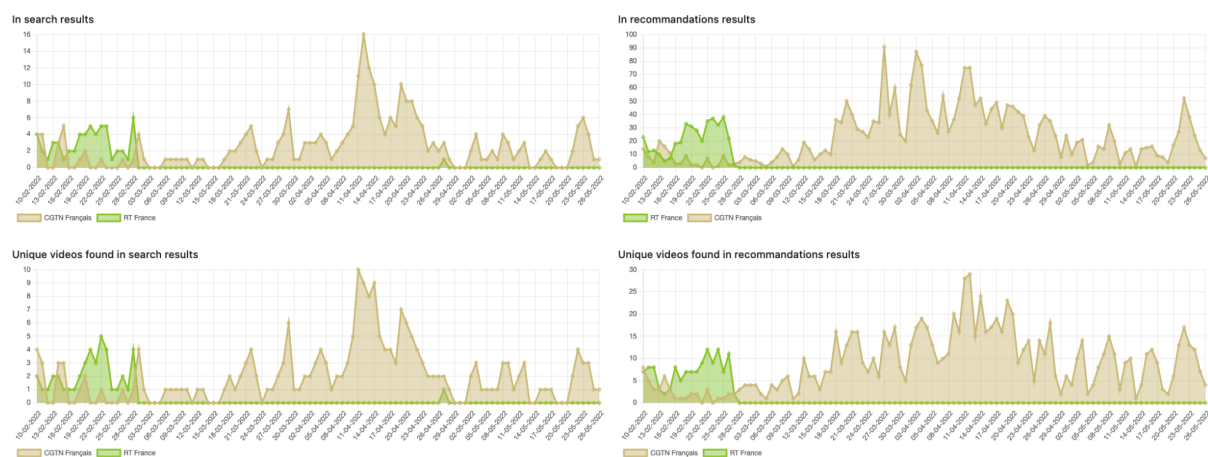


RT France's videos in the recommendations results from YouTube API for the keyword "Russie"

RT France's empty slot is quickly taken over by Chinese state-controlled media

Note: The results mentioned in this first part are based on data extracted from the Youtube API.

While RT France's content was suddenly hidden from European users, a rising stakeholder appeared in the search results and recommended videos, when looking for information by searching the keyword "Russie": CGTN Français. The French-language version of the state-controlled China Global Television Network gained more and more space in the results displayed by Youtube. The collected data through this period, between 25 February and 30 April 2022, is unequivocal.



RT France VS CGTN Français videos recommendations through YouTube APIs

What is CGTN?

**CGTN
FRANÇAIS**

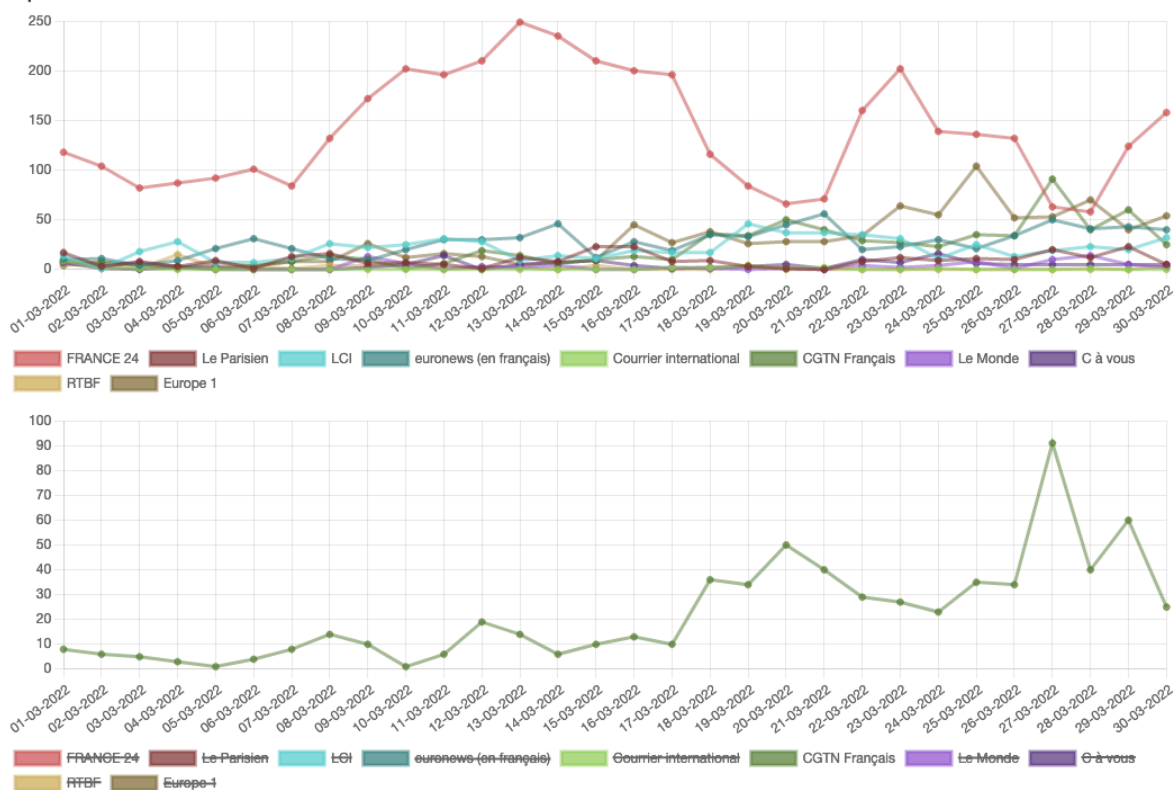
CGTN (China Global Television Network) -formerly CCTV-9 is the international branch of CCTV (China Central Television), the main state television network of China and part of China Media Group since 2018. According to the analysis of Paul Charon & Jean-Baptiste Jeangène Vilmer², the objective of the channel is "to succeed in imposing the 'right' image of China abroad, to 'correct' the bad representation of China." The official website of CGTN indicates that its content is available in more than 160 countries and regions and has "over 150 million subscribers across the globe" (for the website, mobile applications and social network accounts).

² Charon, P., Jeangène Vilmer, J-B.(2021) *Les opérations d'influence chinoises - un moment machiavélien*, IRSEM, p.176-177

According to the data retrieved from the Youtube API, *CGTN Français*' content was more recommended after the *RT France* ban. The channel started to rise in the results on 1 March with 4 videos out of the most recommended ones after performing a search for the keyword "Russie". Then, it slowly rose from 6 to 10 March but never reached the Top 24 search results of "most recommended channels" according to the CrossOver Youtube dashboard data analysis.

However, as *CGTN Français* kept on posting videos and documenting the war in Ukraine, the channel gained visibility. On 29 March, 4 videos of *CGTN Français* appeared in the search results, 3 of them being in the Top 24. The channel's presence also became increasingly significant in the most recommended channels in the autoplay after a video: while they represented 2% of the content on 22 March, they attained 8% (18 videos) a week later.

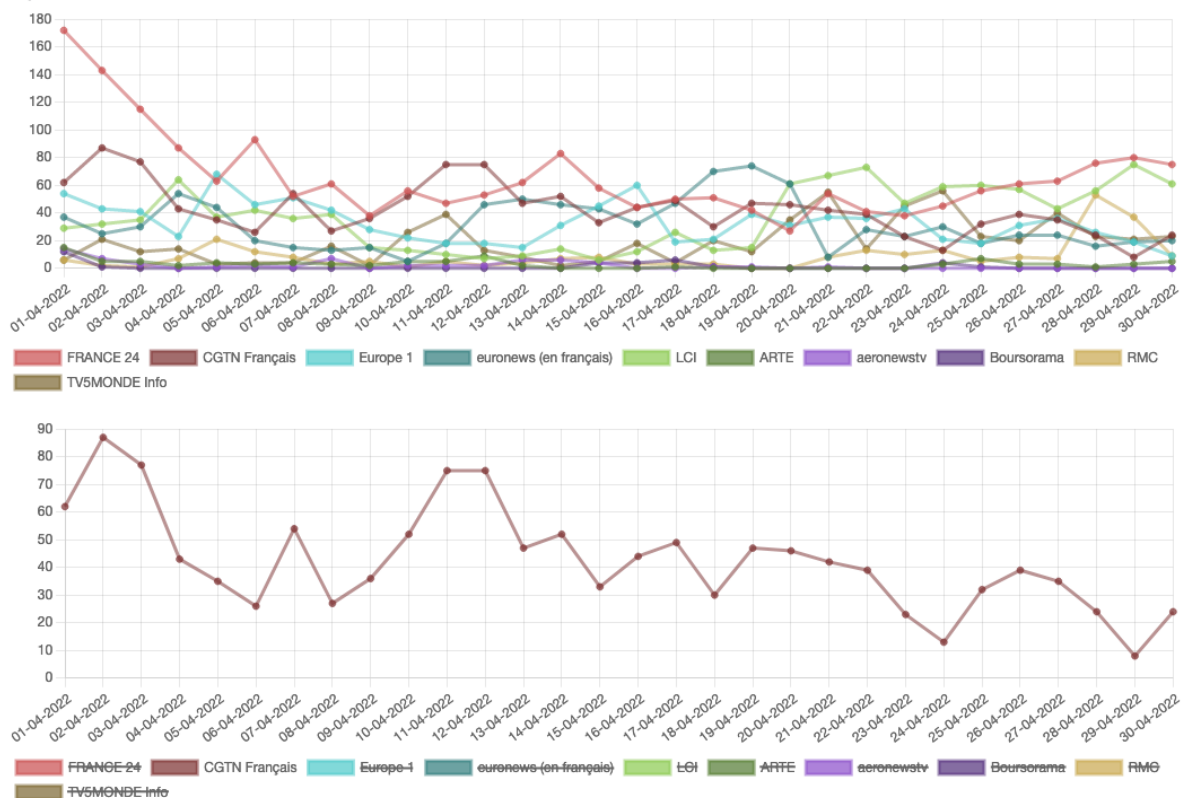
Top 10 recommended channels



CGTN Français' videos recommendations for the keyword "Russie" between March 1st to 31th.

The Chinese channel reached its peak on 12 April with 16 videos in the search results (7 in Top 24). The same day, *CGTN Français* appeared third in the Top 24 most recommended channels - in the autoplay after the video, occupying 8% of the space (19 videos). In the Top 24 search results, *CGTN Français*' videos appeared 1st, 4th, 8th, 12th, 15th, 16th, and 19th. This means that a Belgian user typing "Russie" in their search bar on Youtube on 12 April was more likely to receive as a first recommendation a video of *CGTN Français*.

Top 10 recommended channels

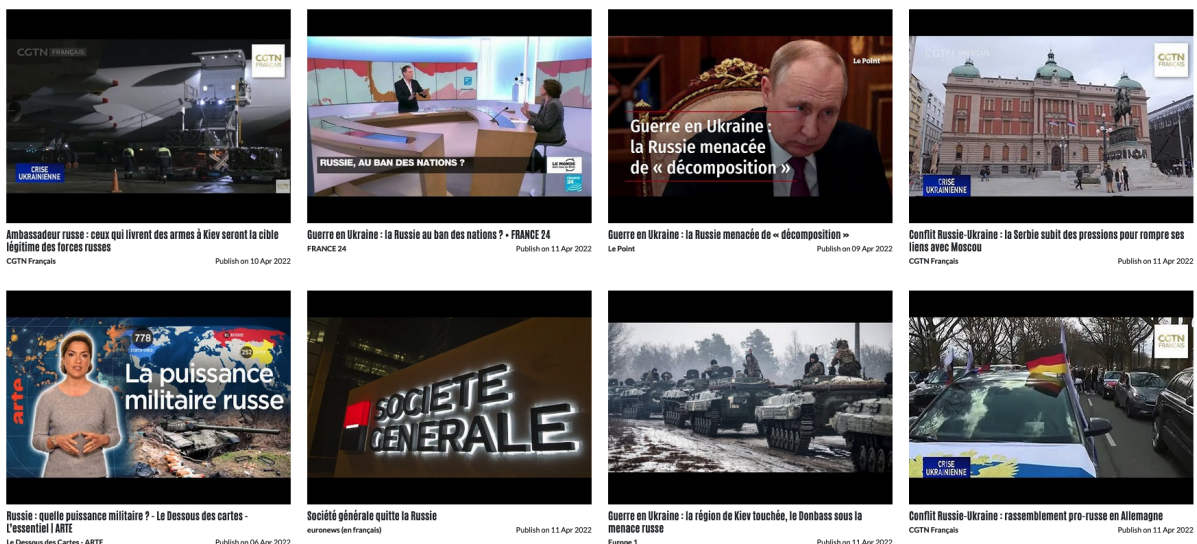


CGTN Français' videos recommendations for the keyword "Russie" between April 1st to the 30th

Most recommended channels



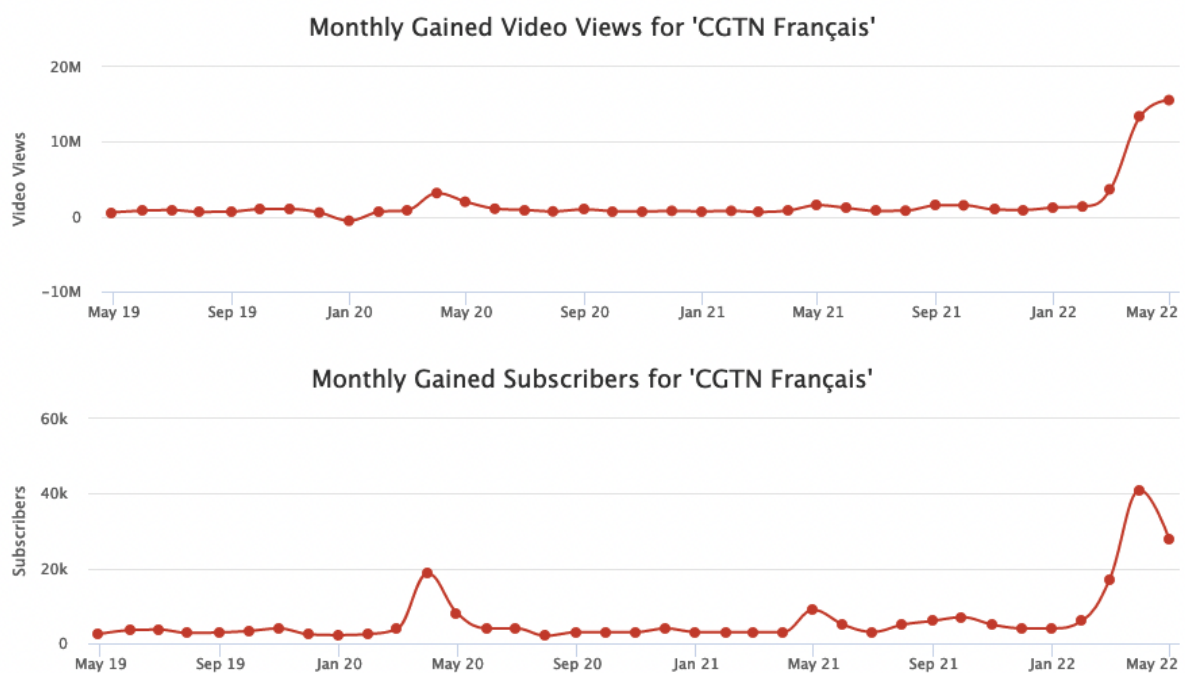
Top 24 search results



Screenshot of the YouTube CrossOver dashboard for the 12th April, language french, keyword "Russie"

This data analysis leads us to the conclusion that, on the topic of Russia, according to Youtube API results, *CGTN Français* has become an increasingly important part of algorithmically recommended content both in search results and in recommendation results after the ban of *RT France*.

These findings are corroborated with [the data retrieved by Socialblade](#): the channel *CGTN Français* gained the most subscribers since May 2019, between 28 February and 7 March (12 000 new subscribers). The weekly video views have increased almost continuously since 28 February. More than gaining visibility, they managed to reach a broader audience.

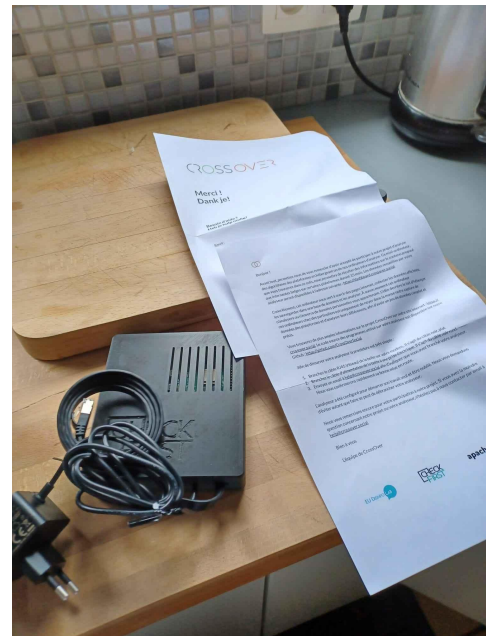


Is the official YouTube API data a good representation of what users really see?

Notes: the collection of data starts at the beginning of April, when Raspberry Pis started to have a subsequent data collection.

The results mentioned in the previous part are based on data extracted from the Youtube API. Within the framework of the Crossover project, we compared the results of the API with those obtained through our user simulation system. This network of computers was deployed in most of Belgium's provinces. They simulate the behaviour of an internet user and retrieve results directly from YouTube.

7 minicomputers are running in Hainaut, East Flanders, West Flanders, Liège, Limburg, Antwerp and Brussels.



CrossOver Raspberry Pi received
by a host in Belgium

Generally, the tendency is the rise of *CGTN Français* but it seems like some results are different depending on the source (API and Raspberry Pis, but also between different Raspberry Pis).

12 April was the day when the most videos from *CGTN Français* appeared in the search results when looking up "Russie". While the API returned 16 videos in search results, the number of recommended videos for the user simulation system is significantly similar.

If we focus on the peak of 12 April, the API returns 7 videos out of 24 in the most recommended videos (ranked 1st, 4th, 8th, 12th, 15th, 16th and 18th); for East Flanders, West Flanders and Limburg, 8 videos appears in the Top 24, and 6 in Liège. The rankings of those videos are significantly similar. Furthermore, the inhabitants of West Flanders, East Flanders and Limburg would only see a video of *CGTN Français* in the second position of the search results. Results are slightly different when observing peaks: according to the API, the highest peak for search results takes place on 12 April, while it takes place the day prior (11 April), in Liège and Limburg.

Analysers name	Date	Channels with more than 1 video in the first 24 search results
API	12 Apr	CGTN Français (7) FRANCE 24 (3) Le Point (2) euronews (en français) (2) TV5MONDE Info (2) RMC (2)
Hainaut	12 Apr.	CGTN Français (7) FRANCE 24 (3) LCI (3) Europe 1 (2) Le Point (2) euronews (en français) (2)
East Flanders	12 Apr.	CGTN Français (8) FRANCE 24 (2) Europe 1 (2) TV5MONDE Info (2) LCI (2)
West Flanders	12 Apr.	CGTN Français (8) FRANCE 24 (2) Europe 1 (2) T V5MONDE Info (2) LCI (2)
Liège	12 Apr.	CGTN Français (6) FRANCE 24 (4) Europe 1 (2) Le Point (2) LCI (2) euronews (en français) (2)
Limburg	12 Apr.	CGTN Français (8) FRANCE 24 (2) Europe 1 (2) LCI (2)

Even if the results provided by the API and the minicomputers differ slightly, the general trend suggesting that *CGTN Français* has become increasingly important in the recommended content following the *RT* ban seems confirmed in both analyses. Moreover, these slight differences underline the fact that there can be a gap between official results provided by the API and results people see from home.

This also raises the question of the correlation between the ban of *RT France* and the rise of *CGTN Français*: does it exist, and how can it be explained?

Was a Russian state-controlled media replaced by its Chinese counterpart?

Can the rise of CGTN *Français* be explained?

For the sake of the investigation, we chose to focus on the keyword “Russie”. But if one looks at the bigger picture, it seems like this topic is the only one which positions CGTN *Français* in the top recommended videos. According to SocialBlade there is [a huge discrepancy between videos](#).

Videos mentioning Russia have several thousand views, while those concerning other -but not less of a hot or important- topic struggle to exceed 1000 views. On 25 May, among the 50 most viewed videos, almost 70% were related to the Russo-Ukrainian conflict (34 videos).

Those videos also have the particularity of having a higher [engagement rate](#) than those on other topics, as can be seen in the previous table (they have more views, but also more comments). A [2020 study from Harvard Kennedy School \(HKS\) Misinformation Review](#) stated that *"the display of social engagement metrics can strongly influence interaction with low-credibility information. The higher the engagement, the more prone people are to sharing questionable content and less to fact checking it."*

Are YouTube algorithms addicted to State-controlled media?

50 Latest Videos	50 Most Viewed Videos	50 Highest Rated	50 Most Relevant			
•DATE•	VIDEO TITLE	VIEWS	RATING% ①	COMMENTS	EST. EARNINGS ②	
2022-05-26	Élection législative en France : le parti d'Emmanu...	919	100.0%	11	\$0 - \$4	
2022-05-26	Le Forum économique mondial	655	100.0%	9	\$0 - \$3	
2022-05-26	Un photographe capture 24 termes solaires dans les...	484	100.0%	2	\$0 - \$2	
2022-05-26	La MTC peut traiter efficacement la COVID-19 et al...	1.2K	100.0%	14	\$1 - \$5	
2022-05-26	Chine : le gouvernement accorde une subvention uni...	1.4K	100.0%	5	\$1 - \$6	
2022-05-26	Un adolescent palestinien tué lors d'affrontements...	398	100.0%	5	\$0 - \$2	
2022-05-26	Le ministre turc des Affaires étrangères effectue ...	3.6K	100.0%	15	\$2 - \$14	
2022-05-26	Shanghai aide les entreprises scientifiques et tec...	581	100.0%	0	\$0 - \$2	
2022-05-26	L'autoroute Gulyang-Huangping apporte une nouvelle ...	969	100.0%	7	\$0 - \$4	
2022-05-26	Chine - Allemagne : discussions extensives entre L...	7.8K	100.0%	13	\$4 - \$31	
2022-05-26	Qu'est-ce que la variole du singe et à quel point ...	544	100.0%	5	\$0 - \$2	
2022-05-26	Séoul : la RPDC a tiré trois missiles balistiques	9.1K	100.0%	36	\$5 - \$36	
2022-05-26	Moscou : l'opération spéciale en Ukraine prend plu...	36.5K	100.0%	223	\$18 - \$146	
2022-05-26	Les collégiens chinois préparent l'examen d'entrée...	95	100.0%	0	\$0 - \$0	
2022-05-26	Guangzhou ouvre la première base d'incubation d'em...	180	100.0%	0	\$0 - \$1	
2022-05-26	222 pays et régions ont signalé des cas de COVID-1...	186	100.0%	0	\$0 - \$1	
2022-05-26	Variole du singe : les responsables de la santé ex...	325	100.0%	8	\$0 - \$1	
2022-05-26	La Chine met les points sur les i concernant ses a...	37.1K	100.0%	155	\$19 - \$148	
2022-05-26	Les entreprises étrangères reprennent leurs opérat...	605	100.0%	0	\$0 - \$2	
2022-05-26	Le monde face à une « catastrophe humaine » en ral...	688	100.0%	2	\$0 - \$3	
2022-05-26	Etats-Unis : Joe Biden appelle à se dresser contre ...	998	100.0%	28	\$1 - \$4	
2022-05-25	Fusillade au Texas vue par Gong Jiong	2.2K	100.0%	21	\$1 - \$9	
2022-05-25	COVID-19 : Beijing signale 23 cas confirmés le 24 ...	452	100.0%	5	\$0 - \$2	
2022-05-25	Visite en Chine de la Haute-Commissaire des Nation...	2.0K	100.0%	16	\$1 - \$8	
2022-05-25	Visites prochaines du ministre chinois des AE dans...	12.6K	100.0%	30	\$6 - \$50	
2022-05-25	Tenue d'un atelier sur l'établissement d'une sécur...	260	100.0%	0	\$0 - \$1	
2022-05-25	Performances en ligne : les concerts de Jay Chou b...	176	100.0%	0	\$0 - \$1	
2022-05-25	Iran : au moins 14 morts dans l'effondrement d'un ...	1.3K	100.0%	3	\$1 - \$5	
2022-05-25	Forum économique mondial : la délégation chinoise ...	2.0K	100.0%	1	\$1 - \$8	
2022-05-25	Beijing : Washington essaie de jouer à un jeu de m...	7.5K	100.0%	40	\$4 - \$30	
2022-05-25	Politique de santé en Chine : amélioration des ser...	650	100.0%	5	\$0 - \$3	
2022-05-25	L'ancienne voie navigable chinoise retrouve son pl...	1.6K	100.0%	4	\$1 - \$6	
2022-05-25	COVID-19 : Shanghai annonce des mesures pour surve...	252	100.0%	4	\$0 - \$1	
2022-05-25	COVID-19 : 141 nouveaux cas dans la partie contine...	203	100.0%	1	\$0 - \$1	
2022-05-25	En Égypte, 20e anniversaire de la nouvelle Bibliot...	178	100.0%	0	\$0 - \$1	
2022-05-25	L'organe décisionnel de l'OMS rejette la propositi...	8.5K	100.0%	18	\$4 - \$34	
2022-05-25	Économie chinoise : le gouvernement dévoile 33 mes...	3.0K	100.0%	4	\$2 - \$12	
2022-05-25	Russie - Ukraine : la situation à Kharkiv est ten...	61.0K	100.0%	189	\$31 - \$244	
2022-05-25	L'OMS dit qu'il n'y a pas de besoin urgent pour un...	910	100.0%	13	\$0 - \$4	
2022-05-25	Poutine : malgré les difficultés, l'économie russe...	75.1K	100.0%	293	\$38 - \$300	
2022-05-25	Les dirigeants avertissent de sombres prévisions é...	4.8K	100.0%	9	\$2 - \$19	
2022-05-25	Cryptomonnaie : le Bitcoin est monnaie légale en R...	6.1K	100.0%	51	\$3 - \$24	
2022-05-25	Réhabilitation des infrastructures routières dans ...	1.0K	100.0%	4	\$1 - \$4	
2022-05-25	Maxime Viva : la Chine parle inlassablement de "co...	2.2K	100.0%	25	\$1 - \$9	
2022-05-24	Les entreprises à Shanghai collaborent étroitement...	1.8K	100.0%	6	\$1 - \$7	
2022-05-24	Jusqu'à 20 ans avant l'entrée de l'Ukraine au sein...	17.5K	100.0%	159	\$9 - \$70	
2022-05-24	La Pologne met fin à l'accord sur le gazoduc de Ya...	20.8K	100.0%	106	\$10 - \$83	
2022-05-24	Un chercheur australien s'efforce de ramener un an...	1.3K	100.0%	6	\$1 - \$5	
2022-05-24	COVID-19 : Shanghai rouvre certains transports pub...	435	100.0%	0	\$0 - \$2	
2022-05-24	Chine : les services de livraison s'adaptent aux r...	580	100.0%	3	\$0 - \$2	
See Summary Page						

1 - 1k views (24)

< 10k views (7)

1 - 10k views (19)

video about Russia (5)

Screenshot of SocialBlade CGTN Français channel analyse for the last 50 videos - May 26th 2020



These elements raise the question of the intricacies of Youtube's recommendation algorithm and how it shapes the spread of information, and indirectly affects user behaviour. Is YouTube mostly recommending *CGTN Français*' videos on the topic of Russia because of the channel's extra production on the topic? Is it due to *CGTN Français*' massive increase in views or perhaps because the videos were recently uploaded?

On 18 May 2022, we asked YouTube's team the following questions:

- Why is CGTN more recommended by YouTube search and recommendation algorithms since March 2022?
- Why is this recommendation only visible on certain keywords like "Russie"?
- What are the metrics that can trigger a higher recommendation in YouTube systems?
- Is YouTube recommending only on the topic of Russia because of *CGTN Français* extra production on the topic? Or because of massive views?

At this date, we did not receive any reply to our email.

Conclusion

Even if the decision to mute *RT France* was effective immediately and took the wind out of the sails of the Kremlin propaganda through this channel, it was slowly but indubitably replaced by another state-controlled media, which has close ties to China. As a reminder, "*China has sought to remain neutral on the conflict, calling for a peaceful solution. But it has yet to condemn the Russian invasion and has criticised western sanctions.*"³

On the topic of Russia, Belgian users of Youtube are more likely to be widely confronted with the Chinese state-controlled media, despite the ban of *Sputnik* and *RT France*.

The success of *CGTN Français* continues to thrive on the topic of the war in Ukraine and all associated themes, but it seems like it is the only matter of interest for *CGTN Français* viewers, seeing the prominence of the numbers of viewers on these videos compared to the ones which deal with other issues.

What was the path to such a success, and how did *CGTN Français* achieve to get a prominent place on Youtube ? Indicators seem to emerge, but the opacity of the algorithm makes it impossible to see a clear picture.

³ <https://www.bbc.com/news/60571253>

Appendix: Methodology

The CrossOver project monitors which content is recommended to users on several media consumption platforms. This article focuses only on YouTube.

Our data collection scheme for monitoring YouTube algorithmic content recommendation is based on search queries from a predefined list of keywords. This article examines which content was returned by a YouTube search on the word "Russie". Data collection is divided in two main parts:

API data collection

Using an API provided to developers by YouTube, CrossOver queries the API with a keyword and stores returned video ids and metadata. For the first 24 results, another set of API calls is initiated to collect ids and metadata for recommended videos.

User simulation

CrossOver developed and dispatched a set of 7 data collection devices across Belgium, both in predominantly French and Dutch speaking parts of the country. These devices form the Crossover Monitoring Network. Each device simulates a user querying YouTube searches twice a day and collects the first 24 returned videos and gathers their ids and metadata. As for the method used with API calls, each of these 24 videos are then interacted with and the 20 first recommended videos are collected. The minicomputers were dispatched to residential areas in the provinces of Hainaut, East Flanders, West Flanders, Liège, Limburg, Antwerp and Brussels.

All data collected either through API calls or Raspberry Pis is publicly available on <https://dashboard.crossover.social> as it was used for the research leading to the writing of this article.


Charts presented in this article were derived from the data available on the dashboard.



We observe and analyse the algorithms of social networks against disinformation

 crossover.social  [@eucrossover](https://twitter.com/eucrossover)



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