IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS

VIRTUAL CREATIVE ARTISTS, LLC, Plaintiff, v. **SNAP INC.,** Defendant.	C.A. No. 1:23-cv-04862 **JURY TRIAL DEMANDED** **PATENT CASE**

ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Virtual Creative Artists, LLC files this Original Complaint for Patent Infringement against Snap, Inc. and would respectfully show the Court as follows:

I. THE PARTIES

1. Plaintiff Virtual Creative Artists, LLC ("VCA" or "Plaintiff") is a Delaware limited liability company, having business address at 338 Gracious Way, Henderson, NV 89011.

2. On information and belief, Defendant Snap, Inc. ("Snap" or "Defendant") is a corporation organized and existing under the laws of Delaware. Defendant has a place of business at 111 W Erie St. Chicago, IL 60654. Defendant has a registered agent at Illinois Corporation Service Company, 801 Adlai Stevenson Drive, Springfield, IL 62703.

II. JURISDICTION AND VENUE

3. This action arises under the patent laws of the United States, Title 35 of the United States Code. This Court has subject matter jurisdiction of such action under 28 U.S.C. §§ 1331 and 1338(a).

4. On information and belief, Defendant is subject to this Court's specific and general personal jurisdiction, pursuant to due process and the Illinois Long-Arm Statute, due at least to its

business in this forum, including at least a portion of the infringements alleged herein at 111 W Erie St. Chicago, IL 60654.

5. Without limitation, on information and belief, within this state, Defendant has used the patented inventions thereby committing, and continuing to commit, acts of patent infringement alleged herein. In addition, on information and belief, Defendant has derived revenues from its infringing acts occurring within Illinois. Further, on information and belief, Defendant is subject to the Court's general jurisdiction, including from regularly doing or soliciting business, engaging in other persistent courses of conduct, and deriving substantial revenue from goods and services provided to persons or entities in Illinois. Further, on information and belief, Defendant is subject to the Court's personal jurisdiction at least due to its sale of products and/or services within Illinois. Defendant has committed such purposeful acts and/or transactions in Illinois such that it reasonably should know and expect that it could be haled into this Court as a consequence of such activity.

6. Venue is proper in this district under 28 U.S.C. § 1400(b). On information and belief, Defendant has businesses in this district at 111 W Erie St. Chicago, IL 60654. On information and belief, from and within this District Defendant has committed at least a portion of the infringements at issue in this case.

7. For these reasons, personal jurisdiction exists and venue is proper in this District under 28 U.S.C. § 1400(b).

III. COUNT I
(PATENT INFRINGEMENT OF UNITED STATES PATENT NO. 9,501,480)

8. Plaintiff incorporates the above paragraphs herein by reference.

9. On November 22, 2016, United States Patent No. 9,501,480 ("the '480 Patent") was duly and legally issued by the United States Patent and Trademark Office. The '480 Patent is

titled "Revenue-Generating Electronic Multi-Media Exchange and Process of Operating Same." A true and correct copy of the '480 Patent is attached hereto as Exhibit A and incorporated herein by reference.

10. VCA is the assignee of all right, title, and interest in the '480 Patent, including all rights to enforce and prosecute actions for infringement and to collect damages for all relevant times against infringers of the '480 Patent. Accordingly, VCA possesses the exclusive right and standing to prosecute the present action for infringement of the '480 Patent by Defendant.

11. The invention relates to the field of creating and distributing media content, in particular, creating media content based upon submissions received on an electronic media exchange. At the time of the original invention in 1998, there was an Internet-centric problem that required a technical solution—how to develop a computer system that would allow remote contributors of electronic content to share and collaborate their content to develop new media content. The claimed invention, which predates modern crowdsourcing solutions, offers a unique, unconventional, and specially configured combination of "subsystems" in which to address the Internet-centric problem.

12. As set forth in the claims, the claimed invention has a collection of unconventional and particularly configured subsystems, including:

- "an electronic media submissions server subsystem,"
- "an electronic multimedia creator server subsystem,"
- "an electronic release subsystem,"
- "an electronic voting subsystem," and
- their corresponding specialized databases.

13. Each of these subsystems are configured in a very specific (and not generic), unconventional and non-routine manner to offer the novel and non-obvious claimed invention.

For example, claim 1 requires an "electronic media submissions database," which is a subsystem that receives media submissions from Internet users. This is not a generic database but rather a scalable database that must be able to receive, store, and manage multiple petabytes of multimedia data received from users all over the world. This is one of the many specialized databased required in the claim. In fact, the specification discloses the use of a sophisticated database management system known in the art at the time that was capable of handling data at this level, Oracle7. This type of database management system cannot operate on a generic computing system but rather requires specialized hardware and software.

14. As another example, the claim requires a specifically configured "electronic media submission server subsystem." This subsystem is defined as specifically having:

- "one or more data processing apparatus,"
- "an electronic media submission database stored on a non-transitory medium," and
- "a submissions electronic interface."

The "submissions electronic interface" is further specifically "configured" [1] "to receive electronic media submissions from a plurality of submitters over a public network, and [2] store the electronic media submissions in the electronic media submission database." Further, "the electronic media submissions database" in this subsystem is further required to "store[] [1] data identifying the submitter and [2] data indicating content for each electronic media submission." Collectively, the level of detail included in this very particular, well-defined, and unconventional subsystem makes clear that the claims include substantially more than the alleged abstract idea or merely performing an alleged abstract idea on a computer.

15. Similarly, the claim also requires a separate specifically configured "an electronic multimedia creator server subsystem." The claim specifically defines how this second subsystem

interacts with other components including being "operatively coupled to the electronic media submissions server subsystem." The claim also specifically defines this subsystem as "having":

- "one or more data processing apparatus" and
- "an electronic creator multimedia database stored on a non-transitory medium."

16. This subsystem is also specifically "configured [1] to select and [2] retrieve a plurality of electronic media submissions from the electronic media submissions database using an electronic content filter located on the electronic multimedia creator server." The "filter" also includes a very specific algorithm of "being based at least in part on at least one of the one or more user attributes to develop multimedia content to be electronically available for viewing on user devices." Even more detail is provided by requiring "the identification of the submitter [be] maintained with each selected and retrieved submission within the multimedia content." Here again, collectively, the level of detail included in this very particular and well-defined and unconventional subsystem makes clear that the claims include substantially more than an alleged abstract idea or merely performing an alleged abstract idea on a computer.

17. The claim also includes "an electronic release subsystem," which is well defined and not conventional or routine. The claim defines how this subsystem is "operatively coupled to the electronic multimedia creator server subsystem." The claim also defines the components of this subsystem as having "one or more data processing apparatus" and being particularly "configured to make the multimedia content electronically available for viewing on one of more user devices." These details, collectively, also make this very particular and well-defined and unconventional subsystem substantially more than an abstract idea or performing an abstract idea on a computer.

18. The claim also requires "an electronic voting subsystem," which is well-defined, specific, and unconventional. This claimed subsystem has "one or more data processing apparatus" and is specifically "configured to enable a user to electronic vote for or electronically rate an electronically available multimedia content or an electronic media submission within a respective electronically available multimedia content."

19. Claim 1 is a specific and discrete implementation. For example, the claim requires an "electronic content filter" located at the server, remote from end users, and customizable based on user attributes. As another example, the "electronic voting subsystem" at the time of the invention was novel and inventive and added sufficient inventive contributions to avoid a risk of preempting creating and distributing media content. It is possible to create and distribute media content without ever having to include a "voting" subsystem on what components should be included in such media content. The detailed configuration "to enable a user to vote for or electronically rate an electronically available multimedia content or an electronic media submission within a respective electronically available multimedia content" has the level of particularity that avoids any risk of preemption.

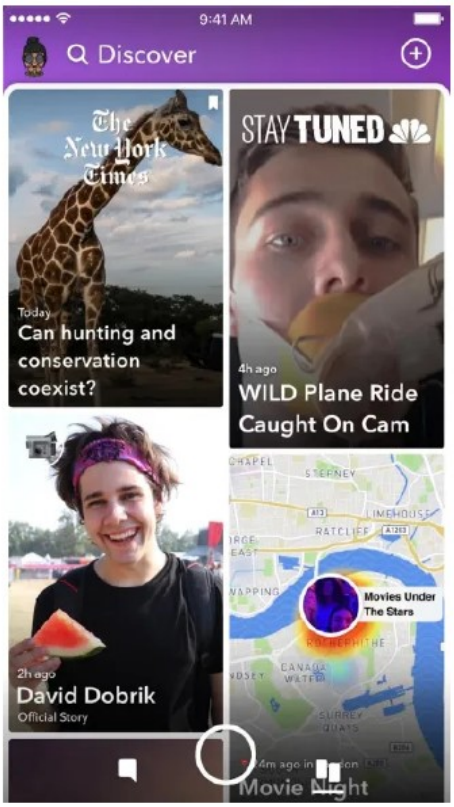
20. Furthermore, the very particular and specifically configured "electronic media creator subsystem" not only provides a detailed and unique physical structure and interrelationship with other claimed components, but also includes a very specific configuration that is not conventional or routine. The claims make clear the interrelationship of the "electronic multimedia creator server subsystem" with respect to "the electronic media submission server subsystem" which must be "operatively coupled" thereto. The claims also provide detail on how the "electronic media creator subsystem" is "configured" "to select and retrieve a plurality of electronic media submissions from the electronic media submission database using an electronic

filter." They also provide detail on how the "electronic filter" is "based at least in part on at least one of the one or more user attributes" and specifies that "the identification of the submitter is maintained with each selected and retrieved submission within the multimedia content."

21. These arguments overcame a patent eligibility rejection under 35 U.S.C. §101 of the claim at issue during the prosecution of the '480 patent before the United States Patents and Trademark Office.

22. **Direct Infringement.** Upon information and belief, Defendant has been directly infringing claim 1 of the '480 Patent in Illinois, and elsewhere in the United States, by employing a computer-based system using https://www.snapchat.com/ ("Accused Instrumentality") (*e.g.,* https://www.snapchat.com/). Snap Inc. uses a computer-based system for its Snapchat website and platform, for example to enable the provision of personalized discovery feeds that show users multimedia content based, *inter alia*, on who they follow and content that has been selected, viewed, subscribed to or positively (or not negatively) rated in the past. (https://techcrunch.com/2017/11/29/snapchat-redesign/). This is consistent with what Snap Inc. currently describes as the operation of its system, "… go to discover, here you'll find your friends' stories, as well as shows, content from publishers, and snaps from creators and the community, personalized for you." (*E.g.,* https://help.snapchat.com/hc/en-us/articles/8961631424020--How-We-Rank-Content-on-Discover; https://www.youtube.com/watch?v=k3nzfw7WHTg). For example, Snap Inc. has employed, in order to operate its Accused Instrumentality, computer servers making use of the Google cloud platform, in datacenters managed by Google, with additional servers being provided on an as-needed basis. Snap Inc. additionally employs, in order to operate its Accused Instrumentality, computer servers operated through AWS (Amazon Web Services). (https://www.vox.com/2017/3/1/14661126/snap-snapchat-ipo-spending-2-billion-

google-cloud). Snap Inc., during the relevant time period, taking advantage of multiple cloud server providers, as well as scalability within its cloud server providers, employed separate server subsystems for all its meaningfully different functions, such as those indicated below. Snap Inc., uses and has used during the relevant time period, numerous different networks, IP addresses, and providers for, *inter alia*, cloud hosting, software-as-a-service, and content delivery networks (CDNs), thereby using separate server subsystems for all its meaningfully different functions, such as those indicated below. (https://www.netify.ai/resources/applications/snapchat).



(*E.g.,* https://techcrunch.com/2017/11/29/snapchat-redesign/ (published November 29, 2017)).

Snapchat now lumps all professional creators, whether they're big news outlets or social media stars or video Show makers, into one Discover tab to the right of the camera. There also are aggregated Stories from hotspots on the Snap Map, Our Stories about events or holidays and topic-based aggregations from Snapchat Search. They're all shown as big preview tiles, with Discover publishers and creators you actively subscribe to at the top. Everything else is sorted by what Snapchat thinks you want to see based on what you've watched in the past.

You'll actually be able to influence the algorithm with what's almost a reversal of Facebook's "Like." You can still tap and hold on Discover content to subscribe to the author, but you'll also get the option to "see less" of this stuff. That way you can train the algorithm what to hide in the future.

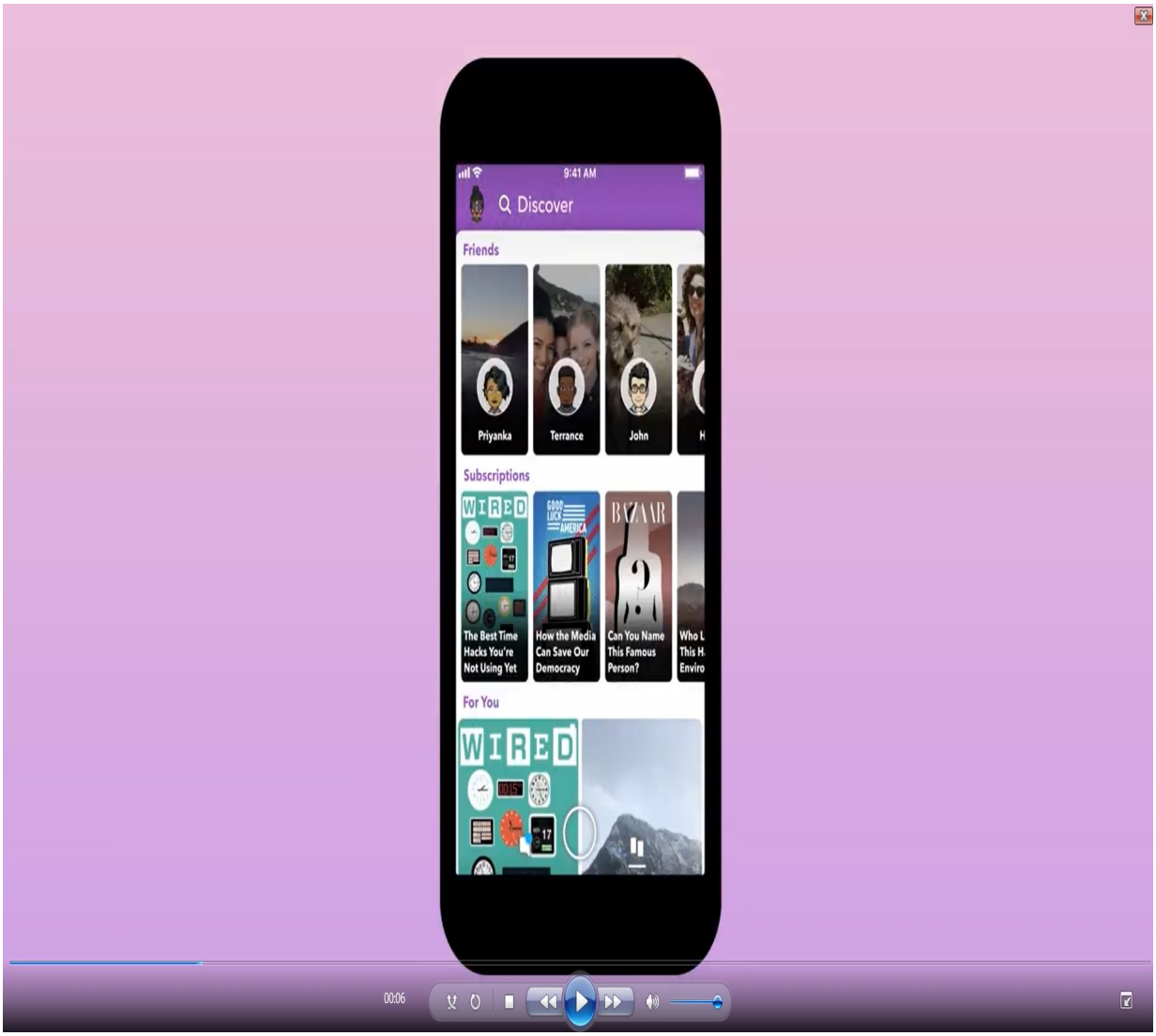
(*E.g.*, https://techcrunch.com/2017/11/29/snapchat-redesign/ (published November 29, 2017)).

5. Ranking Content

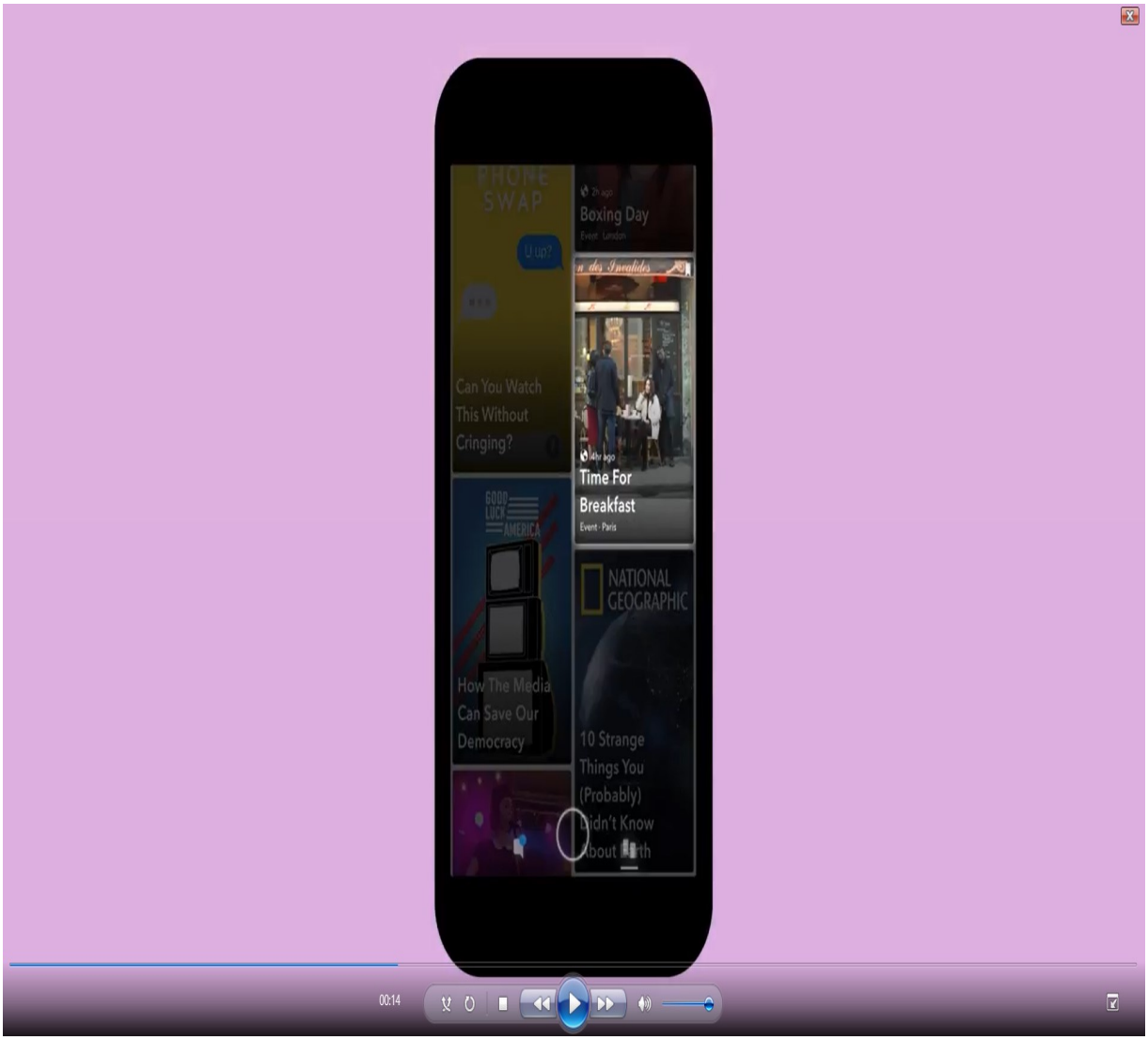
Now that we've labeled the content and figured out what content you'll likely enjoy, we can make sure you see that content in the right order: we call this "ranking."

We organize or rank content for Discover and Spotlight based on a combination of your preferences and the content tags. When we combine this, we hope that the algorithm succeeds in showing you the content you like the most. If that's not happening, you can help the algorithm by watching content you enjoy for a longer time, subscribing to creators you love, favoriting content, and hiding and skipping the content you don't like.

(*E.g.*, https://help.snapchat.com/hc/en-us/articles/8961631424020--How-We-Rank-Content-on-Discover).



(*E.g.*, https://www.youtube.com/watch?v=k3nzfw7WHTg (published July 23, 2018)).



(*E.g.,* https://www.youtube.com/watch?v=k3nzfw7WHTg (published July 23, 2018)).

Snap, which is set to IPO this week, signed a **$2 billion, five-year contract with Google** for its cloud services, which makes Snap Google's **largest customer** of its cloud platform.

For context, Google's cloud business was previously estimated to have an annual runrate revenue of about $1 billion, according to RBC Capital Markets analyst Mark Mahaney, trailing **Amazon Web Services'** $12.2 billion and Microsoft Azure's **estimated $2.7 billion**. (Snap also has a **$1 billion contract** with AWS.)

But what is Snap actually getting from Google for all that money?

Google wouldn't say exactly which services Snap has signed up for, but there are four key products that fall under Google's cloud services: Cloud Storage for storing data on servers managed by Google; Compute Engine for retrieving and managing data; App Engine for developing and running applications; BigQuery for data analysis; and a suite of machine learning tools.

We know Snapchat **was built on App Engine**, which basically allows clients to host their main software on datacenters managed by Google. That differs from just hosting your own servers, since cloud services allow a company to make use of more servers as needed, allowing the app to run faster and more efficiently.

App Engine is one of Google's core cloud services. It provides users with tools and services to build software, ensure its security and test new features. It also allows apps to handle an increasing amount of traffic. Other companies that use App Engine include **Best Buy** and enterprise cloud phone system **Dialpad**.

(*E.g.,* https://www.vox.com/2017/3/1/14661126/snap-snapchat-ipo-spending-2-billion-google-cloud (published March 1, 2017)).

APPLICATION INFORMATION

The following page provides details on domains, platforms, networks and IPs used by **Snapchat**.

DESCRIPTION

Snapchat lets you easily talk with friends, view Live Stories from around the world, and explore news in Discover.

Category	Messaging
Web Link	Snapchat - Home Page (https://www.snapchat.com)

MANAGE BANDWIDTH

Do you know how much **Snapchat** traffic flows through your network? Netify's application detection engine and reporting provides insights to help manage your network.

What gets measured, gets managed.

LEARN MORE (/#WHAT-IS-NETIFY)

DOMAINS

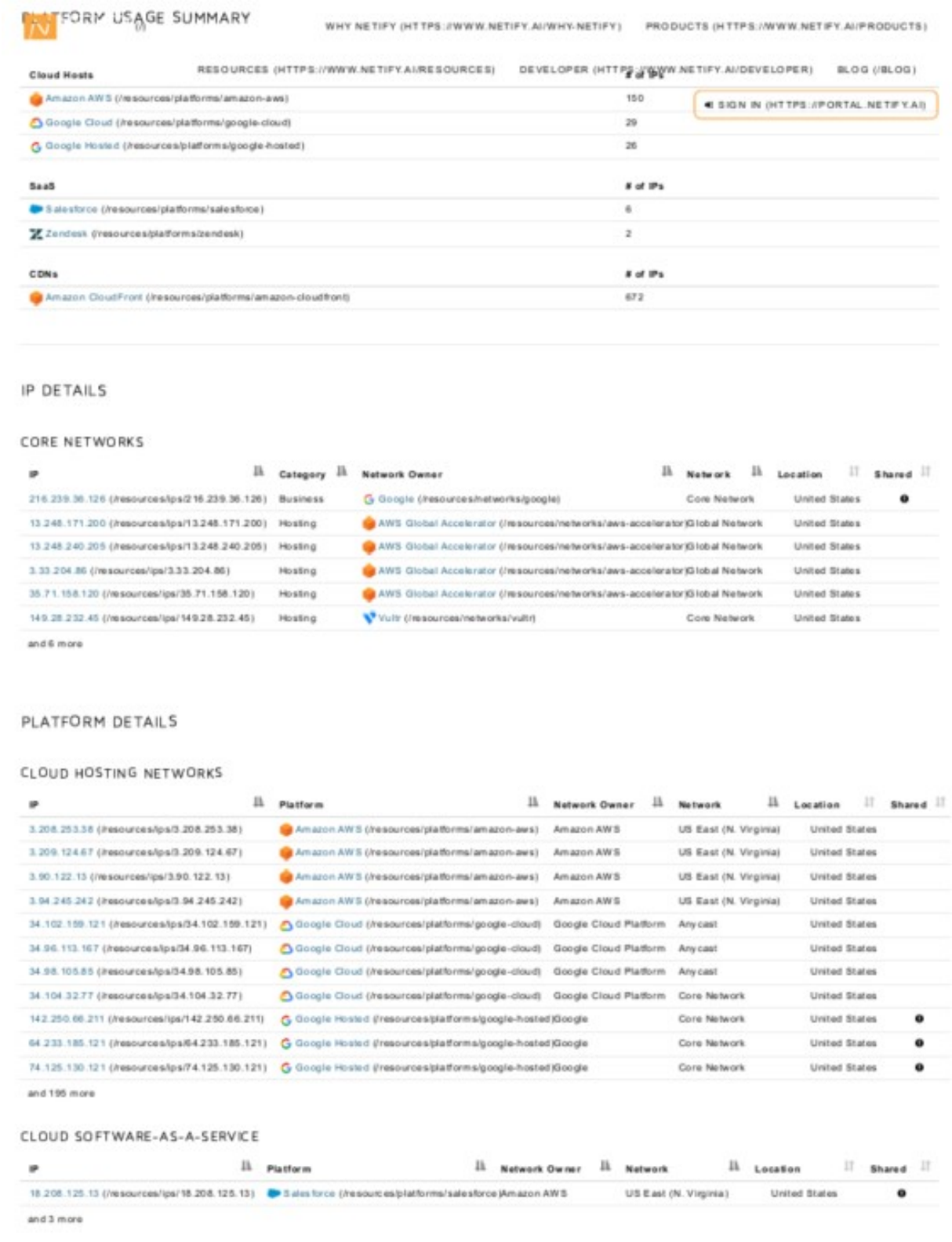
PRIMARY DOMAINS

- addlive.io (/resources/domains/addlive.io)
- feelinsonice.com (/resources/domains/feelinsonice.com)
- sc-cdn.net (/resources/domains/sc-cdn.net)
- sc-corp.net (/resources/domains/sc-corp.net)
- sc-gw.com (/resources/domains/sc-gw.com)
- sc-jpl.com (/resources/domains/sc-jpl.com)
- sc-prod.net (/resources/domains/sc-prod.net)
- sc-static.net (/resources/domains/sc-static.net)
- snapads.com (/resources/domains/snapads.com)
- snapchat.com (/resources/domains/snapchat.com)
- snap-dev.net (/resources/domains/snap-dev.net)
- snapkit.com (/resources/domains/snapkit.com)
- snapmap.com (/resources/domains/snapmap.com)
- snapmap.org (/resources/domains/snapmap.org)
- snapmaps.com (/resources/domains/snapmaps.com)
- snap-storage-cdn.l.google.com (/resources/domains/snap-storage-cdn.l.google.com)

NETWORKS

- 104.193.184.0/22
- 204.154.248.0/21
- 2620:121:5000::/40

(*E.g.,* https://www.netify.ai/resources/applications/snapchat (retrieved July 7, 2023)).



PLATFORM USAGE SUMMARY

WHY NETIFY (HTTPS://WWW.NETIFY.AI/WHY-NETIFY) PRODUCTS (HTTPS://WWW.NETIFY.AI/PRODUCTS)
RESOURCES (HTTPS://WWW.NETIFY.AI/RESOURCES) DEVELOPER (HTTPS://WWW.NETIFY.AI/DEVELOPER) BLOG (/BLOG)
SIGN IN (HTTPS://PORTAL.NETIFY.AI)

Cloud Hosts	# of IPs
Amazon AWS (/resources/platforms/amazon-aws)	150
Google Cloud (/resources/platforms/google-cloud)	29
Google Hosted (/resources/platforms/google-hosted)	26

SaaS	# of IPs
Salesforce (/resources/platforms/salesforce)	6
Zendesk (/resources/platforms/zendesk)	2

CDNs	# of IPs
Amazon CloudFront (/resources/platforms/amazon-cloudfront)	672

IP DETAILS

CORE NETWORKS

IP	Category	Network Owner	Network	Location	Shared
216.239.36.126 (/resources/ips/216.239.36.126)	Business	Google (/resources/networks/google)	Core Network	United States	
13.248.171.200 (/resources/ips/13.248.171.200)	Hosting	AWS Global Accelerator (/resources/networks/aws-accelerator)	Global Network	United States	
13.248.240.205 (/resources/ips/13.248.240.205)	Hosting	AWS Global Accelerator (/resources/networks/aws-accelerator)	Global Network	United States	
3.33.204.86 (/resources/ips/3.33.204.86)	Hosting	AWS Global Accelerator (/resources/networks/aws-accelerator)	Global Network	United States	
35.71.158.120 (/resources/ips/35.71.158.120)	Hosting	AWS Global Accelerator (/resources/networks/aws-accelerator)	Global Network	United States	
149.28.232.45 (/resources/ips/149.28.232.45)	Hosting	Vultr (/resources/networks/vultr)	Core Network	United States	

and 6 more

PLATFORM DETAILS

CLOUD HOSTING NETWORKS

IP	Platform	Network Owner	Network	Location	Shared
3.208.253.38 (/resources/ips/3.208.253.38)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
3.209.124.67 (/resources/ips/3.209.124.67)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
3.90.122.13 (/resources/ips/3.90.122.13)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
3.94.245.242 (/resources/ips/3.94.245.242)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
34.102.159.121 (/resources/ips/34.102.159.121)	Google Cloud (/resources/platforms/google-cloud)	Google Cloud Platform	Anycast	United States	
34.96.113.167 (/resources/ips/34.96.113.167)	Google Cloud (/resources/platforms/google-cloud)	Google Cloud Platform	Anycast	United States	
34.98.105.85 (/resources/ips/34.98.105.85)	Google Cloud (/resources/platforms/google-cloud)	Google Cloud Platform	Anycast	United States	
34.104.32.77 (/resources/ips/34.104.32.77)	Google Cloud (/resources/platforms/google-cloud)	Google Cloud Platform	Core Network	United States	
142.250.66.211 (/resources/ips/142.250.66.211)	Google Hosted (/resources/platforms/google-hosted)	Google	Core Network	United States	
64.233.185.121 (/resources/ips/64.233.185.121)	Google Hosted (/resources/platforms/google-hosted)	Google	Core Network	United States	
74.125.130.121 (/resources/ips/74.125.130.121)	Google Hosted (/resources/platforms/google-hosted)	Google	Core Network	United States	

and 195 more

CLOUD SOFTWARE-AS-A-SERVICE

IP	Platform	Network Owner	Network	Location	Shared
18.208.125.13 (/resources/ips/18.208.125.13)	Salesforce (/resources/platforms/salesforce)	Amazon AWS	US East (N. Virginia)	United States	

and 3 more

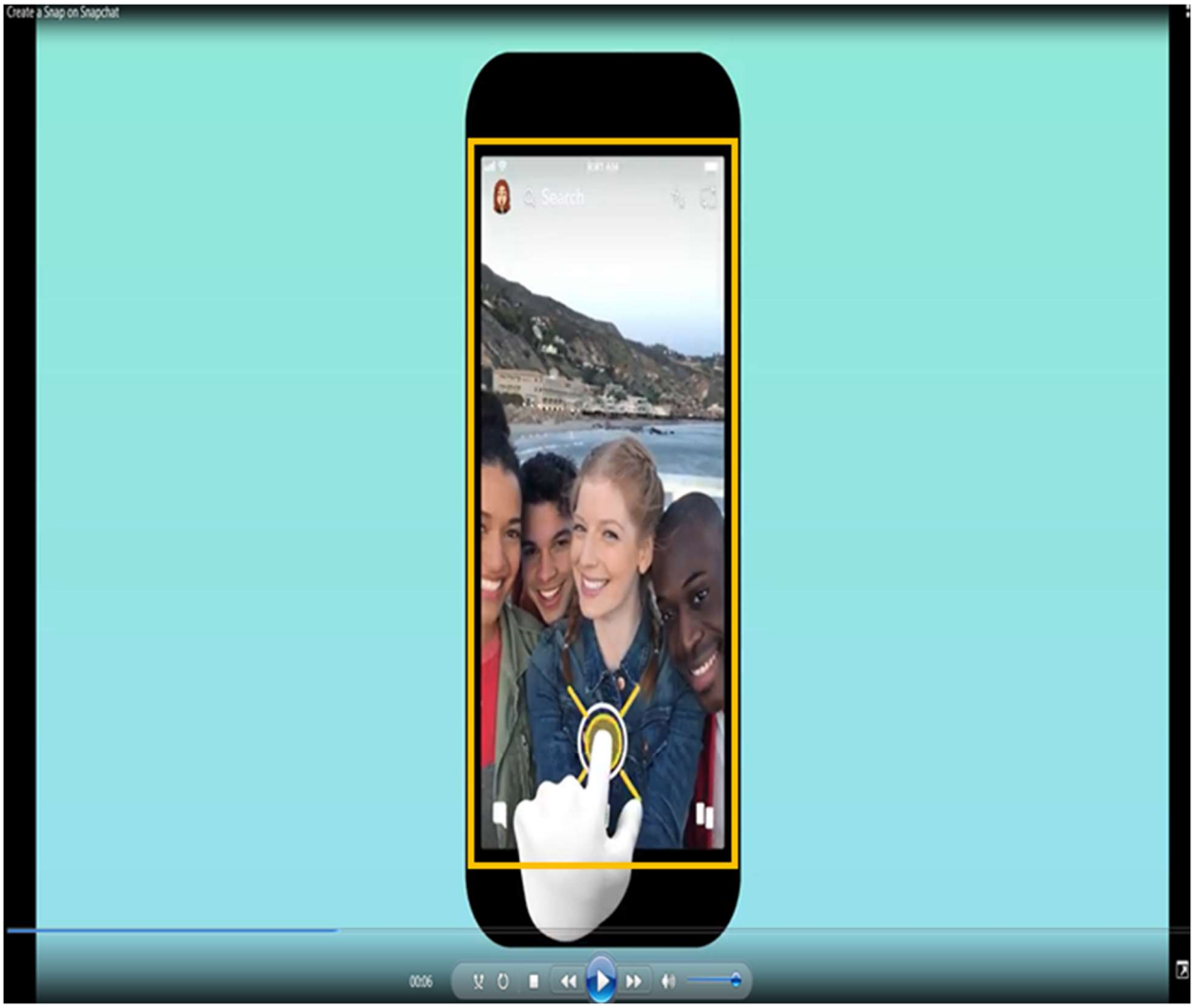
(*E.g.*, https://www.netify.ai/resources/applications/snapchat (retrieved July 7, 2023)).

(*E.g.,* https://www.netify.ai/resources/applications/snapchat (retrieved July 7, 2023)).

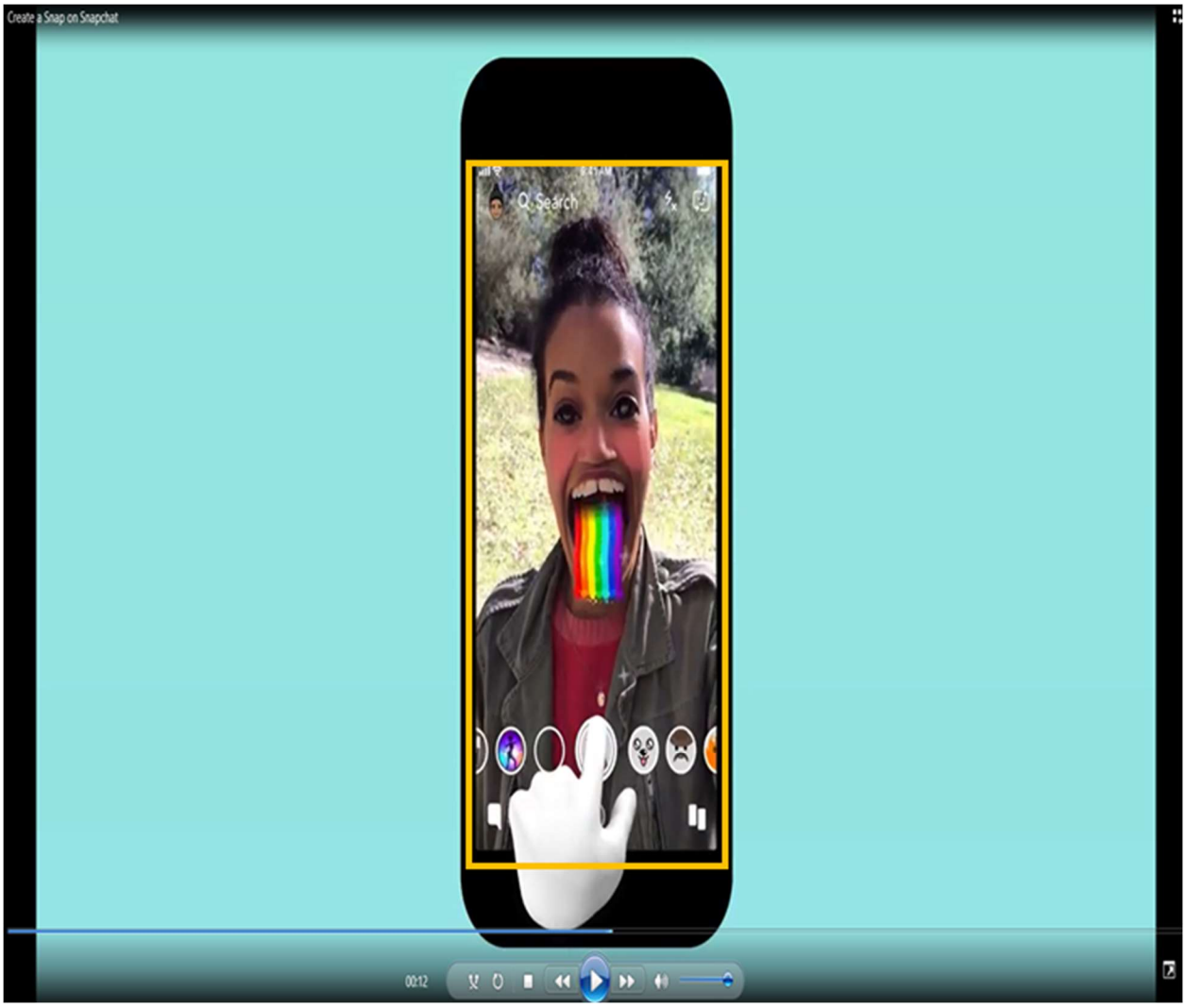
23. The Accused Instrumentality includes an electronic media submissions server subsystem, having one or more data processing apparatus and an electronic media submissions database in order to process and store received submissions from users, for example as discussed above in connection with the Accused Instrumentality's servers. These submissions, which include *e.g.,* video, text and images (sometimes collectively referred to as "snaps"), to be provided to the Accused Instrumentality via a submissions electronic interface configured to receive such electronic media submissions (*e.g.,* video, text, images) from a plurality of submitters (*e.g.,* Snapchat users with accompanying created accounts) over a public network (*e.g.,* the Internet) and stored in said electronic media submissions database for use in distribution to other users. "When you're ready, you can send it to a friend, or share it with the world." (*E.g.,* https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)). Such "snaps", which are configured to be collected in the form of "stories", are made available via storage in the

electronic media submissions database for use in distribution to other users, such as friends or the general userbase of Snapchat, as per the selected option. "… go to discover, here you'll find your friends' stories, as well as shows, content from publishers, and snaps from creators and the community . . .." (*E.g.,* https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).

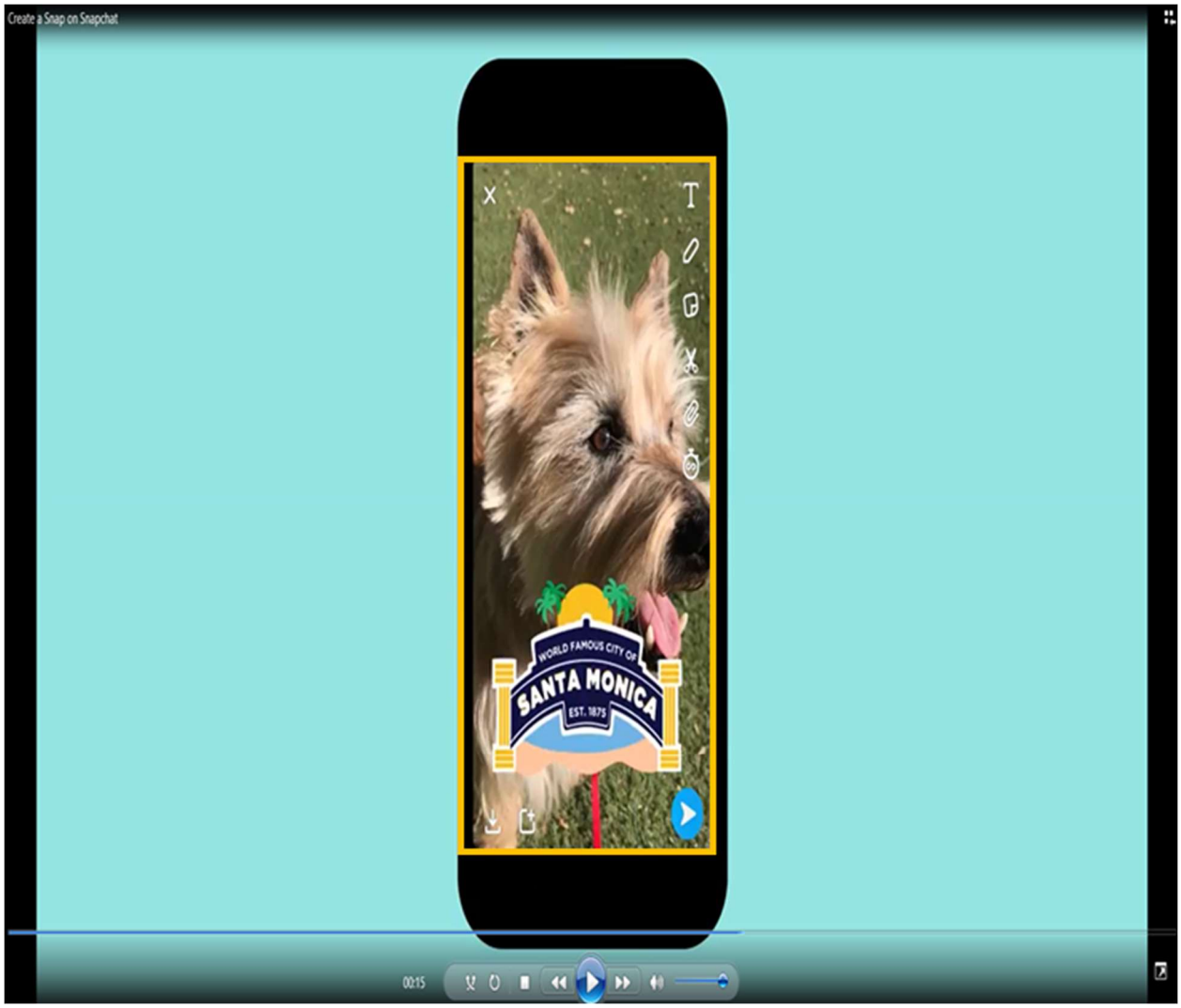
(*E.g.,* https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).



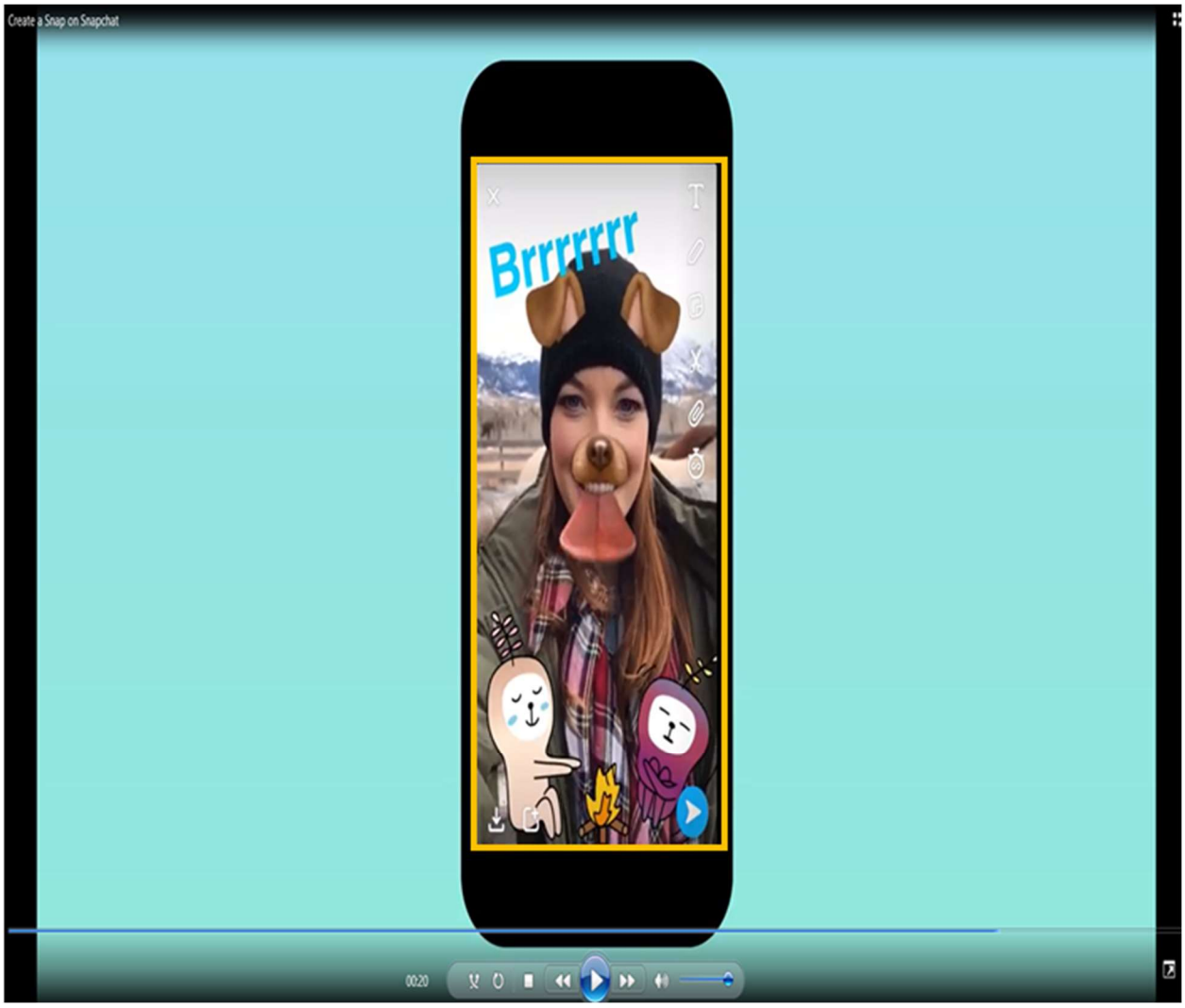
(*E.g.*, https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).



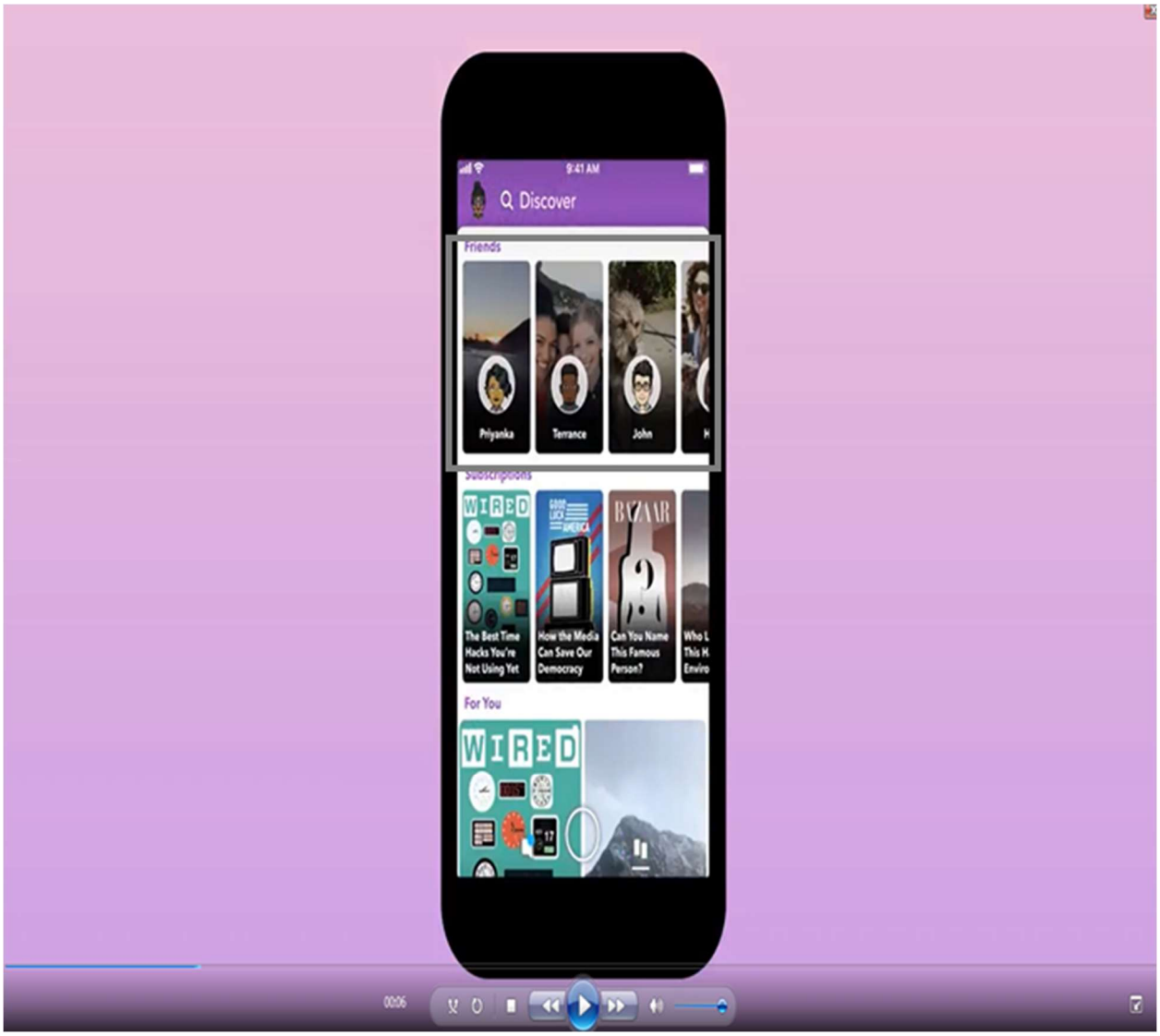
(*E.g.,* https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).



(*E.g.*, https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).

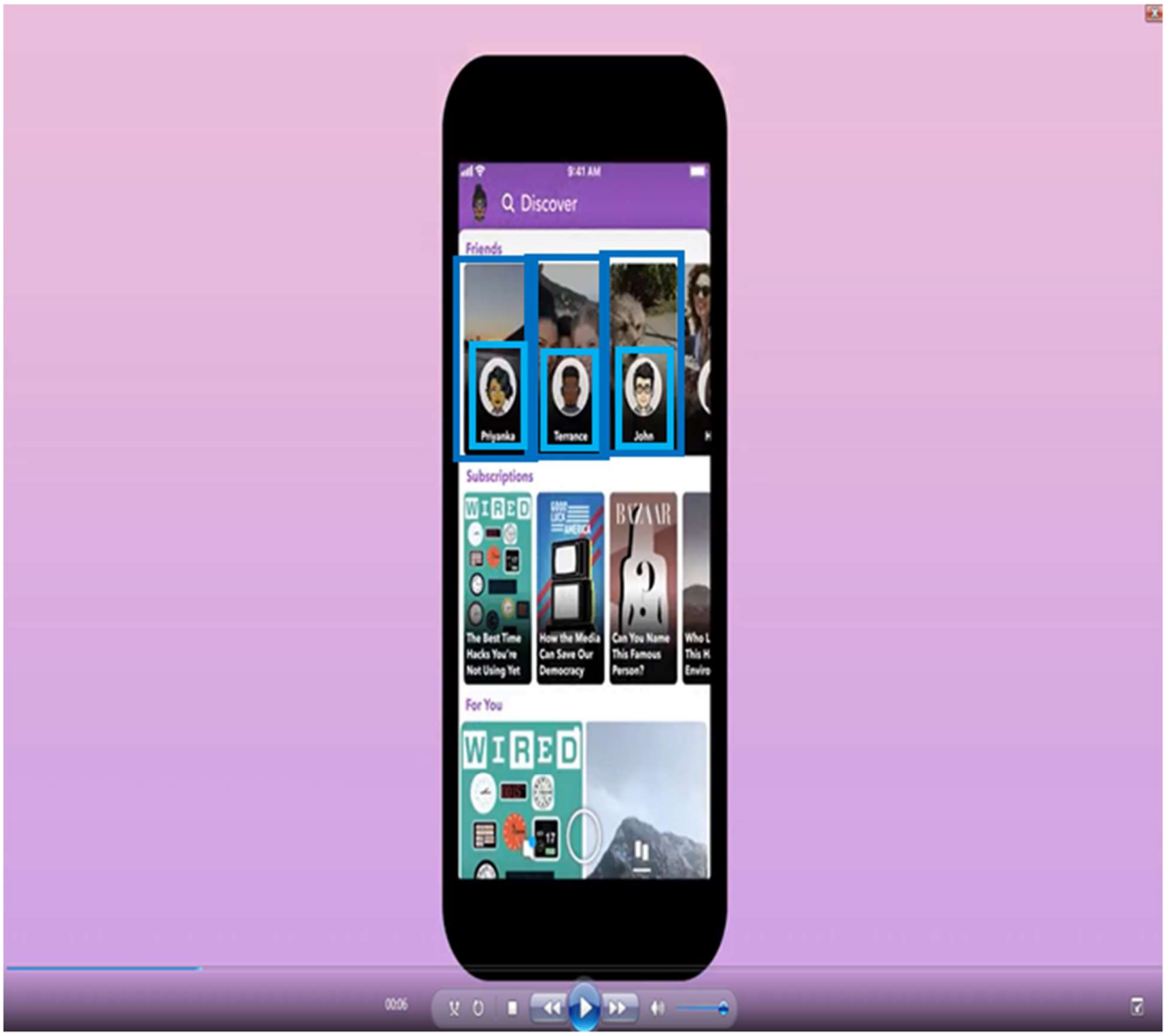


(*E.g.,* https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).

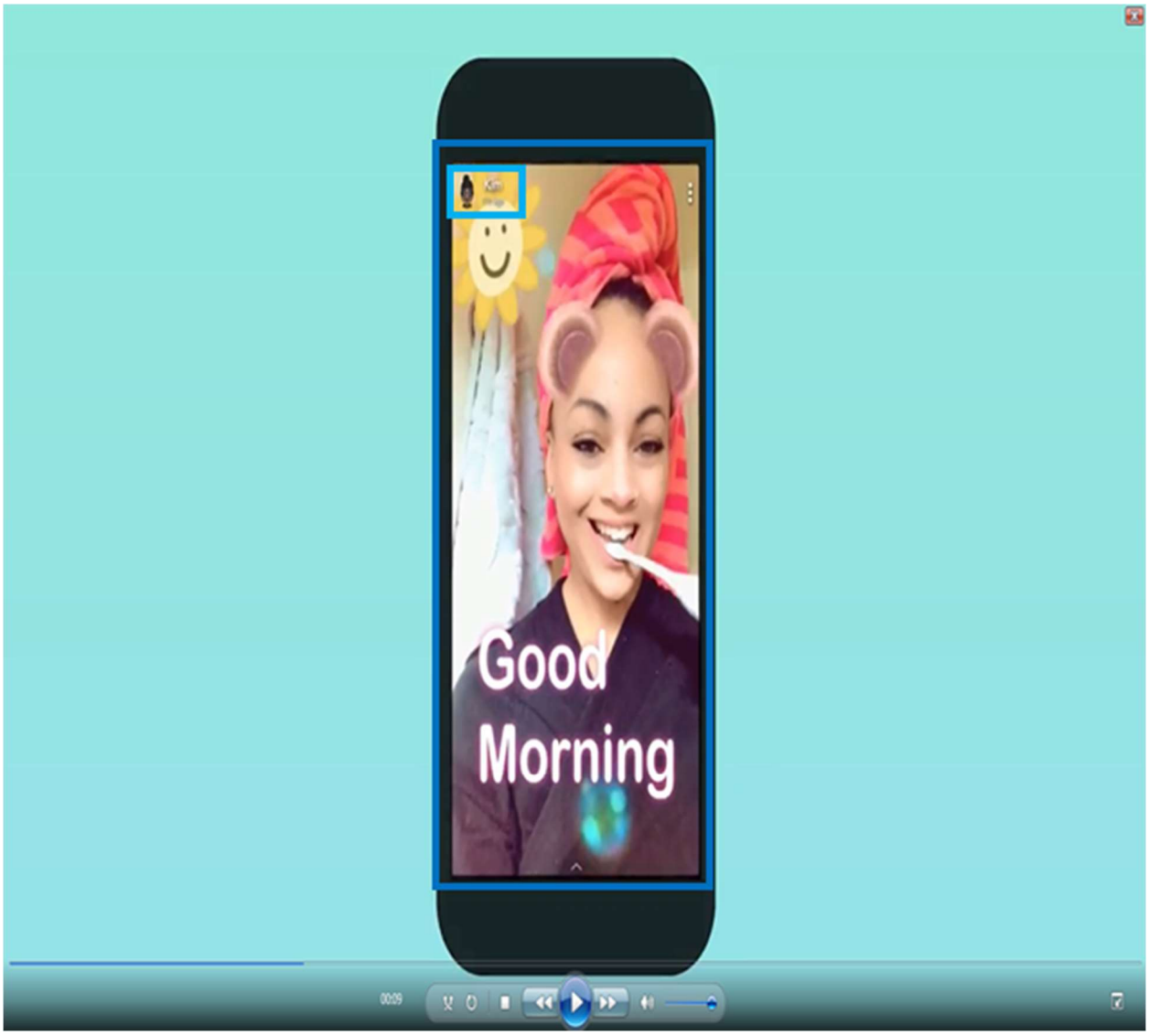


(*E.g.,* https://www.youtube.com/watch?v=k3nzfw7WHTg (published July 23, 2018)).

24. The electronic media submissions database of the Accused Instrumentality which stores the submissions (*e.g.,* video, text, images, forming a multimedia post, sometimes referred to as a "snap" or a "story" submitted by Snapchat users) further stores data identifying the submitter and data indicating content for each electronic media submission, *e.g.,* as shown below with a name and profile picture identifying the submitter and image matter indicating content.



(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



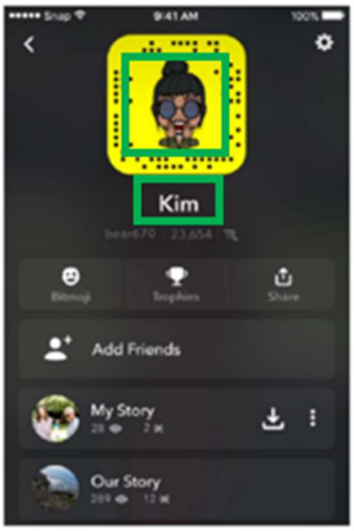
(*E.g.,* https://www.youtube.com/watch?v=OQLtiuawh6w (published July 23, 2018)).

25. The Accused Instrumentality comprises a user database comprising one or more user attributes stored in such database. Such user database is stored in memory available through the Accused Instrumentality's servers, for example as discussed above. Some examples of such user attributes stored in such user database on the Accused Instrumentality are user discussion and viewing history and behavior, follows of other users, follows by other users, friends, subscriptions, preferences, favorites, a profile picture, a profile name, and requests to see less of content, requests to hide content, and skipping of content, as shown and discussed for example below.

So what exactly is the redesign? It puts all messages and Stories from friends to the left of the camera, sorted by who you talk to and view most. It revives auto-advance, so you can watch everyone's Stories in a row, but with best friends not people who post the most first. And it puts to the right of the camera all premium publishers, pro social media stars you follow and aggregated stories from search and Snap Map in the Discover section, curated by humans and sorted by your past viewing behavior.

How the new Snapchat works

Simple: The camera and profile

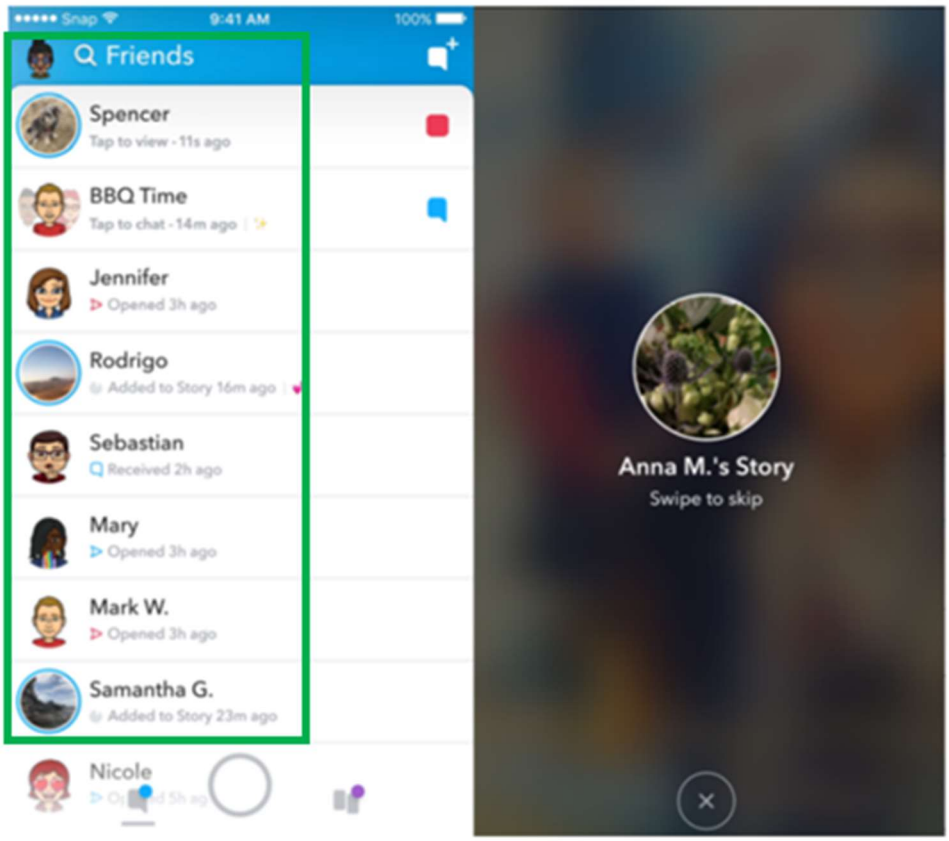


Auto-advance with best first: The Friends page

Snap is mixing Stories and private messages in a single Friends tab. First you'll see new Snaps and text chats at the top, then Stories from your closest friends you watch and chat with the most, followed by the Stories from the rest of your acquaintances.

Every group chat now gets its own Group Story all members can add to. Gone are social media influencers. Now if you follow someone but they don't follow you back they'll appear in Discover, whereas if they do follow you back, they'll be on the Friends page. Influencers will also get to choose if they want to share to just their friends or their followers too. The split should take pressure off your friends to perform like they're stars, encouraging people to post more raw and esoteric content instead of a perfectly polished presence.

(*E.g.*, https://techcrunch.com/2017/11/29/snapchat-redesign/ (published November 29, 2017)).



Snapchat now lumps all professional creators, whether they're big news outlets or social media stars or video Show makers, into one Discover tab to the right of the camera. There also are aggregated Stories from hotspots on the Snap Map, Our Stories about events or holidays and topic-based aggregations from Snapchat Search. They're all shown as big preview tiles, with Discover publishers and creators you actively subscribe to at the top. Everything else is sorted by what Snapchat thinks you want to see based on what you've watched in the past.

You'll actually be able to influence the algorithm with what's almost a reversal of Facebook's "Like." You can still tap and hold on Discover content to subscribe to the author, but you'll also get the option to "see less" of this stuff. That way you can train the algorithm what to hide in the future.

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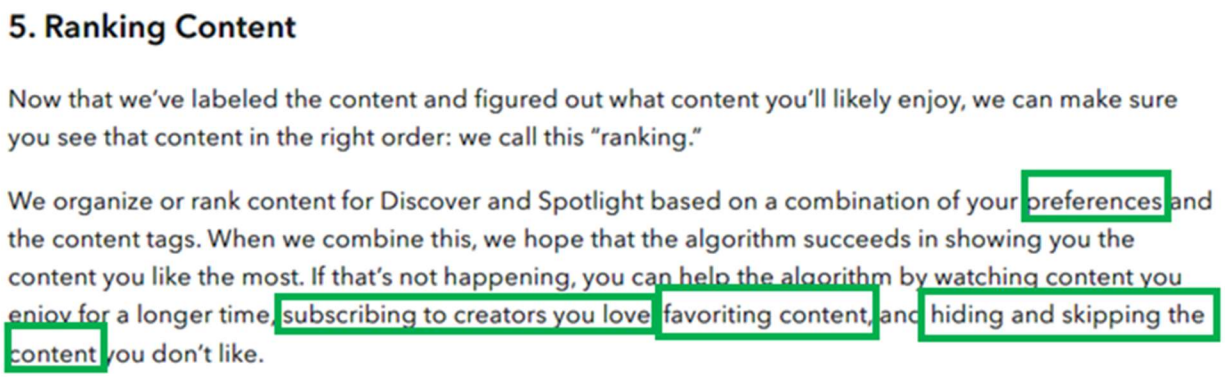


5. Ranking Content

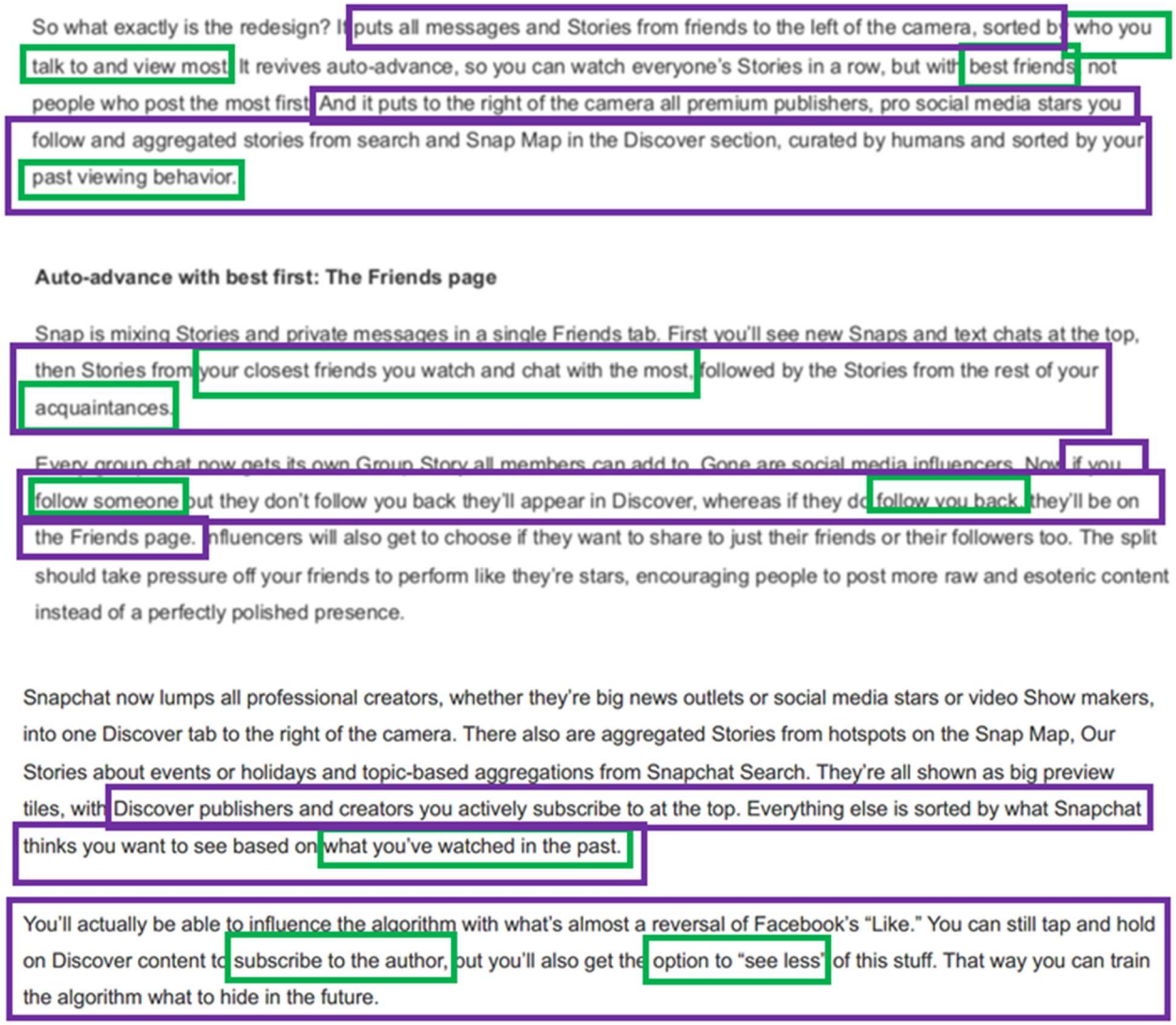
Now that we've labeled the content and figured out what content you'll likely enjoy, we can make sure you see that content in the right order: we call this "ranking."

We organize or rank content for Discover and Spotlight based on a combination of your preferences and the content tags. When we combine this, we hope that the algorithm succeeds in showing you the content you like the most. If that's not happening, you can help the algorithm by watching content you enjoy for a longer time, subscribing to creators you love, favoriting content, and hiding and skipping the content you don't like.

(*E.g.,* https://help.snapchat.com/hc/en-us/articles/8961631424020--How-We-Rank-Content-on-Discover).

26. The Accused Instrumentality employs an electronic multimedia creator server subsystem operatively coupled to the electronic media submissions server subsystem, necessarily having one or more data processing apparatus in order to manage content, and an electronic creator multimedia database stored on a non-transitory medium, configured to select and retrieve a plurality of electronic media submissions from the electronic media submissions database using an electronic content filter located on the electronic multimedia creator server. As can be seen below, such electronic content filter as is used by Snap, Inc. is based at least in part on at least one of the one or more user attributes, (*e.g.,* based on user discussion and viewing history and behavior, follows of other users, follows by other users, friends, subscriptions, preferences, favorites, requests to see less of content, requests to hide content, and skipping of content, which in turn affects which electronic media submissions appear on a given user's Snapchat discovery feed), as shown and discussed for example below. Snap Inc. uses function-specific subsystems, for example as discussed below. Such electronic content filter is used by the Accused Instrumentality to develop multimedia content (*e.g.,* content associated with video, text and images) to be electronically available for viewing on user devices (*e.g.,* devices such as smart phones

incorporating browsers or apps) wherein the identification of the submitter is maintained with each selected and retrieved submission within the multimedia content, for example as shown below.



So what exactly is the redesign? It puts all messages and Stories from friends to the left of the camera, sorted by who you talk to and view most. It revives auto-advance, so you can watch everyone's Stories in a row, but with best friends, not people who post the most first. And it puts to the right of the camera all premium publishers, pro social media stars you follow and aggregated stories from search and Snap Map in the Discover section, curated by humans and sorted by your past viewing behavior.

Auto-advance with best first: The Friends page

Snap is mixing Stories and private messages in a single Friends tab. First you'll see new Snaps and text chats at the top, then Stories from your closest friends you watch and chat with the most, followed by the Stories from the rest of your acquaintances.

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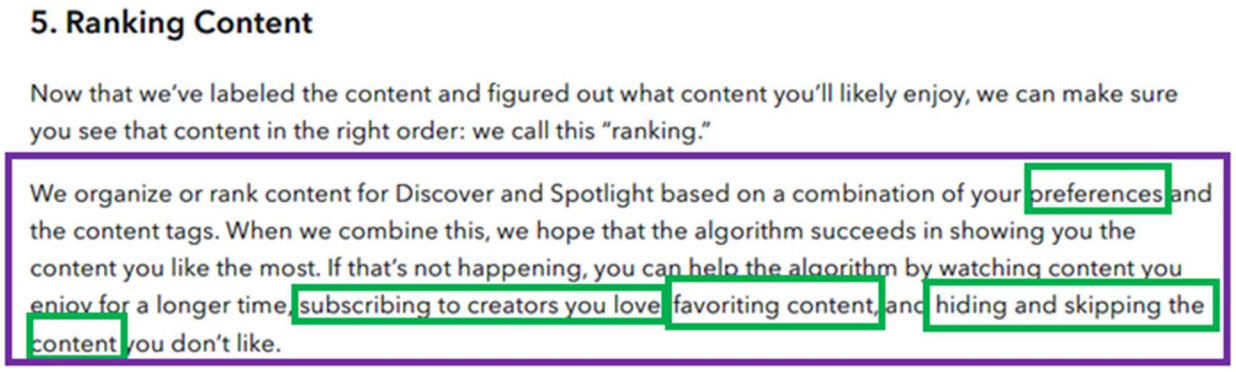
(*E.g.*, https://techcrunch.com/2017/11/29/snapchat-redesign/ (published November 29, 2017)).



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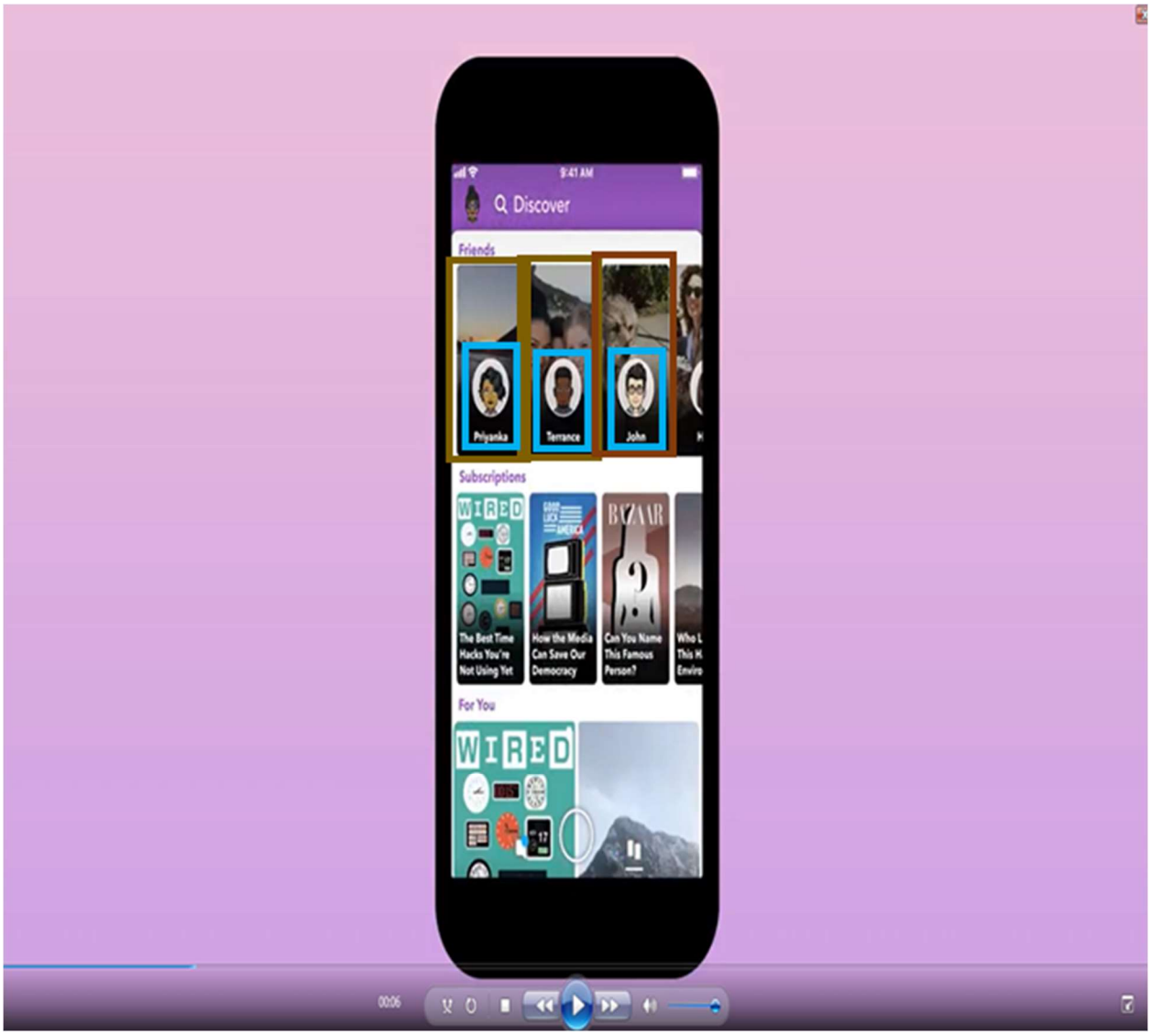
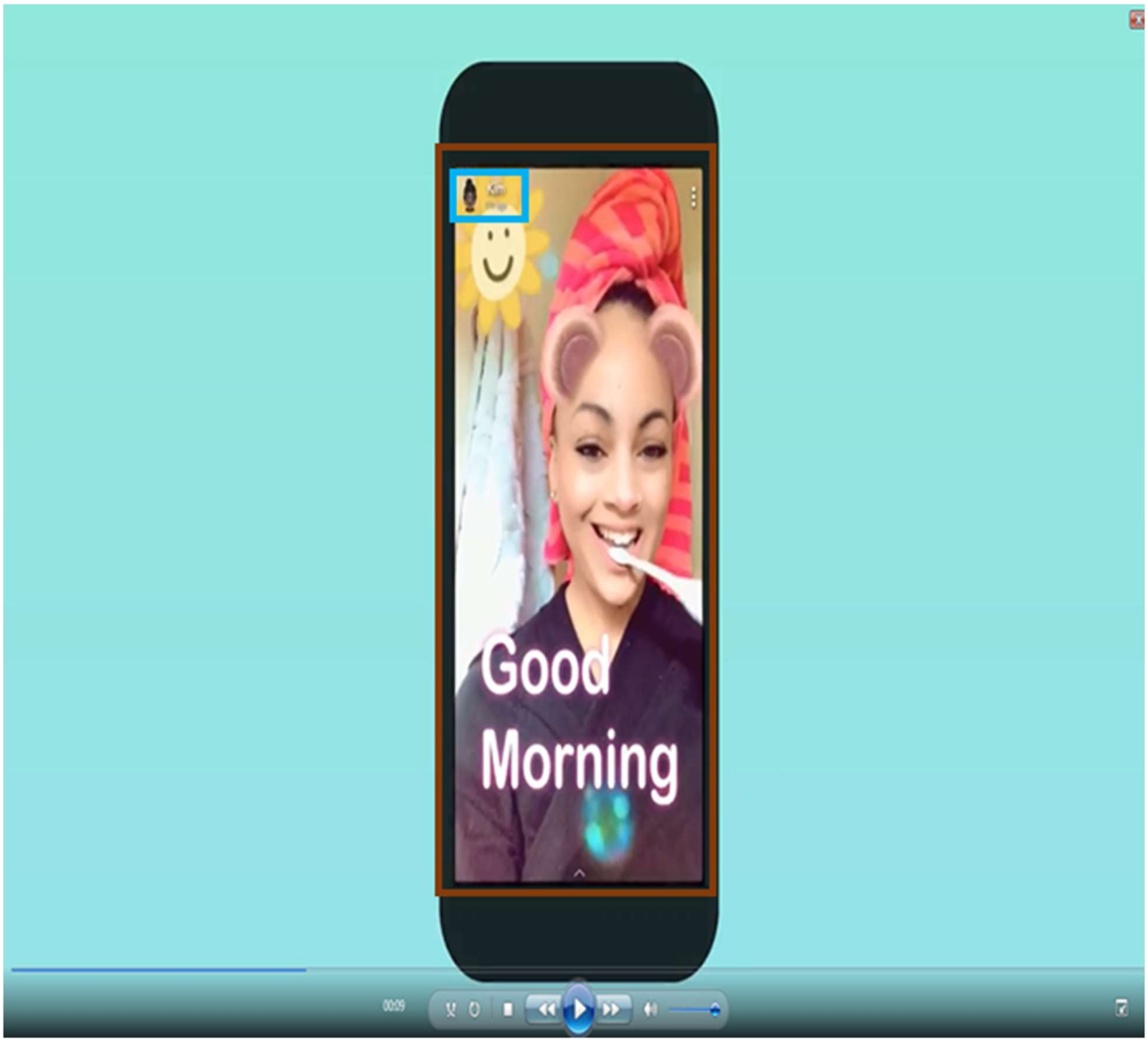
(*E.g.*, https://help.snapchat.com/hc/en-us/articles/8961631424020--How-We-Rank-Content-on-Discover).

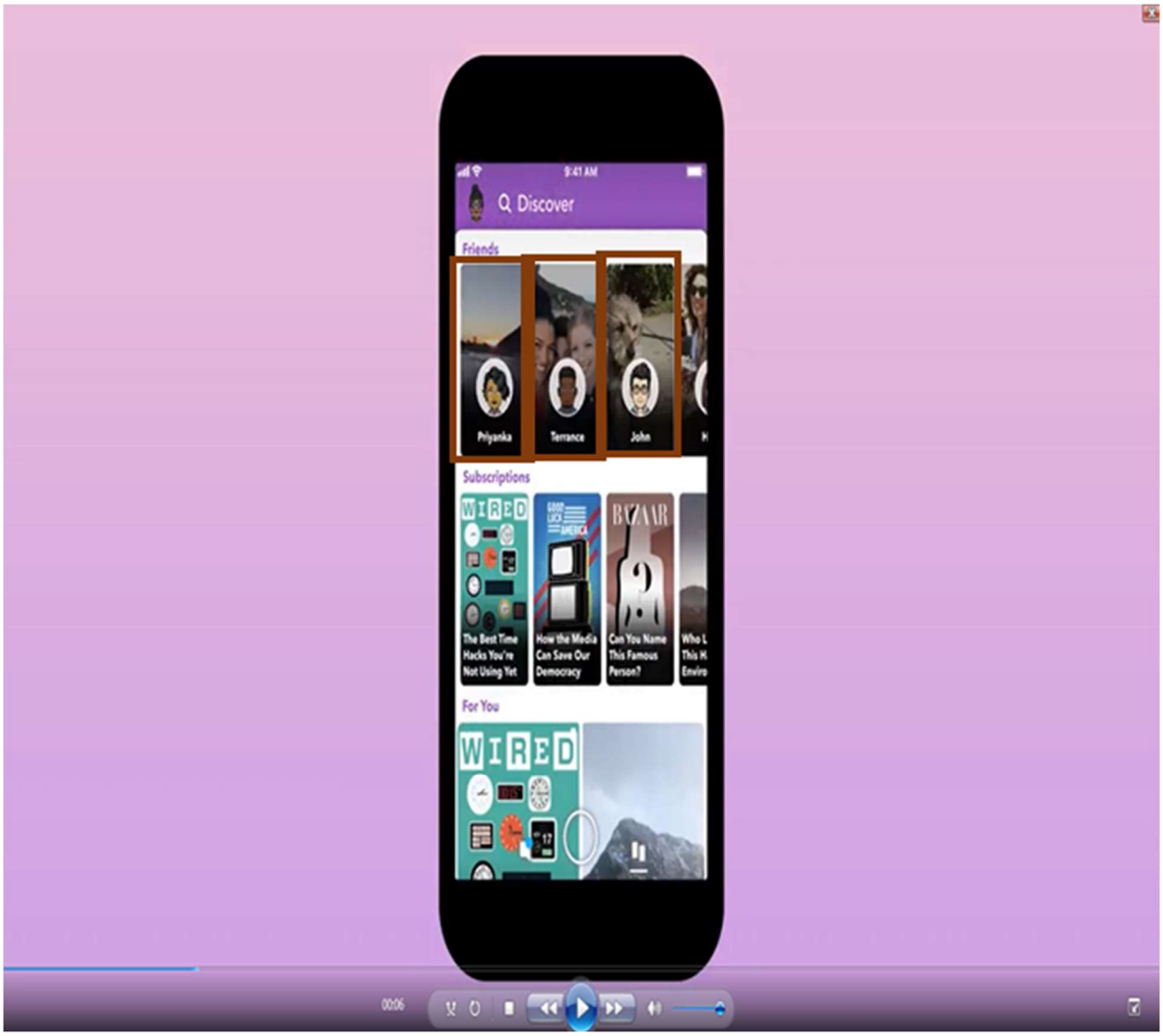


(*E.g.*, https://www.youtube.com/watch?v=k3nzfw7WHTg (published July 23, 2018)).

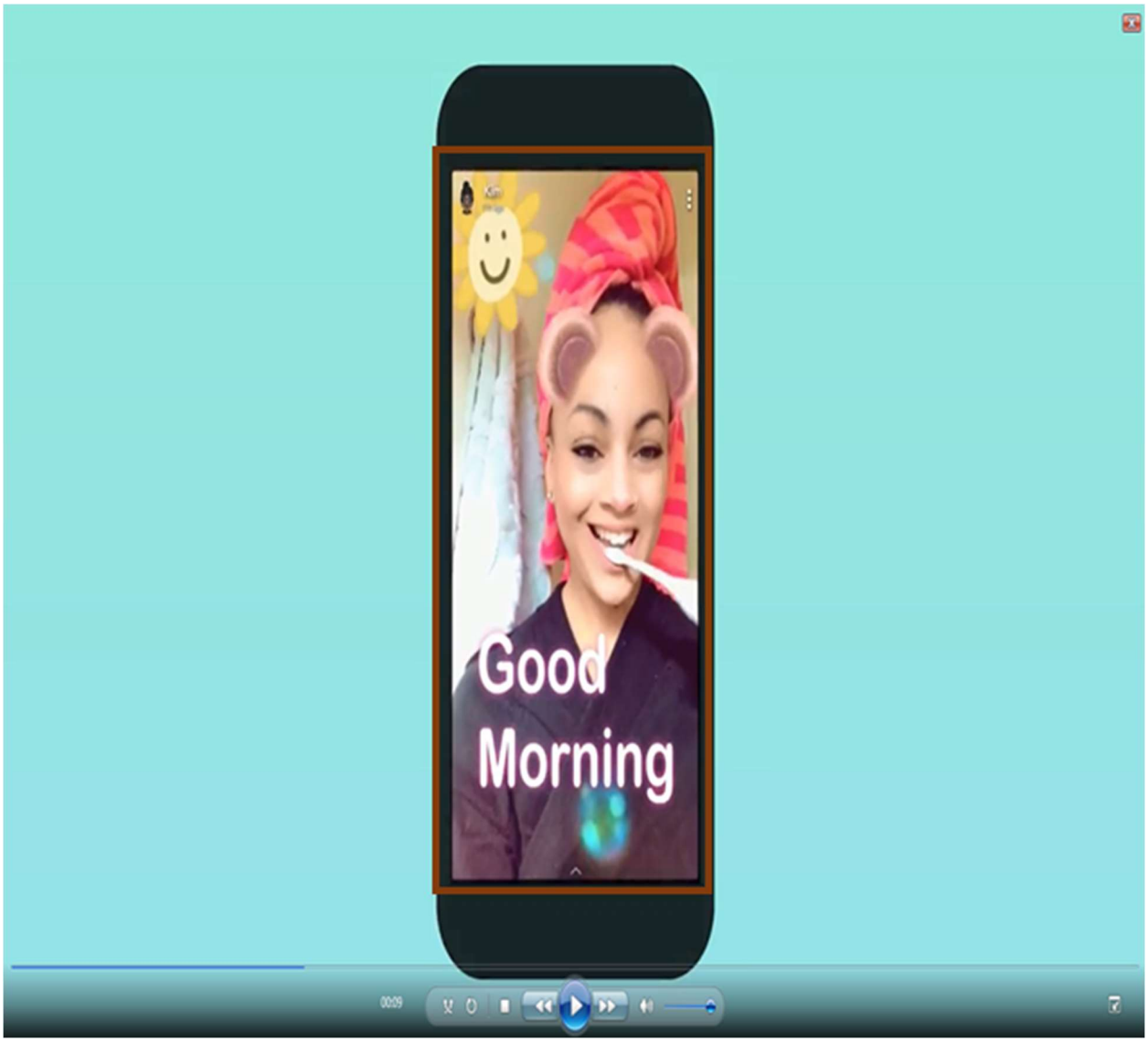


(*E.g.,* https://www.youtube.com/watch?v=OQLtiuawh6w (published July 23, 2018)).

27. The Accused Instrumentality employs an electronic release subsystem operatively coupled to the electronic multimedia creator server subsystem, necessarily having one or more data processing apparatus in order to serve content to Snapchat users, configured to make the multimedia content electronically available for viewing on one or more user devices. For example, as shown below, multimedia content is provided on a user's device in response to a user logging in to Snapchat and viewing their Snapchat discovery feed or other feeds.



(*E.g.*, https://www.youtube.com/watch?v=k3nzfw7WHTg (published July 23, 2018)).



(*E.g.,* https://www.youtube.com/watch?v=OQLtiuawh6w (published July 23, 2018)).

28. The Accused Instrumentality employs an electronic voting subsystem, necessarily having one or more data processing apparatus in order to track voting, configured to enable a user to electronically vote for or rate (*e.g.,* by the user's choices with respect to viewing, tapping and holding on, opting to see less of, favoriting, hiding, or skipping) an electronically available multimedia content (*e.g.,* a collection or "story") or an electronic media submission (*e.g.,* a user post or "snap") within a respective electronically available multimedia content. As can be seen below, the option to vote for or rate electronically available multimedia content (*e.g.,* a collection

or "story") or an electronic media submission (*e.g.,* a user post or "snap") within a respective electronically available multimedia content is made available to users via the user's choices with respect to viewing, tapping and holding on, opting to see less of, favoriting, hiding, or skipping the multimedia content, and this voting or rating behavior is tracked and associated with the multimedia content and/or submission so as to allow for serving of future content based on this behavior and/or for display purposes (*e.g.,* as to a number of views, shown for example by a number next to an eye icon).

> So what exactly is the redesign? It puts all messages and Stories from friends to the left of the camera, sorted by who you talk to and view most. It revives auto-advance, so you can watch everyone's Stories in a row, but with best friends, not people who post the most first. And it puts to the right of the camera all premium publishers, pro social media stars you follow and aggregated stories from search and Snap Map in the Discover section, curated by humans and sorted by your past viewing behavior.
>
> Snapchat now lumps all professional creators, whether they're big news outlets or social media stars or video Show makers, into one Discover tab to the right of the camera. There also are aggregated Stories from hotspots on the Snap Map, Our Stories about events or holidays and topic-based aggregations from Snapchat Search. They're all shown as big preview tiles, with Discover publishers and creators you actively subscribe to at the top. Everything else is sorted by what Snapchat thinks you want to see based on what you've watched in the past.
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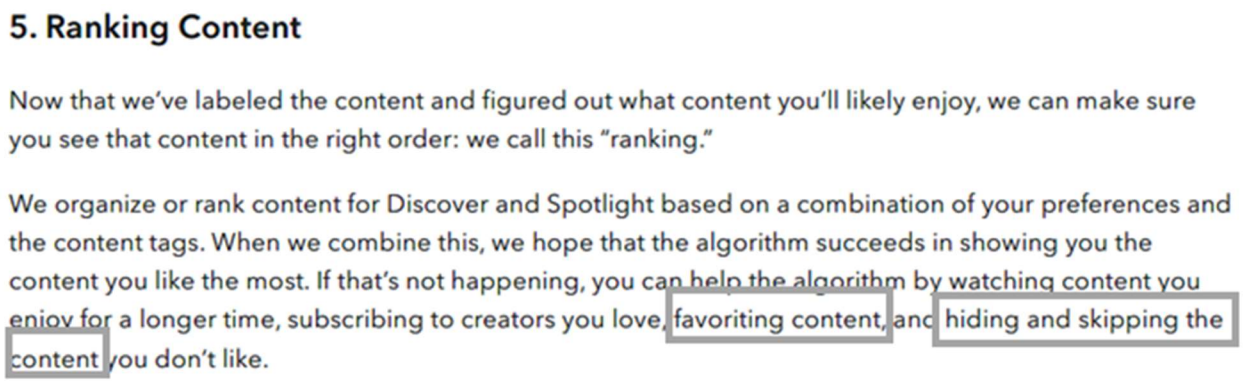

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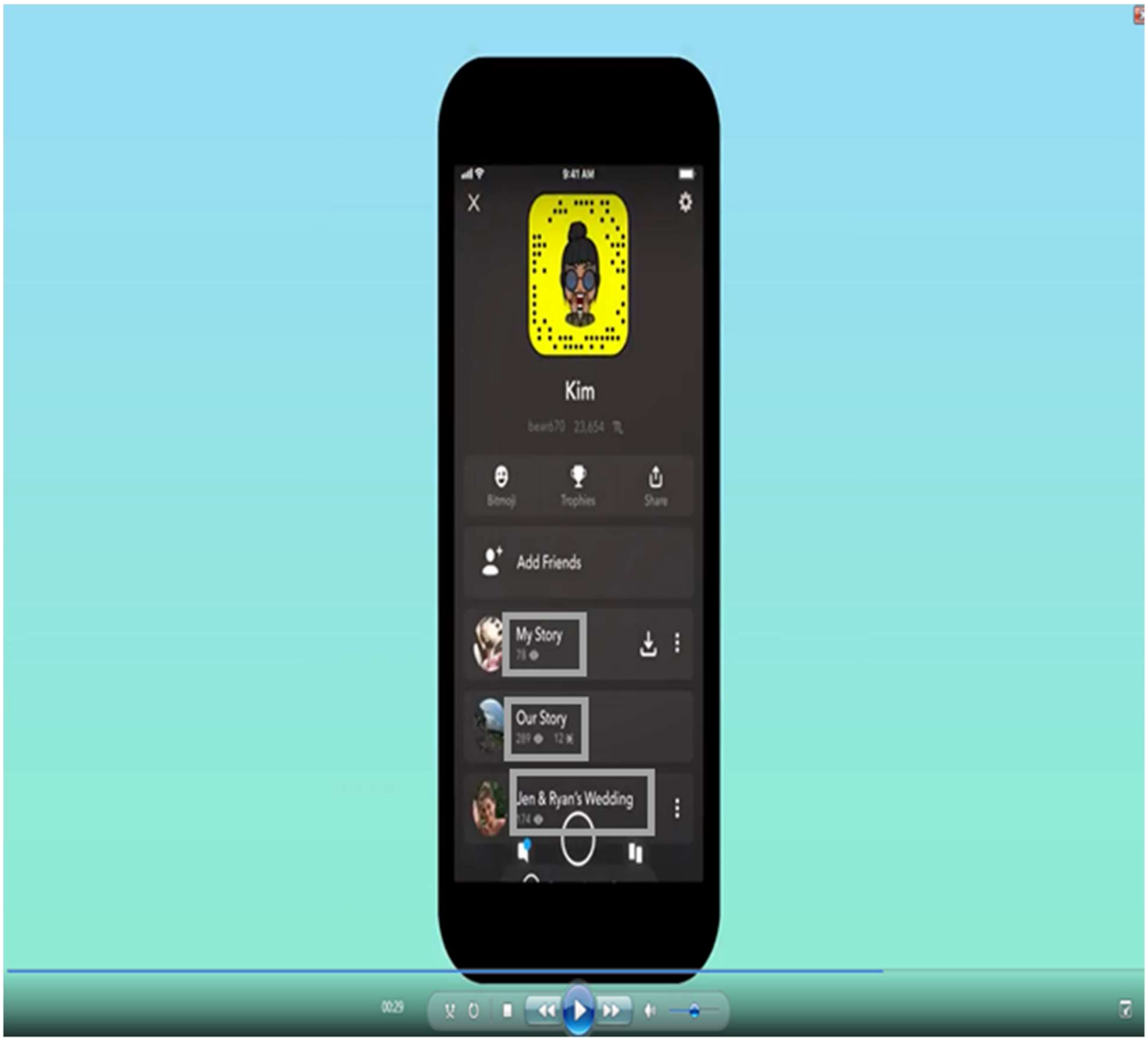


(*E.g.,* https://www.youtube.com/watch?v=OQLtiuawh6w (retrieved July 23, 2018)).

29. Plaintiff has been damaged as a result of Defendant's infringing conduct. Defendant is thus liable to Plaintiff for damages in an amount that adequately compensates Plaintiff for such Defendant's infringement of the '480 Patent, *i.e.*, in an amount that by law cannot be less than would constitute a reasonable royalty for the use of the patented technology, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

30. To the extent marking is required, VCA has complied with all marking requirements.

IV. COUNT II
(PATENT INFRINGEMENT OF UNITED STATES PATENT NO. 9,477,665)

31. Plaintiff incorporates the above paragraphs herein by reference.

32. On October 25, 2016, United States Patent No. 9,477,665 ("the '665 Patent") was duly and legally issued by the United States Patent and Trademark Office. The '665 Patent is titled "Revenue-Generating Electronic Multi-Media Exchange and Process of Operating Same." A true and correct copy of the '665 Patent is attached hereto as Exhibit B and incorporated herein by reference.

33. VCA is the assignee of all right, title, and interest in the '665 Patent, including all rights to enforce and prosecute actions for infringement and to collect damages for all relevant times against infringers of the '665 Patent. Accordingly, VCA possesses the exclusive right and standing to prosecute the present action for infringement of the '665 Patent by Defendant.

34. The application leading to the '665 patent was filed November 16, 2012, which was a continuation of application no. 11/978,781, which issued as United States Patent No. 8,340,994, which was a continuation of application no. 09/565,438 which issued as United States Patent No. 7,308,413. (Ex. B at cover). The '665 patent was first assigned to Virtual Creative Artists, LLC. (*Id.*).

35. The '665 Patent shares the identical specification as the '480 patent and therefore VCA incorporates the background and discussion of the invention in Paragraphs 11-18. Furthermore claim 1 involves a system for generating multimedia content. The claim requires, among other things, electronically generating a multimedia file from the retrieved electronic media Submissions in accordance with a selected digital format, wherein the identification of the submitter is maintained with each retrieved submission within the multimedia file. The claim requires electronically transmitting the multimedia file to a plurality of publicly accessible

webservers to be electronically available for viewing on one or more user devices over a public network via a web-browser and. This allows electronically transmit data indicating votes or rating of multimedia content in a much quicker and easier fashion based on specific user criteria. There is nothing abstract about this very particular, unconventional, and non-routine system for the generation of multimedia content as specifically claimed and there is no risk of preempting creating and distribution contention generally, or even within the context of the Internet.

36. The invention is a highly technical electronic process that cannot be achieved with the human mind and is instead rooted in computer technology, including the steps of:

- "electronically retrieving a plurality of electronic media submissions,"
- "electronically generating a multimedia file from the retrieved electronic media submissions in accordance with a selected digital format,"
- "electronically transmitting the multimedia file to a plurality of publicly accessible webservers to be electronically available for viewing on one or more user devices over a public network via a web-browser," and
- "providing a web-based graphical user interface that enables a user to electronically transmit data indicating a vote or rating for an electronically available multimedia content or an electronic media Submission within a respective electronically available multimedia content."

37. Each of these subsystems are configured in a very specific (and not generic, unconventional and non-routine manner to offer the novel and non-obvious approach claimed invention. For example, claim 1 requires an "electronic media submissions database," which is a subsystem that receives media submissions from Internet users. This is not a generic database but rather a scalable database that must be able to receive, store, and manage multiple petabytes of multimedia data received from users all over the world. This is one of the many specialized databased required in the claim. In fact, the specification discloses the use of a sophisticated database management system known in the art at the time that was capable of handling data at this

level, Oracle7. This type of database management system cannot operate on a generic computing system but rather requires specialized hardware and software.

38. The claim also provides details to explain how each step operates. For example, the claim requires "electronically retrieving a plurality of electronic media submissions from an electronic media submissions database using an electronic content filter located on one or more data processing apparatus." Further, "the electronic media submissions database" in this step is further required to "store[] [1] data identifying the submitter and [2] data indicating content for each electronic media submission." The step further requires and "electronic content filter." The "filter" also includes a very specific algorithm of "being based at least in part on at least one of the one or more user attributes."

39. The claims also require an "electronically generating a multimedia file from the retrieved electronic media submissions in accordance with a selected digital format." Manipulation of multimedia data in accordance with a selected digital format is far from generic and was not routine or conventional at the time of the invention. Further, this step requires that the "electronic media submissions database" "stores data identifying the submitter" and the "the identification of the submitter is maintained with each retrieved submission within the multimedia file."

40. The claims also require "providing a web-based graphical user interface that enables a user to electronically transmit data indicating a vote or rating for an electronically available multimedia content or an electronic media Submission within a respective electronically available multimedia content," which is a well-defined, specific, and unconventional feature. By including this additional voting/rating feature, the claims avoid any risk of preempting the creation and distribution of content.

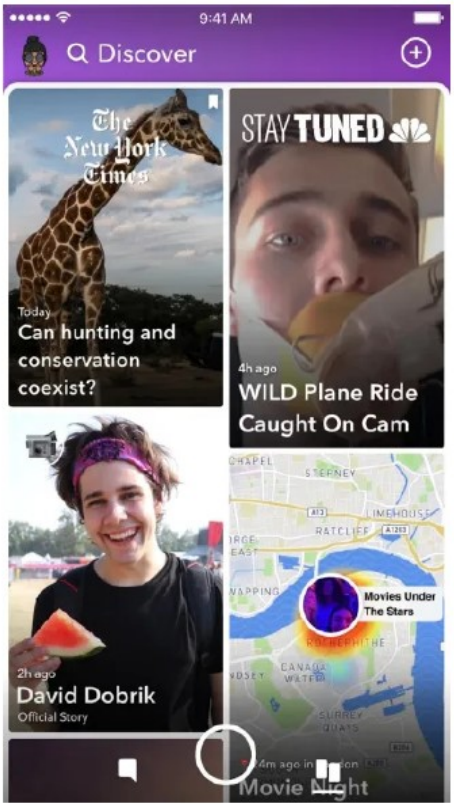
41. The also has inventive concepts. For example, the claim requires that he filtering tool be at a specific location, remote from the end-users, with customizable filtering features specific to each end user. The "electronic content filter" is located at the server, remote from the end user, and customizable based on user attributes. The "electron voting" step at the time of the invention was also novel, inventive, and added sufficient inventive contributions to avoid a risk of preempting the creation and distribution of media content. It is clearly possible to create and distribute media content without every having to include a "voting" subsystem on what components should be included in such media content.

42. These arguments overcame a patent eligibility rejection under 35 U.S.C. §101 of the claim at issue during the prosecution of the '665 patent before the United States Patent and Trademark Office.

43. **Direct Infringement.** Upon information and belief, Defendant has been directly infringing claim 1 of the '665 Patent in Illinois, and elsewhere in the United States, by employing a computer-based system using https://www.snapchat.com/ ("Accused Instrumentality") (*e.g.,* https://www.snapchat.com/).

44. Snap Inc. uses a computer-based system for the Accused Instrumentality, for example to enable the provision of personalized discovery feeds that show users multimedia content based, *inter alia*, on who they follow and content that has been selected, viewed, subscribed to or positively (or not negatively) rated in the past. This system makes use of one or more data processing apparatus, and a computer readable medium coupled to the one or more data processing apparatus having instructions stored thereon which, when executed by the one or more data processing apparatus, cause the one or more data processing apparatus to perform an electronic method comprising the functions as further discussed below. This is consistent with

what Snap Inc. currently describes as the operation of its system, "… go to discover, here you'll find your friends' stories, as well as shows, content from publishers, and snaps from creators and the community, personalized for you." (*E.g.,* https://help.snapchat.com/hc/en-us/articles/8961631424020--How-We-Rank-Content-on-Discover; https://www.youtube.com/watch?v=k3nzfw7WHTg). Snap Inc., during the relevant time period, taking advantage of multiple cloud server providers, as well as scalability within its cloud server providers, employed separate server subsystems for all its meaningfully different functions, such as those indicated below. Snap Inc., uses and has used during the relevant time period, numerous different networks, IP addresses, and providers for, *inter alia*, cloud hosting, software-as-a-service, and content delivery networks (CDNs), thereby using separate server subsystems for all its meaningfully different functions, such as those indicated below.



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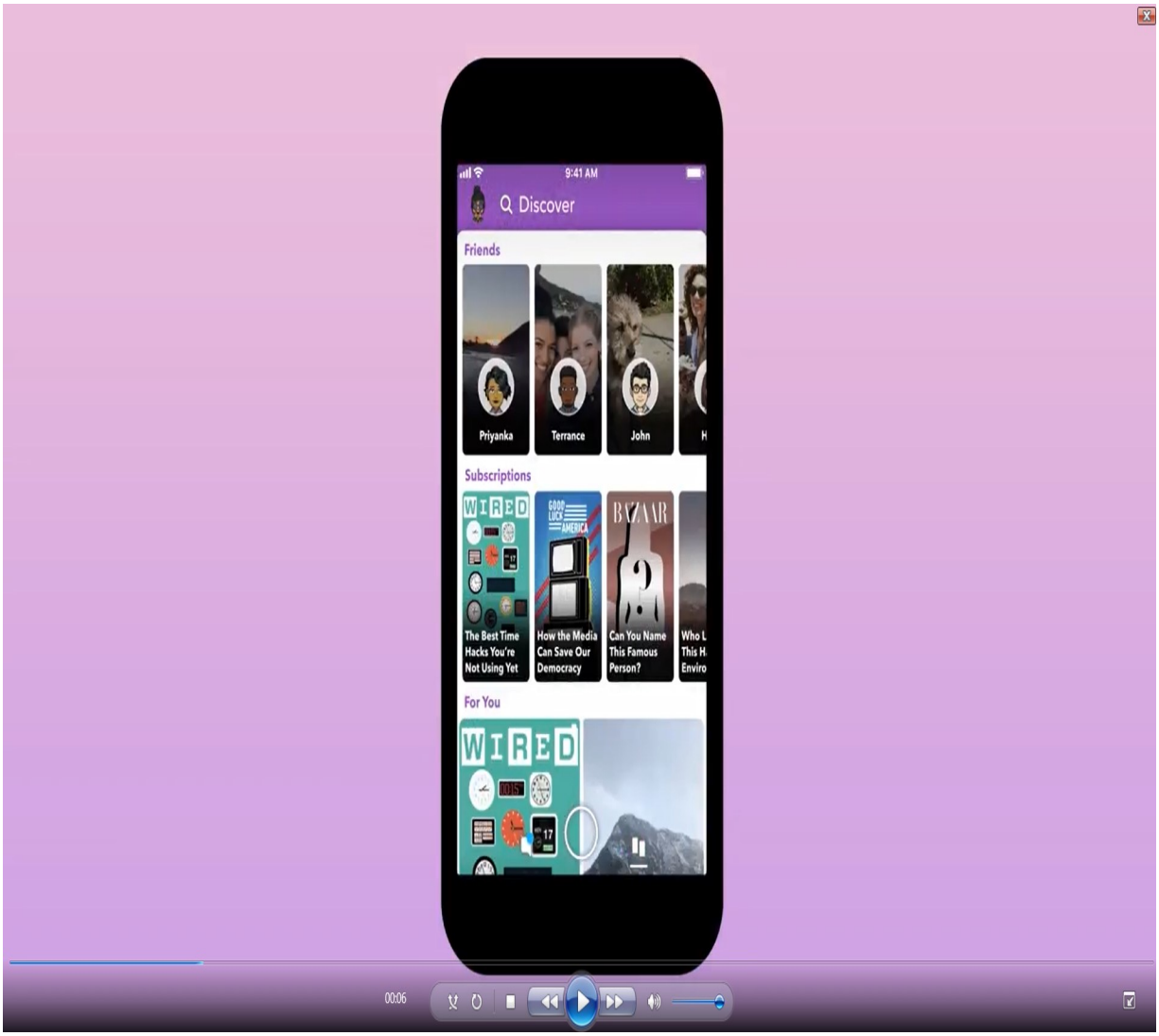

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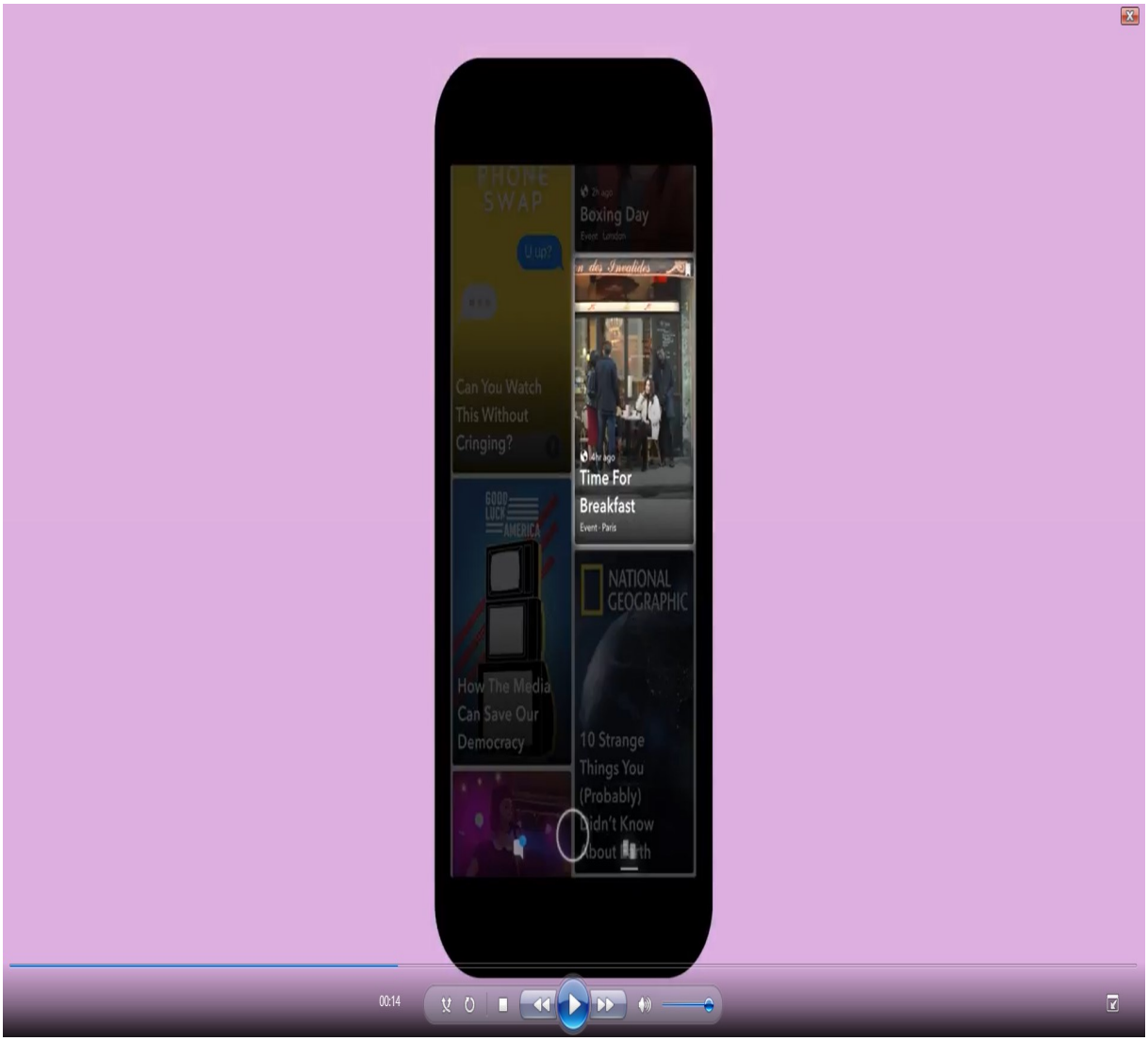


(*E.g.*, https://www.youtube.com/watch?v=k3nzfw7WHTg (published July 23, 2018)).

Snap, which is set to IPO this week, signed a **$2 billion, five-year contract with Google** for its cloud services, which makes Snap Google's **largest customer** of its cloud platform.

For context, Google's cloud business was previously estimated to have an annual runrate revenue of about $1 billion, according to RBC Capital Markets analyst Mark Mahaney, trailing **Amazon Web Services'** $12.2 billion and Microsoft Azure's **estimated $2.7 billion**. (Snap also has a **$1 billion contract** with AWS.)

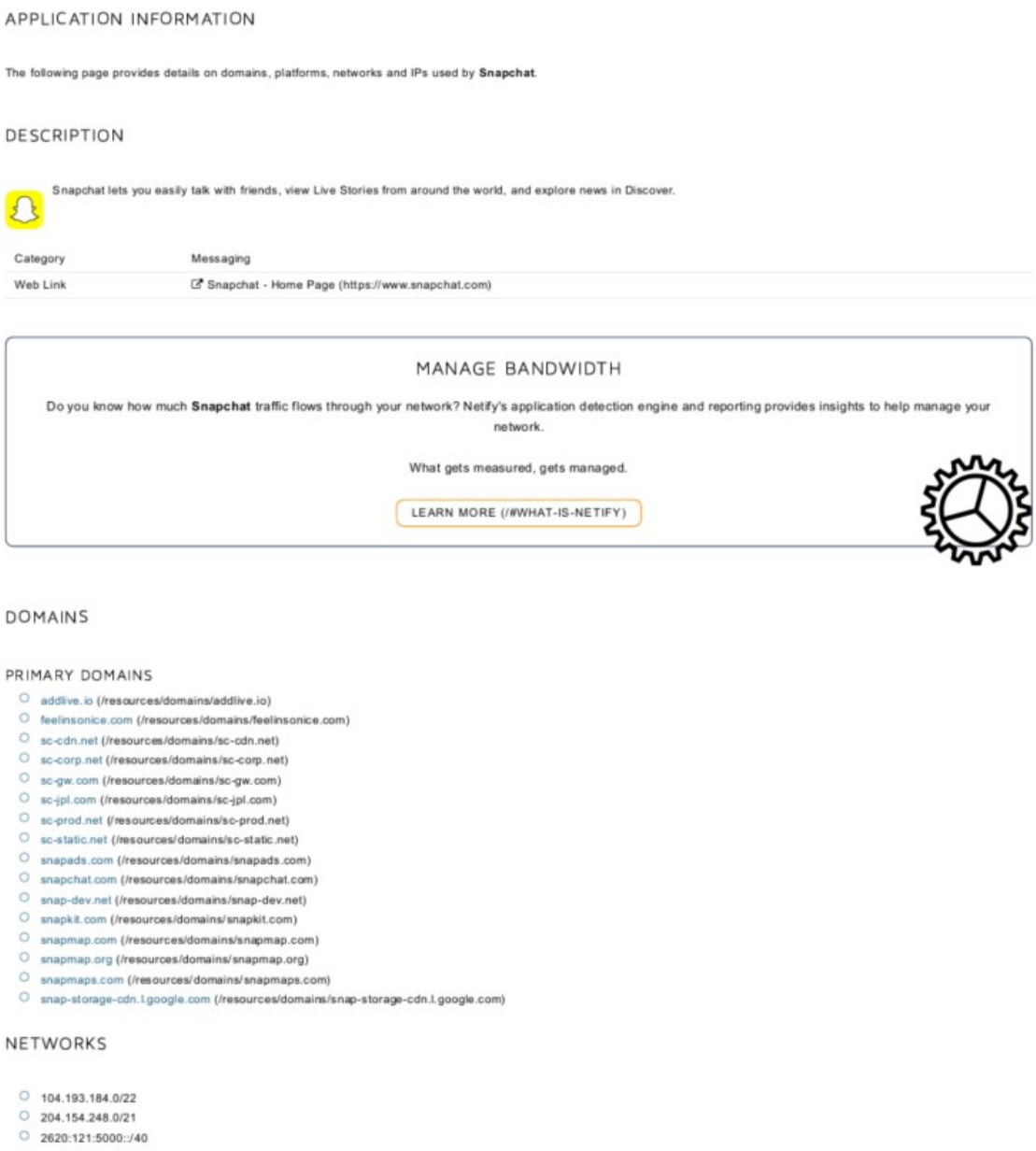
But what is Snap actually getting from Google for all that money?

Google wouldn't say exactly which services Snap has signed up for, but there are four key products that fall under Google's cloud services: Cloud Storage for storing data on servers managed by Google; Compute Engine for retrieving and managing data; App Engine for developing and running applications; BigQuery for data analysis; and a suite of machine learning tools.

We know Snapchat **was built on App Engine**, which basically allows clients to host their main software on datacenters managed by Google. That differs from just hosting your own servers, since cloud services allow a company to make use of more servers as needed, allowing the app to run faster and more efficiently.

App Engine is one of Google's core cloud services. It provides users with tools and services to build software, ensure its security and test new features. It also allows apps to handle an increasing amount of traffic. Other companies that use App Engine include **Best Buy** and enterprise cloud phone system **Dialpad**.

(*E.g.,* https://www.vox.com/2017/3/1/14661126/snap-snapchat-ipo-spending-2-billion-google-cloud (published March 1, 2017)).



APPLICATION INFORMATION

The following page provides details on domains, platforms, networks and IPs used by **Snapchat**.

DESCRIPTION

Snapchat lets you easily talk with friends, view Live Stories from around the world, and explore news in Discover.

Category	Messaging
Web Link	Snapchat - Home Page (https://www.snapchat.com)

MANAGE BANDWIDTH

Do you know how much **Snapchat** traffic flows through your network? Netify's application detection engine and reporting provides insights to help manage your network.

What gets measured, gets managed.

LEARN MORE (/#WHAT-IS-NETIFY)

DOMAINS

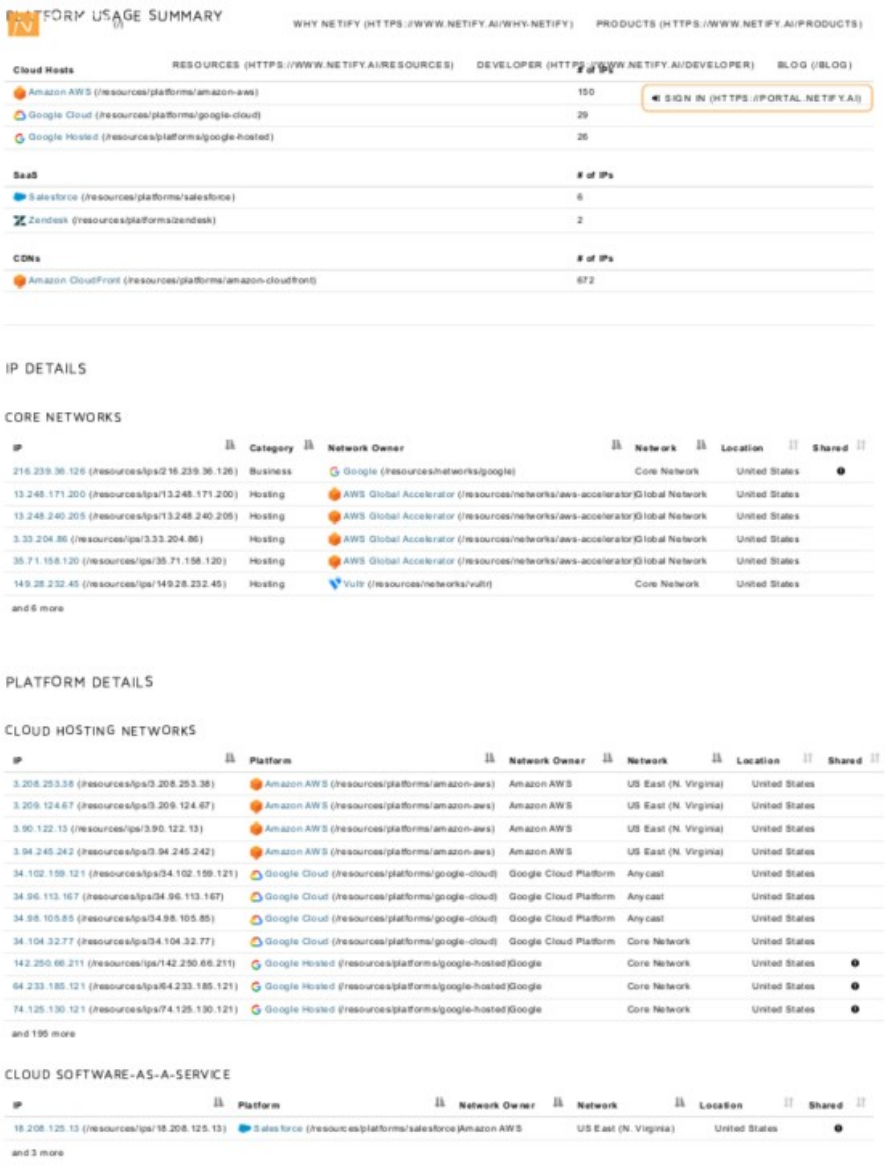
PRIMARY DOMAINS

- addlive.io (/resources/domains/addlive.io)
- feelinsonice.com (/resources/domains/feelinsonice.com)
- sc-cdn.net (/resources/domains/sc-cdn.net)
- sc-corp.net (/resources/domains/sc-corp.net)
- sc-gw.com (/resources/domains/sc-gw.com)
- sc-jpl.com (/resources/domains/sc-jpl.com)
- sc-prod.net (/resources/domains/sc-prod.net)
- sc-static.net (/resources/domains/sc-static.net)
- snapads.com (/resources/domains/snapads.com)
- snapchat.com (/resources/domains/snapchat.com)
- snap-dev.net (/resources/domains/snap-dev.net)
- snapkit.com (/resources/domains/snapkit.com)
- snapmap.com (/resources/domains/snapmap.com)
- snapmap.org (/resources/domains/snapmap.org)
- snapmaps.com (/resources/domains/snapmaps.com)
- snap-storage-cdn.l.google.com (/resources/domains/snap-storage-cdn.l.google.com)

NETWORKS

- 104.193.184.0/22
- 204.154.248.0/21
- 2620:121:5000::/40

(*E.g.*, https://www.netify.ai/resources/applications/snapchat (retrieved July 7, 2023)).



PLATFORM USAGE SUMMARY

WHY NETIFY (HTTPS://WWW.NETIFY.AI/WHY-NETIFY) PRODUCTS (HTTPS://WWW.NETIFY.AI/PRODUCTS)

RESOURCES (HTTPS://WWW.NETIFY.AI/RESOURCES) DEVELOPER (HTTPS://WWW.NETIFY.AI/DEVELOPER) BLOG (/BLOG)

SIGN IN (HTTPS://PORTAL.NETIFY.AI)

Cloud Hosts	# of IPs
Amazon AWS (/resources/platforms/amazon-aws)	150
Google Cloud (/resources/platforms/google-cloud)	29
Google Hosted (/resources/platforms/google-hosted)	26

SaaS	# of IPs
Salesforce (/resources/platforms/salesforce)	6
Zendesk (/resources/platforms/zendesk)	2

CDNs	# of IPs
Amazon CloudFront (/resources/platforms/amazon-cloudfront)	672

IP DETAILS

CORE NETWORKS

IP	Category	Network Owner	Network	Location	Shared
216.239.36.126 (/resources/ips/216.239.36.126)	Business	Google (/resources/networks/google)	Core Network	United States	
13.248.171.200 (/resources/ips/13.248.171.200)	Hosting	AWS Global Accelerator (/resources/networks/aws-accelerator)	Global Network	United States	
13.248.240.205 (/resources/ips/13.248.240.205)	Hosting	AWS Global Accelerator (/resources/networks/aws-accelerator)	Global Network	United States	
3.33.204.86 (/resources/ips/3.33.204.86)	Hosting	AWS Global Accelerator (/resources/networks/aws-accelerator)	Global Network	United States	
35.71.158.120 (/resources/ips/35.71.158.120)	Hosting	AWS Global Accelerator (/resources/networks/aws-accelerator)	Global Network	United States	
149.28.232.45 (/resources/ips/149.28.232.45)	Hosting	Vultr (/resources/networks/vultr)	Core Network	United States	

and 6 more

PLATFORM DETAILS

CLOUD HOSTING NETWORKS

IP	Platform	Network Owner	Network	Location	Shared
3.208.253.38 (/resources/ips/3.208.253.38)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
3.209.124.67 (/resources/ips/3.209.124.67)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
3.90.122.13 (/resources/ips/3.90.122.13)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
3.94.245.242 (/resources/ips/3.94.245.242)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
34.102.159.121 (/resources/ips/34.102.159.121)	Google Cloud (/resources/platforms/google-cloud)	Google Cloud Platform	Anycast	United States	
34.96.113.167 (/resources/ips/34.96.113.167)	Google Cloud (/resources/platforms/google-cloud)	Google Cloud Platform	Anycast	United States	
34.98.105.85 (/resources/ips/34.98.105.85)	Google Cloud (/resources/platforms/google-cloud)	Google Cloud Platform	Anycast	United States	
34.104.32.77 (/resources/ips/34.104.32.77)	Google Cloud (/resources/platforms/google-cloud)	Google Cloud Platform	Core Network	United States	
142.250.66.211 (/resources/ips/142.250.66.211)	Google Hosted (/resources/platforms/google-hosted)	Google	Core Network	United States	
64.233.185.121 (/resources/ips/64.233.185.121)	Google Hosted (/resources/platforms/google-hosted)	Google	Core Network	United States	
74.125.130.121 (/resources/ips/74.125.130.121)	Google Hosted (/resources/platforms/google-hosted)	Google	Core Network	United States	

and 195 more

CLOUD SOFTWARE-AS-A-SERVICE

IP	Platform	Network Owner	Network	Location	Shared
18.208.125.13 (/resources/ips/18.208.125.13)	Salesforce (/resources/platforms/salesforce)	Amazon AWS	US East (N. Virginia)	United States	

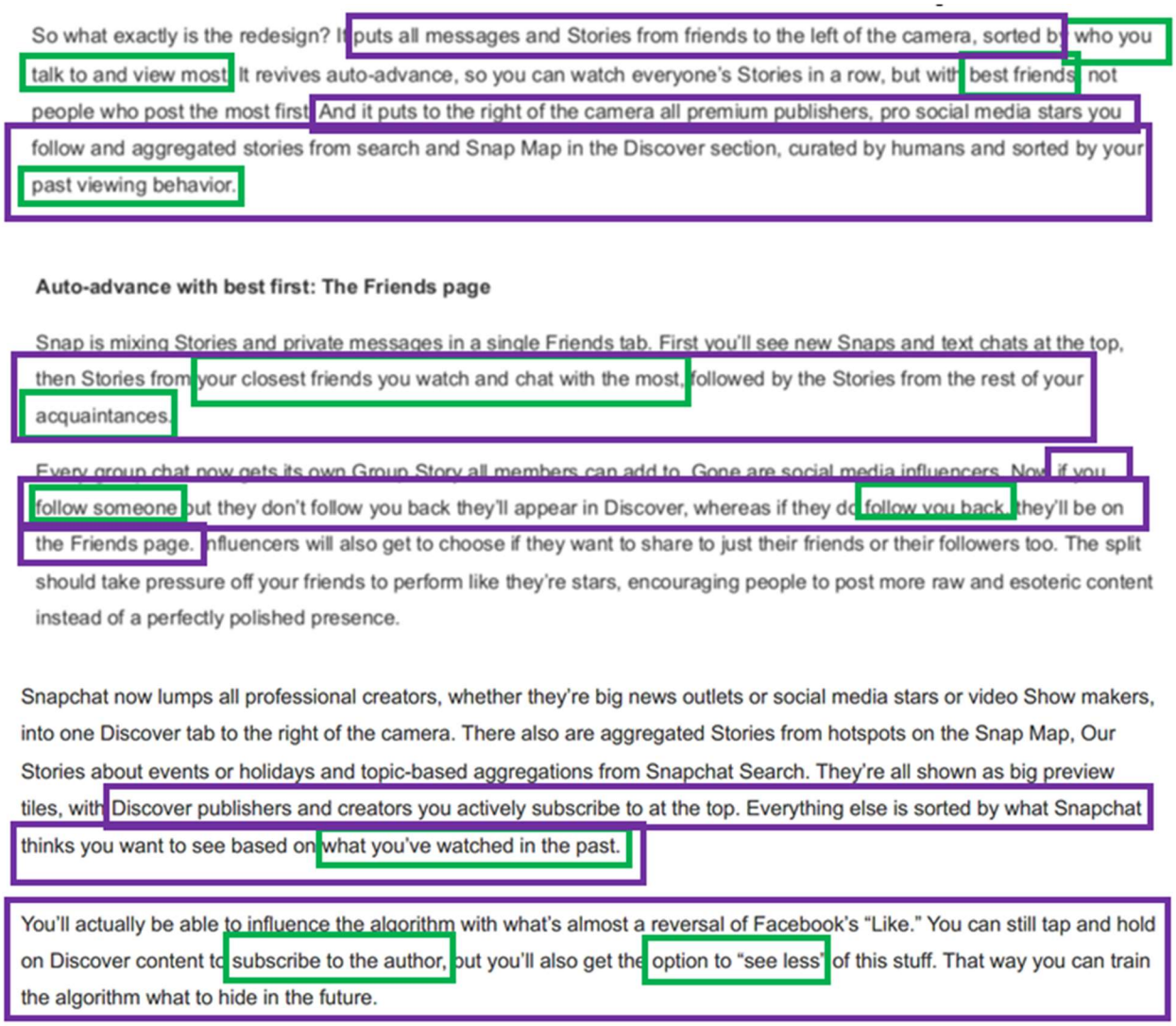
and 3 more

(*E.g.*, https://www.netify.ai/resources/applications/snapchat (retrieved July 7, 2023)).

(*E.g.,* https://www.netify.ai/resources/applications/snapchat (retrieved July 7, 2023)).

45. The Accused Instrumentality comprises a user database comprising one or more user attributes stored in such database. Such user database is stored in memory available through the Snapchat platform's servers, for example as discussed above. Some examples of such user attributes stored in such user database on the Snapchat platform and Snapchat discovery and other feeds are user discussion and viewing history and behavior, follows of other users, follows by other users, friends, subscriptions, preferences, favorites, requests to see less of content, requests to hide content, and skipping of content. Snap's Accused Instrumentality electronically retrieves, from storage in an electronic media submissions database on a non-transitory medium, a plurality of electronic media submissions from an electronic media submissions database using an electronic content filter necessarily located on and associated with one or more data processing apparatus in order to manage content. As can be seen below, such electronic content filter as is used by the Accused Instrumentality is based at least in part on at least one of the one or more user attributes

(*e.g.,* based on user discussion and viewing history and behavior, follows of other users, follows by other users, friends, subscriptions, preferences, favorites, requests to see less of content, requests to hide content, and skipping of content, which in turn affects which electronic media submissions appear on a given user's discovery feed). As can be seen below, such electronic content filter as is used by Snap, Inc. is based at least in part on at least one of the one or more such user attributes, as shown and discussed for example below. Snap Inc. uses function-specific subsystems, for example as discussed below.



So what exactly is the redesign? It puts all messages and Stories from friends to the left of the camera, sorted by who you talk to and view most. It revives auto-advance, so you can watch everyone's Stories in a row, but with best friends, not people who post the most first. And it puts to the right of the camera all premium publishers, pro social media stars you follow and aggregated stories from search and Snap Map in the Discover section, curated by humans and sorted by your past viewing behavior.

Auto-advance with best first: The Friends page

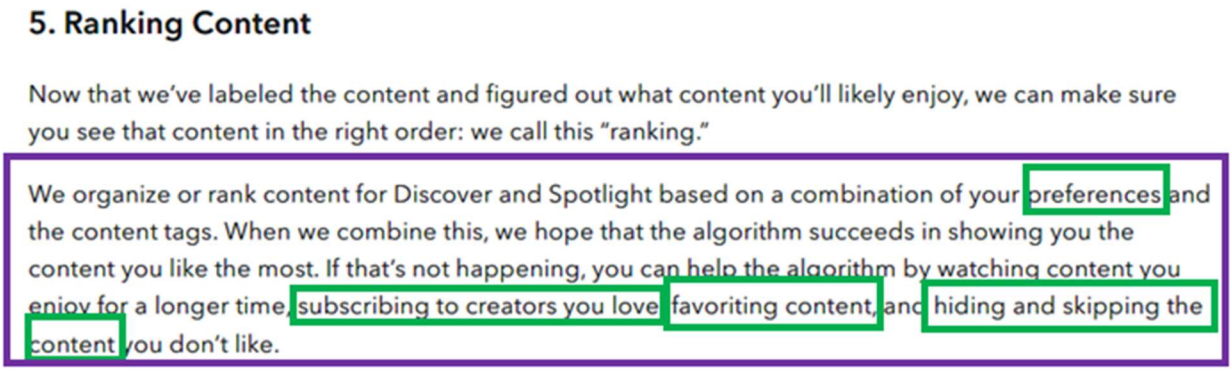
Snap is mixing Stories and private messages in a single Friends tab. First you'll see new Snaps and text chats at the top, then Stories from your closest friends you watch and chat with the most, followed by the Stories from the rest of your acquaintances.

Every group chat now gets its own Group Story all members can add to. Gone are social media influencers. Now if you follow someone but they don't follow you back they'll appear in Discover, whereas if they do follow you back they'll be on the Friends page. Influencers will also get to choose if they want to share to just their friends or their followers too. The split should take pressure off your friends to perform like they're stars, encouraging people to post more raw and esoteric content instead of a perfectly polished presence.

Snapchat now lumps all professional creators, whether they're big news outlets or social media stars or video Show makers, into one Discover tab to the right of the camera. There also are aggregated Stories from hotspots on the Snap Map, Our Stories about events or holidays and topic-based aggregations from Snapchat Search. They're all shown as big preview tiles, with Discover publishers and creators you actively subscribe to at the top. Everything else is sorted by what Snapchat thinks you want to see based on what you've watched in the past.

You'll actually be able to influence the algorithm with what's almost a reversal of Facebook's "Like." You can still tap and hold on Discover content to subscribe to the author, but you'll also get the option to "see less" of this stuff. That way you can train the algorithm what to hide in the future.

(*E.g.,* https://techcrunch.com/2017/11/29/snapchat-redesign/ (published November 29, 2017)).



5. Ranking Content

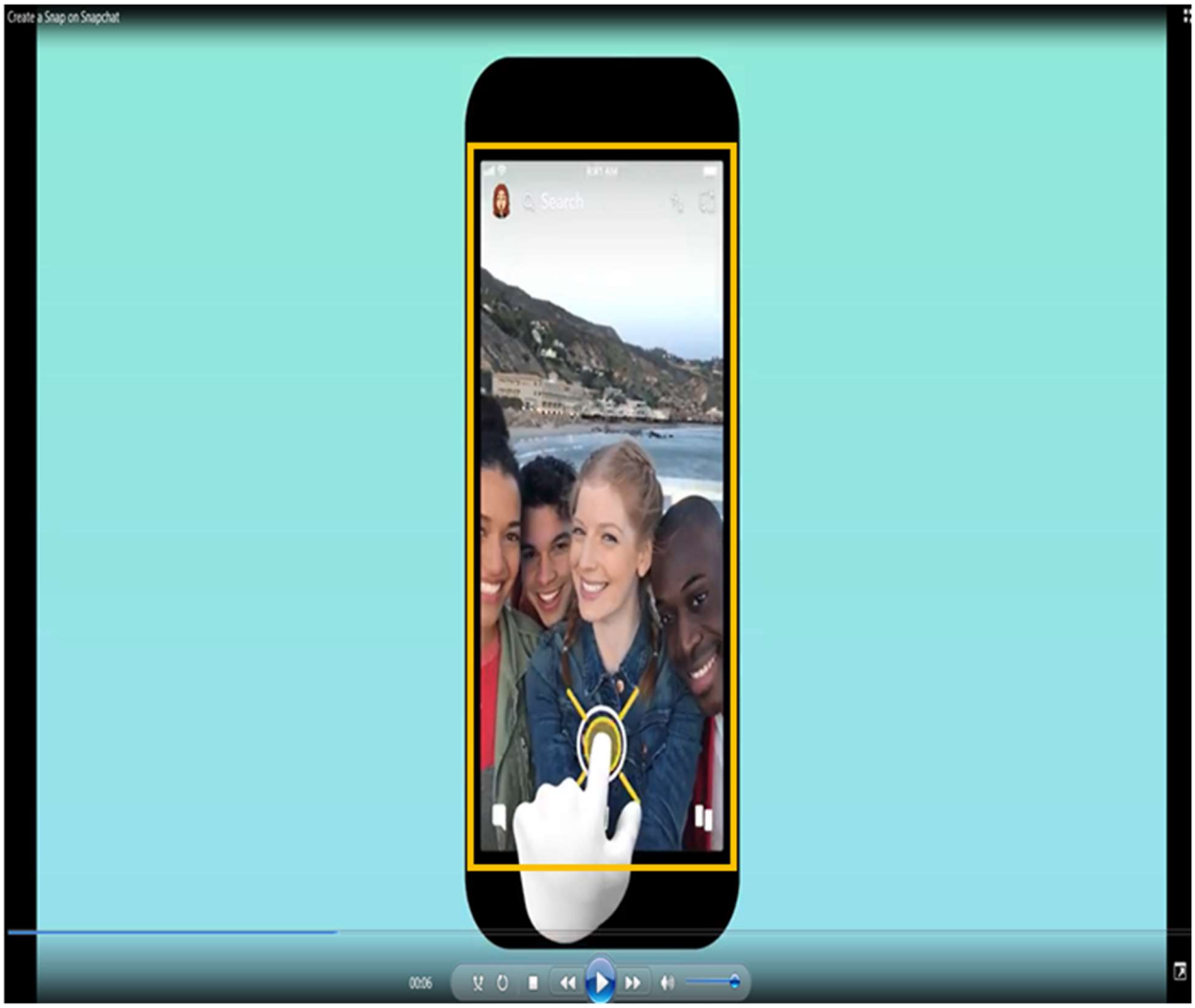
Now that we've labeled the content and figured out what content you'll likely enjoy, we can make sure you see that content in the right order: we call this "ranking."

We organize or rank content for Discover and Spotlight based on a combination of your preferences and the content tags. When we combine this, we hope that the algorithm succeeds in showing you the content you like the most. If that's not happening, you can help the algorithm by watching content you enjoy for a longer time, subscribing to creators you love, favoriting content, and hiding and skipping the content you don't like.

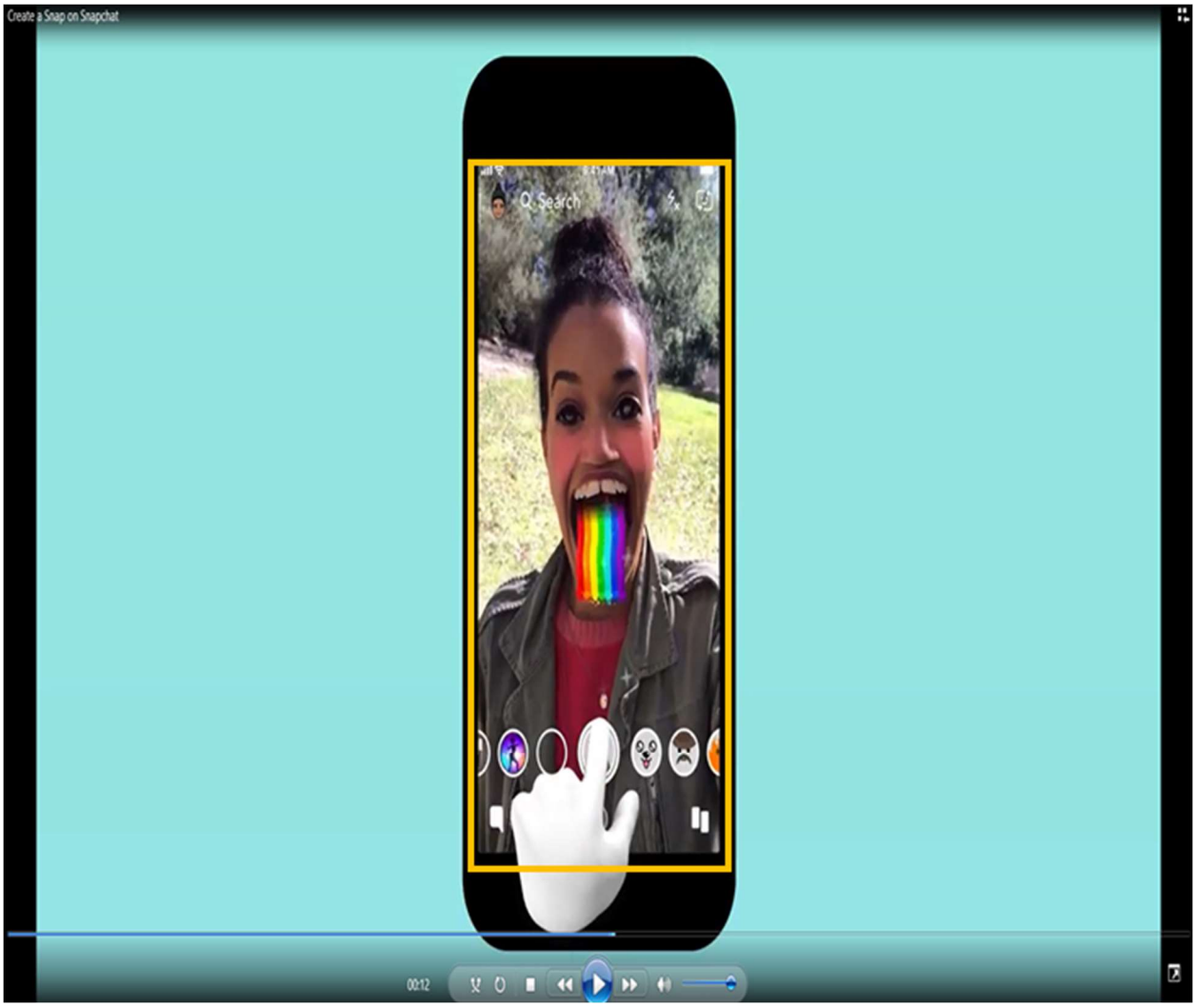
(*E.g.,* https://help.snapchat.com/hc/en-us/articles/8961631424020--How-We-Rank-Content-on-Discover).

46. The Accused Instrumentality enable a plurality of electronic media submissions, which include *e.g.,* video, text and images (sometimes collectively referred to as "snaps"), to be provided to the Snapchat platform via a submissions electronic interface configured to receive such electronic media submissions (*e.g.,* video, text, images) from a plurality of submitters (*e.g.,* Snapchat users with accompanying created accounts) over a public network (*e.g.,* the Internet) and stored in said electronic media submissions database for use in distribution to other users (*e.g.,* upon selecting an option to make the snap available to friends or the general public). "When you're ready, you can send it to a friend, or share it with the world." (*E.g.,* https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)). Such "snaps", which are configured to be collected in the form of "stories", are made available via storage in the electronic media submissions database for use in distribution to other users, such as friends or the general userbase of Snapchat, as per the selected option.

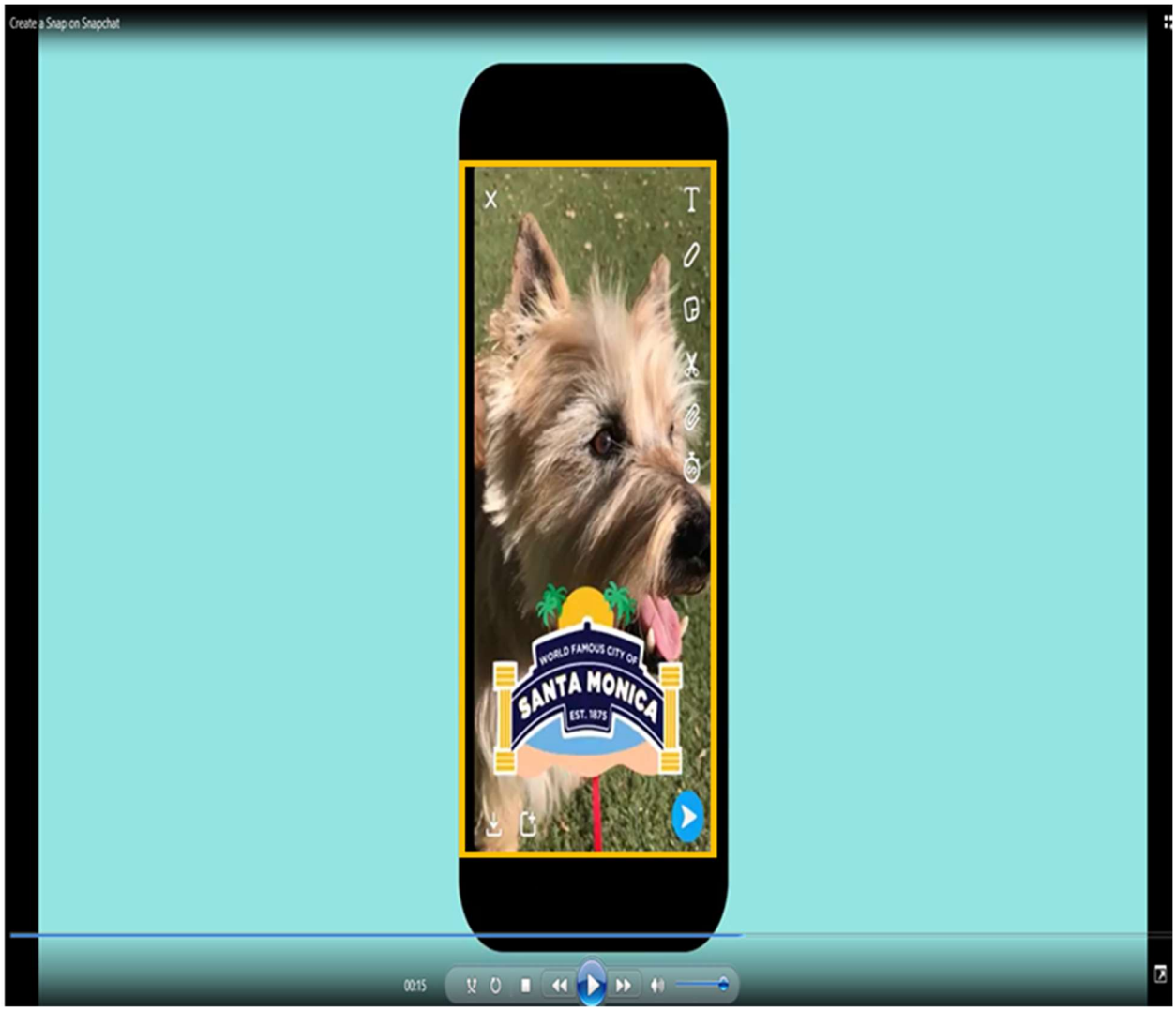
(*E.g.,* https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).



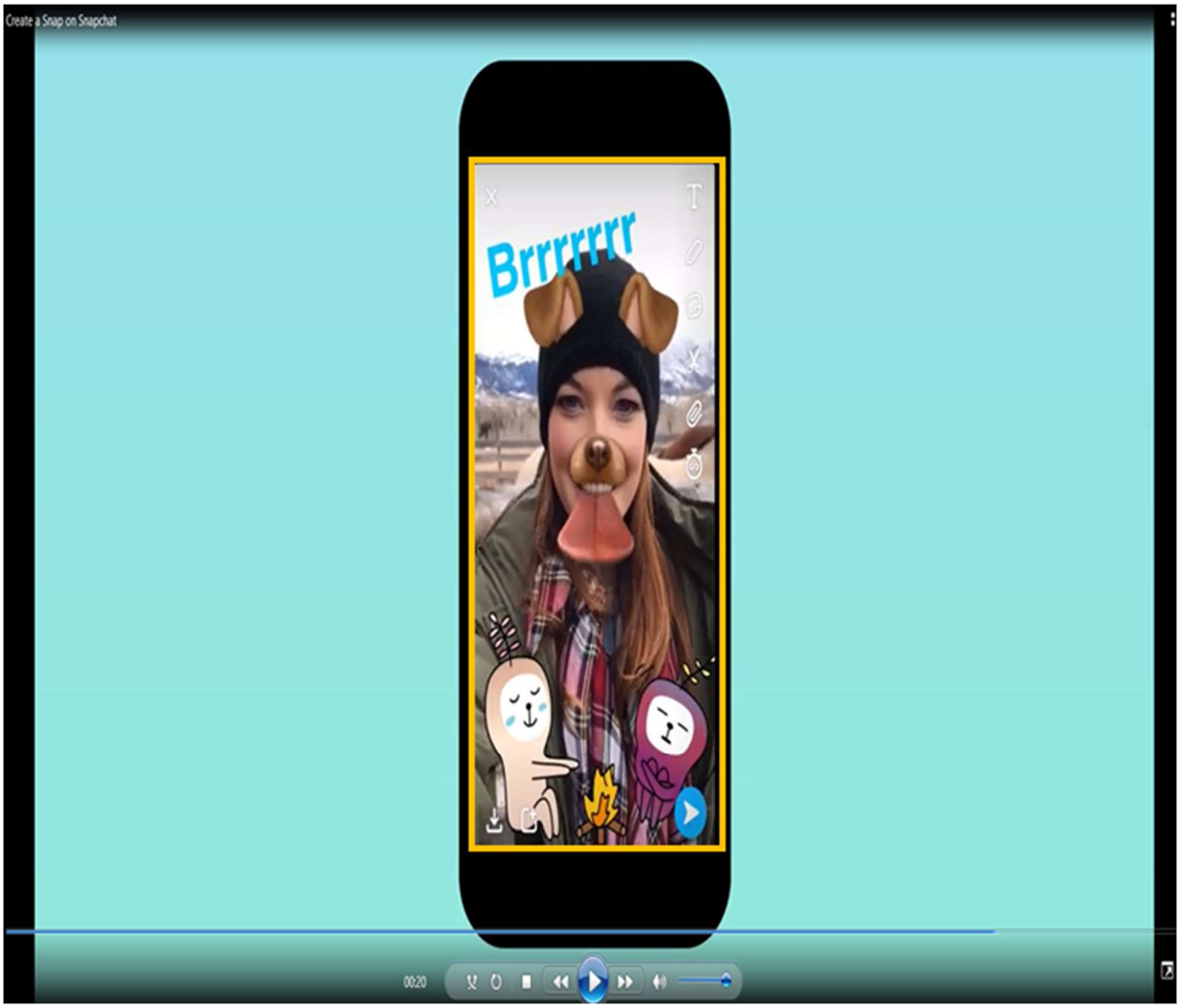
(*E.g.,* https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).



(*E.g.,* https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).

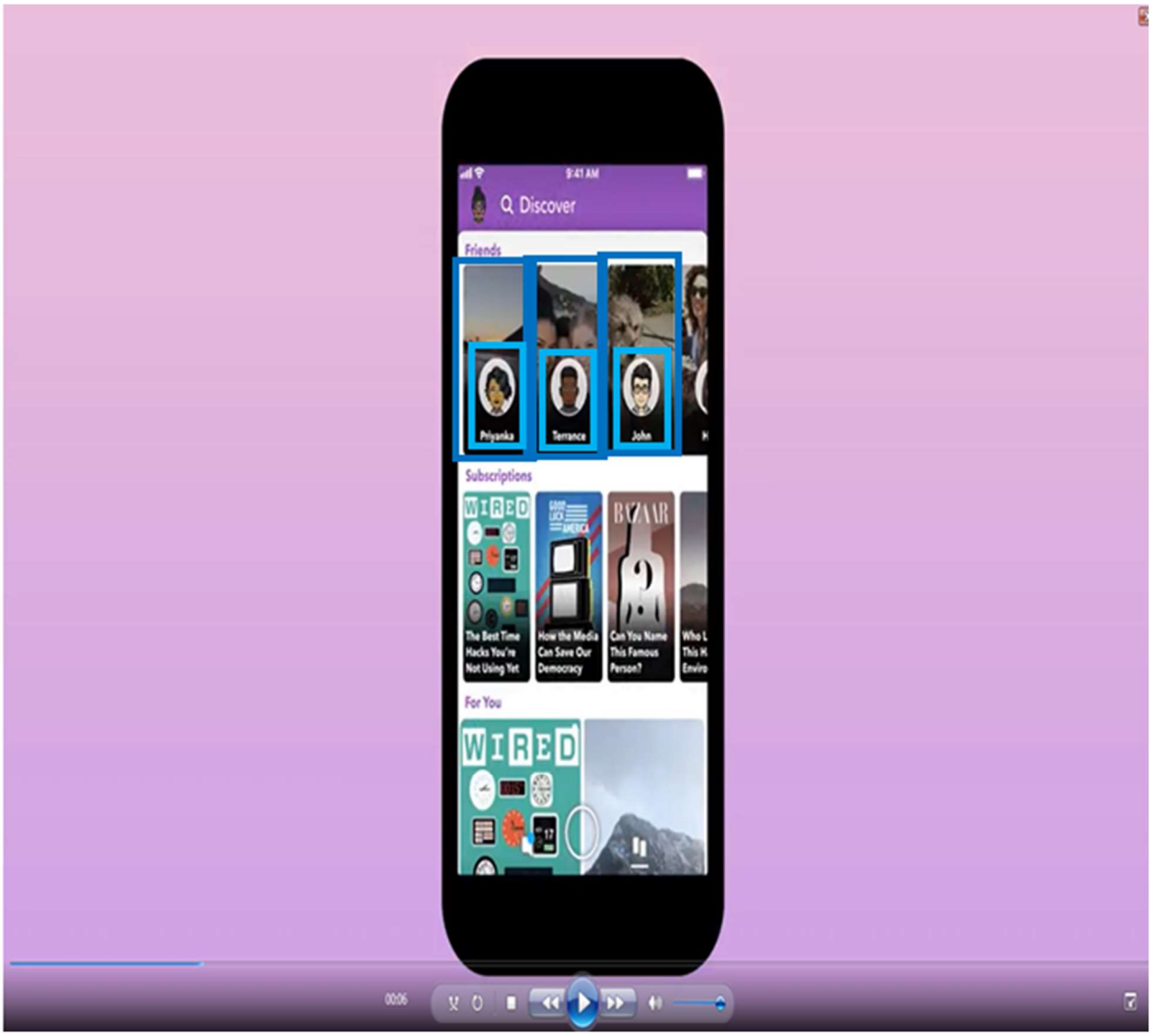


(*E.g.*, https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).

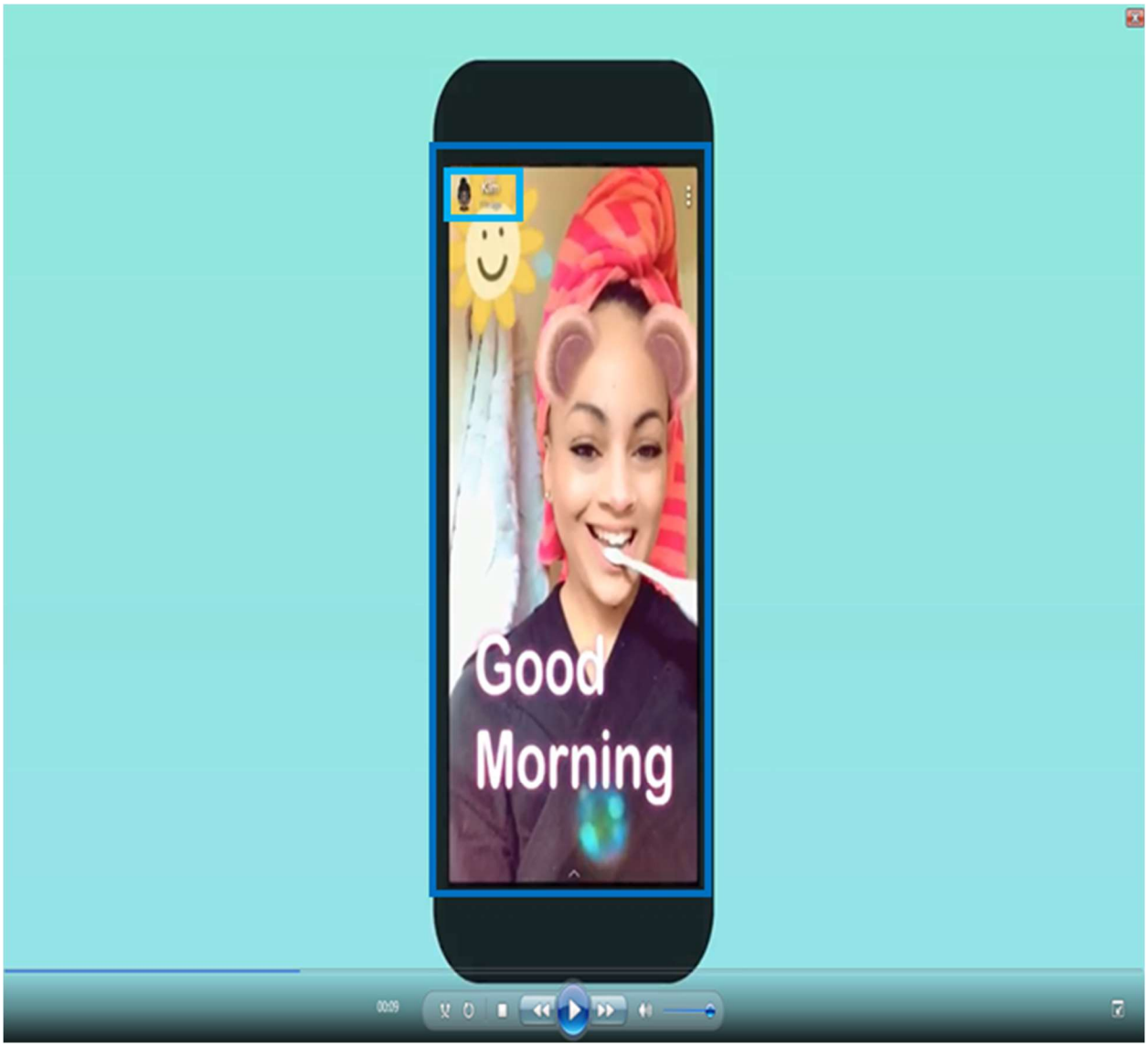


(*E.g.,* https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).

47. The electronic media submissions database of the Accused Instrumentality used by Snap Inc. which stores the submissions (*e.g.,* video, text, images, forming a multimedia post, sometimes referred to as a "snap" or a "story" submitted by Snapchat users) further stores data identifying the submitter and data indicating content for each electronic media submission, *e.g.,* as shown below with a name and profile picture identifying the submitter and image matter indicating content.



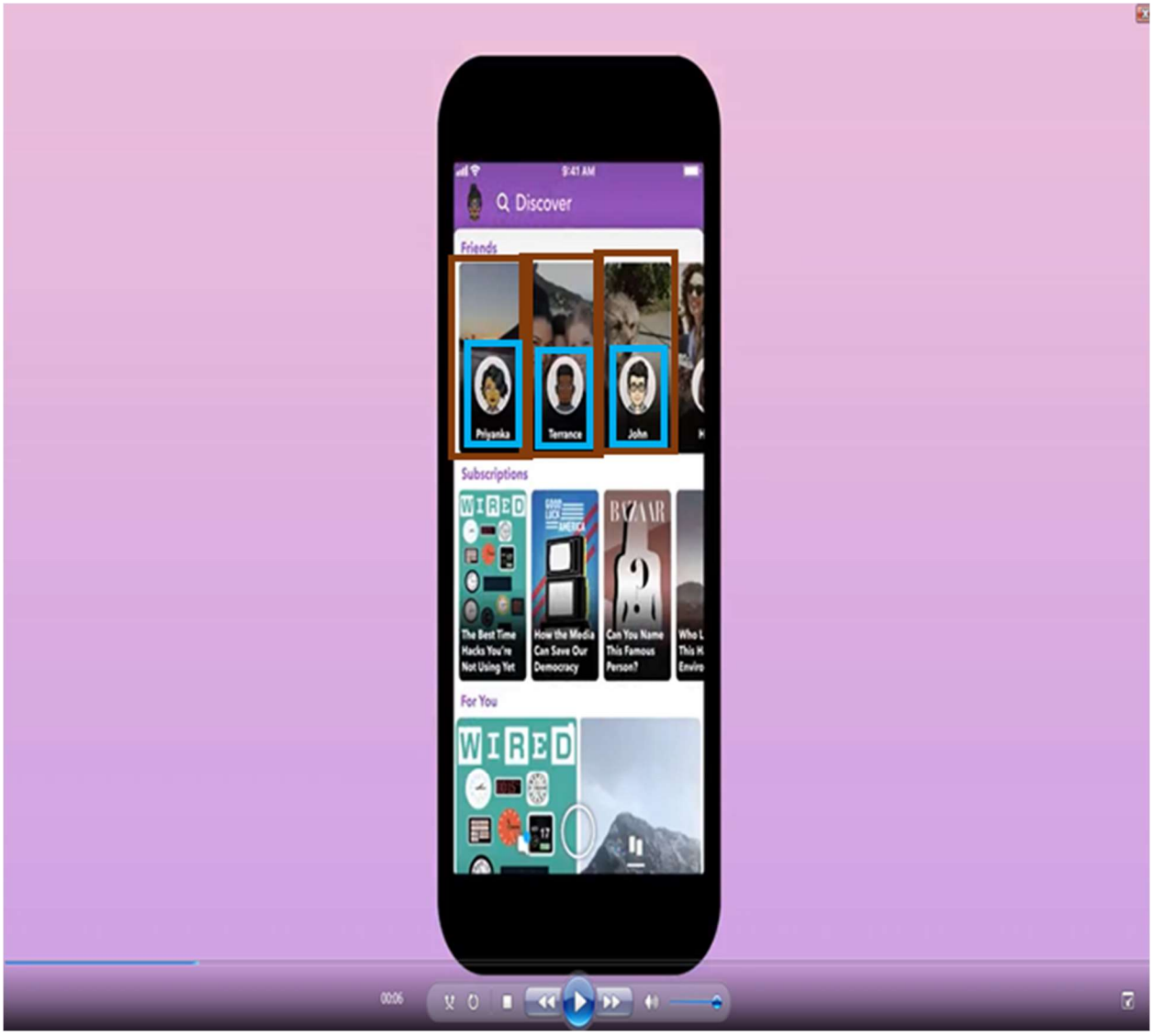
(*E.g.,* https://www.youtube.com/watch?v=k3nzfw7WHTg (published July 23, 2018)).



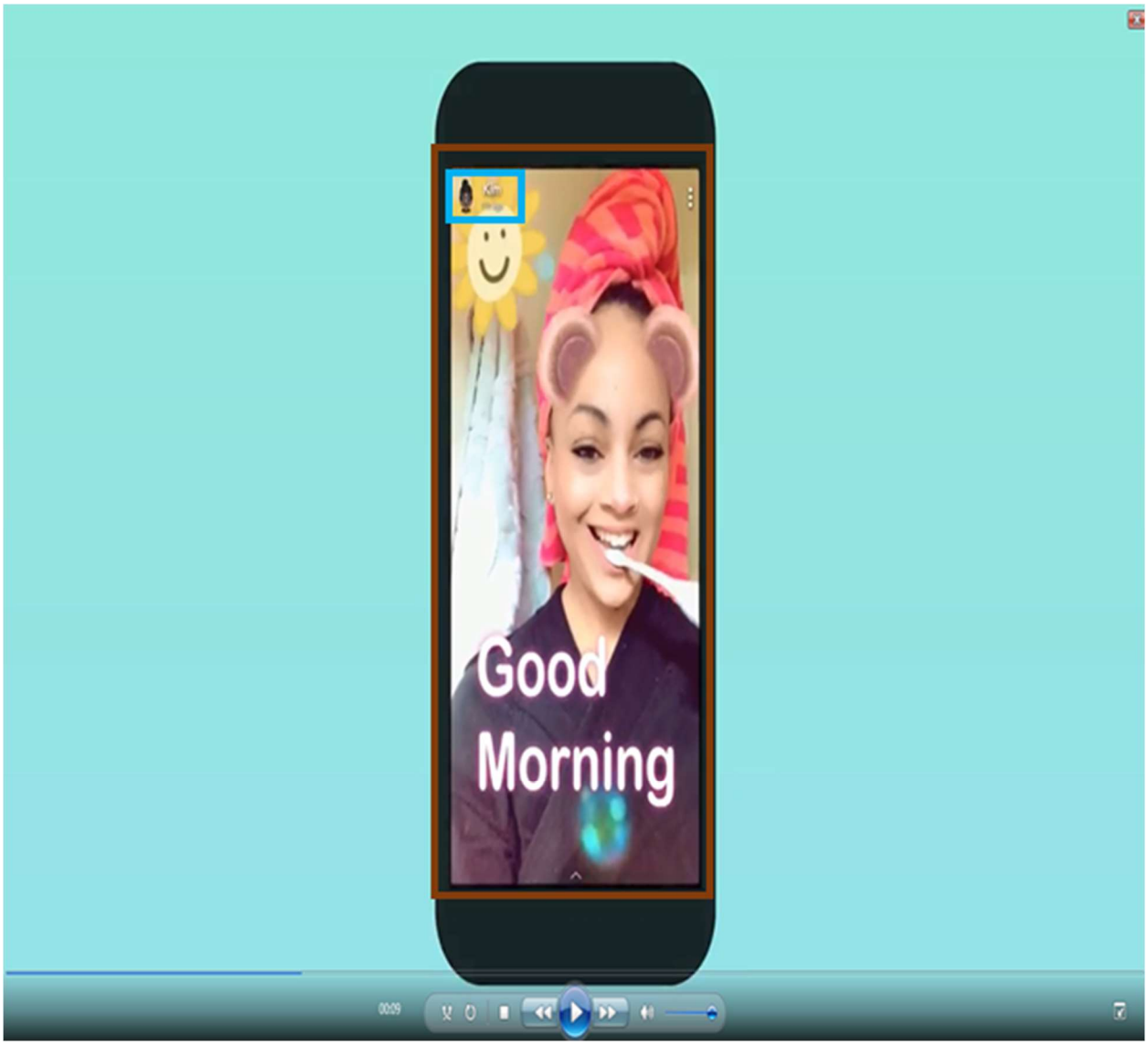
(*E.g.,* https://www.youtube.com/watch?v=OQLtiuawh6w (published July 23, 2018)).

48. Snap's Accused Instrumentality electronically generates multimedia files from the retrieved electronic media submissions in accordance with a selected digital format (*e.g.,* a digital format compatible with a selected digital format compatible with the particular smart phone, browser, or application of a particular user), wherein the identification of the submitter is maintained with each retrieved submission within the multimedia file. For example, below are examples of such multimedia files being displayed within a user's browser or app, on user devices (*e.g.,* smart phones with a browser or app), in association with the identification of the submitter

for each retrieved submission within the multimedia file and its associated multimedia content (*e.g.,* content associated with text, video and images).



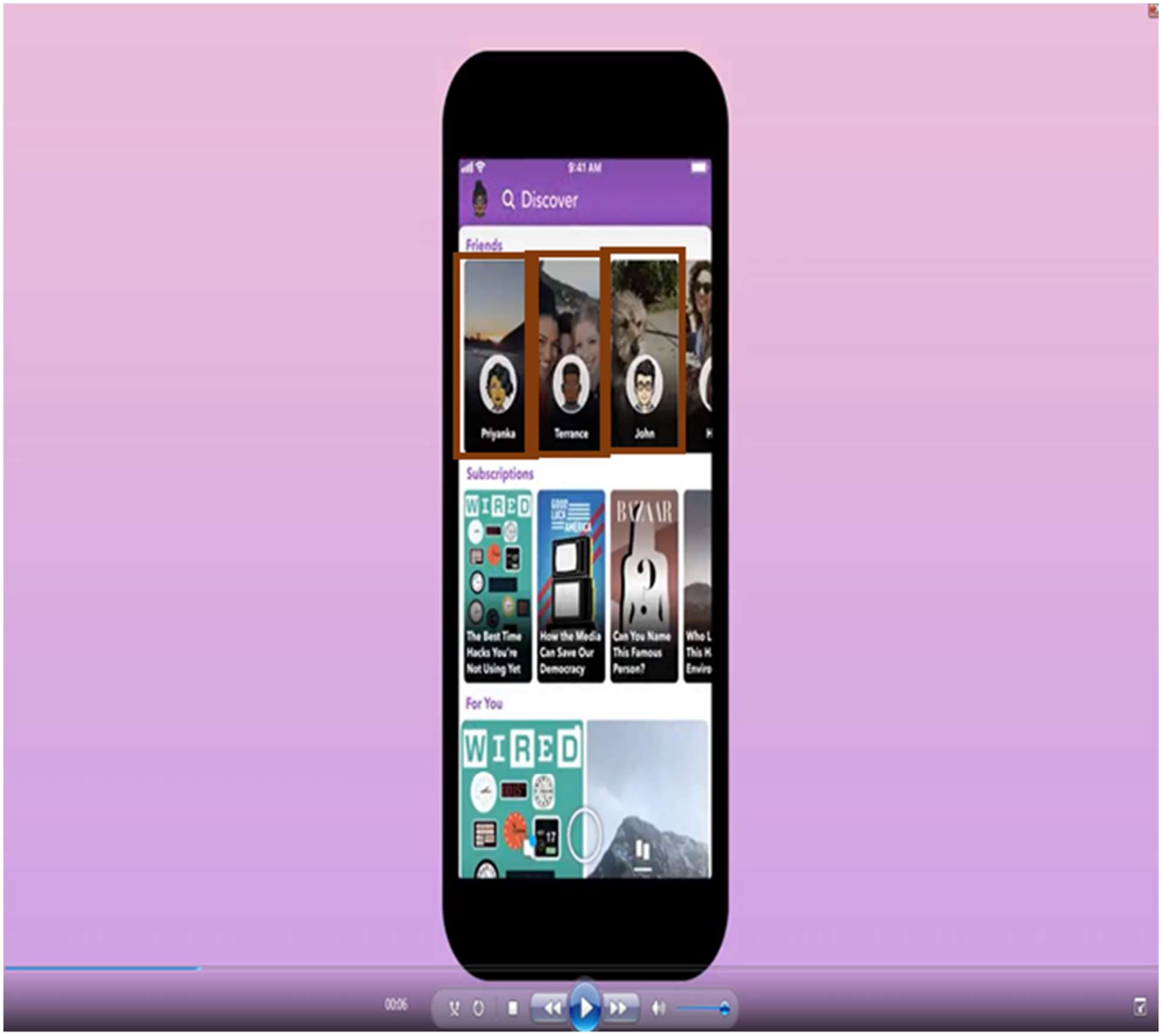
(*E.g.,* https://www.youtube.com/watch?v=k3nzfw7WHTg (published July 23, 2018)).



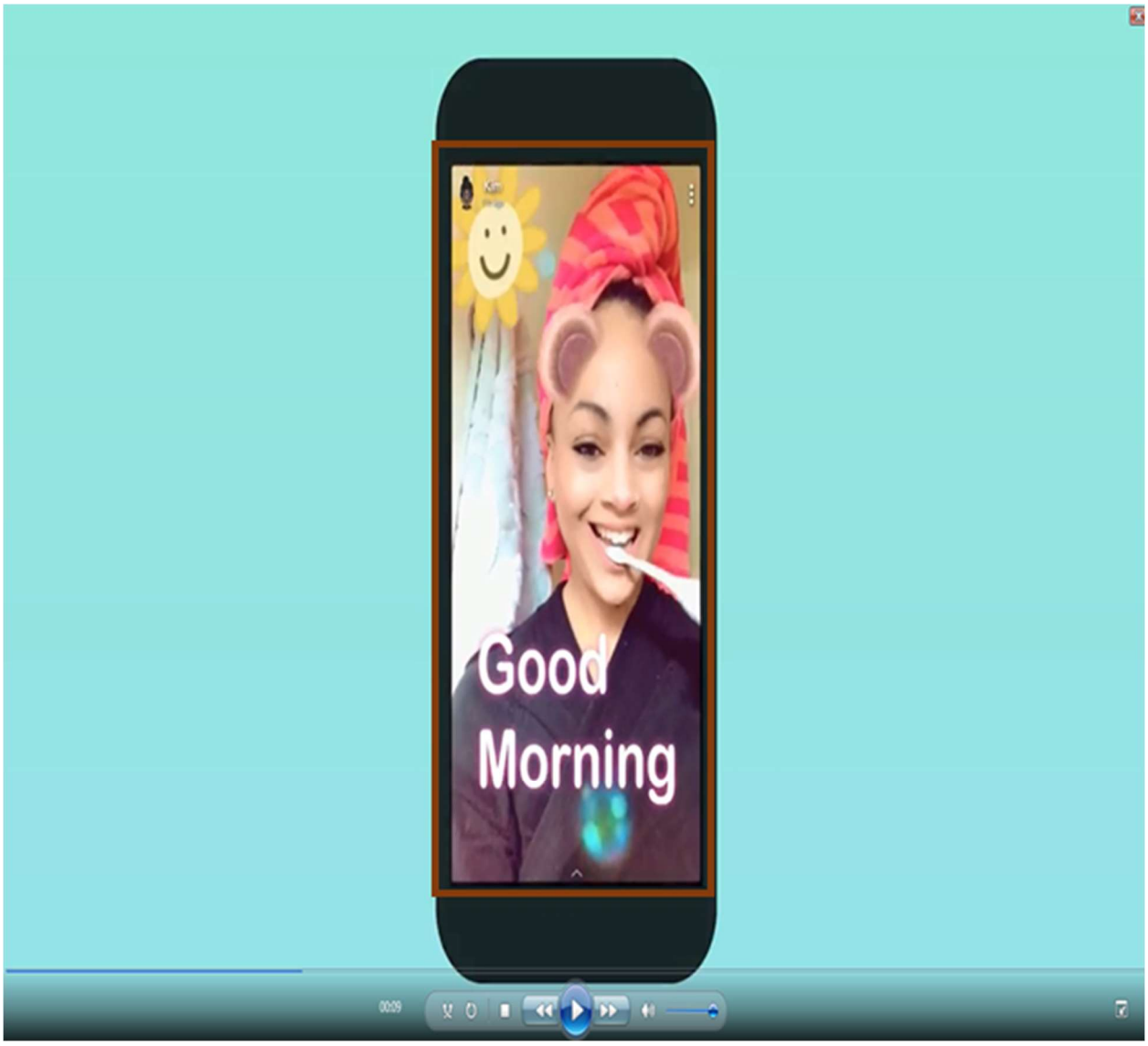
(*E.g.,* https://www.youtube.com/watch?v=OQLtiuawh6w (published July 23, 2018)).

49. Snap's Accused Instrumentality and other feeds electronically transmit the multimedia file to a plurality of publicly available webservers, for example as discussed above in connection with Snapchat's servers, in order to ensure rapid delivery to any of various users from amongst a geographically-distributed userbase, to be electronically available for viewing on one or more user devices of such userbase over a public network (*e.g.,* the Internet) via a web-browser. Examples of viewing of such multimedia files and their associated multimedia content on user devices via a public network via a smart phone app, which functions as a web-browser to view

various Internet-supplied content hosted from the Snapchat platform, is shown below. Snap Inc. uses function-specific subsystems, for example as discussed below.



(*E.g.*, https://www.youtube.com/watch?v=k3nzfw7WHTg (published July 23, 2018)).



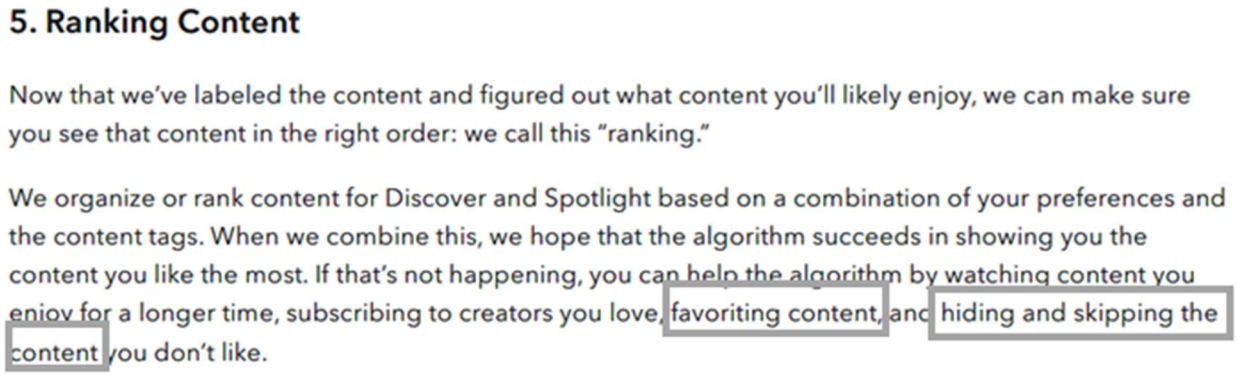
(*E.g.,* https://www.youtube.com/watch?v=OQLtiuawh6w (published July 23, 2018)).

50. The Accused Instrumentality provides (*e.g.,* via a smart phone graphical user interface that interfaces with web-based and web-provided content of the Snapchat platform) a web-based graphical user interface that enables a user to electronically transmit data (*e.g.,* user's choices with respect to viewing, tapping and holding on, opting to less of, favoriting, hiding, or skipping) indicating a vote or rating for an electronically available multimedia content (*e.g.,* a "story" or "snap" made up of video, image and/or textual content) or an electronic submission (*e.g.,* a "snap" made up of video, image and/or textual content) within a respective electronically

available multimedia content. As can be seen below, the option to vote for or rate electronically available multimedia content (*e.g.,* a collection or "story") or an electronic media submission (*e.g.,* a user post or "snap") within a respective electronically available multimedia content is made available to users via the user's choices with respect to viewing, tapping and holding on, opting to less of, favoriting, hiding, or skipping the multimedia content, and this voting or rating behavior is tracked and associated with the multimedia content and/or submission so as to allow for serving of future content based on this behavior and/or for display purposes (*e.g.,* as to a number of views, shown for example by a number next to an eye icon). Snap Inc. uses function-specific subsystems, for example as discussed below.

> So what exactly is the redesign? It puts all messages and Stories from friends to the left of the camera, sorted by who you talk to and view most. It revives auto-advance, so you can watch everyone's Stories in a row, but with best friends, not people who post the most first. And it puts to the right of the camera all premium publishers, pro social media stars you follow and aggregated stories from search and Snap Map in the Discover section, curated by humans and sorted by your past viewing behavior.
>
> Snapchat now lumps all professional creators, whether they're big news outlets or social media stars or video Show makers, into one Discover tab to the right of the camera. There also are aggregated Stories from hotspots on the Snap Map, Our Stories about events or holidays and topic-based aggregations from Snapchat Search. They're all shown as big preview tiles, with Discover publishers and creators you actively subscribe to at the top. Everything else is sorted by what Snapchat thinks you want to see based on what you've watched in the past.
>
> You'll actually be able to influence the algorithm with what's almost a reversal of Facebook's "Like." You can still tap and hold on Discover content to subscribe to the author, but you'll also get the option to "see less" of this stuff. That way you can train the algorithm what to hide in the future.

(*E.g.,* https://techcrunch.com/2017/11/29/snapchat-redesign/ (published November 29, 2017)).

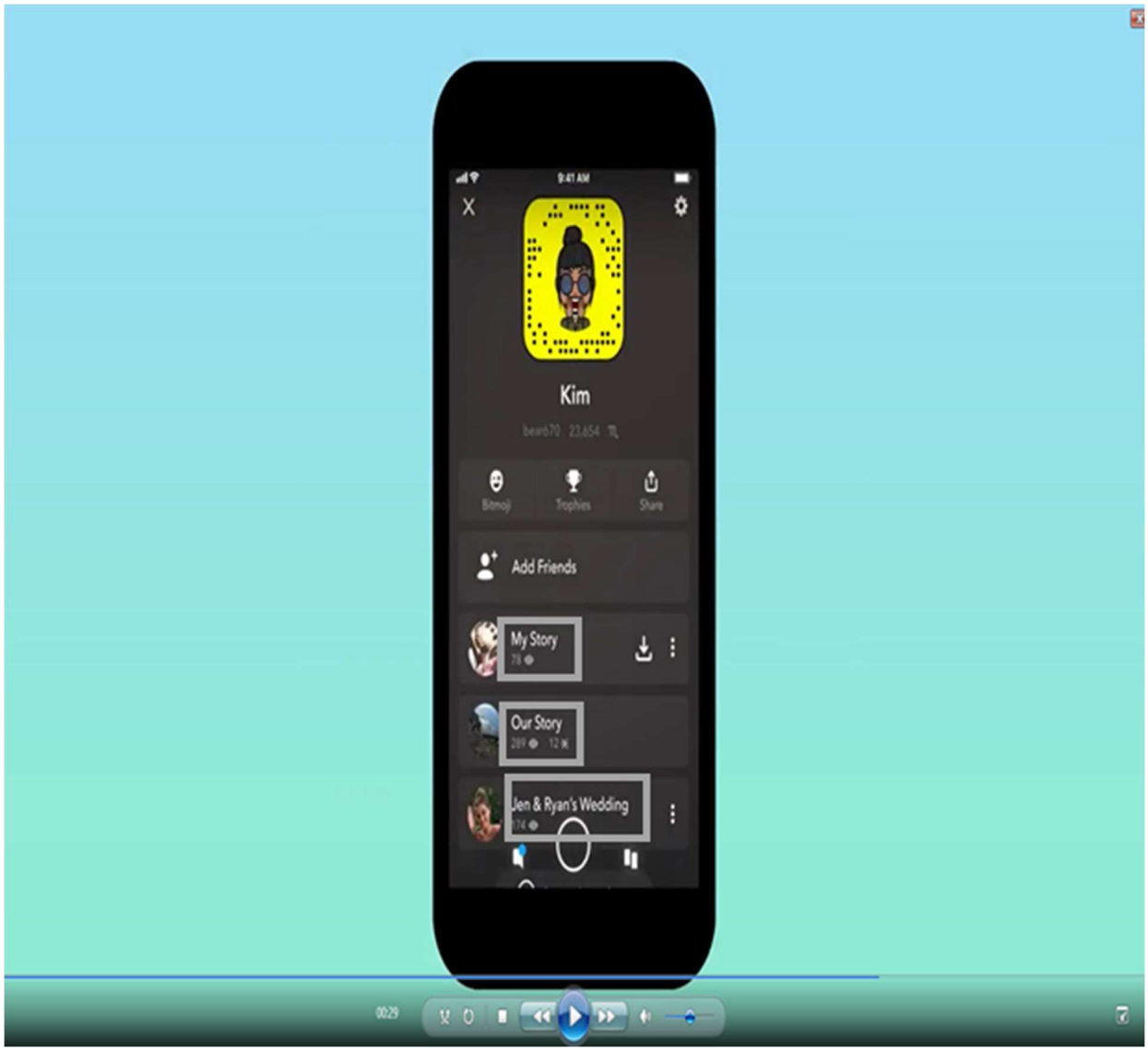


5. Ranking Content

Now that we've labeled the content and figured out what content you'll likely enjoy, we can make sure you see that content in the right order: we call this "ranking."

We organize or rank content for Discover and Spotlight based on a combination of your preferences and the content tags. When we combine this, we hope that the algorithm succeeds in showing you the content you like the most. If that's not happening, you can help the algorithm by watching content you enjoy for a longer time, subscribing to creators you love, favoriting content, and hiding and skipping the content you don't like.

(*E.g.*, https://help.snapchat.com/hc/en-us/articles/8961631424020--How-We-Rank-Content-on-Discover).



(*E.g.,* https://www.youtube.com/watch?v=OQLtiuawh6w (retrieved July 23, 2018)).

51. Plaintiff has been damaged as a result of Defendant's infringing conduct. Defendant is thus liable to Plaintiff for damages in an amount that adequately compensates Plaintiff for such Defendant's infringement of the '665 Patent, *i.e.*, in an amount that by law cannot be less than would constitute a reasonable royalty for the use of the patented technology, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

52. To the extent marking is required, VCA has complied with all marking requirements.

V. COUNT III
(PATENT INFRINGEMENT OF UNITED STATES PATENT NO. 10,339,576)

53. Plaintiff incorporates the above paragraphs herein by reference.

54. On July 2, 2019, United States Patent No. 10,339,576 ("the '576 Patent") was duly and legally issued by the United States Patent and Trademark Office. The '576 Patent is titled "Revenue-Generating Electronic Multi-Media Exchange and Process of Operating Same." A true and correct copy of the '576 Patent is attached hereto as Exhibit C and incorporated herein by reference.

55. VCA is the assignee of all right, title, and interest in the '576 Patent, including all rights to enforce and prosecute actions for infringement and to collect damages for all relevant times against infringers of the '576 Patent. Accordingly, VCA possesses the exclusive right and standing to prosecute the present action for infringement of the '576 Patent by Defendant.

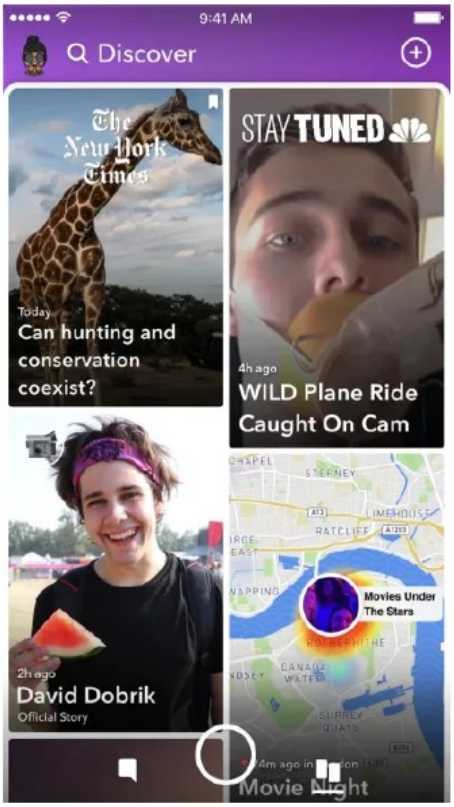
56. The application leading to the '576 patent was filed September 9, 2016, which was a continuation of application no. 13/679,659, which issued as United States Patent No. 9,477,665, which was a continuation of application no. 14/308,064 which issued as the '480 Patent. (Ex. C at cover). The '576 patent was first assigned to Virtual Creative Artists, LLC. (*Id.*).

57. The '576 Patent shares the identical specification as the '480 patent and therefore VCA incorporates the background and discussion of the invention in Paragraphs 11-18. Furthermore claim 1 involves a system for generating multimedia content. The claim requires, among other things, the automatic generation of multimedia content for view on a plurality of user devices. The claim requires that the content be generated in a very specific way by applying an electronic filter to a plurality of electronic media submissions stored on one or more database, the filter having criteria associated with one or more users. This allows automatic generation of multimedia content in a much quicker and easier fashion based on specific user criteria. There is

nothing abstract about this very particular, unconventional, and non-routine system for the generation of multimedia content as specifically claimed and there is no risk of preempting creating and distribution contention generally, or even within the context of the Internet.

58. **Direct Infringement.** Upon information and belief, Defendant has been directly infringing claims 17 and 18 of the '576 Patent in Illinois, and elsewhere in the United States, by employing a computer-based system using https://www.snapchat.com/ ("Accused Instrumentality") (*e.g.,* https://www.snapchat.com/).

59. Snap Inc. uses a computer-based system for its Accused Instrumentality, for example to enable the generation of multimedia content and the provision of such content on users' personalized discovery feeds based, *inter alia*, on who they follow and content that has been selected, viewed, subscribed to or positively (or not negatively) rated in the past. This is consistent with what Snap Inc. currently describes as the operation of its system "… go to discover, here you'll find your friends' stories, as well as shows, content from publishers, and snaps from creators and the community, personalized for you." (*E.g.,* https://help.snapchat.com/hc/en-us/articles/8961631424020--How-We-Rank-Content-on-Discover; https://www.youtube.com/watch?v=k3nzfw7WHTg). Snap Inc., during the relevant time period, taking advantage of multiple cloud server providers, as well as scalability within its cloud server providers, employed separate server subsystems for all its meaningfully different functions, such as those indicated below. Snap Inc., uses and has used during the relevant time period, numerous different networks, IP addresses, and providers for, *inter alia*, cloud hosting, software-as-a-service, and content delivery networks (CDNs), thereby using separate server subsystems for all its meaningfully different functions, such as those indicated below.



Snapchat now lumps all professional creators, whether they're big news outlets or social media stars or video Show makers, into one Discover tab to the right of the camera. There also are aggregated Stories from hotspots on the Snap Map, Our Stories about events or holidays and topic-based aggregations from Snapchat Search. They're all shown as big preview tiles, with Discover publishers and creators you actively subscribe to at the top. Everything else is sorted by what Snapchat thinks you want to see based on what you've watched in the past.

You'll actually be able to influence the algorithm with what's almost a reversal of Facebook's "Like." You can still tap and hold on Discover content to subscribe to the author, but you'll also get the option to "see less" of this stuff. That way you can train the algorithm what to hide in the future.

(*E.g.*, https://techcrunch.com/2017/11/29/snapchat-redesign/ (published November 29, 2017)).

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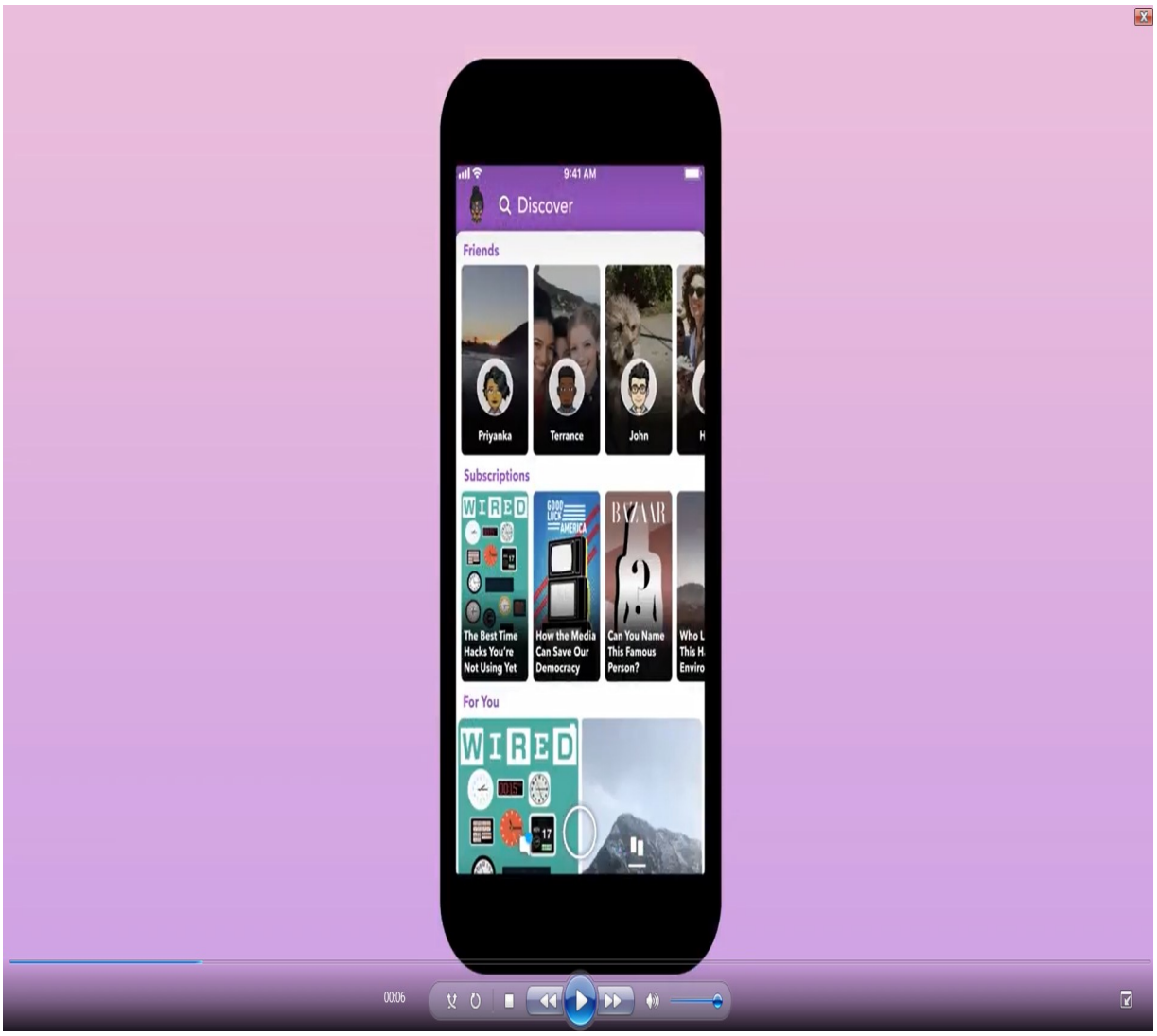
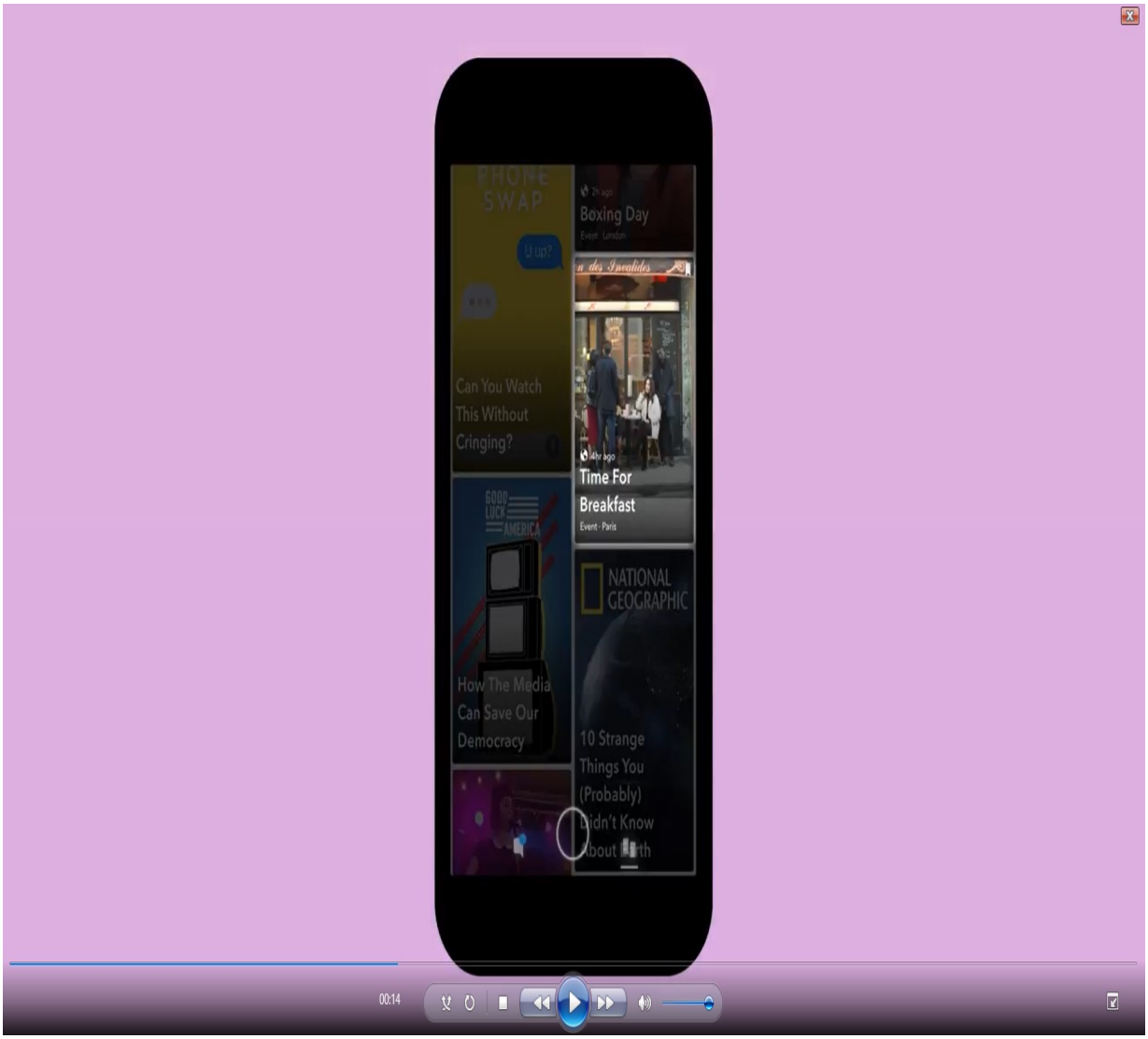
(*E.g.*, https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).



(*E.g.*, https://www.youtube.com/watch?v=k3nzfw7WHTg (published July 23, 2018)).



(*E.g.,* https://www.youtube.com/watch?v=k3nzfw7WHTg (published July 23, 2018)).

Snap, which is set to IPO this week, signed a **$2 billion, five-year contract with Google** for its cloud services, which makes Snap Google's **largest customer** of its cloud platform.

For context, Google's cloud business was previously estimated to have an annual runrate revenue of about $1 billion, according to RBC Capital Markets analyst Mark Mahaney, trailing **Amazon Web Services'** $12.2 billion and Microsoft Azure's **estimated $2.7 billion**. (Snap also has a **$1 billion contract** with AWS.)

But what is Snap actually getting from Google for all that money?

Google wouldn't say exactly which services Snap has signed up for, but there are four key products that fall under Google's cloud services: Cloud Storage for storing data on servers managed by Google; Compute Engine for retrieving and managing data; App Engine for developing and running applications; BigQuery for data analysis; and a suite of machine learning tools.

We know Snapchat **was built on App Engine**, which basically allows clients to host their main software on datacenters managed by Google. That differs from just hosting your own servers, since cloud services allow a company to make use of more servers as needed, allowing the app to run faster and more efficiently.

App Engine is one of Google's core cloud services. It provides users with tools and services to build software, ensure its security and test new features. It also allows apps to handle an increasing amount of traffic. Other companies that use App Engine include **Best Buy** and enterprise cloud phone system **Dialpad**.

(*E.g.,* https://www.vox.com/2017/3/1/14661126/snap-snapchat-ipo-spending-2-billion-google-cloud (published March 1, 2017)).

APPLICATION INFORMATION

The following page provides details on domains, platforms, networks and IPs used by **Snapchat**.

DESCRIPTION

Snapchat lets you easily talk with friends, view Live Stories from around the world, and explore news in Discover.

Category	Messaging
Web Link	Snapchat - Home Page (https://www.snapchat.com)

MANAGE BANDWIDTH

Do you know how much **Snapchat** traffic flows through your network? Netify's application detection engine and reporting provides insights to help manage your network.

What gets measured, gets managed.

LEARN MORE (/#WHAT-IS-NETIFY)

DOMAINS

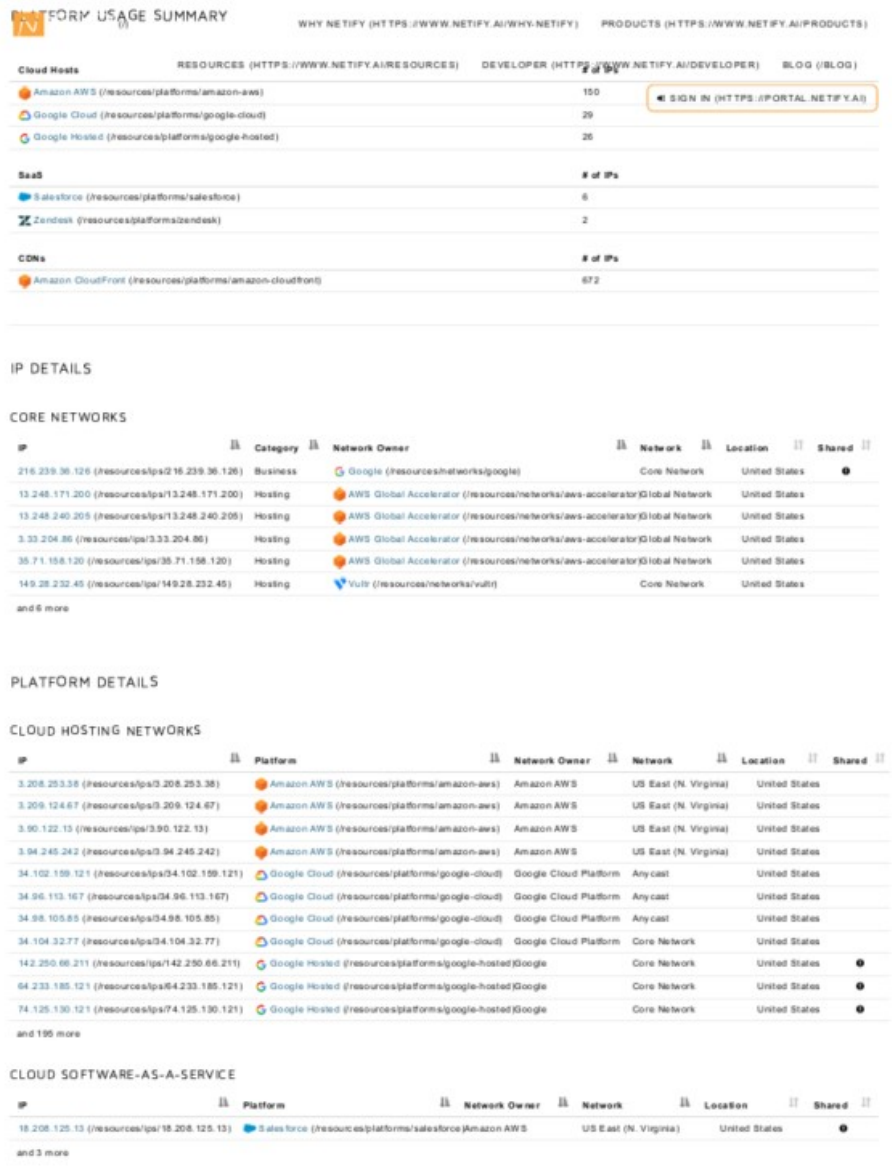
PRIMARY DOMAINS

- addlive.io (/resources/domains/addlive.io)
- feelinsonice.com (/resources/domains/feelinsonice.com)
- sc-cdn.net (/resources/domains/sc-cdn.net)
- sc-corp.net (/resources/domains/sc-corp.net)
- sc-gw.com (/resources/domains/sc-gw.com)
- sc-jpl.com (/resources/domains/sc-jpl.com)
- sc-prod.net (/resources/domains/sc-prod.net)
- sc-static.net (/resources/domains/sc-static.net)
- snapads.com (/resources/domains/snapads.com)
- snapchat.com (/resources/domains/snapchat.com)
- snap-dev.net (/resources/domains/snap-dev.net)
- snapkit.com (/resources/domains/snapkit.com)
- snapmap.com (/resources/domains/snapmap.com)
- snapmap.org (/resources/domains/snapmap.org)
- snapmaps.com (/resources/domains/snapmaps.com)
- snap-storage-cdn.l.google.com (/resources/domains/snap-storage-cdn.l.google.com)

NETWORKS

- 104.193.184.0/22
- 204.154.248.0/21
- 2620:121:5000::/40

(*E.g.*, https://www.netify.ai/resources/applications/snapchat (retrieved July 7, 2023)).



PLATFORM USAGE SUMMARY

WHY NETIFY (HTTPS://WWW.NETIFY.AI/WHY-NETIFY) PRODUCTS (HTTPS://WWW.NETIFY.AI/PRODUCTS)

RESOURCES (HTTPS://WWW.NETIFY.AI/RESOURCES) DEVELOPER (HTTPS://WWW.NETIFY.AI/DEVELOPER) BLOG (/BLOG)

SIGN IN (HTTPS://PORTAL.NETIFY.AI)

Cloud Hosts	# of IPs
Amazon AWS (/resources/platforms/amazon-aws)	150
Google Cloud (/resources/platforms/google-cloud)	29
Google Hosted (/resources/platforms/google-hosted)	26

SaaS	# of IPs
Salesforce (/resources/platforms/salesforce)	6
Zendesk (/resources/platforms/zendesk)	2

CDNs	# of IPs
Amazon CloudFront (/resources/platforms/amazon-cloudfront)	672

IP DETAILS

CORE NETWORKS

IP	Category	Network Owner	Network	Location	Shared
216.239.36.126 (/resources/ips/216.239.36.126)	Business	Google (/resources/networks/google)	Core Network	United States	
13.248.171.200 (/resources/ips/13.248.171.200)	Hosting	AWS Global Accelerator (/resources/networks/aws-accelerator)	Global Network	United States	
13.248.240.205 (/resources/ips/13.248.240.205)	Hosting	AWS Global Accelerator (/resources/networks/aws-accelerator)	Global Network	United States	
3.33.204.86 (/resources/ips/3.33.204.86)	Hosting	AWS Global Accelerator (/resources/networks/aws-accelerator)	Global Network	United States	
35.71.158.120 (/resources/ips/35.71.158.120)	Hosting	AWS Global Accelerator (/resources/networks/aws-accelerator)	Global Network	United States	
149.28.232.45 (/resources/ips/149.28.232.45)	Hosting	Vultr (/resources/networks/vultr)	Core Network	United States	

and 6 more

PLATFORM DETAILS

CLOUD HOSTING NETWORKS

IP	Platform	Network Owner	Network	Location	Shared
3.208.253.38 (/resources/ips/3.208.253.38)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
3.209.124.67 (/resources/ips/3.209.124.67)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
3.90.122.13 (/resources/ips/3.90.122.13)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
3.94.245.242 (/resources/ips/3.94.245.242)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
34.102.159.121 (/resources/ips/34.102.159.121)	Google Cloud (/resources/platforms/google-cloud)	Google Cloud Platform	Anycast	United States	
34.96.113.167 (/resources/ips/34.96.113.167)	Google Cloud (/resources/platforms/google-cloud)	Google Cloud Platform	Anycast	United States	
34.98.105.85 (/resources/ips/34.98.105.85)	Google Cloud (/resources/platforms/google-cloud)	Google Cloud Platform	Anycast	United States	
34.104.32.77 (/resources/ips/34.104.32.77)	Google Cloud (/resources/platforms/google-cloud)	Google Cloud Platform	Core Network	United States	
142.250.66.211 (/resources/ips/142.250.66.211)	Google Hosted (/resources/platforms/google-hosted)	Google	Core Network	United States	
64.233.185.121 (/resources/ips/64.233.185.121)	Google Hosted (/resources/platforms/google-hosted)	Google	Core Network	United States	
74.125.130.121 (/resources/ips/74.125.130.121)	Google Hosted (/resources/platforms/google-hosted)	Google	Core Network	United States	

and 195 more

CLOUD SOFTWARE-AS-A-SERVICE

IP	Platform	Network Owner	Network	Location	Shared
18.208.125.13 (/resources/ips/18.208.125.13)	Salesforce (/resources/platforms/salesforce)	Amazon AWS	US East (N. Virginia)	United States	

and 3 more

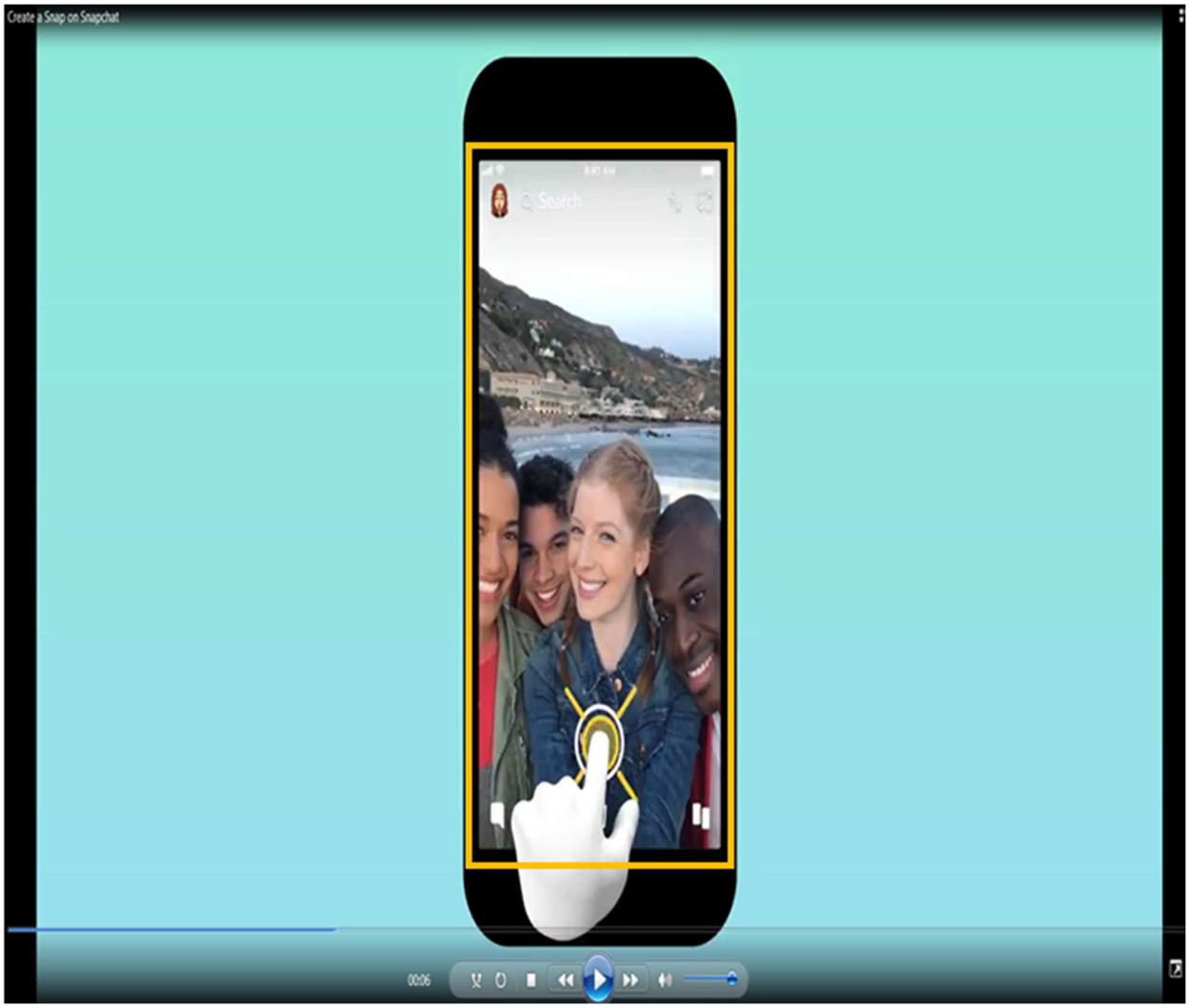
(*E.g.*, https://www.netify.ai/resources/applications/snapchat (retrieved July 7, 2023)).

(*E.g.,* https://www.netify.ai/resources/applications/snapchat (retrieved July 7, 2023)).

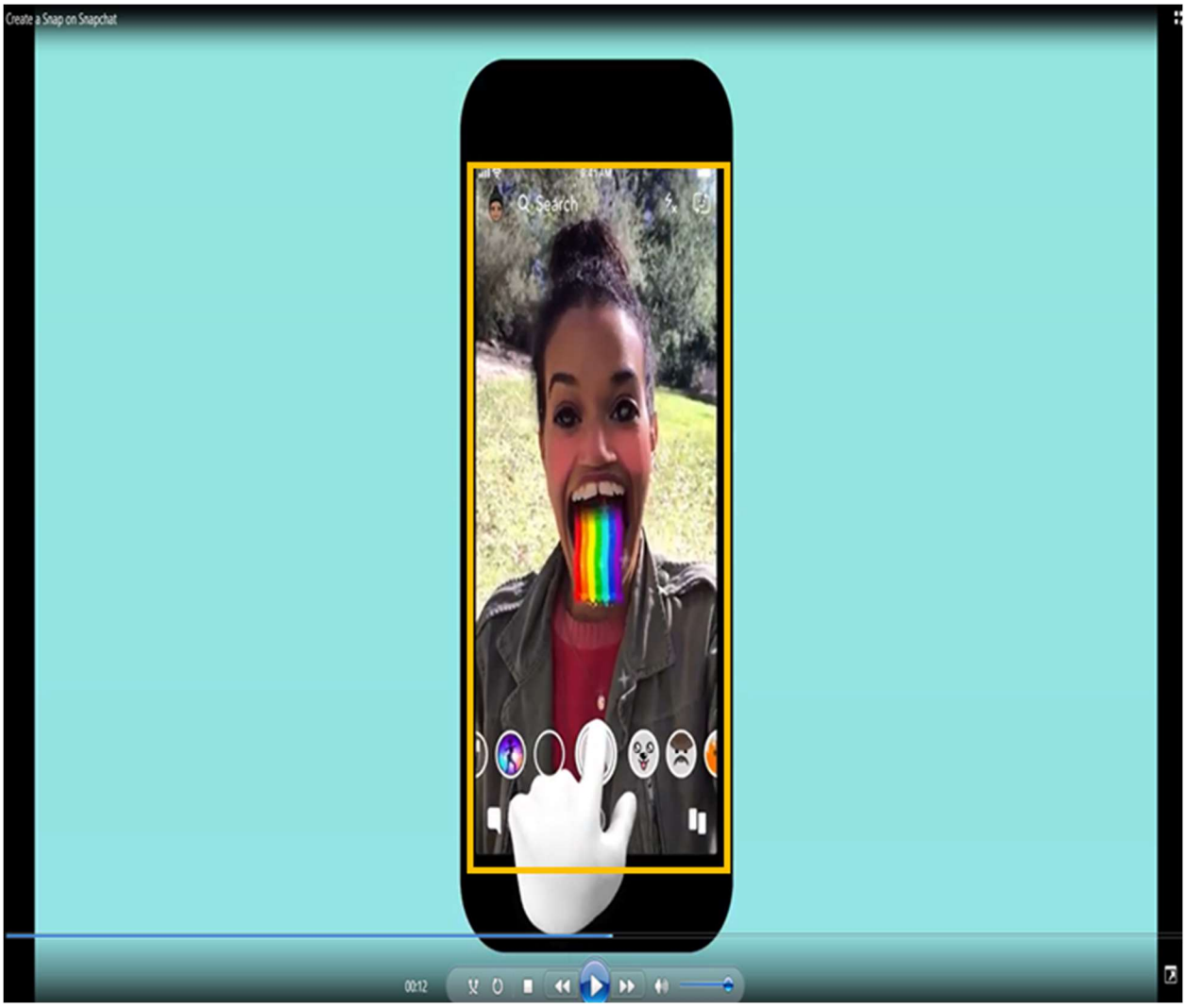
60. The Accused Instrumentality includes an electronic media submissions server subsystem, having one or more data processing apparatus and one more database stored on a non-transitory medium in order to process and store received submissions from various users, for example as discussed above in connection with the Snapchat platform and the Snapchat discovery feeds' servers. These submissions, which include *e.g.,* video, text and images (sometimes collectively referred to as "snaps"), to be provided to the Snapchat platform via a submissions electronic interface configured to receive such electronic media submissions (*e.g.,* video, text, images) from a plurality of submitters (*e.g.,* Snapchat users with accompanying created accounts) over a public network (*e.g.,* the Internet) and stored in said electronic media submissions database for use in distribution to other users. "When you're ready, you can send it to a friend, or share it with the world. "(*E.g.,* https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)). Such "snaps", which are configured to be collected in the form of "stories", are made

available via storage in the electronic media submissions database for use in distribution to other users, such as friends or the general userbase of Snapchat, as per the selected option.

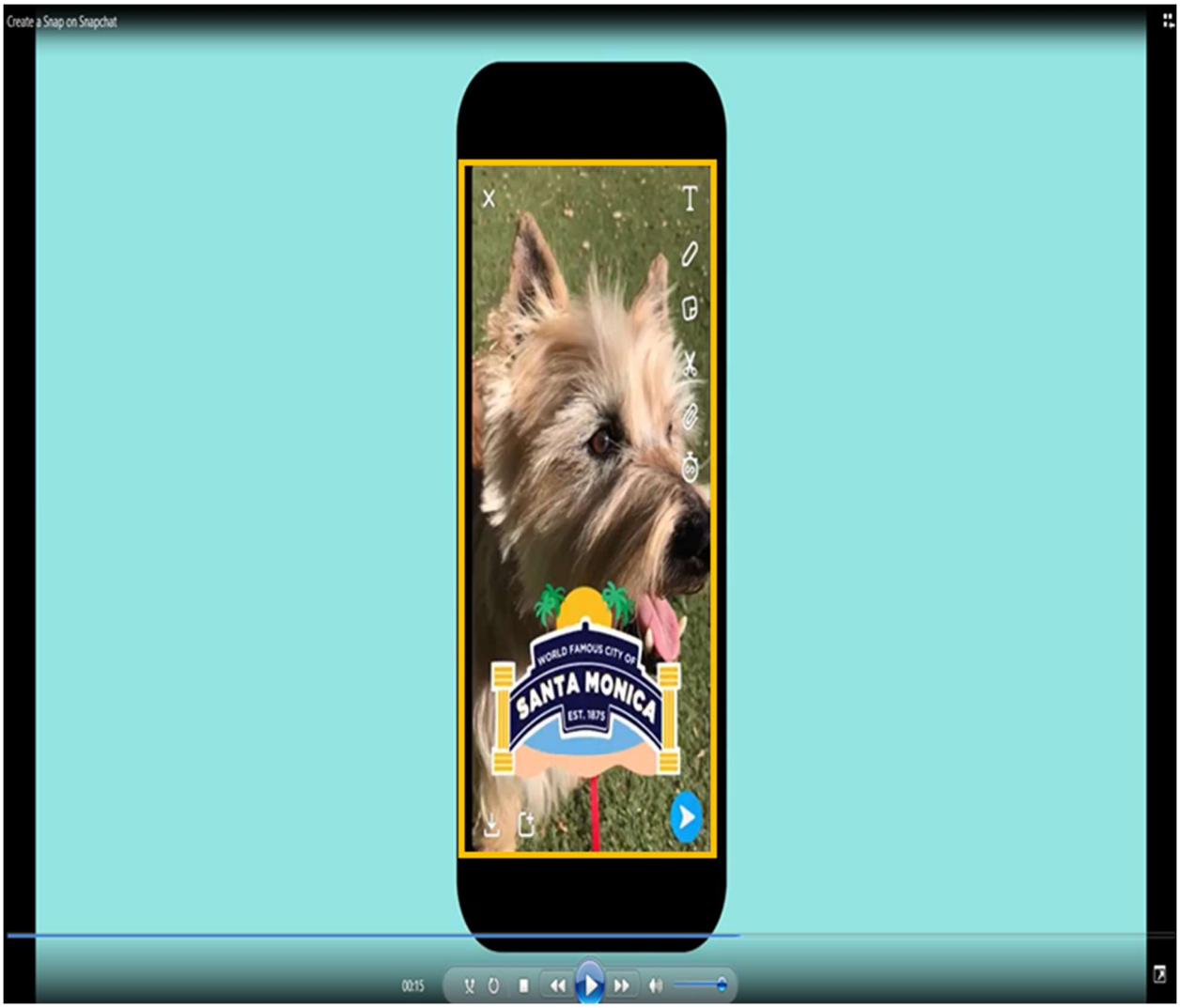
(*E.g.*, https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).



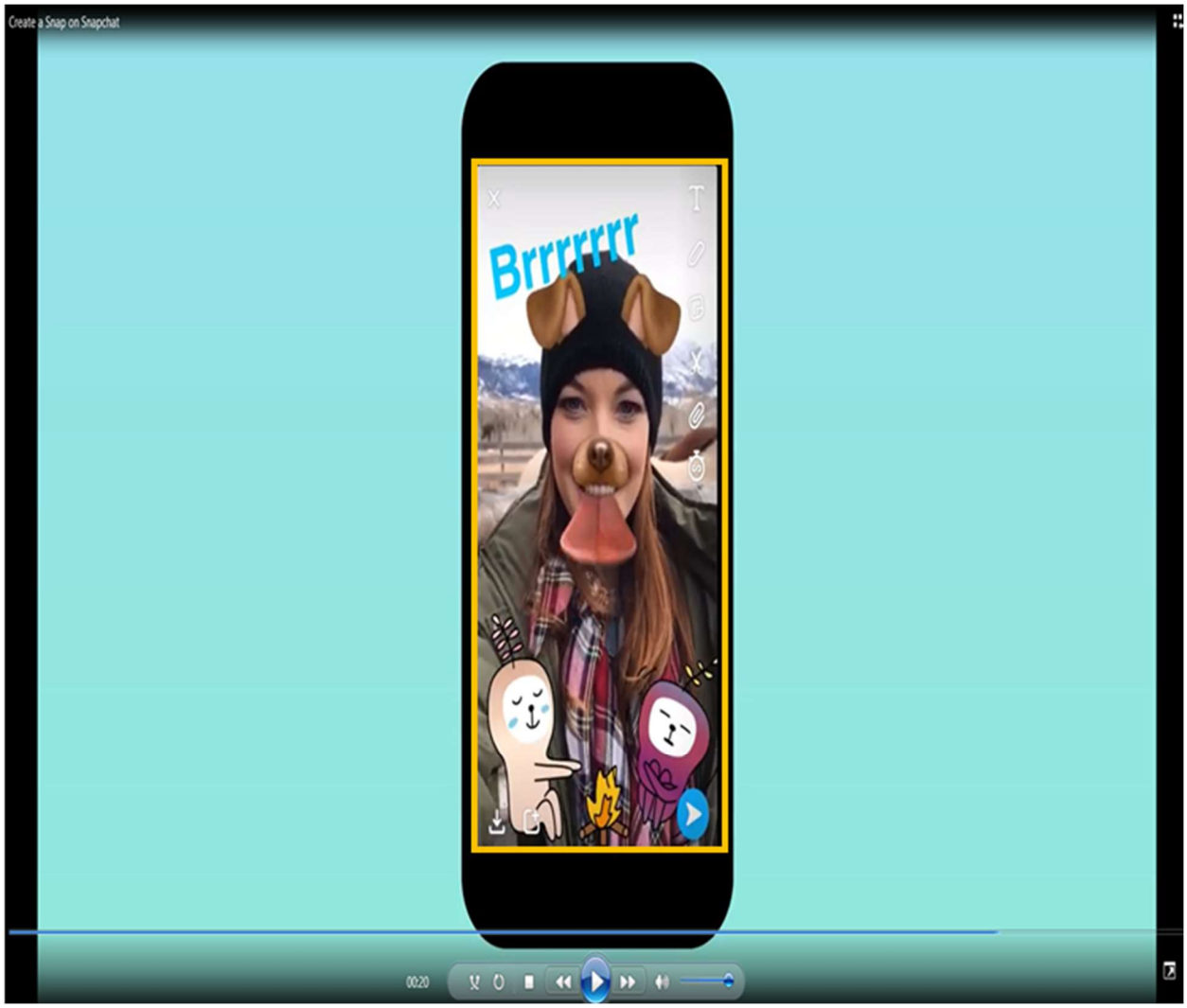
(*E.g.*, https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).



(*E.g.,* https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).



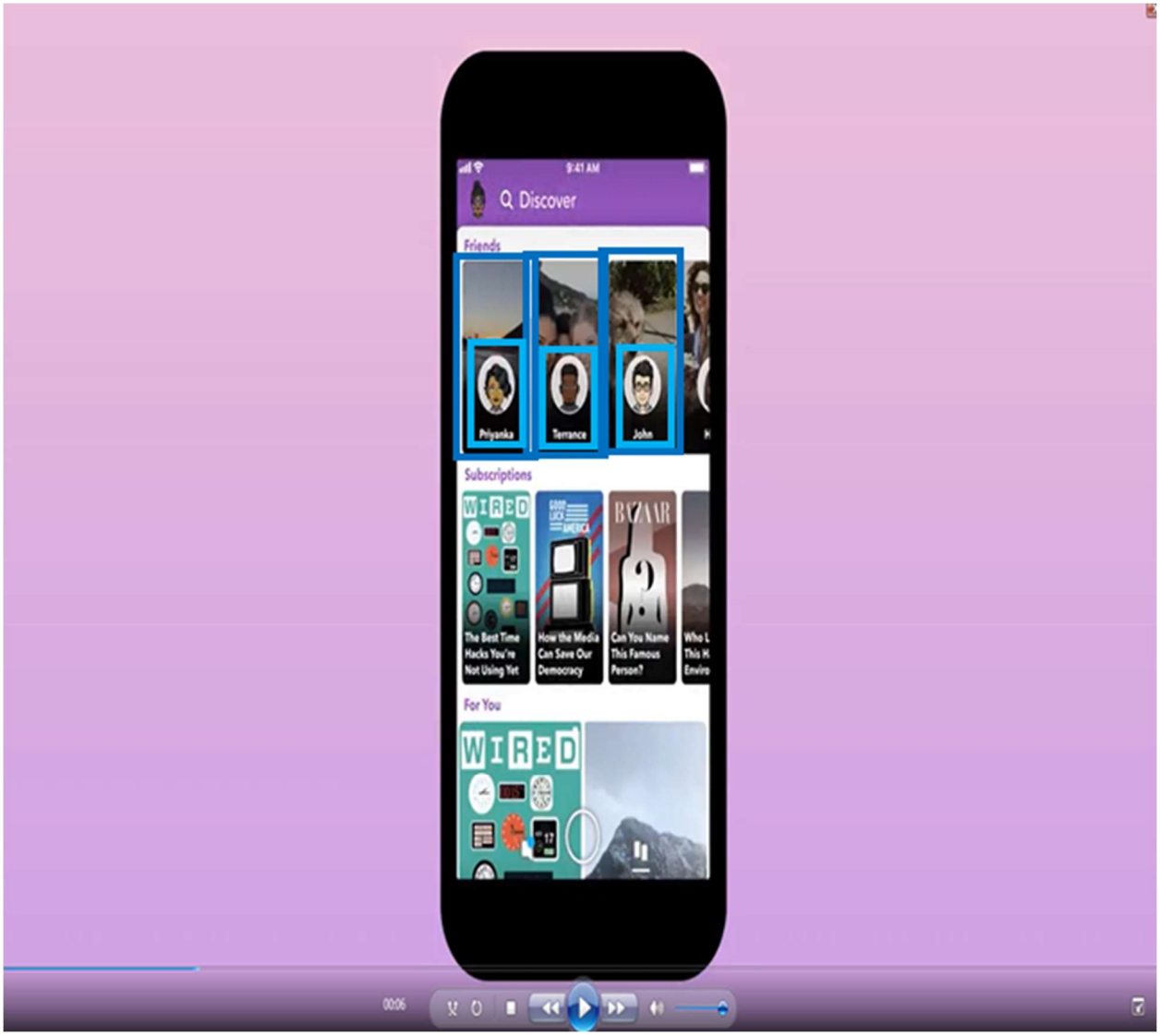
(*E.g.*, https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).



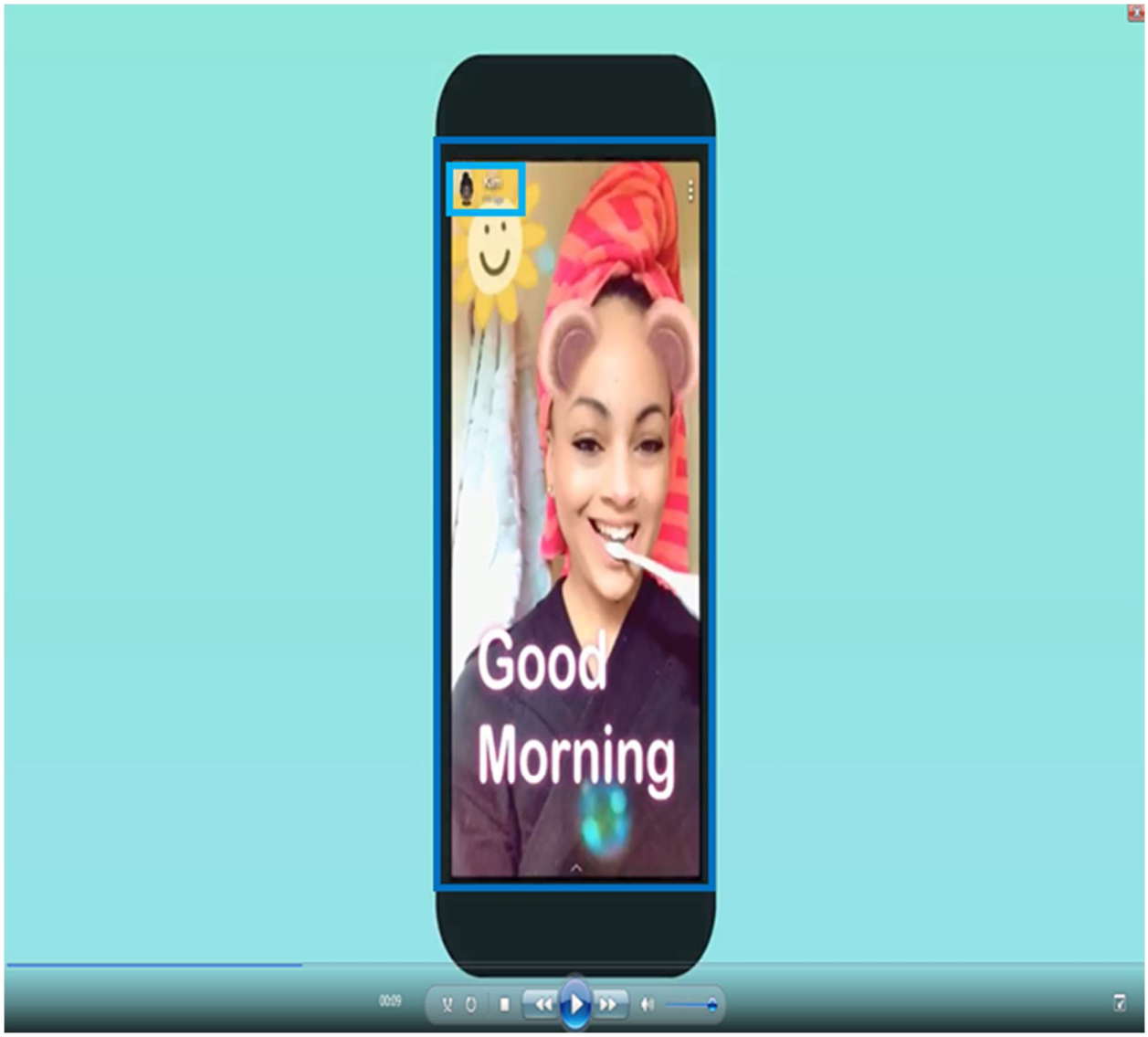
(*E.g.,* https://www.youtube.com/watch?v=oG78mWQnY1w (published July 23, 2018)).

61. The stored electronic media submissions submitted via Accused Instrumentality used by Snap Inc., with respect to the first electronic media submission (*e.g.,* video, text, and images, forming a multimedia post, submitted by a first user of Snapchat) includes data identifying the first user and data indicating content for the first electronic media submission, *e.g.,* as shown below with a name and profile picture identifying the submitter and video, textual and image matter indicating content. The stored electronic media submissions submitted via the Accused Instrumentality, with respect to the first electronic media submission (*e.g.,* video, text and/or images, forming a multimedia post, submitted by a first user of Snapchat) further includes data

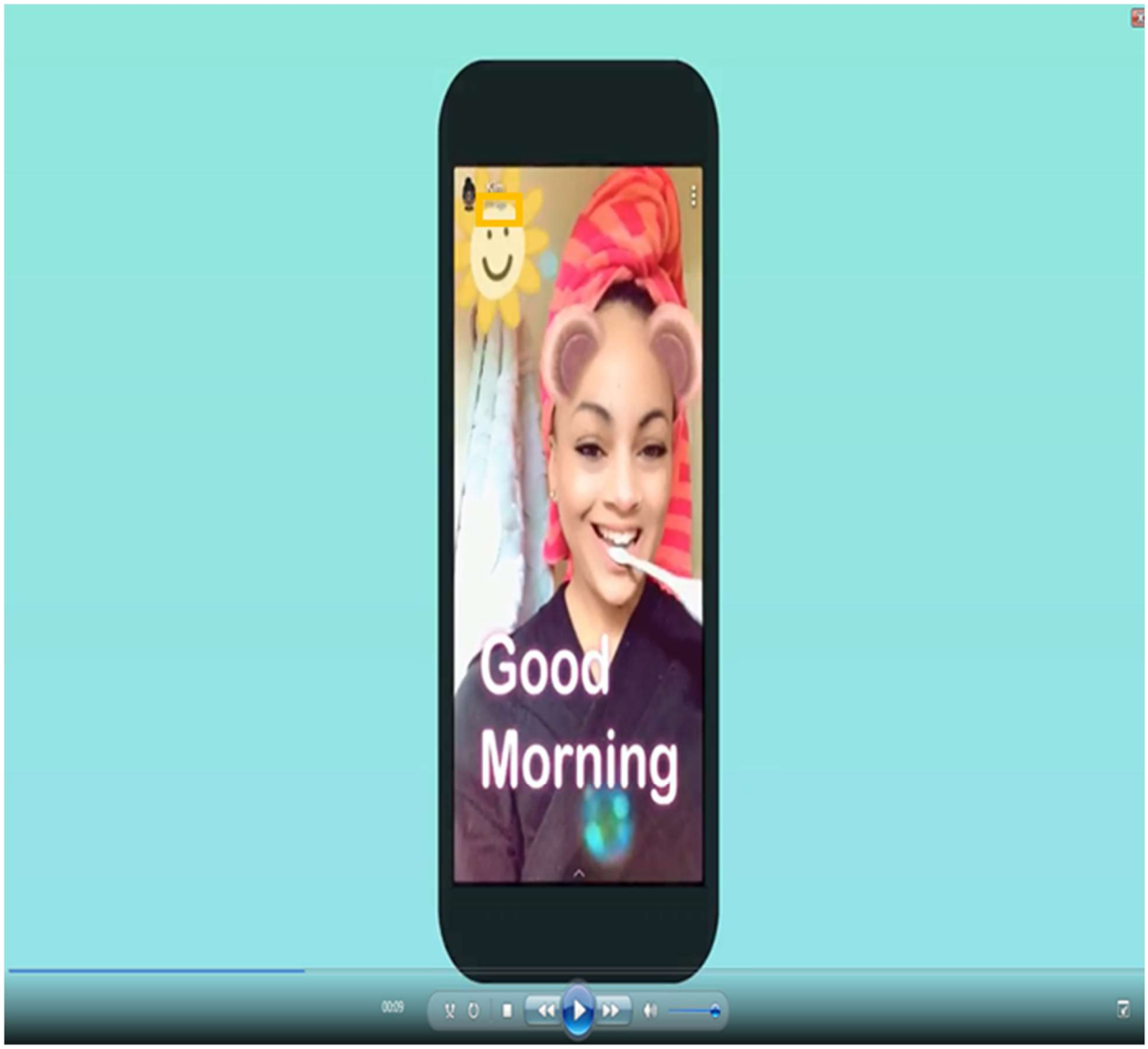
identifying date and time associated with receipt of the first electronic media submission. This can be seen for example below, where an amount of time "ago" is made visible with the submission (thereby indicating, with reference to the time of viewing, the time of submission). Snap Inc. further explains that the submission time is also tracked and used such that "your story includes snaps from the last 24 hours." (*E.g.,* https://www.youtube.com/watch?v=OQLtiuawh6w (published July 23, 2018)).



(*E.g.,* https://www.youtube.com/watch?v=k3nzfw7WHTg (published July 23, 2018)).



(*E.g.,* https://www.youtube.com/watch?v=OQLtiuawh6w (published July 23, 2018)).



(*E.g.,* https://www.youtube.com/watch?v=OQLtiuawh6w (published July 23, 2018)).

62. The Accused Instrumentality comprises one or more databases comprising criteria associated with one or more users of the plurality of users stored in such database. Such user database is stored in memory available through the Accused Instrumentality's servers, for example as discussed above. Some examples of such criteria stored in such user database on the Accused Instrumentality are user discussion and viewing history and behavior, follows of other users, follows by other users, friends, subscriptions, preferences, favorites, a profile picture, a profile

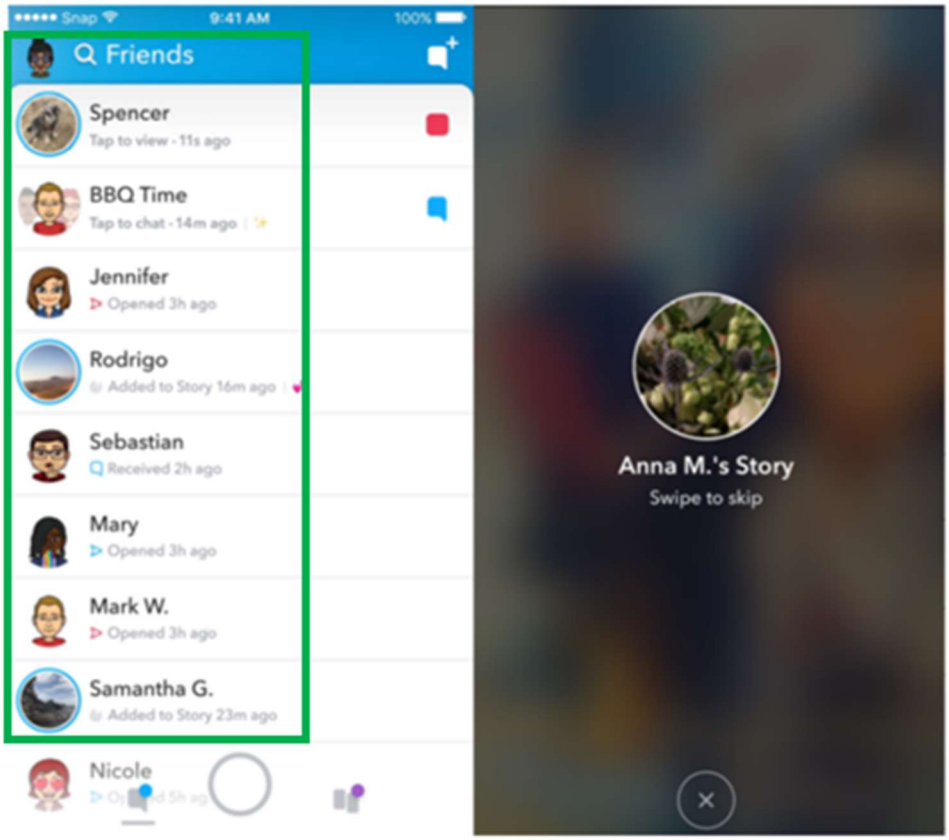
name, and requests to see less of content, requests to hide content, and skipping of content, as shown and discussed for example below. This is consistent with what Snap Inc. currently describes as the operation of its system. (*E.g.,* https://help.snapchat.com/hc/en-us/articles/8961631424020--How-We-Rank-Content-on-Discover).

So what exactly is the redesign? It puts all messages and Stories from friends to the left of the camera, sorted by who you talk to and view most. It revives auto-advance, so you can watch everyone's Stories in a row, but with best friends not people who post the most first. And it puts to the right of the camera all premium publishers, pro social media stars you follow and aggregated stories from search and Snap Map in the Discover section, curated by humans and sorted by your past viewing behavior.

Auto-advance with best first: The Friends page

Snap is mixing Stories and private messages in a single Friends tab. First you'll see new Snaps and text chats at the top, then Stories from your closest friends you watch and chat with the most, followed by the Stories from the rest of your acquaintances.

Every group chat now gets its own Group Story all members can add to. Gone are social media influencers. Now if you follow someone but they don't follow you back they'll appear in Discover, whereas if they do follow you back, they'll be on the Friends page. Influencers will also get to choose if they want to share to just their friends or their followers too. The split should take pressure off your friends to perform like they're stars, encouraging people to post more raw and esoteric content instead of a perfectly polished presence.



(*E.g.*, https://techcrunch.com/2017/11/29/snapchat-redesign/ (published November 29, 2017)).

Snapchat now lumps all professional creators, whether they're big news outlets or social media stars or video Show makers, into one Discover tab to the right of the camera. There also are aggregated Stories from hotspots on the Snap Map, Our Stories about events or holidays and topic-based aggregations from Snapchat Search. They're all shown as big preview tiles, with Discover publishers and creators you actively subscribe to at the top. Everything else is sorted by what Snapchat thinks you want to see based on what you've watched in the past.

You'll actually be able to influence the algorithm with what's almost a reversal of Facebook's "Like." You can still tap and hold on Discover content to subscribe to the author, but you'll also get the option to "see less" of this stuff. That way you can train the algorithm what to hide in the future.

(*E.g.,* https://techcrunch.com/2017/11/29/snapchat-redesign/ (published November 29, 2017)).

5. Ranking Content

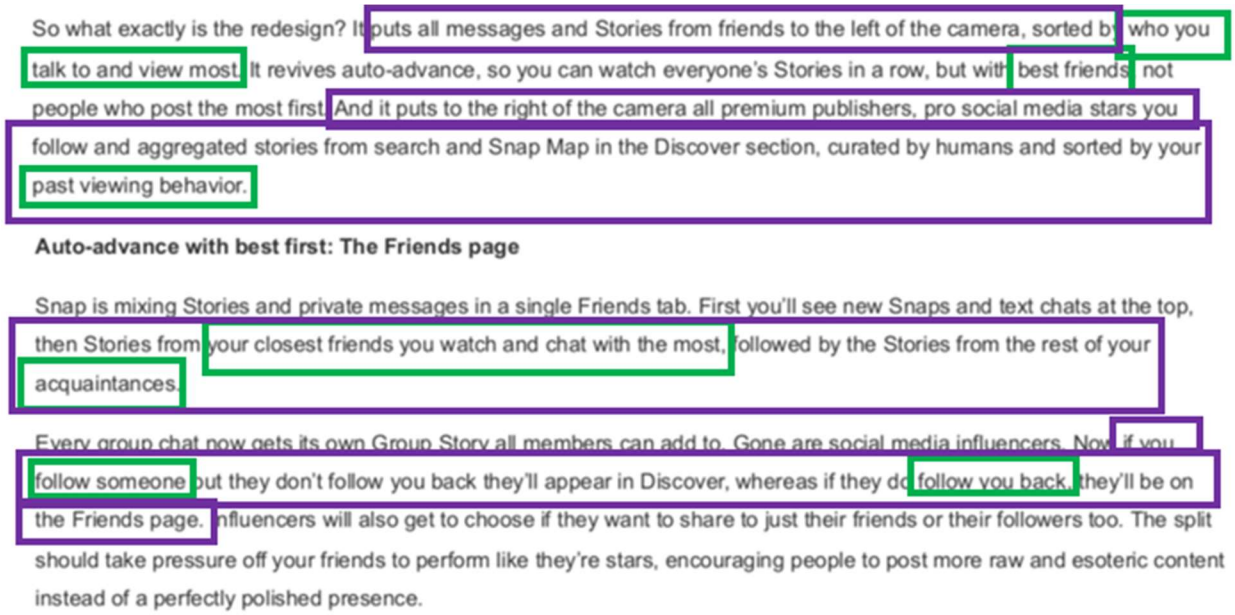
Now that we've labeled the content and figured out what content you'll likely enjoy, we can make sure you see that content in the right order: we call this "ranking."

We organize or rank content for Discover and Spotlight based on a combination of your preferences and the content tags. When we combine this, we hope that the algorithm succeeds in showing you the content you like the most. If that's not happening, you can help the algorithm by watching content you enjoy for a longer time, subscribing to creators you love, favoriting content, and hiding and skipping the content you don't like.

(*E.g.,* https://help.snapchat.com/hc/en-us/articles/8961631424020--How-We-Rank-Content-on-Discover).

63. The Accused Instrumentality employs an electronic multimedia creator server subsystem operatively coupled to the electronic media submissions server subsystem, necessarily having one or more data second processing apparatus (*e.g.,* located elsewhere within its cloud-based servers as discussed above) in order to manage content, and an electronic content filter, configured to, based on criteria associated with one or more of the Snapchat users such as are discussed above, obtain and make available a plurality of electronic media submissions from the database using an electronic content filter, for electronic viewing by the Snapchat users including the first user, using their respective electronic devices. As can be seen below, such electronic content filter as is used by Snap Inc. for the Accused Instrumentality is based at least in part on at

least one of the criteria, (*e.g.,* based on user discussion and viewing history and behavior, follows of other users, follows by other users, friends, subscriptions, preferences, favorites, requests to see less of content, requests to hide content, and skipping of content, which in turn affects which electronic media submissions appear on a given user's Snapchat discovery feed), as shown and discussed for example below. Snap Inc. uses function-specific subsystems, for example as discussed below. Such electronic content filter is used by the Accused Instrumentality to develop multimedia content (*e.g.,* content associated with video, text and images) to be electronically available for viewing on user devices (*e.g.,* devices such as smart phones incorporating browsers or apps), including at least one user device associated with the first user.



So what exactly is the redesign? It puts all messages and Stories from friends to the left of the camera, sorted by who you talk to and view most. It revives auto-advance, so you can watch everyone's Stories in a row, but with best friends, not people who post the most first. And it puts to the right of the camera all premium publishers, pro social media stars you follow and aggregated stories from search and Snap Map in the Discover section, curated by humans and sorted by your past viewing behavior.

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Snap is mixing Stories and private messages in a single Friends tab. First you'll see new Snaps and text chats at the top, then Stories from your closest friends you watch and chat with the most, followed by the Stories from the rest of your acquaintances.

Every group chat now gets its own Group Story all members can add to. Gone are social media influencers. Now if you follow someone but they don't follow you back they'll appear in Discover, whereas if they do follow you back, they'll be on the Friends page. Influencers will also get to choose if they want to share to just their friends or their followers too. The split should take pressure off your friends to perform like they're stars, encouraging people to post more raw and esoteric content instead of a perfectly polished presence.

(*E.g.,* https://techcrunch.com/2017/11/29/snapchat-redesign/ (published November 29, 2017)).

Snapchat now lumps all professional creators, whether they're big news outlets or social media stars or video Show makers, into one Discover tab to the right of the camera. There also are aggregated Stories from hotspots on the Snap Map, Our Stories about events or holidays and topic-based aggregations from Snapchat Search. They're all shown as big preview tiles, with Discover publishers and creators you actively subscribe to at the top. Everything else is sorted by what Snapchat thinks you want to see based on what you've watched in the past.

You'll actually be able to influence the algorithm with what's almost a reversal of Facebook's "Like." You can still tap and hold on Discover content to subscribe to the author, but you'll also get the option to "see less" of this stuff. That way you can train the algorithm what to hide in the future.

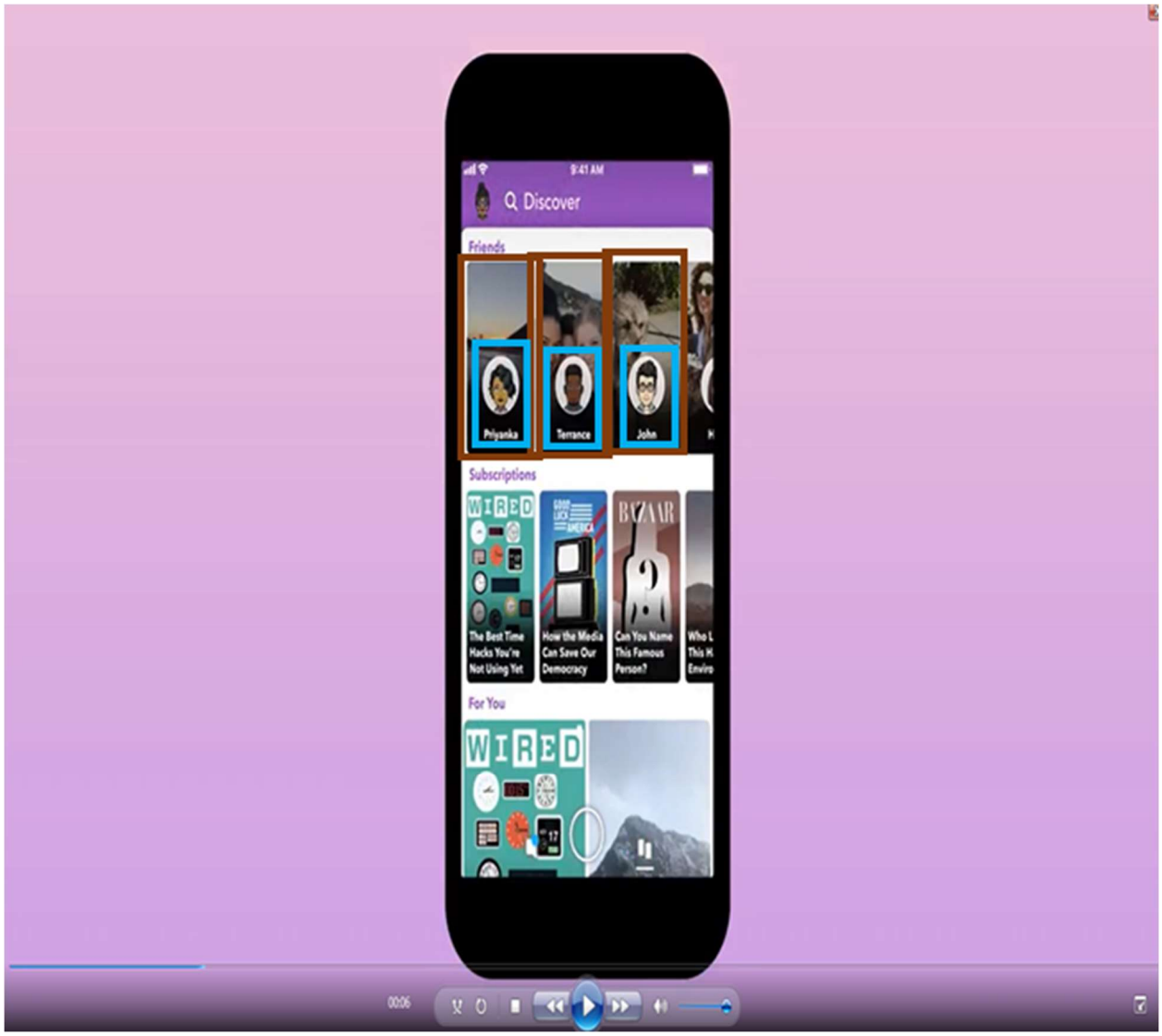
(*E.g.*, https://techcrunch.com/2017/11/29/snapchat-redesign/ (published November 29, 2017)).

5. Ranking Content

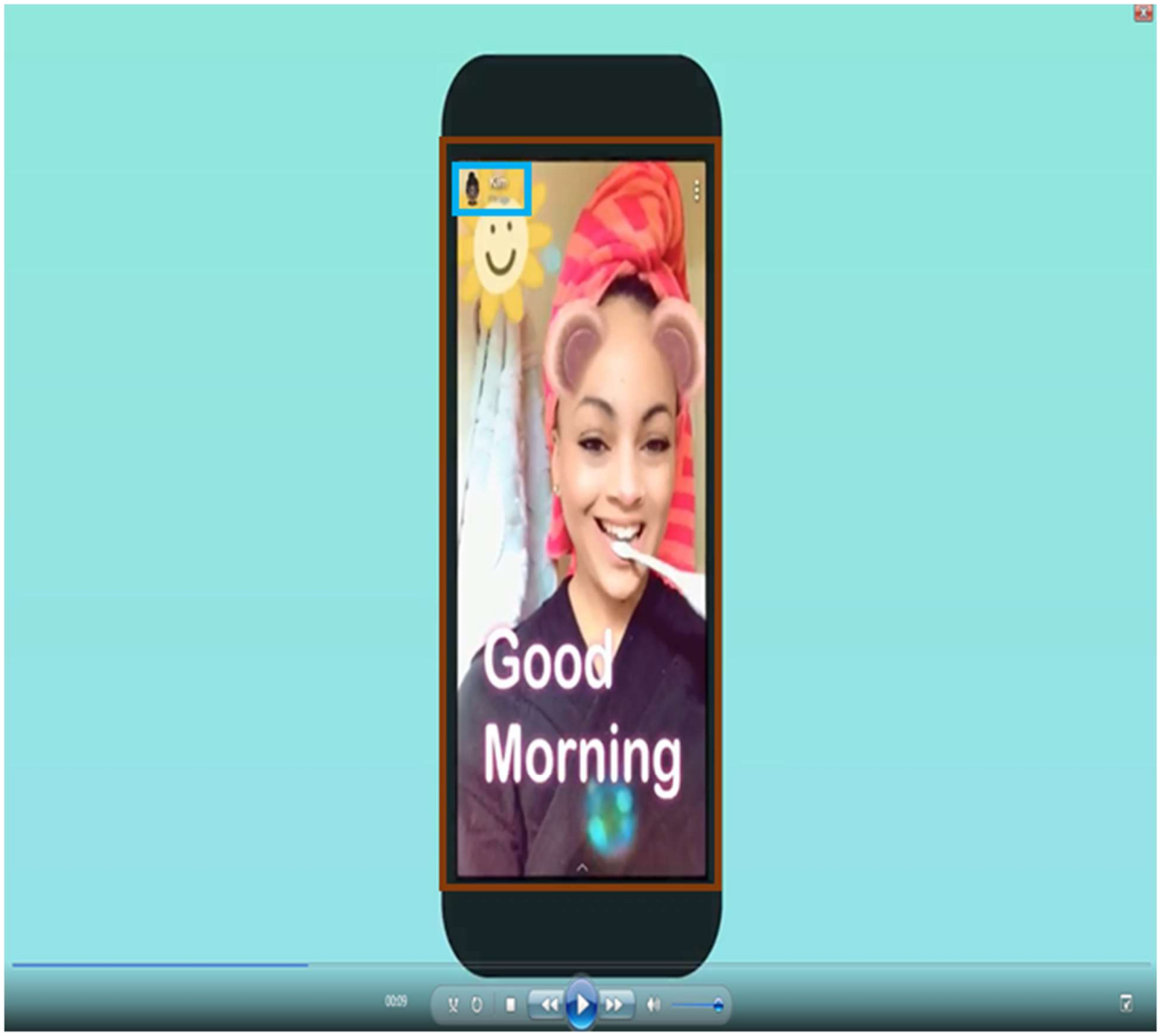
Now that we've labeled the content and figured out what content you'll likely enjoy, we can make sure you see that content in the right order: we call this "ranking."

We organize or rank content for Discover and Spotlight based on a combination of your preferences and the content tags. When we combine this, we hope that the algorithm succeeds in showing you the content you like the most. If that's not happening, you can help the algorithm by watching content you enjoy for a longer time, subscribing to creators you love, favoriting content, and hiding and skipping the content you don't like.

(*E.g.*, https://help.snapchat.com/hc/en-us/articles/8961631424020--How-We-Rank-Content-on-Discover).

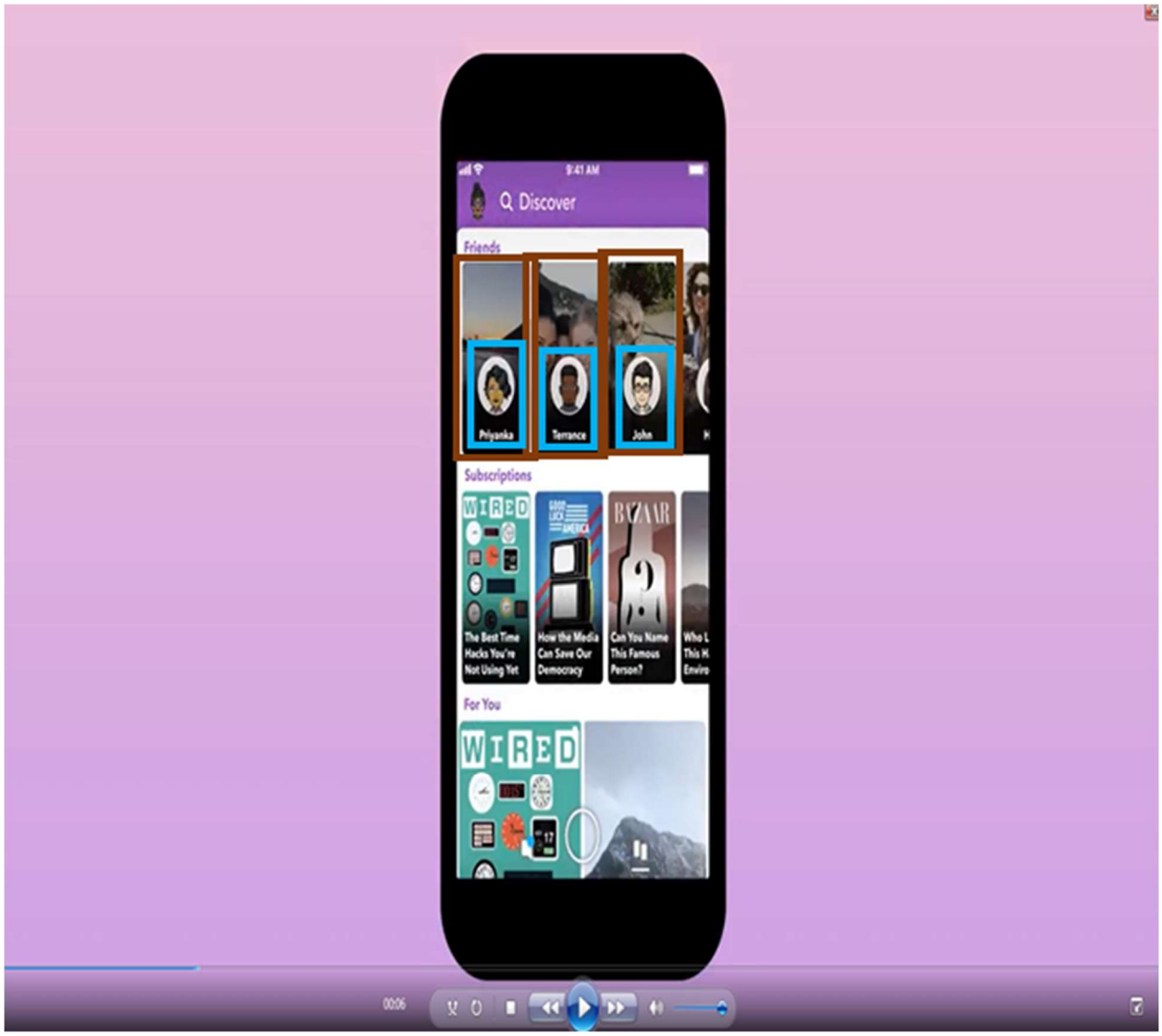


(*E.g.*, https://www.youtube.com/watch?v=k3nzfw7WHTg (published July 23, 2018)).

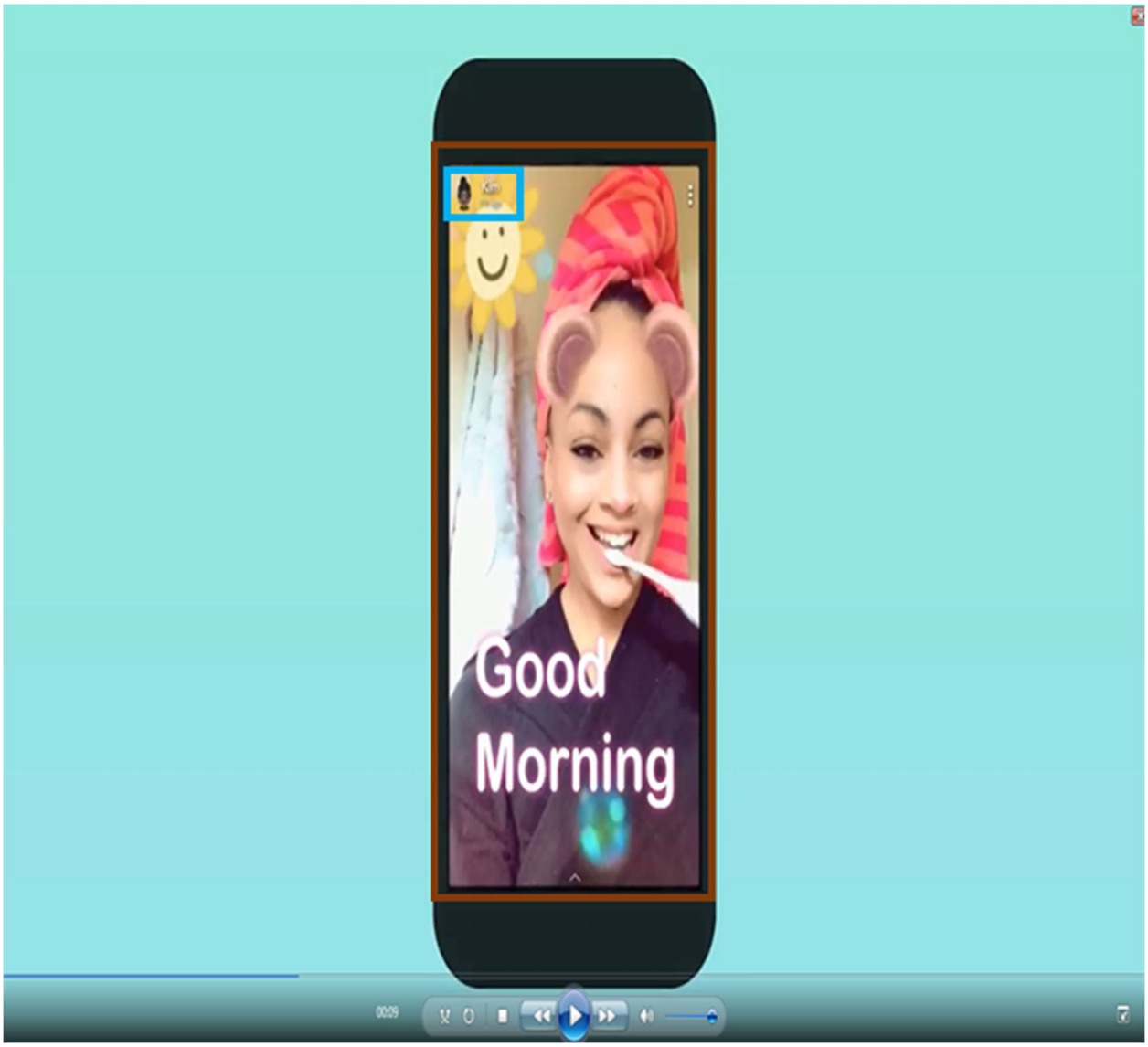


(*E.g.,* https://www.youtube.com/watch?v=OQLtiuawh6w (published July 23, 2018)).

64. Such electronic content filter is used by the Accused Instrumentality to develop multimedia content (*e.g.,* content associated with video, text and images) to be electronically available for viewing on user devices (*e.g.,* smart phone devices and other devices incorporating browsers or apps), where the data identifying the respective user is maintained for each electronic media submission within the multimedia content, for example as shown below.



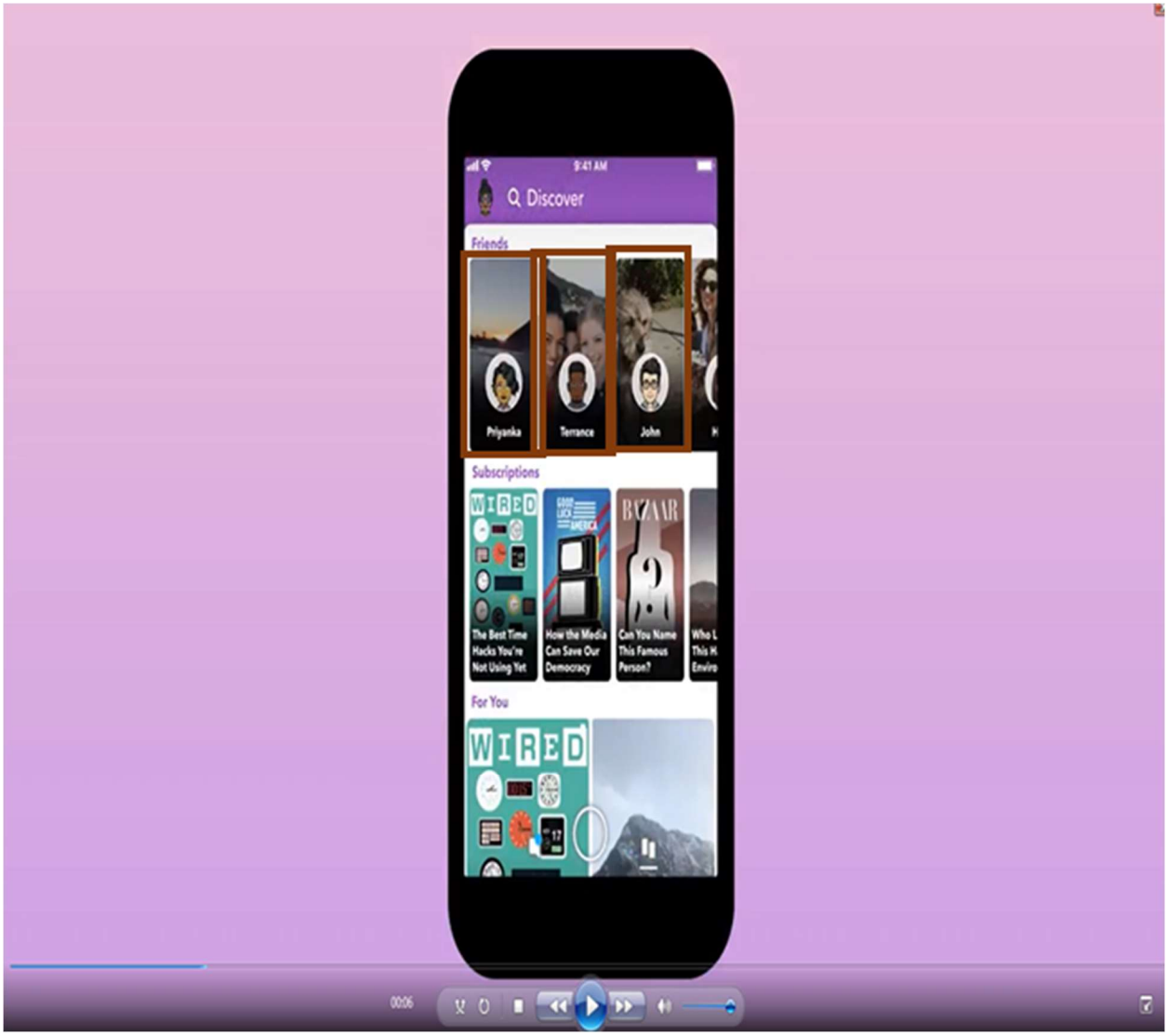
(*E.g.*, https://www.youtube.com/watch?v=k3nzfw7WHTg (published July 23, 2018)).



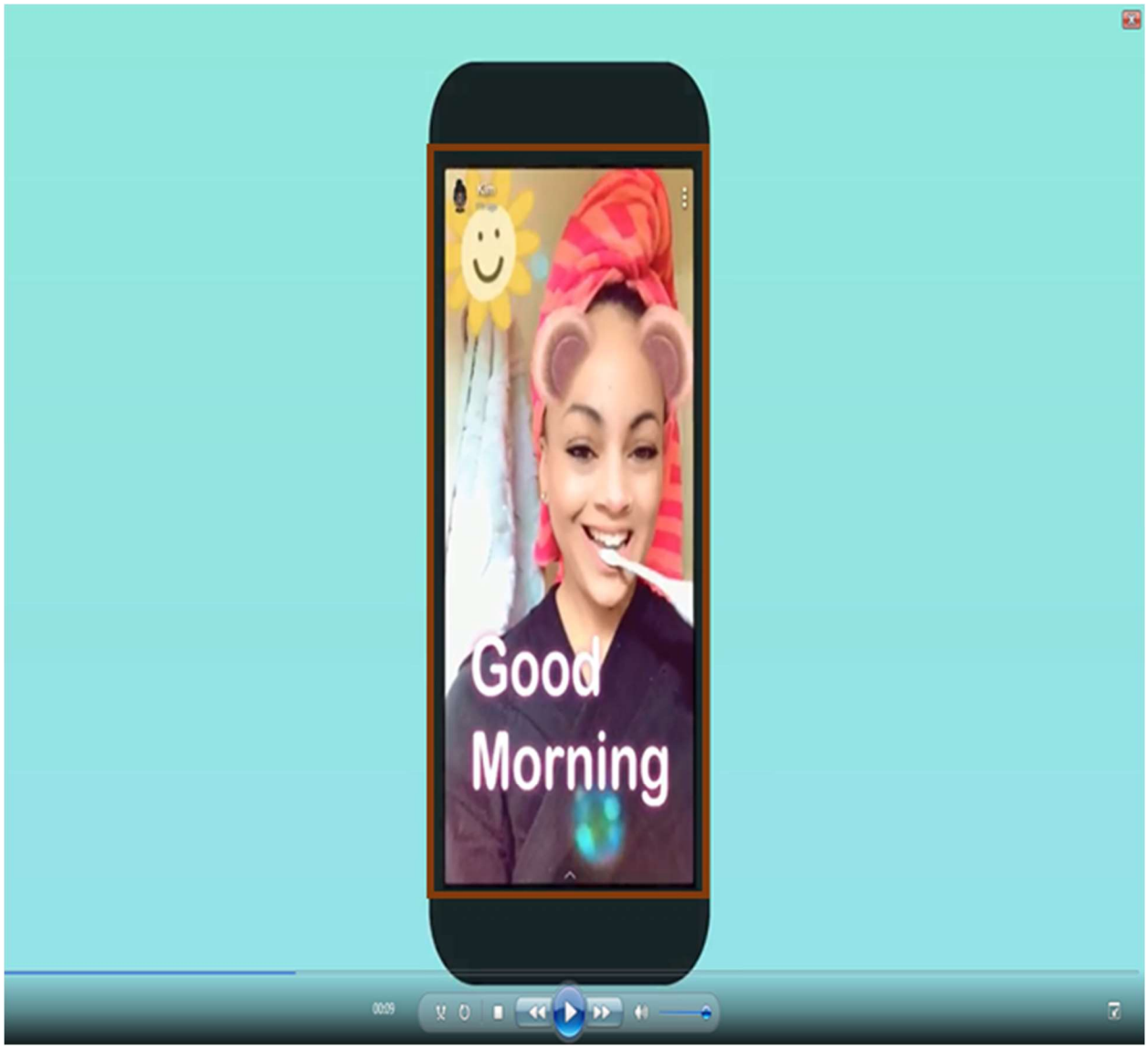
(*E.g.,* https://www.youtube.com/watch?v=OQLtiuawh6w (published July 23, 2018)).

65. The Accused Instrumentality employs an electronic release subsystem operatively coupled to the electronic multimedia creator server subsystem, necessarily having one or more third data processing apparatus in order to serve content to Snapchat users, configured to make the multimedia content electronically available for viewing on a plurality of user devices corresponding to a plurality of "friends" or a plurality of other users of the Snapchat platform. For example, as shown below, multimedia content is provided on a representative user's device from amongst a plurality of such users and associated user devices in response to such users logging in

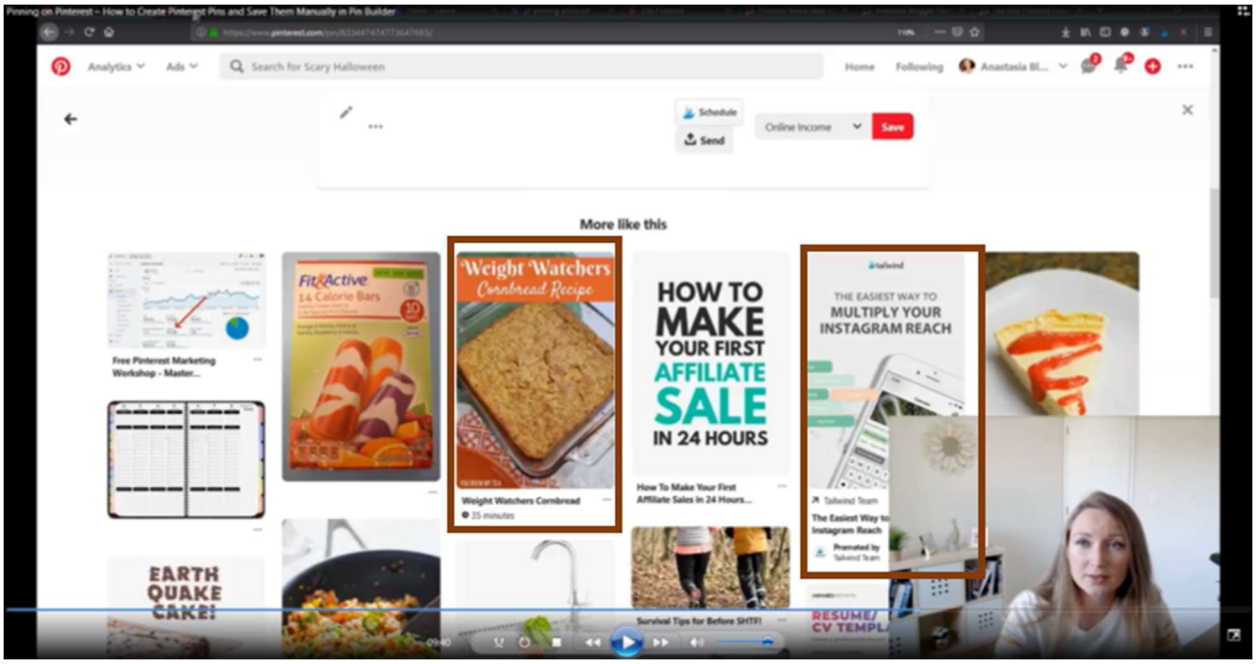
to Snapchat and viewing their Snapchat discovery feed or other feeds. Snap Inc. uses function-specific subsystems, including respective data processing apparatuses, for example as discussed below.



(*E.g.*, https://www.youtube.com/watch?v=k3nzfw7WHTg (published July 23, 2018)).



(*E.g.*, https://www.youtube.com/watch?v=OQLtiuawh6w (published July 23, 2018)).



(*E.g.,* https://www.youtube.com/watch?v=EmqaleD5790 (published August 29, 2019)).

66. The Accused Instrumentality employs an electronic voting subsystem, necessarily having one or more data processing apparatus in order to track voting, configured to enable any of a plurality of users, including a third user, to electronically vote for (*e.g.,* by the third user's choices with respect to viewing, tapping and holding on, opting to see less of, favoriting, hiding, or skipping) an electronically available multimedia content (*e.g.,* a collection or "story" or "snap"). As can be seen below, the option to vote for electronically available multimedia content (*e.g.,* a collection or "story" or "snap") is made available to users via the user's choices with respect to viewing, tapping and holding on, opting to see less of, favoriting, hiding, or skipping the multimedia content, and this voting behavior is tracked and associated with the multimedia content and/or submission so as to allow for serving of future content based on this behavior and/or for display purposes (*e.g.,* as to a number of views, shown for example by a number next to an eye icon). Snap Inc. uses function-specific subsystems, for example as discussed below.

So what exactly is the redesign? It puts all messages and Stories from friends to the left of the camera, sorted by who you talk to and view most. It revives auto-advance, so you can watch everyone's Stories in a row, but with best friends, not people who post the most first. And it puts to the right of the camera all premium publishers, pro social media stars you follow and aggregated stories from search and Snap Map in the Discover section, curated by humans and sorted by your past viewing behavior.

Snapchat now lumps all professional creators, whether they're big news outlets or social media stars or video Show makers, into one Discover tab to the right of the camera. There also are aggregated Stories from hotspots on the Snap Map, Our Stories about events or holidays and topic-based aggregations from Snapchat Search. They're all shown as big preview tiles, with Discover publishers and creators you actively subscribe to at the top. Everything else is sorted by what Snapchat thinks you want to see based on what you've watched in the past.

You'll actually be able to influence the algorithm with what's almost a reversal of Facebook's "Like." You can still tap and hold on Discover content to subscribe to the author, but you'll also get the option to "see less" of this stuff. That way you can train the algorithm what to hide in the future.

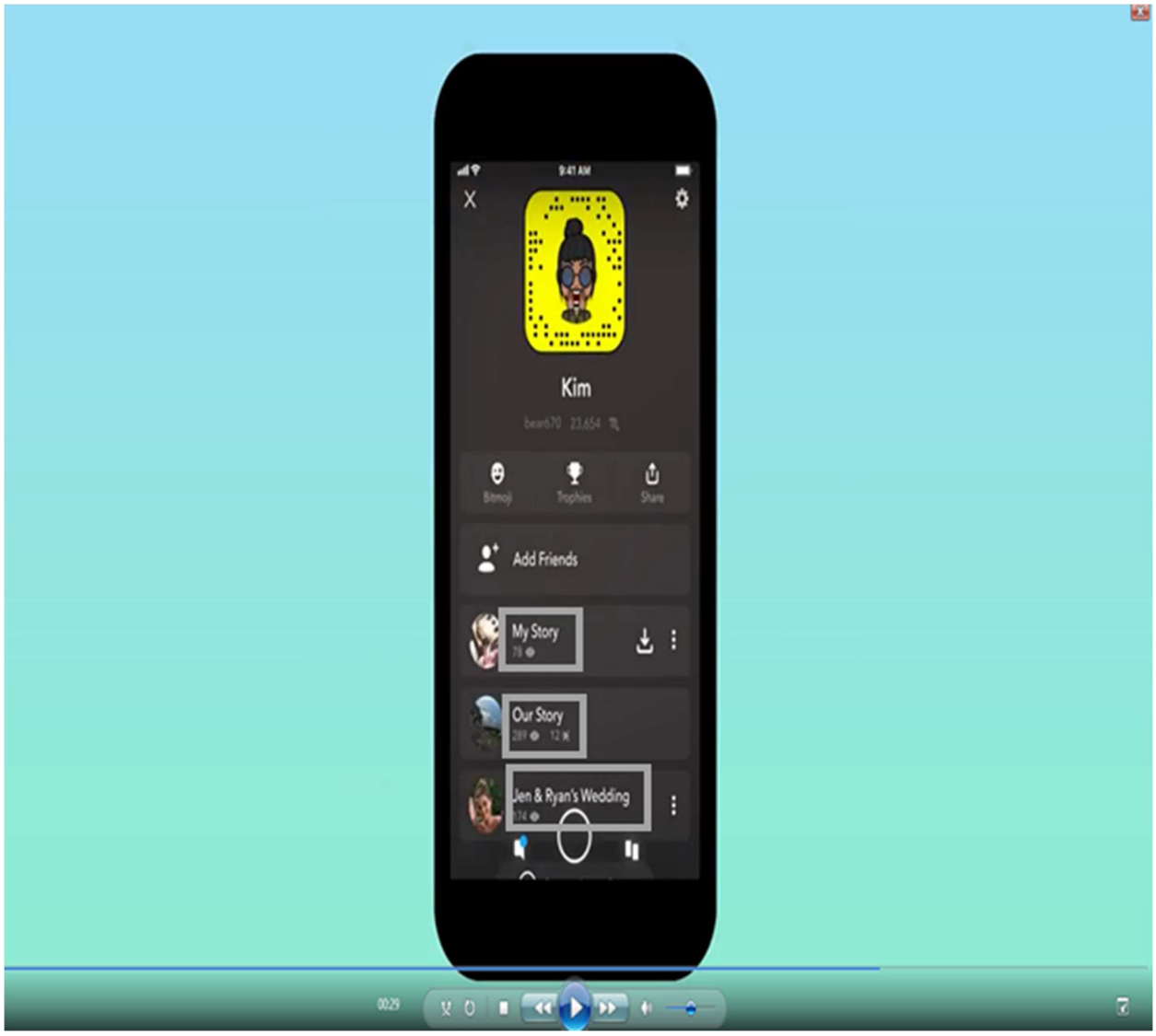
(*E.g.*, https://techcrunch.com/2017/11/29/snapchat-redesign/ (published November 29, 2017)).

5. Ranking Content

Now that we've labeled the content and figured out what content you'll likely enjoy, we can make sure you see that content in the right order: we call this "ranking."

We organize or rank content for Discover and Spotlight based on a combination of your preferences and the content tags. When we combine this, we hope that the algorithm succeeds in showing you the content you like the most. If that's not happening, you can help the algorithm by watching content you enjoy for a longer time, subscribing to creators you love, favoriting content, and hiding and skipping the content you don't like.

(*E.g.*, https://help.snapchat.com/hc/en-us/articles/8961631424020--How-We-Rank-Content-on-Discover).



(*E.g.,* https://www.youtube.com/watch?v=OQLtiuawh6w (retrieved July 23, 2018)).

67. As discussed above in connection with claim 17, Snap's Accused Instrumentality employs an electronic voting subsystem, necessarily having one or more data processing apparatus in order to track voting behavior, configured to enable a user, for example a third user, to electronically vote for (*e.g.,* by selecting to "pin" or "save" the content) an electronically available media submission (*e.g.,* a particular "snap") within the multimedia content (*e.g.,* a "story" made up of multiple snaps throughout a day) As can be seen below, the option to vote for electronically available multimedia content within a respective electronically available multimedia content is

made available to users via a variety of tracked behaviors (*e.g.,* by the third user's choices with respect to viewing, tapping and holding on, opting to see less of, favoriting, hiding, or skipping a "snap"). Snap Inc. uses function-specific subsystems, for example as discussed below.

So what exactly is the redesign? It puts all messages and Stories from friends to the left of the camera, sorted by who you talk to and view most. It revives auto-advance, so you can watch everyone's Stories in a row, but with best friends, not people who post the most first. And it puts to the right of the camera all premium publishers, pro social media stars you follow and aggregated stories from search and Snap Map in the Discover section, curated by humans and sorted by your past viewing behavior.

Snapchat now lumps all professional creators, whether they're big news outlets or social media stars or video Show makers, into one Discover tab to the right of the camera. There also are aggregated Stories from hotspots on the Snap Map, Our Stories about events or holidays and topic-based aggregations from Snapchat Search. They're all shown as big preview tiles, with Discover publishers and creators you actively subscribe to at the top. Everything else is sorted by what Snapchat thinks you want to see based on what you've watched in the past.

You'll actually be able to influence the algorithm with what's almost a reversal of Facebook's "Like." You can still tap and hold on Discover content to subscribe to the author, but you'll also get the option to "see less" of this stuff. That way you can train the algorithm what to hide in the future.

(*E.g.,* https://techcrunch.com/2017/11/29/snapchat-redesign/ (published November 29, 2017)).

5. Ranking Content

Now that we've labeled the content and figured out what content you'll likely enjoy, we can make sure you see that content in the right order: we call this "ranking."

We organize or rank content for Discover and Spotlight based on a combination of your preferences and the content tags. When we combine this, we hope that the algorithm succeeds in showing you the content you like the most. If that's not happening, you can help the algorithm by watching content you enjoy for a longer time, subscribing to creators you love, favoriting content, and hiding and skipping the content you don't like.

(*E.g.,* https://help.snapchat.com/hc/en-us/articles/8961631424020--How-We-Rank-Content-on-Discover).

68. Plaintiff has been damaged as a result of Defendant's infringing conduct. Defendant is thus liable to Plaintiff for damages in an amount that adequately compensates Plaintiff for such Defendant's infringement of the '576 Patent, *i.e.*, in an amount that by law cannot

be less than would constitute a reasonable royalty for the use of the patented technology, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

69. To the extent marking is required, VCA has complied with all marking requirements.

VI. JURY DEMAND

Plaintiff, under Rule 38 of the Federal Rules of Civil Procedure, requests a trial by jury of any issues so triable by right.

VII. PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests that the Court find in its favor and against Defendant, and that the Court grant Plaintiff the following relief:

a. Judgment that one or more claims of United States Patent No. 9,501,480 have been infringed, either literally and/or under the doctrine of equivalents, by Defendant;

b. Judgment that one or more claims of United States Patent No. 9,477,665 have been infringed, either literally and/or under the doctrine of equivalents, by Defendant;

c. Judgment that one or more claims of United States Patent No. 10,339,576 have been infringed, either literally and/or under the doctrine of equivalents, by Defendant;

d. Judgment that Defendant account for and pay to Plaintiff all damages to and costs incurred by Plaintiff because of Defendant's infringing activities and other conduct complained of herein, and an accounting of all infringements and damages not presented at trial;

e. That Plaintiff be granted pre-judgment and post-judgment interest on the damages caused by Defendant's infringing activities and other conduct complained of herein; and

f. That Plaintiff be granted such other and further relief as the Court may deem just and proper under the circumstances.

July 26, 2023

Respectfully Submitted,

/s/Steven G. Kalberg
David R. Bennett (IL Bar No.: 6244214)
Steven G. Kalberg (IL Bar No.: 6336131)
P.O. Box 14184
Chicago, Illinois 60614-0184
Telephone: (312) 291-1667
dbennett@directionip.com
Telephone: (847) 508-1294
Skalberg@directionip.com

Attorneys for Plaintiff
Virtual Creative Artists, LLC