IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

NTECH PROPERTIES, INC., a California Corporation, Plaintiff, vs. BYTEDANCE LTD., a Caymanian Corporation, BYTEDANCE PTE. LTD., a Singaporean Corporation, TIKTOK PTE. LTD., a Singaporean Corporation, TIKTOK INC., a California Corporation, Defendants.	))))))))))))))	Civil Action No. 24-cv-00130-JPG **DEMAND FOR JURY TRIAL**

AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff NTECH Properties, Inc. ("NTECH" or Plaintiff) files this Complaint for Patent Infringement and Demand for Jury Trial against ByteDance Ltd., ByteDance Pte. Ltd., TikTok Pte. Ltd., and TikTok Inc. (collectively, "Defendants") and alleges as follows:

THE PARTIES

1. NTECH is a California corporation, with its principal place of business and key employees, including NTECH's founder, at 611 Pearl Street, Ojai, California, 93023. NTECH was previously based in Oxnard, California.

2. ByteDance Ltd. is a Chinese multinational internet technology corporation. ByteDance Ltd. is incorporated in the Cayman Islands and is headquartered in Beijing at No. 23 Yard, North Third Ring West Road, Haidian District Beijing, 100098, Beijing, China, with a regular and established place of business in Austin, Texas.

3. ByteDance Pte. Ltd. is a Singaporean multinational internet technology corporation, with its principal place of business at 1, Raffles Quay, #26-10, Singapore, 048583.

4. TikTok Pte. Ltd. is a Singaporean multinational internet technology corporation with its principal place of business at 1, Raffles Quay, #26-10, Singapore, 048583, and/or 8 Marina View Level 43, Asia Square Tower 1, Singapore, 018960.

5. TikTok Inc. is a California multinational internet technology corporation with its headquarters at 5800 Bristol Parkway, Suite 100, Culver City, CA 90230, and principal place of business in Austin, TX 78205, and a registered agent for service of process at CT Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas 75201.

6. ByteDance Ltd. is the parent corporation and owner of TikTok Pte. Ltd. Defendants developed and distributes the accused technologies that are in various products and services ("Accused Technologies"), which are described below.

JURISDICTION AND VENUE

7. This action for patent infringement arises under the patent laws of the United States, 35 U.S.C. § 101 *et seq*. This Court has original jurisdiction over this controversy pursuant to 28 U.S.C. §§ 1331 and 1338.

8. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391(b) and (c) and 1400(b). Defendants are foreign corporations. Venue is proper as to a foreign defendant in any district. 28 U.S.C. § 1391(c)(3).

9. Defendants are subject to this Court's jurisdiction pursuant to due process and/or the Texas Long Arm Statute due to their substantial business in this State and District, including (a) its past infringing activities, (b) regularly doing or soliciting business in the State of Texas, and/or (c) engaging in persistent conduct and/or deriving substantial revenue from goods and services provided to customers in the State of Texas and this District. Upon information and belief, Defendants, directly or indirectly, participate in the stream of commerce that results in products, including the Accused Technologies, being made, used,

offered for sale, and/or sold in the State of Texas and this District and/or imported into the United States to the State of Texas and this District.

10. Additionally, this Court can exercise personal jurisdiction over Defendants in this action because Defendants have committed acts of infringement and/or inducement of infringement in this District, because NTECH's claims arise out of and relate to Defendants' acts of infringement and/or inducement of infringement in this District, and because the exercise of jurisdiction by this Court over Defendants in this action would be reasonable. Accordingly, Defendants have minimum contacts with Texas such that the maintenance of this action within this District would not offend traditional notions of fair play and substantial justice.

NTECH'S INNOVATIONS AND ASSERTED PATENTS

11. Based in Ojai, California, NTECH is an award-winning innovator in the development and use of "On Demand" technology.

12. Mr. Dwight Marcus, an innovator and entrepreneur in the field of television and media technology, founded NTECH in 2001. In 2005, he launched StimTV, providing the world's first truly interactive and personally tailored media presentation network. In 2007, StimTV was awarded a Technology and Engineering Emmy Award for "Outstanding Innovation and Achievement in Advanced Media Technology for the best use of 'On Demand' Technology".

13. In recognition of NTECH's innovation and expertise with respect to programming, presentation, and generation of media programming, the United States Patent and Trademark Office ("USPTO") awarded to NTECH a number of United States patents covering solutions to the presentation of audiovisual media programming.

14. On March 27, 2012, the USPTO issued U.S. Patent No. 8,145,704 (the "'704

Patent"), entitled "Method and system for providing media programming." The '704 Patent lists Mr. Dwight Marcus as its inventor and states that it was assigned to NTECH. Attached hereto as Exhibit 1 is a true and correct copy of the '704 Patent.

15. The '704 Patent generally discloses a method and system of generating media programming via an aggregator that receives data relating to a plurality of media streams, accesses user information, determines a temporal sequence of media programming comprising the media streams, accesses the media streams, and provides to the client media programming in the determined temporal sequence.

16. On December 15, 2015, the USPTO issued U.S. Patent No. 9,215,261 (the "'261 Patent"), entitled "Method and system for providing media programming." The '261 Patent lists Mr. Dwight Marcus as its inventor and states that it was assigned to NTECH. Attached hereto as Exhibit 2 is a true and correct copy of the '261 Patent.

17. The '261 Patent generally discloses a method of generating personalized media programming via an aggregator that delivers to a client device media feeds, receives from the client device a selection of media feeds, provides to a publisher an identification of the selected media feeds and client information, and initiates individual customized media programming.

18. On March 20, 2018, the USPTO issued U.S. Patent No. 9,923,947 (the "'947 Patent"), entitled "Method and system for providing media programming." The '947 Patent lists Mr. Dwight Marcus as its inventor and states that it was assigned to NTECH. Attached hereto as Exhibit 3 is a true and correct copy of the '947 Patent.

19. The '947 Patent generally discloses a method of generating customized media programming via an aggregator that provides a client device a list of media feeds, receives from the client device a selection of media feeds, provides to a publisher the media feed

selection from which the publishes analyzes user information, insert elements into media programming, provides to the client device media programming, and dynamically updates the element in the media programming.

20. On November 11, 2014, the USPTO issued U.S. Patent No. 8,886,753 (the "'753 Patent"), entitled "Method and system for providing media programming." The '753 Patent lists Mr. Dwight Marcus as its inventor and states that it was assigned to NTECH. Attached hereto as Exhibit 4 is a true and correct copy of the '753 Patent.

21. The '753 Patent generally discloses a method of generating media programming via an aggregator that delivers to a client a list of feeds, receives from the client a selection of the feeds, provides a publisher with the feed selection from which the publisher collects client information, and provides to the client individual customized media programming.

22. On April 19, 2016, the USPTO issued U.S. Patent No. 9,317,597 (the "'597 Patent"), entitled "Method and apparatus for efficient, entertaining information delivery." The '597 Patent lists Mr. Dwight Marcus as its inventor and states that it was assigned to NTECH. Attached hereto as Exhibit 5 is a true and correct copy of the '597 Patent.

23. The '597 Patent generally discloses a method for efficient, entertaining information delivery that includes a processor that receives a user's request for a stream of media, stores clips in a non-transitory storage medium, generates a unique stream of concatenated clips according to the user's viewing history, streams the clips to the user upon an information display with viewing areas, and generates new clips according to the user's selection of visual representations of the clips.

24. On October 28, 2014, the USPTO issued U.S. Patent No. 8,875,185 (the "'185 Patent"), entitled "Method and apparatus for efficient, entertaining information delivery." The

’185 Patent lists Mr. Dwight Marcus as its inventor and states that it was assigned to NTECH. Attached hereto as Exhibit 6 is a true and correct copy of the ’185 Patent.

25. The ’185 Patent generally discloses a method for efficient, entertaining information delivery that includes a processor that receives a user’s request for a stream of media, stores clips in a non-transitory storage medium, generates a unique stream of concatenated clips according to the user’s viewing history, streams the clips to the user upon an information display with viewing areas, and generates new clips according to the user’s selection of visual representations of the clips.

26. The ’704, ’261, ’947, ’753, ’597, and ’185 Patents are collectively referred to herein as the “Asserted Patents.”

27. The Asserted Patents are not abstract and specifically claim inventive concepts that represent significant improvements over data processing, audiovisual programming and information delivery. Traditionally, data would need to be combined and aggregated through manual analysis and insertion by a user. Before NTECH’s inventions, conventional systems did not have a means of providing media programming that was intuitive and customized in the manner set forth in the claims of the Asserted Patents. The Asserted Patents disclose various methods and systems that improve upon existing means of providing audiovisual programming and information delivery by, for example, implementing specific architectures and detailed requirements for systems that improve efficiency in systems for editing, customizing and personalizing content. Moreover, the Asserted Patents include concrete limitations that provide a specific solution to the problems, including various server architectures that interact with specific components, such as a processor, aggregator, publisher, non-transitory storage medium, information display, and user device.

28. Conventional approaches to information delivery relied on users to examine and select from a list of retrieved, potentially relevant items and inefficient and non-customizable systems and methods for information delivery. Also, conventional approaches to audiovisual programming relied on human editors to make final editing decisions, including the ultimate selection of individual clips and transitions, and review of the content of clips to determine of appropriate subject matter in a desired sequence. The Asserted Patents introduce novel and inventive concepts not found in then-conventional technology, including, but not limited to, discrete systems that allowed for automated, smoothly-transitioning, and subject-matter appropriate audiovisual programming.

29. The technology disclosed in the Asserted Patents was not available in the art at the time of the inventions because conventional audiovisual programming methods did not have a means of providing customized and intuitive media programming. In one example, the claimed inventions improved the performance of the system by including specific components and configurations in the claims of the Asserted Patents, including, but not limited to the application of an aggregator in the different specific manners set forth in the claims. For example, the claimed inventions overcome the previous inability to curate and present audiovisual clips containing subject matter tailored towards each individual end user at particular times. Existing systems did not have the ability to adapt in real-time to meet the changing demands of a user in the manner set forth in the claims, and simultaneously continuously present relevant media programming. As another example, the claimed inventions further overcome existing systems' previous inability to provide control to a user over the subject matter, duration, broadcast time and sequence of audiovisual programming.

30. The claimed inventions of the '947 Patent solves problems relating to the

generation of intuitive and personalized media programming. For example, the claims of the '947 Patent improve computer functionality by automating audiovisual programming in a manner where the claimed inventions overcome computers' previous inability to edit audiovisual clips such that the user is shown a smooth audiovisual transition between adjoining clips, and which comprise publishers to review the content of clips in order to determine the appropriate subject matter of clips to be displayed in a desired sequence. Additionally, the claims recite generating media programming via a server architecture which facilitates bilateral communication between an aggregator and a client device by providing from the aggregator to the client device a list of media feeds, receiving from a client device a selection input, providing to a publisher from the aggregator selections of data, analyzing the selection, inserting variable elements into the media programming according to the selection, and providing dynamically updated media programing to the client device. The claims of the '947 Patent are inventive because they describe, amongst other things, a novel request-and-response client server architecture that uses specific data signals to inform media programming, including positioning, frequency, type, demographic targeting, geo-targeting and psychographic targeting and these data signals are updated regularly and in real time to create a dynamic and intuitive media programming selection.

31. The technology disclosed in the '947 was not available in the art at the time of the inventions because conventional audiovisual programming methods did not have a means of providing customized and intuitive media programming. The claimed inventions overcome the previous inability to curate and present audiovisual clips containing subject matter tailored toward each individual end user at particular times. Existing systems did not have the ability to adapt in real-time to meet the changing demands of a user in the manner set forth in the claims,

and simultaneously continuously present relevant media programming. The claimed inventions further overcome existing systems' previous inability to provide to a user control over the subject matter, duration, broadcast time and sequence of audiovisual programming.

32. The claimed inventions of the '261 Patent solves problems relating to the generation of intuitive and personalized media programming. For example, the claims of the '947 Patent improve computer functionality by automating audiovisual programming in a manner that the claimed inventions overcome computers' previous inability to edit audiovisual clips such that the user is shown a smooth audiovisual transition between adjoining clips and clips pertaining to appropriate subject manner. Additionally, the claims recite generating media programming via a server architecture which facilitates bilateral communication between an aggregator and a client device by receiving from a client device selection input, providing to a publisher from the aggregator selections of data, and generating media programming comprising media elements selected from the publisher, which (i) correspond to the user's selection and the user's information, and (ii) are ordered and concatenated according to the user's selection and the user's information. The claims of, at least, the '261 Patent describe, amongst other things, a novel method of generating media programming using media tagging involving associating media elements with various tags and subsequently using a user's previous media selection to create a connection between media tagging and user preferences. This generates pre-selected and individualized media programming. Further, the claims of, at least, the '261 Patent discloses, amongst other things, using templates in a novel way to assemble media elements in a sequence that is uniquely pleasing to each end user.

33. The technology disclosed in the '261 Patent was not available in the art at the time of the inventions because conventional audiovisual programming methods did not have a

means of providing customized and intuitive media programming. The claimed inventions overcome the previous inability to curate and present audiovisual clips containing subject matter tailored towards each individual end user at particular times. Existing systems did not have the ability to adapt in real-time to meet the changing demands of a user in the manner set forth in the claims, and simultaneously continuously present relevant media programming. The claimed inventions further overcome existing systems' previous inability to provide to a user control over the subject matter, duration, broadcast time and sequence of audiovisual programming.

34. The claimed inventions of the '704 Patent solves problems relating to the generation of intuitive and personalized media programming. For example, the claims of the '704 Patent improve computer functionality by automating audiovisual programming in a manner that the claimed inventions overcome computers' previous inability to edit audiovisual clips such that the user is shown a smooth audiovisual transition between adjoining clips and clips pertaining to appropriate subject manner. Additionally, the claims recite server architectures which, amongst other limitations, comprise aggregators to select appropriate clips and transitions in order to provide the user smooth audiovisual transitions, and which comprise publishers to review the content of clips in order to determine the appropriate subject matter of clips to be displayed in a desired sequence. Moreover, the claims of, at least, the '704 Patent disclose, amongst other things, a novel request-and-response system architecture that improves upon existing systems for generating media programming by leveraging computer components, such as an aggregator, processor, and associated publishers, with algorithms to assemble media streams in a temporal sequence based on the user's selections and the user's data.

35. The technology disclosed in the '704 Patent was not available in the art at the

time of the inventions because conventional audiovisual programming methods did not have a system with a means of providing customized and intuitive media programming as efficiently as what is presented in the claims. The claimed inventions overcome the previous inability to curate and present audiovisual clips containing subject matter tailored towards each individual end user at particular times. Existing systems did not have the ability to adapt in real-time to meet the changing demands of a user in the manner set forth in the claims, and simultaneously continuously present relevant media programming. The claimed inventions further overcome existing systems' previous inability to provide to a user control over the subject matter, duration, broadcast time and sequence of audiovisual programming.

36. The claimed inventions of the '753 Patent solves problems relating to the generation of intuitive and personalized media programming. For example, the claims of the '753 Patent improve computer functionality by automating audiovisual programming in a manner that the claimed inventions overcome computers' previous inability to edit audiovisual clips such that the user is shown a smooth audiovisual transition between adjoining clips and clips pertaining to appropriate subject manner. Additionally, the claims recite improving the performance of a computer system in generating media programming via a server architecture which facilitates bilateral communication between an aggregator and a client device by delivering from an aggregator to a client device a list of feeds, receiving from a publisher a selection input, collecting from the aggregator client information, providing to the client media programming responsive to the feed selection and including media elements selected, ordered, and concatenated with the feed and corresponding to the user's information.

37. The technology disclosed in the '753 Patent was not available in the art at the time of the inventions because conventional audiovisual programming methods did not have a

means of providing customized and intuitive media programming. The claimed inventions overcome the previous inability to curate and present audiovisual clips containing subject matter tailored towards each individual end user at particular times. Existing systems did not have the ability to adapt in real-time to meet the changing demands of a user in the manner set forth in the claims, and simultaneously continuously present relevant media programming. The claimed inventions further overcome existing systems' previous inability to provide to a user control over the subject matter, duration, broadcast time and sequence of audiovisual programming.

38. The claimed inventions of the '185 Patent solved problems relating to the delivery and creation of information in an efficient and accurate manner. For example, the claims of the '185 Patent describe interactions between servers and databases to create a transition of related clips, specific to the requests of a user, allowing for an accurate and consistent stream of relevant information. The '185 Patent discloses methods of utilizing computer technology to adapt the display of media programming to each computer device for efficiency and accuracy of the displayed content, thereby improving the performance of the computer system. Display features are not applied in a generalized uniform way, rather, each display feature is adapted based on its compatibility with each device type, resulting in a stylistic transition of bespoke media for each end user. The '185 Patent improves computer functionality by delivering users information in a manner that overcomes computers' previous inability to provide information to users in a flexible, searchable manner that offers the user control to select their desired content. The '185 Patent claims recite, for example, server architectures which comprise a processor to receive a user's request for a stream of media and a user's selection of media, non-transitory memory to store media clips, and a processor to

generate a unique stream of media clips to be displayed to the user on an information display.

39. The ’185 Patent also improves efficiency in media delivery by disclosing methods of displaying to a user an overlay of varying related clips, which a user may engage with, and natural transitions created with templates. These templates determine which clips will be presented and how they will be presented in the future, allowing for an efficient and accurate user experience.

40. The claimed inventions of the ’597 Patents solve problems relating to the delivery of information in an efficient and accurate manner. For example, the claims of the ’597 Patent describes interactions between servers and databases to create a transition of related clips, specific to the requests of a user, allowing for an accurate and consistent stream of relevant information, and thereby improving the performance of the systems employing these systems. The ’597 Patent discloses methods of utilizing computer technology to adapt the display of media programming to each computer device for efficiency and accuracy of the displayed content. Display features are not applied in a generalized uniform way, rather, each display feature is adapted based on its compatibility with each device type, resulting in a stylistic transition of bespoke media for each end user. The’597 Patent improves computer functionality by delivering users information in a manner that overcomes computers’ previous inability to provide information to users in a flexible, searchable manner that offers the user control to select their desired content. Additionally, the ‘597 Patent claims recite a novel request-and-response server architecture which leverage video servers with computer components including computing devices, databases, and templates to facilitate bilateral communication between the server and user’s computing device. The novel server architecture also associates video clips, including transitional clips intelligently according to a user’s search

results in order to generate video programming according to various template variables including user information, temporal relationships amongst video clips, and style requirements.

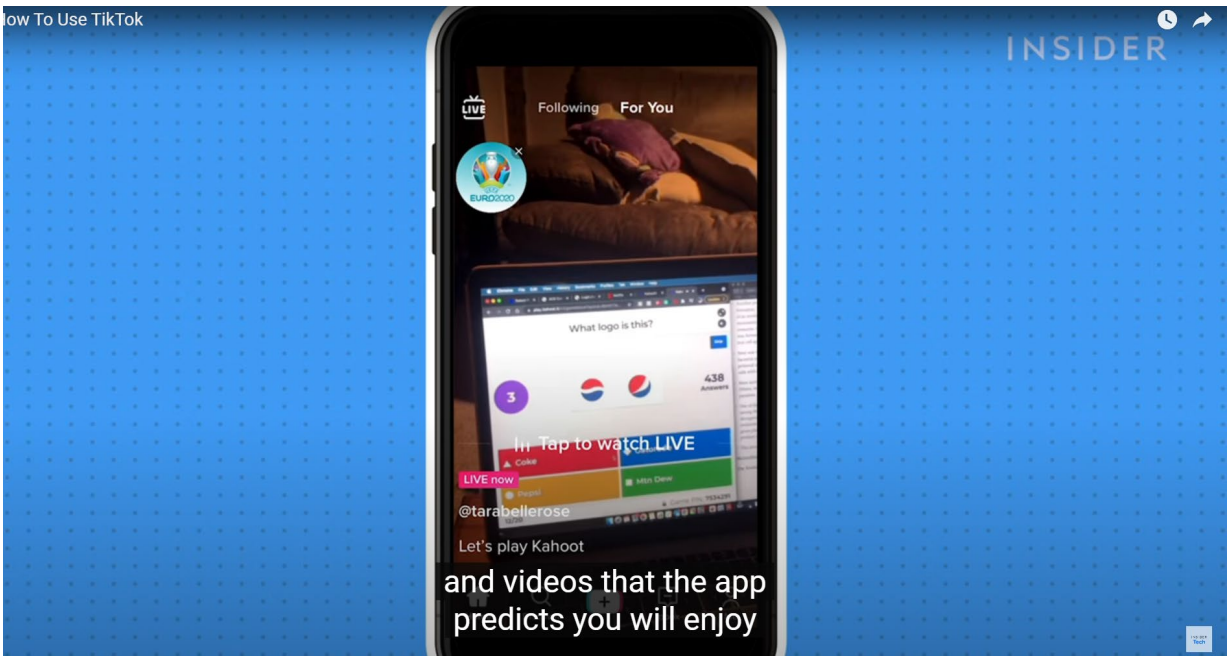
41. The '597 Patent also improves efficiency in media delivery by disclosing methods of displaying to a user an overlay of varying related clips, which a user may engage with, and natural transitions created with templates. These templates determine which clips will be presented and how they will be presented in the future, allowing for an efficient and accurate user experience.

DEFENDANTS' ACCUSED TECHNOLOGIES

42. Defendants infringe in this District the Asserted Patents found in the Accused Technologies, including, at least, the TikTok App, the TikTok Website, and TikTok's servers and software supporting the TikTok App and Website. Ex. 7 (Screenshot of App Store listing TikTok and describing TikTok Pte. Ltd. as the "Seller").

43. The Accused Technologies operate as a video-sharing social networking platform owned by ByteDance. Defendants launched the Accused Technologies in 2017 for iOS and Android and the Accused Technologies have been widely used across the United States. The Accused Technologies offer users a range of features, including the ability to create, share, and watch various short form videos of themselves and others users. Ex. 8, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6. The Accused Technologies generate these short form videos either in response to a specific user request or as an independent pre-selected suggestion. *Id.* at 8 (describing how videos appear

on a user's TikTok feed);



see also https://www.youtube.com/watch?v=EomghrtdSdg at 0:43.

44. The Accused Technologies' independent pre-selected suggestions are made possible by algorithms which consider variables including user information, a user's previous interaction with the mobile app, location, and much more. *See* Ex. 9 at 4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you (describing why a video is recommended on a user's "For You" feed, including because "[t]his video is popular in your country, "[t]his video is longer, and you seem to like longer videos," and "[y]ou're following this creator," and stating "you'll see a variety of videos while we learn your preferences to launch your new personalized feed").

45. The Accused Technologies present these short form videos (whether in response to a user's request or as an independent suggestion) in the form of associated video clips also known as streams or feeds. The Accused Technologies include a "For You" feed showcasing the pre-selected suggestions personalized to each user. Ex. 8 at 4-5,

https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6 (describing the "For You" feed, which "amasses popular content from across TikTok, similar to Instagram's Explore page.").

46. The Accused Technologies use metadata to associate a first video clip with a second video clip, resulting in a stream of media presented to the user on their "For You" feed. The stream of media is made up of video clips that are varied by factors including genre, length, title, description, features, and date. The stream is also made up of transitional clips, including commercials and advertisements, that are associated with the selected first video clips (i.e. commercials and advertisements that are uniquely selected to be presented to the user according to the video clips that are selected to be part of the stream on the user's "For You" feed). *See* Ex. 8 at 4-5, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6; *see also id.* at 9-10 (describing "landing pages" containing streams of videos made available according to associated hashtags).

47. The Accused Technologies also include a display feature that delivers a display of dynamic media programming known as the "Animated Thumbnail" feature, which a user may adapt. *See* Ex. 17 at 9, https://support.tiktok.com/en/using-tiktok/exploring-videos/accessibility-for-watching-videos.

DEFENDANTS' INFRINGEMENT OF NTECH'S PATENTS

48. Defendants have infringed and continue to infringe one or more claims of each of the Asserted Patents by engaging in acts that constitute infringement under 35 U.S.C. § 271, including but not necessarily limited to making, using, selling, and/or offering for sale, in this District and elsewhere in the United States, and/or importing into this District and elsewhere in

the United States the Accused Technologies. Ex. 7 (screenshot of App Store listing TikTok and describing TikTok Pte. Ltd. as the "Seller").

49. In addition to directly infringing the Asserted Patents pursuant to 35 U.S.C. § 271(a), literally and/or under the doctrine of equivalents, Defendants indirectly infringe all the Asserted Patents under 35 U.S.C. §§ 271(b) and (c), literally and/or under the doctrine of equivalents. Defendants induce infringement of the Asserted Patents by instructing, directing and/or requiring others, including its customers, purchasers, users, and developers, to meet claim elements, literally and/or under the doctrine of equivalents, of the Asserted Patents. Defendants contributorily infringe the Asserted Patents by making and supplying the TikTok App, TikTok Website and supporting servers and software that are components in an infringing system with components from manufacturers, customers, purchasers, users, and developers that together meet all claim elements in the Asserted Patents, literally and/or under the doctrine of equivalents.

50. Defendants had direct notice of the Asserted Patents and their infringement of the Asserted Patents by February 22, 2024, when NTECH sent Defendants a letter identifying the Asserted Patents and describing Defendants' infringement. Ex. 11.

COUNT I
(Direct Infringement of the '704 Patent)

51. NTECH repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

52. Defendants have infringed and continue to infringe the '704 Patent, including, at least, exemplary Claim 19, in violation of 35 U.S.C. § 271(a) by, among other things, making, using, importing, selling, and offering for sale in the United States the infringing technology that is used in the Accused Technologies.

53. Defendants' infringement is based upon literal infringement, infringement under the doctrine of equivalents, or both.

54. Defendants' acts of patent infringement Accused Technologies have been without the permission, consent, authorization, or license of NTECH.

55. The Accused Technologies employ all elements of exemplary Claim 19. They are systems for providing media programming, comprising: an aggregator having a memory and a processor, the processor adapted for presenting a plurality of media streams to a user, receiving a signal having data indicative of a selection of one of the media streams, and providing an output signal including data indicative of the selection and of user data; and a publisher having a memory and a processor, the publisher processor adapted to receive the output signal from the aggregator, and responsive to the data indicative of the selection and of user data, access from the memory at least one algorithm for selection and sequencing of media elements, select a temporal sequence of media programming comprising the selected media stream and other media elements based on an output of the algorithm using the selection and the user data, assemble the selected media stream and the other media elements in the temporal sequence.

56. For example, the Accused Technologies are a system for providing media programming. The aggregators in the Accused Technologies include the front-end servers that support its app and host its website. The Accused Technologies has these front-end servers located in the cloud, and they service the users that accesses webpages and mobile apps. The Accused Technologies use the cloud for its computing and storage needs, including databases, analytics, recommendation engines, video transcoding, and more. *See* Ex. 12 at 2-3, https://medium.com/@entrustech/tiktok-the-magic-behind-the-screen-9346a5b718f4 (referring

to the servers used by the Accused Technologies).

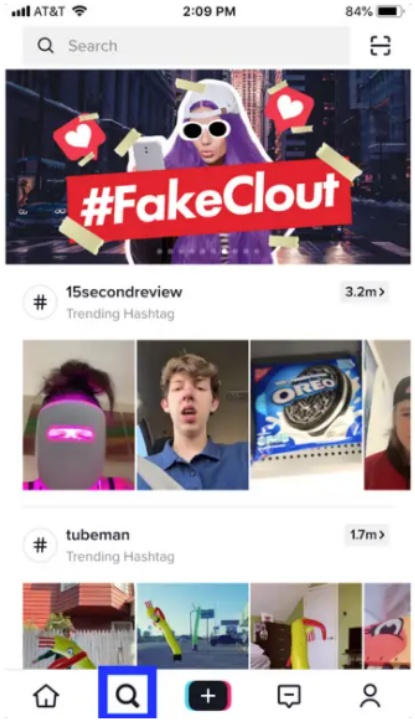
In our last post, we introduced TikTokTruths and explored the facts about some of the most common misperceptions about how TikTok handles data related to things like location and GPS, keystrokes, and biometric information. In this next post in the series, we're updating the name of the series to TikTok Facts, and examining how we keep people's personal information secure as well as our approach to data storage.

We are committed to safeguarding our community and have a global workforce dedicated to ensuring the reliability, safety, and security of our platform. That includes a range of controls, authorization approval protocols, and localized storage mechanisms to restrict access to TikTok personal information. We store user data described in the What Information We Collect section in servers located in the United States, Singapore, and Malaysia. TikTok user data is protected by strong physical and logical security controls, including gated entry points, firewalls, and intrusion detection technologies.

See Ex. 13 at 1-2, https://newsroom.tiktok.com/en-us/tiktok-facts-how-we-secure-personal-information-and-store-data ("TikTok Facts" webpage which refers to TikTok's servers and storage facilities).

57. The front-end servers acting as aggregators have memory and processors adapted for presenting a plurality of media streams to a user.

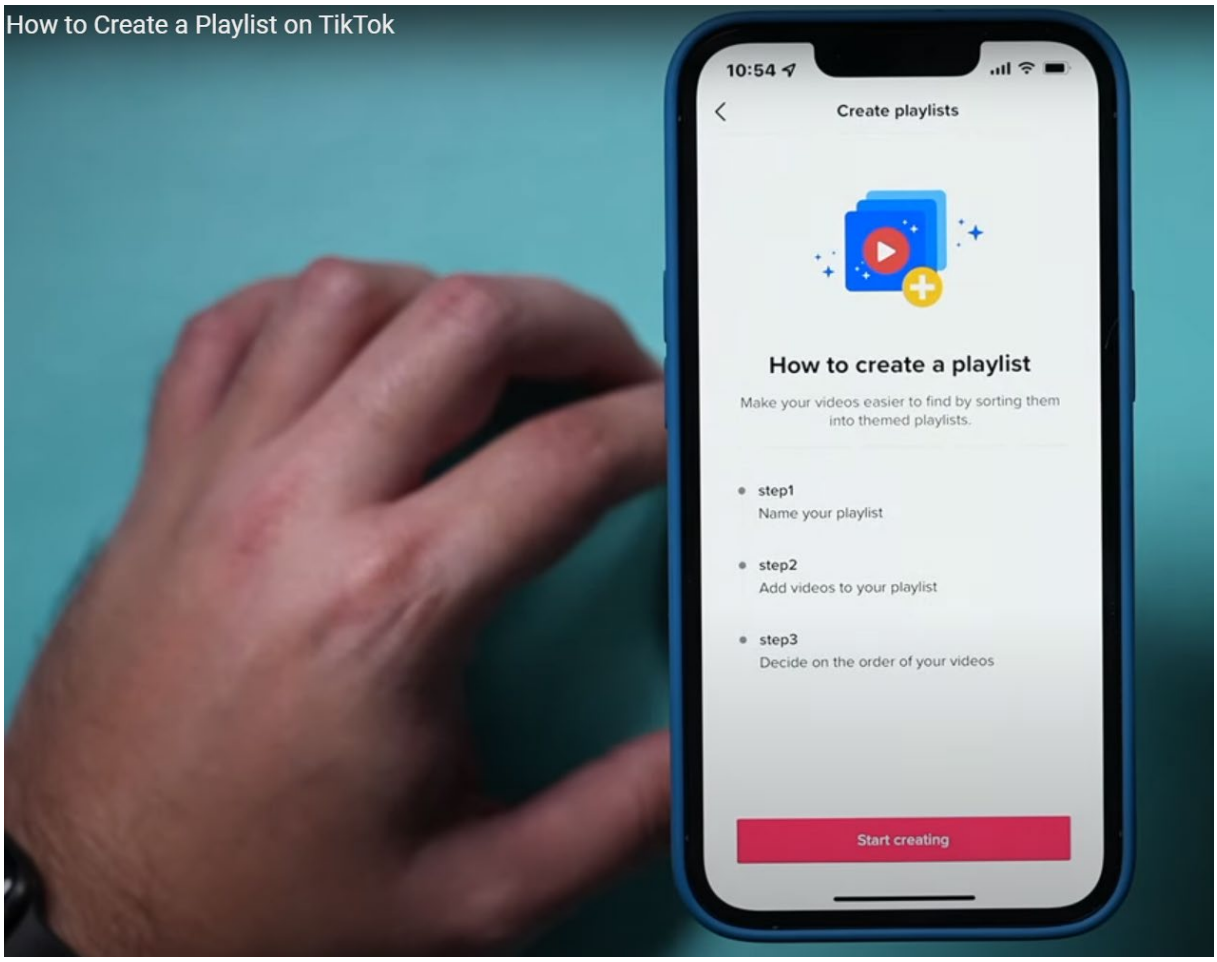
The second tab in the menu running across the bottom of TikTok, represented by a magnifying glass, is where you'll find what's trending on the app. This is TikTok's bread and butter: it's where the latest viral trends are found, and associated hashtags are tracked.

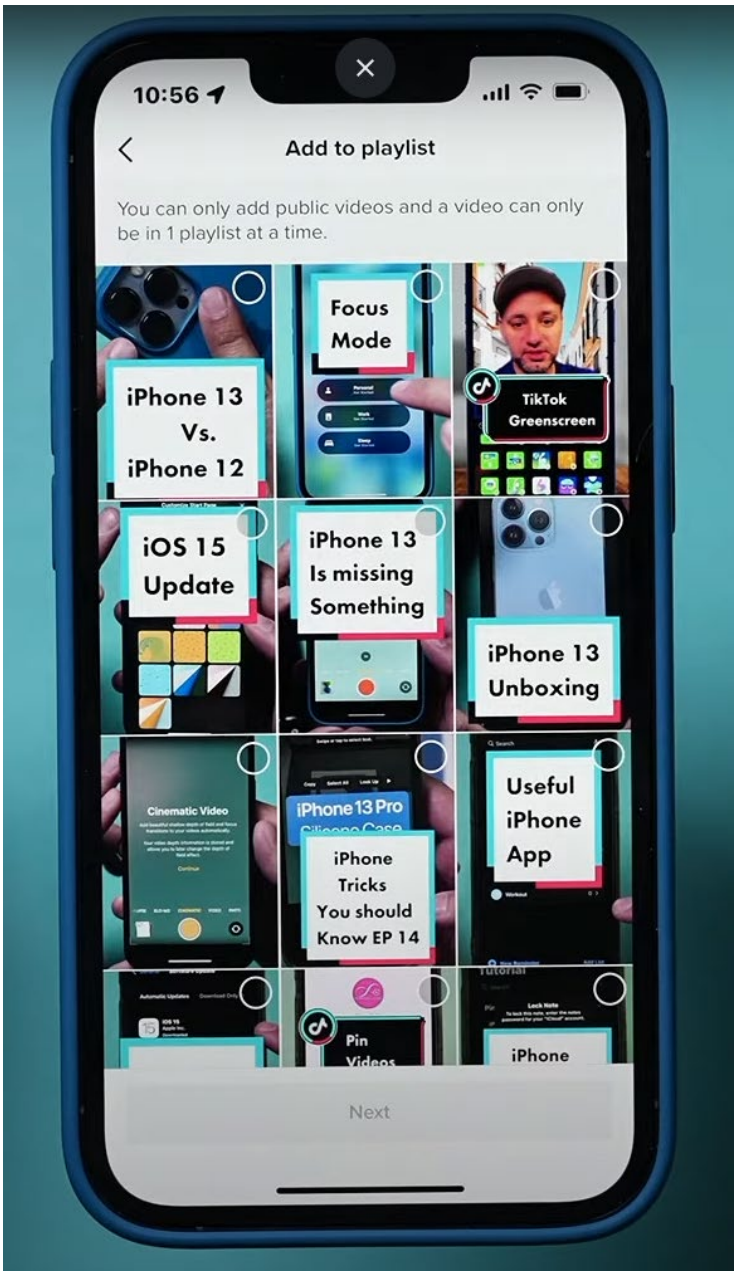


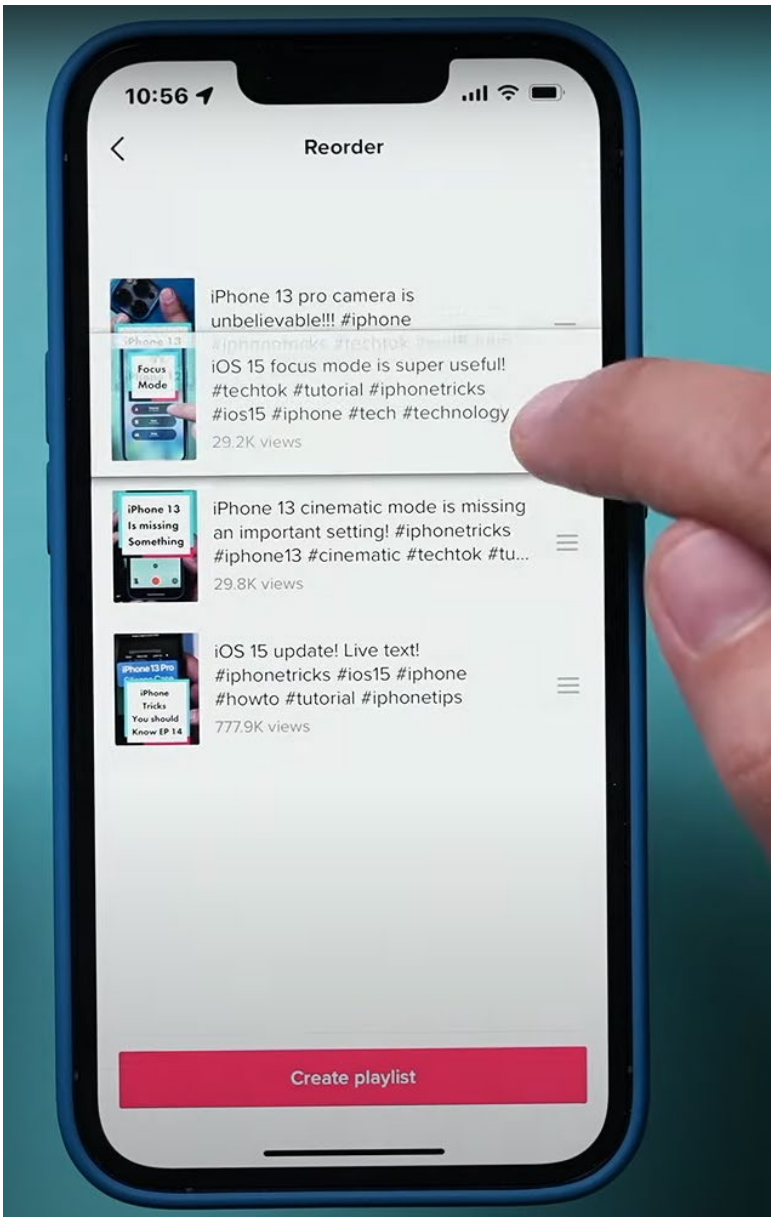
TikTok/Business Insider

See Ex. 8 at 5-6, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6 (showing a plurality of media streams on TikTok, presented to a user).

58. Further, the front-end servers receive signals from a user indicating the user's selection of one of the media streams that the front-end servers present to the user. Then front-end servers send an output signal indicating the user's selection and user data to the publishers (i.e. TikTok algorithm servers), which have a memory and a processor. An example of sending an output signal indicating a user's selection and user data is when a user creates a playlist.


How to Create a Playlist on TikTok
10:54
Create playlists
How to create a playlist
Make your videos easier to find by sorting them into themed playlists.
step1
Name your playlist
step2
Add videos to your playlist
step3
Decide on the order of your videos
Start creating


10:56
Add to playlist
You can only add public videos and a video can only be in 1 playlist at a time.
iPhone 13 Vs. iPhone 12
Focus Mode
TikTok Greenscreen
iOS 15 Update
iPhone 13 Is missing Something
iPhone 13 Unboxing
Cinematic Video
iPhone 13 Pro
iPhone Tricks You should Know EP 14
Useful iPhone App
Pin Videos
iPhone
Next



See https://www.youtube.com/watch?v=StNbxwqnKmc at 2:30 (showing a user curating a playlist on TikTok).

59. In response, the Accused Technologies user front-end servers to determine a sequence of media programming comprising the user's selected media streams, based on user information. The front-end server may have pre-existing data relating to the user that includes viewing history, user preference data, search queries or patterns.

60. TikTok's publishers (*i.e.*, algorithm servers) assemble media elements into a temporal sequence of media programming (*i.e.*, video stream) through the use of its Recommendation Engine. TikTok's Recommendation Engine is made up of algorithms which filter and select a temporal sequence of media elements based on each individual user profile, sequence of user actions, whom they are following, what is trending, which produces weighted output. This is presented in a user's "Following" feed or "For You" feed, which lines up a queue of videos based on the user's data (including their viewing history and demographics) and the user's selection. *See* Ex. 8 at 3-5, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6 (showing TikTok's "Following" and "For You" feeds).

Why a video is recommended on your For You feed

At TikTok, we want to help you understand why certain videos appear on your For You feed. That's why we share this information on each video in the feed.

To learn why a video is recommended to you:
1. In the TikTok app, tap the **Share** button on the side of a video in the **For You** feed.
2. Tap **Why this video**. We'll list some reasons why a video shows up on your feed, such as:
   - You commented on, liked, shared, or watched similar videos
   - This video is popular in your country
   - This video was posted recently
   - This video is longer, and you seem to like longer videos
   - You're following this creator

Keep in mind, if you've recently refreshed your For You feed, you'll see a variety of videos while we learn your preferences to launch your new personalized feed.

Learn more about why a video is recommended in For You.

Ex. 9 at 4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you (an article on TikTok's help center describing how TikTok's recommendation engine curates programming for a user).

61. To the extent any components of the claimed systems are provided by Defendants' users, Defendants directly infringe by acting as the final assembler of the infringing system when it configures the final infringing system at the direction of their users.

Defendants are the final assembler such that they infringe the claims because users are required to accept Terms of Services that gives Defendants control over the information provided by the customer before a customer can access and use the Accused Technologies. Ex. 14 at 3, https://www.tiktok.com/legal/terms-of-service/en (Section 3 of TikTok's Terms of Service demonstrating TikTok's control over the final infringing system, including by amending the terms of service, requiring the user's acceptance of the Terms, and conditioning access and use of the Accused Technologies upon acceptance of the Terms by requiring the user to "stop accessing or using the Services" if the user does not "agree to the new Terms"); *id.* at 4 (Section 4 of TikTok's Terms of Service, stating, "We reserve the right to disable your user account at any time, including if you have failed to comply with any of the provisions of these Terms, or if activities occur on your account which, ***in our sole discretion***, would or might cause damage to or impair the Services.") (emphasis added); *id.* at 4-6 (Section 5 of TikTok's Terms of Service, stating, "You may not: access or use the Services if you are not fully able and legally competent to agree to these Terms," and demonstrating TikTok configures the final infringing system by stating users may not "interfere with or attempt to interfere with the proper working of the Services, disrupt our website or any networks connected to the Services, or bypass any measures we may use to prevent or restrict access to the Services. . . . We reserve the right, at any time and without prior notice, to remove or disable access to content at our discretion for any reason or no reason.").

62. To the extent Defendants' users perform any steps of the claimed methods, Defendants further directly infringe by directing and controlling the infringing systems, and obtaining benefits from their control of the systems as a whole. For example, TikTok's Terms of Service demonstrate Defendants' direction and control of users to use the Accused

Technologies in an infringing manner, including by directing users to make an account with TikTok and making use of the Accused Technologies conditional upon compliance with the Terms. Ex. 14 at 3-4, https://www.tiktok.com/legal/terms-of-service/en (Section 4 of TikTok's Terms of Service demonstrating TikTok's direction and control over its users use of the Accused Technologies by including in its Terms of Service instruction to create an account and provide TikTok with user data, and reserving the right to withhold user data upon deletion of an account); *id.* at 7 (Section 7 of TikTok's Terms of Service demonstrating TikTok's benefit over the user's use of the Accused Technologies, stating "[y]ou acknowledge and agree that we may generate revenues, increase goodwill or otherwise increase our value from your use of the Services, including, by way of example and not limitation, through the sale of advertising, sponsorships, promotions, usage data and Gifts"); *id.* at 3 (Section 3 of TikTok's Terms of Service conditioning access and use of the Accused Technologies upon acceptance of the Terms and requiring the user to "stop accessing or using the Services" if the user does not "agree to the new Terms.").

63. Further, Defendants directly infringe because they direct and control the users when Defendants instruct users on how to operate the Accused Technologies in an infringing manner via Help Center articles. *See* Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you (TikTok's Help Center article, directing and controlling the user to manage their "For You" feed, including by sharing feedback on videos, refreshing their "For You" feed, and using filter video keywords); Ex. 24 at 10-11, https://support.tiktok.com/en/using-tiktok/exploring-videos/sharing (TikTok's Help Center article, directing and controlling the user to operate and share a tagging system (hashtags); Ex. 17 at 1, https://support.tiktok.com/en/using-tiktok/exploring-videos/accessibility-for-watching-

videos (TikTok's Help Center article directing and controlling the user to configure the settings and systems preferences of their device, to enable the infringing display of media programming).

64. Defendants' infringement of the '704 Patent has injured and continues to injure NTECH in an amount to be proven at trial, but not less than a reasonable royalty. Defendants' infringement has caused and is continuing to cause irreparable injury to NTECH, and NTECH will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

65. Pursuant to 35 U.S.C. §§ 283, 284, and 285, NTECH is entitled to injunctive relief, damages, and attorney's fees and costs.

COUNT II
(Indirect Infringement of the '704 Patent)

66. NTECH repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

67. As set forth with respect to Count I, Defendants directly infringe the '704 Patent. In addition to directly infringing the '704 Patent, Defendants have also induced and continue to induce infringement of one or more claims of the '704 Patent under 35 U.S.C. § 271(b). Furthermore, Defendants have contributorily infringed and continue to contributorily infringe one or more claims of the '704 Patent under 35 U.S.C. § 271(c).

68. Defendants knowingly and actively aided and abetted the direct infringement of the '704 Patent by instructing and encouraging its customers, users, and developers to use the Accused Technologies. Such instructions and encouragement include, but is not limited to, advising third parties to use the Accused Technologies in an infringing manner, providing a mechanism through which third parties may infringe the '704 Patent, by advertising and

promoting the use of the Accused Technologies in an infringing manner, and distributing guidelines and instructions to third parties on how to use the Accused Technologies in an infringing manner. Further examples of this instruction and encouragement includes TikTok's help and customer service sections on its website and mobile application, which it actively updates and maintains. It covers in-depth aspects of operating the Accused Technologies in an infringing manner including detailed instruction regarding all aspects of the "For You" and "Following" feed. *See* Ex. 9, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you.

69. Further, TikTok advertises on its website the Accused Technologies and infringing features, and instructs consumers on how to configure and use the Accused Technologies in an infringing manner, as depicted below. *See* Ex. 15 at 1-11, https://support.tiktok.com/en/using-tiktok (showing TikTok's online Help Center, where a customer is directed to TikTok's instructional articles); Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you (instructing the customer on how to manage their "For You" feed, including by sharing feedback on videos, refreshing their "For You" feed, and using filter video keywords); Ex. 24 at 10-11, https://support.tiktok.com/en/using-tiktok/exploring-videos/sharing (TikTok's Help Center article instructing the user to operate and share a tagging system (hashtags); Ex. 17 at 9, https://support.tiktok.com/en/using-tiktok/exploring-videos/accessibility-for-watching-videos (TikTok's Help Center article instructing the user to configure the settings and systems preferences of their device, to enable the infringing display of media programming).

70. Defendants are also liable for contributory infringement of the Accused Technologies pursuant to 35 U.S.C. § 271(c) by knowing or being willfully blind to the fact

that they are contributing to infringement of at least exemplary Claim 19 by offering to sell and selling the Accused Technologies in the United States. In particular, Defendants know the Accused Technologies are particularly suited to be used in an infringing manner and are particularly suited for this use. The Accused Technologies include the TikTok application, website and supporting servers and software, which are developed and specialized for the provision of entertaining media programming to end users, and are not staple articles or commodities of commerce because they are specifically made to be used in an infringing manner, as described in the direct infringement claim above. Defendants have known or have been willfully blind to the fact that it is contributing to the infringement of one or more claims of the '704 Patent, including at least Claim 19.

71. Defendants' indirect infringement of the '704 Patent has injured and continues to injure NTECH in an amount to be proven at trial, but not less than a reasonable royalty. NTECH will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by the Court.

72. Pursuant to 35 U.S.C. §§ 283, 284, and 285, NTECH is entitled to injunctive relief, damages, and attorney's fees and costs.

COUNT III
(Direct Infringement of the '261 Patent)

73. NTECH repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

74. Defendants have infringed and continue to infringe the '261 Patent, including, at least, exemplary Claim 1, in violation of 35 U.S.C. § 271(a). The '261 Patent only has method claims.

75. Defendants' infringement is based upon literal infringement, infringement under

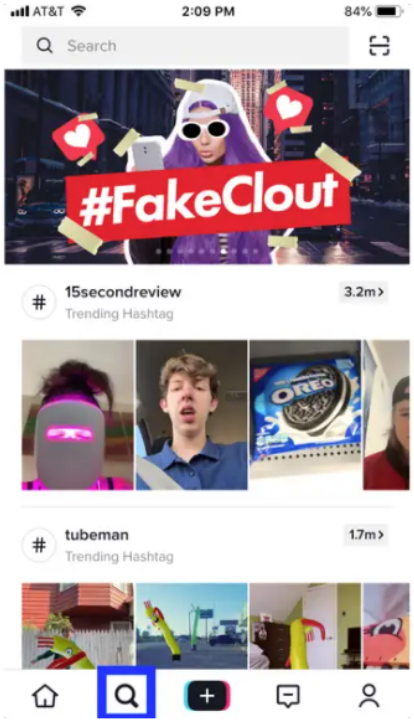
the doctrine of equivalents, or both.

76. Defendants' infringement Accused Technologies has been without the permission, consent, authorization, or license of NTECH.

77. The Accused Technologies employ all elements of exemplary Claim 1 because they perform a method of generating customized media programming, comprising the steps of delivering by an aggregator, to a client device associated with a user, a selectable menu of media feeds available from at least one publisher, wherein each said media feed comprises a plurality of media elements selected from audio media elements, visual media elements, and combinations thereof, and each said media element is tagged in at least one library in communication with at least one publisher; receiving by the aggregator from the client device a selection identifying at least one of said media feeds; providing by the aggregator, to said publisher, an identification of each selected media feed; providing by the aggregator, to said publisher, client information comprising information about the user and information about the associated client device; and initiating, by the aggregator, for display at the client device, individual customized media programming comprising media elements selected from one or more libraries in communication with said publisher, wherein the selected media elements (i) correspond to at least one selected media feed and are responsive to said user information, and (ii) are ordered and concatenated at least in part according to each selected media feed and said user information.

78. For example, the Accused Technologies perform a method of generating customized media programming utilizing its servers supporting its app and its website, which act as aggregators, to deliver a selectable menu of media feeds to a user, as depicted below.

The second tab in the menu running across the bottom of TikTok, represented by a magnifying glass, is where you'll find what's trending on the app. This is TikTok's bread and butter: it's where the latest viral trends are found, and associated hashtags are tracked.



TikTok/Business Insider

See Ex. 8 at 5-6, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6 (showing a plurality of media streams on TikTok, presented to a user).

79. As another example the Accused Technologies provides a selectable menu of media feeds available from at least one publisher including at least a vast music library with tagged music, which is in communication with a publisher and is therefore available for users to access. This library is utilized by users to develop media elements including audio media elements, visual media elements, and combinations of the two, which make up the media feed. *See* Ex. 16, https://ads.tiktok.com/help/article/commercial-music-library?lang=en (showing TikTok's music library).

80. The algorithm of the Accused Technologies acts as a publisher, as it generates a sequenced media program by selecting different media elements from the database that meet the rules received from the user, which can take the form of searching a hashtag or creating a playlist among others, and placing them into a sequence for playback. *See* Ex. 8 at 6, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6; s*ee also* https://www.youtube.com/watch?v=StNbxwqnKmc at 2:30 (showing TikTok's music library).

81. Further, the Accused Technologies provide an algorithm with user information, which informs the customized media programming that is provided to a user, which (i) correspond to at least one selected media feed and are responsive to the user information, and (ii) are ordered and concatenated at least in part according to each selected media feed and the user information. As depicted below.

Why a video is recommended on your For You feed

At TikTok, we want to help you understand why certain videos appear on your For You feed. That's why we share this information on each video in the feed.

To learn why a video is recommended to you:
1. In the TikTok app, tap the **Share** button on the side of a video in the **For You** feed.
2. Tap **Why this video**. We'll list some reasons why a video shows up on your feed, such as:
   - You commented on, liked, shared, or watched similar videos
   - This video is popular in your country
   - This video was posted recently
   - This video is longer, and you seem to like longer videos
   - You're following this creator

Keep in mind, if you've recently refreshed your For You feed, you'll see a variety of videos while we learn your preferences to launch your new personalized feed.

Learn more about why a video is recommended in For You.

See Ex. 9 at 4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you.

82. Feeds include a concatenated sequence of media elements, in which the order and selection of media elements is determined by algorithms implemented in software operating at the publisher. *See* Ex. 8 at 5-6, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6 (showing a plurality of media streams on TikTok, presented to a user).

83. To the extent Defendants' users perform any steps of the claimed methods, Defendants further directly infringe by directing and controlling the infringing systems, and obtaining benefits from their control of the systems as a whole. For example, TikTok's Terms of Service demonstrate Defendants' direction and control of users to use the Accused Technologies in an infringing manner, including by directing users to make an account with TikTok and making use of the Accused Technologies conditional upon compliance with the Terms. Ex. 14 at 3-4, https://www.tiktok.com/legal/terms-of-service/en (Section 4 of TikTok's Terms of Service demonstrating TikTok's direction and control over its users use of the Accused Technologies by including in its Terms of Service instruction to create an account and provide TikTok with user data, and reserving the right to withhold user data upon deletion of an account); *id.* at 7, https://www.tiktok.com/legal/terms-of-service/en (Section 7 of TikTok's Terms of Service demonstrating TikTok's benefit over the user's use of the Accused Technologies, stating "[y]ou acknowledge and agree that we may generate revenues, increase goodwill or otherwise increase our value from your use of the Services, including, by way of example and not limitation, through the sale of advertising, sponsorships, promotions, usage data and Gifts"); *id.* at 3 (Section 3 of TikTok's Terms of Service conditioning access and use of the Accused Technologies upon acceptance of the Terms and requiring the user to "stop accessing or using the Service" if the user does not "agree to the new Terms.").

84. Further, Defendants directly infringe because they direct and control the users when Defendants instruct users on how to operate the Accused Technologies in an infringing manner via Help Center articles. *See* Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you (TikTok's Help Center article, directing and controlling the user to manage their "For You" feed, including by sharing feedback on videos, refreshing their "For You" feed, and using filter video keywords); Ex. 24 at 10-11, https://support.tiktok.com/en/using-tiktok/exploring-videos/sharing (TikTok's Help Center article, directing and controlling the user to operate and share a tagging system (hashtags); Ex. 10, https://support.tiktok.com/en/using-tiktok/creating-videos/accessibility (TikTok's Help Center article directing and controlling the user to configure the settings and systems preferences of their device, to enable the infringing display of media programming).

85. Defendants' infringement of the '261 Patent has injured and continues to injure NTECH in an amount to be proven at trial, but not less than a reasonable royalty. Defendants' infringement has caused and is continuing to cause irreparable injury to NTECH, and NTECH will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

86. Pursuant to 35 U.S.C. §§ 283, 284, and 285, NTECH is entitled to injunctive relief, damages, and attorney's fees and costs.

COUNT IV
(Indirect Infringement of the '261 Patent)

87. NTECH repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

88. As set forth above, Defendants directly infringe the ’261 Patent. In addition to directly infringing the ’261 Patent, Defendants have induced their users’ direct infringement of the ’261 Patent under 35 U.S.C. § 271(b).

89. Defendants knowingly and actively aided and abetted the direct infringement of the ’261 Patent by instructing and encouraging its customers, users, and developers to use the Accused Technologies. Such instructions and encouragement include, but is not limited to, advising third parties to use the Accused Technologies in an infringing manner, providing a mechanism through which third parties may infringe the ’261 Patent, and by advertising and promoting the use of the Accused Technologies in an infringing manner, and distributing guidelines and instructions to third parties on how to use the Accused Technologies in an infringing manner. Further examples of this instruction and encouragement includes TikTok’s help and customer service sections on its website and mobile application, which it actively updates and maintains. It covers in-depth aspects of operating the Accused Technologies in an infringing manner including detailed instruction regarding all aspects of the “For You” and “Following” feed. *See* Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you.

90. Further, TikTok advertises on its website the Accused Technologies and infringing features and instructs consumers on how to configure and use the Accused Technologies in an infringing manner. *See* Ex. 15 at 1-9, https://support.tiktok.com/en/using-tiktok (showing TikTok’s online Help Center, where a customer is directed to TikTok’s instructional articles); Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you (instructing the customer on how to manage their “For You” feed, including by sharing feedback on videos, refreshing their “For You” feed, and using filter video keywords);

Ex. 24 at 10-11, https://support.tiktok.com/en/using-tiktok/exploring-videos/sharing (TikTok's Help Center article instructing the user to operate and share a tagging system (hashtags); Ex. 17 at 9, https://support.tiktok.com/en/using-tiktok/exploring-videos/accessibility-for-watching-videos (TikTok's Help Center article instructing the user to configure the settings and systems preferences of their device, to enable the infringing display of media programming).

91. Defendants' indirect infringement of the '261 Patent has injured and continues to injure NTECH in an amount to be proven at trial, but not less than a reasonable royalty. NTECH will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by the Court.

92. Pursuant to 35 U.S.C. §§ 283, 284, and 285, NTECH is entitled to injunctive relief, damages, and attorney's fees and costs.

COUNT V
(Direct Infringement of the '947 Patent)

93. NTECH repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

94. Defendants have infringed and continue to infringe the '947 Patent, including at least exemplary Claim 1, in violation of 35 U.S.C. § 271(a). The '947 Patent only has method claims.

95. Defendants' infringement is based upon literal infringement, infringement under the doctrine of equivalents, or both.

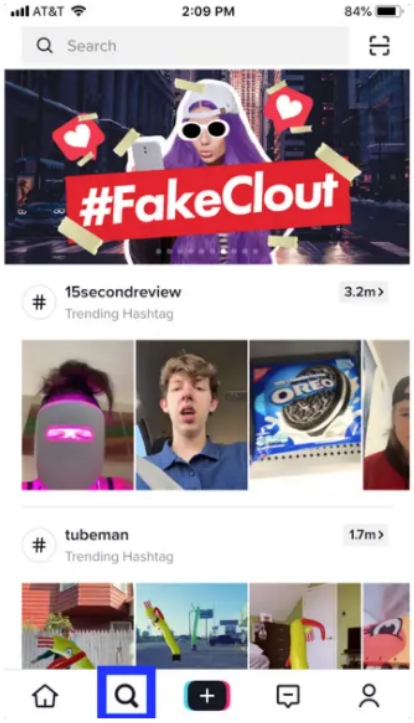
96. Defendants' acts of making, using, importing, selling, and offering for sale the Accused Technologies have been without the permission, consent, authorization, or license of NTECH.

97. The Accused Technologies employ all elements of exemplary Claim 1 because

they perform a method of generating customized media programming, comprising: providing by an aggregator, to a client device associated with a user, a list of media feeds available from at least one publisher, wherein each said media feed comprises a plurality of media elements selected from audio media elements, visual media elements, and combinations thereof; receiving by the aggregator from the client device a selection identifying at least one of the media feeds; providing, to a publisher from the aggregator, the media feed selection received from the client device; analyzing, by the publisher, user information included in the media feed selection inserting into media programming based on a publisher-initiated feed responsive to the media feed selection, based on the user information, an element based on at least one of positioning, frequency, type, demographic targeting, geo-targeting and psychographic targeting; providing, to the client device, the media programming; and dynamically updating the element in the media programming responsive to additional user information provided by the aggregator.

98. For example, the Accused Technologies perform a method of generating customized media programming utilizing its servers supporting its app and website, which act as aggregators, to deliver a selectable menu of media feeds to a user which is published via the front end facing mobile application or website, as depicted below.

The second tab in the menu running across the bottom of TikTok, represented by a magnifying glass, is where you'll find what's trending on the app. This is TikTok's bread and butter: it's where the latest viral trends are found, and associated hashtags are tracked.

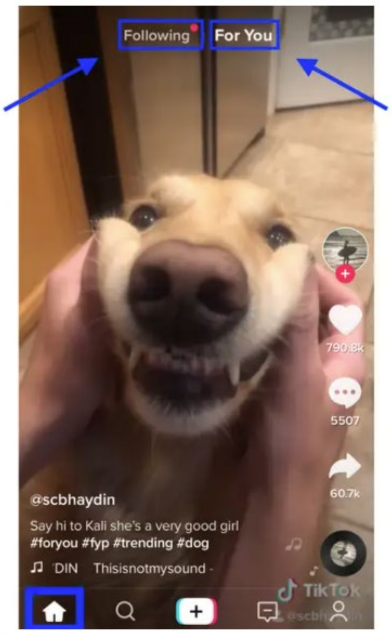


TikTok/Business Insider

See Ex. 8 at 5-6, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6.

99. The Accused Technologies include media feeds including, at least, its "For You" and its "Following" feeds which are made up of a plurality of user generated media elements including audio and visual media elements and a combination of the two, as depicted below.

The TikTok home page, where your feed lives, is split up into two sections: "following," to only see content from users you follow, and "for you," which amasses popular content from across TikTok, similar to Instagram's Explore page.

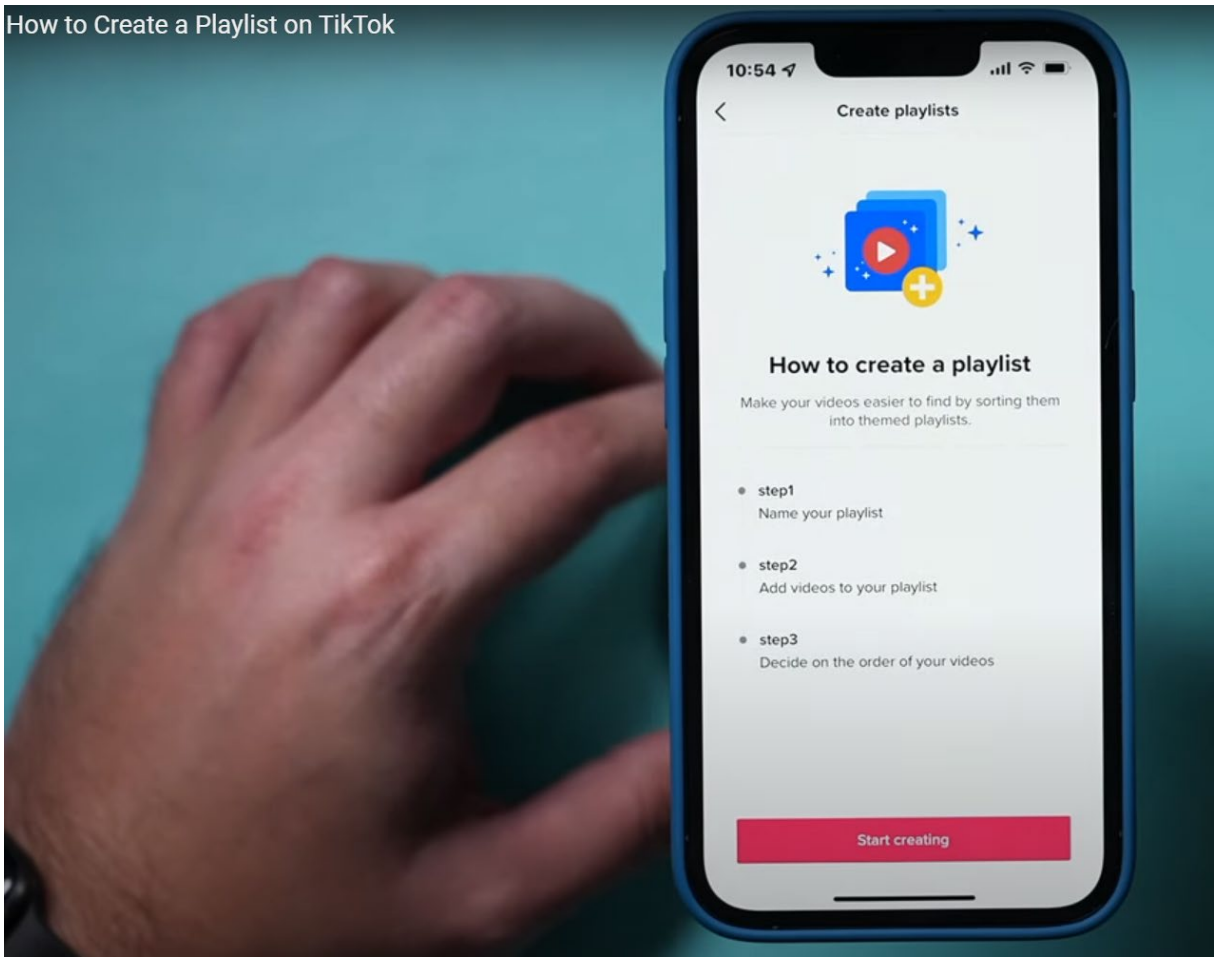


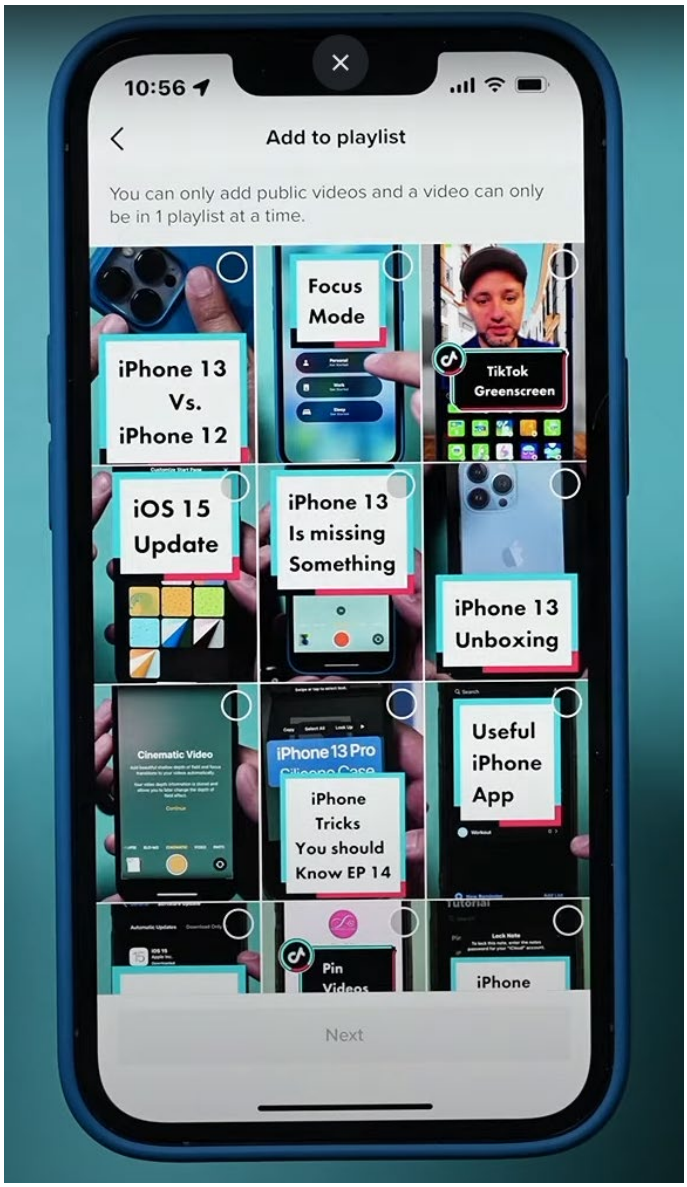
TikTok/Business Insider

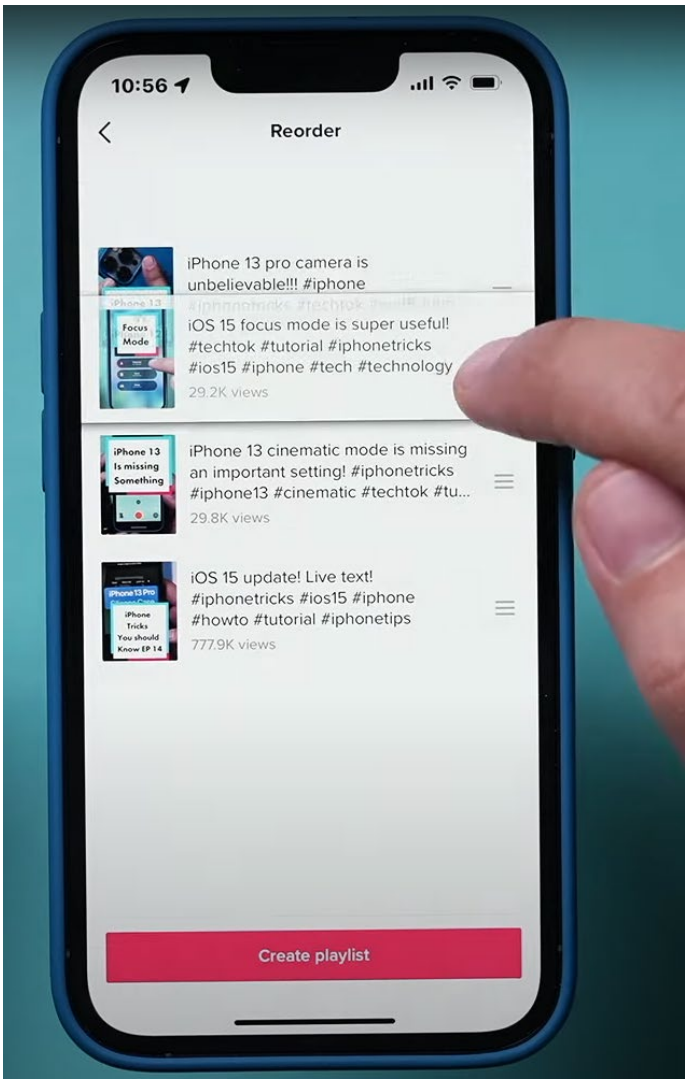
See Ex. 8 at 4-5, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6 (showing TikTok's "Following" and "For You" feeds).

100. TikTok aggregators are the servers that host its website. On information and belief, TikTok has front end servers located in the cloud, and they change often for each user that accesses webpages and mobile apps. TikTok uses the cloud for its computing and storage needs, including databases, analytics, recommendation engines, video transcoding, and more. *See* Ex. 13 at 1-2, https://newsroom.tiktok.com/en-us/tiktok-facts-how-we-secure-personal-information-and-store-data ("TikTok Facts" webpage which refers to TikTok's servers and storage facilities); Ex. 12 at 2-3, https://medium.com/@entrustech/tiktok-the-magic-behind-the-screen-9346a5b718f4 (referring to TikTok's various servers).

101. Further, TikTok aggregators (front end servers) receive signals from a user indicating the user's selection of one of the media streams that the front-end servers presented on the TikTok webpage. Then front-end servers send an output signal indicating the user's selection and user data to the publishers (i.e. TikTok algorithm servers). An example of this is when a user creates a playlist.


How to Create a Playlist on TikTok
10:54
Create playlists
How to create a playlist
Make your videos easier to find by sorting them into themed playlists.
step1
Name your playlist
step2
Add videos to your playlist
step3
Decide on the order of your videos
Start creating


10:56
Add to playlist
You can only add public videos and a video can only be in 1 playlist at a time.
iPhone 13 Vs. iPhone 12
Focus Mode
TikTok Greenscreen
iOS 15 Update
iPhone 13 Is missing Something
iPhone 13 Unboxing
Cinematic Video
iPhone 13 Pro
iPhone Tricks You should Know EP 14
Useful iPhone App
Pin Videos
iPhone
Next



See https://www.youtube.com/watch?v=StNbxwqnKmc at 2:30 (showing a user curating a playlist on TikTok).

102. TikTok's servers provide the user's selection and user data to the recommendation servers (i.e. publishers) to start generating candidate videos and narrowing them down for presentation. Ex. 18 at 1-3, https://www.theverge.com/2021/12/6/22820305/tiktok-algorithm-explained-leak-how-it-works.

103. TikTok's publisher analyzes user information included in the media feed selection. The Accused Technologies utilize user data and information to generate customized media elements which are dynamically updated. This is done by its server/aggregator, which

provides user information to its recommendation servers and algorithm (publishers). This user information can include at least, positioning, type, demographic targeting, geo targeting, psychographic targeting and user engagement with the platform such as frequency of engagement.

Why a video is recommended on your For You feed

At TikTok, we want to help you understand why certain videos appear on your For You feed. That's why we share this information on each video in the feed.

To learn why a video is recommended to you:

1. In the TikTok app, tap the **Share** button on the side of a video in the **For You** feed.
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   - This video was posted recently
   - This video is longer, and you seem to like longer videos
   - You're following this creator

Keep in mind, if you've recently refreshed your For You feed, you'll see a variety of videos while we learn your preferences to launch your new personalized feed.

Learn more about why a video is recommended in For You.

See Ex. 9 at 4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you.

104. To the extent Defendants' users perform any steps of the claimed methods, Defendants further directly infringe by directing and controlling the infringing systems, and obtain benefits from their control of the systems as a whole, for example, when Defendants configure and maintain the infringing systems as a service for their users.

105. To the extent Defendants' users perform any steps of the claimed methods, Defendants further directly infringe by directing and controlling the infringing systems, and obtaining benefits from their control of the systems as a whole. For example, TikTok's Terms of Service demonstrate Defendants' direction and control of users to use the Accused Technologies in an infringing manner, including by directing users to make an account with

TikTok and making use of the Accused Technologies conditional upon compliance with the Terms. Ex. 14 at 3-4, https://www.tiktok.com/legal/terms-of-service/en (Section 4 of TikTok's Terms of Service demonstrating TikTok's direction and control over its users use of the Accused Technologies by including in its Terms of Service instruction to create an account and provide TikTok with user data, and reserving the right to withhold user data upon deletion of an account); *id.* at 7 (Section 7 of TikTok's Terms of Service demonstrating TikTok's benefit over the user's use of the Accused Technologies, stating "[y]ou acknowledge and agree that we may generate revenues, increase goodwill or otherwise increase our value from your use of the Services, including, by way of example and not limitation, through the sale of advertising, sponsorships, promotions, usage data and Gifts"); *id.* at 3 (Section 3 of TikTok's Terms of Service conditioning access and use of the Accused Technologies upon acceptance of the Terms and requiring the user to "stop accessing or using the Service" if the user does not "agree to the new Terms.").

106. Further, Defendants directly infringe because they direct and control the users when Defendants instruct users on how to operate the Accused Technologies in an infringing manner via Help Center articles. *See* Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you (TikTok's Help Center article, directing and controlling the user to manage their "For You" feed, including by sharing feedback on videos, refreshing their "For You" feed, and using filter video keywords); Ex. 24 at 10-11, https://support.tiktok.com/en/using-tiktok/exploring-videos/sharing (TikTok's Help Center article, directing and controlling the user to operate and share a tagging system (hashtags); Ex. 10, https://support.tiktok.com/en/using-tiktok/creating-videos/accessibility (TikTok's Help

Center article directing and controlling the user to configure the settings and systems preferences of their device, to enable the infringing display of media programming).

107. Defendants' infringement of the '947 Patent has injured and continues to injure NTECH in an amount to be proven at trial, but not less than a reasonable royalty. Defendants' infringement has caused and is continuing to cause irreparable injury to NTECH, and NTECH will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

108. Pursuant to 35 U.S.C. §§ 283, 284, and 285, NTECH is entitled to injunctive relief, damages, and attorney's fees and costs.

COUNT VI
(Indirect Infringement of the '947 Patent)

109. NTECH repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

110. As set forth with respect to Count V, Defendants directly infringe the '947 Patent. In addition to directly infringing the '947 Patent, as discussed above, Defendants have induced their users' direct infringement of the '947 Patent under 35 U.S.C. § 271(b).

111. Defendants knowingly and actively aided and abetted the direct infringement of the '261 Patent by instructing and encouraging its customers, users, and developers to use the Accused Technologies. Such instructions and encouragement include, but is not limited to, advising third parties to use the Accused Technologies in an infringing manner, providing a mechanism through which third parties may infringe the '947 Patent, and by advertising and promoting the use of the Accused Technologies in an infringing manner, and distributing guidelines and instructions to third parties on how to use the Accused Technologies in an infringing manner. Further examples of this instruction and encouragement includes TikTok's

help and customer service sections on its website and mobile application, which it actively updates and maintains. It covers in-depth aspects of operating the Accused Technologies in an infringing manner including detailed instruction regarding all aspects of the "For You" and "Following" feed. *See* Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you.

112. Further, TikTok advertises on its website the Accused Technologies and infringing features and instructs consumers on how to configure and use the Accused Technologies in an infringing manner. *See* Ex. 15 at 1-9, https://support.tiktok.com/en/using-tiktok (showing TikTok's online Help Center, where a customer is directed to TikTok's instructional articles); Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you (instructing the customer on how to manage their "For You" feed, including by sharing feedback on videos, refreshing their "For You" feed, and using filter video keywords); Ex. 24 at 10-11, https://support.tiktok.com/en/using-tiktok/exploring-videos/sharing (TikTok's Help Center article instructing the user to operate and share a tagging system (hashtags); Ex. 10, https://support.tiktok.com/en/using-tiktok/creating-videos/accessibility (TikTok's Help Center article instructing the user to configure the settings and systems preferences of their device, to enable the infringing display of media programming).

113. Defendants' indirect infringement of the '947 Patent has injured and continues to injure NTECH in an amount to be proven at trial, but not less than a reasonable royalty. NTECH will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by the Court.

114. Pursuant to 35 U.S.C. §§ 283, 284, and 285, NTECH is entitled to injunctive relief, damages, and attorney's fees and costs.

COUNT VII
(Direct Infringement of the '753 Patent)

115. NTECH repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

116. Defendants have infringed and continue to infringe the '753 Patent, including at least exemplary Claim 1, in violation of 35 U.S.C. § 271(a). The '753 Patent only has method claims.

117. Defendants' infringement is based upon literal infringement, infringement under the doctrine of equivalents, or both.

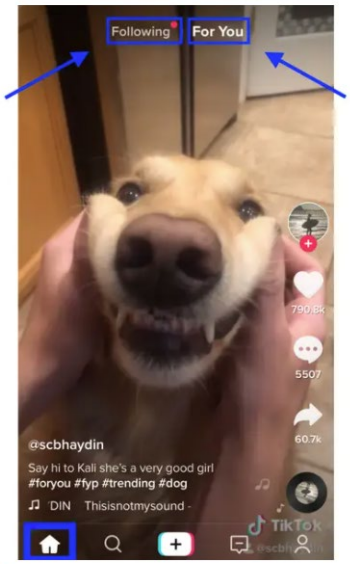
118. Defendants' acts of making, using, importing, selling, and offering for sale the Accused Technologies have been without the permission, consent, authorization, or license of NTECH.

119. The Accused Technologies employ all elements of exemplary Claim 1 because they perform a method of generating media programming, comprising delivering by an aggregator to a client a list of feeds; receiving by the aggregator from the client a selection of one of the feeds acquiring by a publisher from the aggregator the feed selection; collecting by the publisher from the aggregator client information, wherein said client information comprises user information; and providing to the client individual customized media programming based on a publisher- initiated feed responsive to the feed selection and including media elements selected, ordered, and concatenated with the feed that are responsive at least in part to the user information.

120. For example, the Accused Technologies perform a method of generating media programming utilizing its servers supporting its app and website, which act as aggregators, to

deliver a selectable menu of media feeds to a user including, at least, its "For You" and its "Following" feeds.

The TikTok home page, where your feed lives, is split up into two sections: "following," to only see content from users you follow, and "for you," which amasses popular content from across TikTok, similar to Instagram's Explore page.



TikTok/Business Insider

See Ex. 8 at 4-5, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6 (showing TikTok's "Following" and "For You" feeds).

121. TikTok aggregators (front end servers) receive signals from a user indicating the user's selection of one of the media streams that the front-end servers presented on the TikTok webpage. Then front-end servers send an output signal indicating the user's selection and user data to the publishers, which have a memory and a processor. An example of this is when a user creates a playlist. *See* https://www.youtube.com/watch?v=StNbxwqnKmc at 2:30 (showing a user curating a playlist on TikTok). TikTok's publisher (i.e. TikTok algorithm servers) then acquires the feed selection from the aggregator (i.e. front end servers). Ex. 18 at 1-3, https://www.theverge.com/2021/12/6/22820305/tiktok-algorithm-explained-leak-how-it-works.

122. TikTok's server utilizes user information, such as the previous media selections of users, viewing history, user preference data, search queries or patterns, and provides this information to its recommendation servers and algorithms (i.e. publishers) to generate individual customized media programming. This media programming (i.e. media feeds) include a concatenated sequence of media elements, in which the order and selection of media elements is determined by algorithms implemented in software operating at the publisher.

Why a video is recommended on your For You feed

At TikTok, we want to help you understand why certain videos appear on your For You feed. That's why we share this information on each video in the feed.

To learn why a video is recommended to you:
1. In the TikTok app, tap the **Share** button on the side of a video in the **For You** feed.
2. Tap **Why this video**. We'll list some reasons why a video shows up on your feed, such as:
   - You commented on, liked, shared, or watched similar videos
   - This video is popular in your country
   - This video was posted recently
   - This video is longer, and you seem to like longer videos
   - You're following this creator

Keep in mind, if you've recently refreshed your For You feed, you'll see a variety of videos while we learn your preferences to launch your new personalized feed.

Learn more about why a video is recommended in For You.

See Ex. 9 at 4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you.

123. To the extent Defendants' users perform any steps of the claimed methods, Defendants further directly infringe by directing and controlling the infringing systems, and obtaining benefits from their control of the systems as a whole. For example, TikTok's Terms of Service demonstrate Defendants' direction and control of users to use the Accused Technologies in an infringing manner, including by directing users to make an account with TikTok and making use of the Accused Technologies conditional upon compliance with the Terms. Ex. 14 at 3-4, https://www.tiktok.com/legal/terms-of-service/en (Section 4 of TikTok's

Terms of Service demonstrating TikTok's direction and control over its users use of the Accused Technologies by including in its Terms of Service instruction to create an account and provide TikTok with user data, and reserving the right to withhold user data upon deletion of an account); *id.* at 7 (Section 7 of TikTok's Terms of Service demonstrating TikTok's benefit over the user's use of the Accused Technologies, stating "[y]ou acknowledge and agree that we may generate revenues, increase goodwill or otherwise increase our value from your use of the Services, including, by way of example and not limitation, through the sale of advertising, sponsorships, promotions, usage data and Gifts"); *id.* at 3 (Section 3 of TikTok's Terms of Service conditioning access and use of the Accused Technologies upon acceptance of the Terms and requiring the user to "stop accessing or using the Service" if the user does not "agree to the new Terms.").

124. Further, Defendants directly infringe because they direct and control the users when Defendants instruct users on how to operate the Accused Technologies in an infringing manner via Help Center articles. *See* Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you (TikTok's Help Center article, directing and controlling the user to manage their "For You" feed, including by sharing feedback on videos, refreshing their "For You" feed, and using filter video keywords); Ex. 24 at 10-11, https://support.tiktok.com/en/using-tiktok/exploring-videos/sharing (TikTok's Help Center article, directing and controlling the user to operate and share a tagging system (hashtags); Ex. 17 at 9, https://support.tiktok.com/en/using-tiktok/exploring-videos/accessibility-for-watching-videos (TikTok's Help Center article directing and controlling the user to configure the settings and systems preferences of their device, to enable the infringing display of media programming).

125. Defendants' infringement of the '753 Patent has injured and continues to injure NTECH in an amount to be proven at trial, but not less than a reasonable royalty. Defendants' infringement has caused and is continuing to cause irreparable injury to NTECH, and NTECH will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

126. Pursuant to 35 U.S.C. §§ 283, 284, and 285, NTECH is entitled to injunctive relief, damages, and attorney's fees and costs.

COUNT VIII
(Indirect Infringement of the '753 Patent)

127. NTECH repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

128. As set forth with respect to Count VII, Defendants directly infringe the '753 Patent. In addition to directly infringing the '753 Patent, as discussed above, Defendants have induced their users' direct infringement of the '753 Patent under 35 U.S.C. § 271(b).

129. Defendants knowingly and actively aided and abetted the direct infringement of the '753 Patent by instructing and encouraging its customers, users, and developers to use the Accused Technologies. Such instructions and encouragement include, but is not limited to, advising third parties to use the Accused Technologies in an infringing manner, providing a mechanism through which third parties may infringe the '753 Patent, and by advertising and promoting the use of the Accused Technologies in an infringing manner, and distributing guidelines and instructions to third parties on how to use the Accused Technologies in an infringing manner. Further examples of this instruction and encouragement includes TikTok's help and customer service sections on its website and mobile application, which it actively updates and maintains. It covers in-depth aspects of operating the Accused Technologies in an

infringing manner including detailed instruction regarding all aspects of the "For You" and "Following" feed. *See* Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you.

130. Further, TikTok advertises on its website the Accused Technologies and infringing features and instructs consumers on how to configure and use the Accused Technologies in an infringing manner. *See* Ex. 15 at 1-9, https://support.tiktok.com/en/using-tiktok (showing TikTok's online Help Center, where a customer is directed to TikTok's instructional articles); Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you (instructing the customer on how to manage their "For You" feed, including by sharing feedback on videos, refreshing their "For You" feed, and using filter video keywords); Ex. 24 at 10-11, https://support.tiktok.com/en/using-tiktok/exploring-videos/sharing (TikTok's Help Center article instructing the user to operate and share a tagging system (hashtags); Ex. 10, https://support.tiktok.com/en/using-tiktok/creating-videos/accessibility (TikTok's Help Center article instructing the user to configure the settings and systems preferences of their device, to enable the infringing display of media programming).

131. Defendants' indirect infringement of the '753 Patent has injured and continues to injure NTECH in an amount to be proven at trial, but not less than a reasonable royalty. NTECH will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by the Court.

132. Pursuant to 35 U.S.C. §§ 283, 284, and 285, NTECH is entitled to injunctive relief, damages, and attorney's fees and costs.

COUNT IX
(Direct Infringement of the '597 Patent)

133. NTECH repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

134. Defendants have infringed and continue to infringe the '597 Patent, including at least exemplary Claim 1, in violation of 35 U.S.C. § 271(a). The '597 Patent only has method claims.

135. Defendants' infringement is based upon literal infringement, infringement under the doctrine of equivalents, or both.

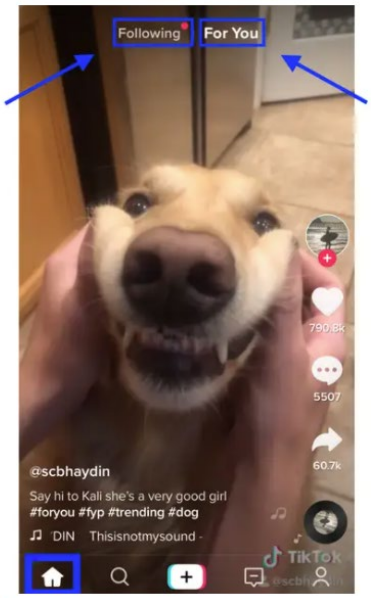
136. Defendants' acts of making, using, importing, selling, and offering for sale the Accused Technologies have been without the permission, consent, authorization, or license of NTECH.

137. The Accused Technologies employ all elements of exemplary Claim 1 because they perform a method of providing video programming to a user, comprising the steps of receiving a first request for video programming at a computing device comprising a video server, by communication with a computing device associated with a user searching one or more databases of video clips based on the first request, wherein each said database is in communication with said video server computing device, receiving one or more first search results at said video server computing device, wherein said first search results collectively correspond to a plurality of first video clips in said one or more databases, each of which is responsive to the first request, and wherein at least some of said responsive first video clips are each associated with one or more second video clips in said one or more databases; identifying a plurality of first transitional clips in said one or more databases for association with at least some of said responsive first video clips; defining first video programming comprising a

selected plurality of said responsive first video clips and a selected plurality of first transitional clips that are concatenated according to a first temporal sequence; providing a presentation of said first video programming to a display associated with said user computing device; receiving an identification of a first video clip of said first video programming at said video server computing device; searching said one or more databases of video clips according to a second request for second video programming that is based at least in part on a stored association between the identified first video clip and at least one second video clip; receiving one or more second search results at said video server computing device, wherein said second search results collectively correspond to a plurality of second video clips in said one or more databases that are responsive to the second request, including at least one second video clip that is associated with the identified first video clip; identifying a plurality of second transitional clips in said one or more databases for association with at least some of said responsive second video clips; defining second video programming comprising a selected plurality of second video clips, including the designated second video clip, and a selected plurality of second transitional clips that are concatenated according to a second temporal sequence; and presenting said second video programming to a display associated with said user computing device; wherein at least one searching or defining step is performed according to one or more templates which collectively comprise a plurality of template variables comprising (a) information about a user associated with the second computing device, (b) viewing scenarios of two or more selected video clips in a temporal relationship to each other, and (c) "style requirements".

138. For example, the Accused Technologies perform a method of generating media programming to a user on its servers supporting its app and website.

The TikTok home page, where your feed lives, is split up into two sections: "following," to only see content from users you follow, and "for you," which amasses popular content from across TikTok, similar to Instagram's Explore page.



TikTok/Business Insider

See Ex. 8 at 4, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6.

139. The Accused Technologies do this via a request and response client server architecture. Here, a user requests video programming on their computing device within TikTok in a variety of ways including, at least, generating a search in the search bar, exploring a hashtag, selecting the "For You" or "Following" feeds and creating a playlist. TikTok's server receives this request. Ex. 12 at 1-3, https://medium.com/@entrustech/tiktok-the-magic-behind-the-screen-9346a5b718f4;

In our last post, we introduced TikTokTruths and explored the facts about some of the most common misperceptions about how TikTok handles data related to things like location and GPS, keystrokes, and biometric information. In this next post in the series, we're updating the name of the series to TikTok Facts, and examining how we keep people's personal information secure as well as our approach to data storage.

We are committed to safeguarding our community and have a global workforce dedicated to ensuring the reliability, safety, and security of our platform. That includes a range of controls, authorization approval protocols, and localized storage mechanisms to restrict access to TikTok personal information. We store user data described in the What Information We Collect section in servers located in the United States, Singapore, and Malaysia. TikTok user data is protected by strong physical and logical security controls, including gated entry points, firewalls, and intrusion detection technologies.

See Ex. 13 at 1-2, https://newsroom.tiktok.com/en-us/tiktok-facts-how-we-secure-personal-information-and-store-data ("TikTok Facts" webpage which refers to TikTok's servers and storage facilities).

140. TikTok's servers search databases of media (i.e. video libraries) pursuant to a user's request and generates a plethora of video clips which are associated with one another and are presented in the form of transitional clips in a temporal sequence. This occurs in various ways including, at least, generating a search in the search bar, exploring a hashtag and curating a video playlist. *See* Ex. 8 at 6, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6; *see also* https://www.youtube.com/watch?v=StNbxwqnKmc at 2:30 (showing a user creating a playlist on TikTok).

141. Each database is in communication with a video server. TikTok uses the cloud for its computing and storage needs, including databases, analytics, recommendation engines, video transcoding, and more. Ex. 20 at 2,

https://www.theverge.com/2020/10/15/21517403/tiktok-security-servers-separate-bytedance-china-trump-ban.

142. The Accused Technologies utilize front end servers with memory and processors capable of adapting, to display video programming in a manner that is compatible with the user's device. *See* Ex. 19 at 1, https://www.crunchbase.com/organization/tiktok/technology.

143. TikTok selects transitional clips for association with at least some of the selected first video clips. TikTok selects transitional clips to play after or between the first video clips. Such transitional clips can include additional clips related to the user's search in between clips responsive to the user's search, such as advertisements. *See generally* Ex. 21, https://blog.hootsuite.com/tiktok-advertising/ (showing a TikTok advertisement); Ex. 22 at 2-7, https://influencermarketinghub.com/tiktok-video-ad-specs/ (describing TikTok advertising).

144. TikTok determines a first temporal sequence for concatenating the selected first video clips and first transitional clips. This happens when information is packaged by concatenating clips together to form a stream of data. For example, an advertisement related to a user's search will play after the first video. TikTok concatenates content according to templates comprising a plurality of variables such as information about the user, relationship of clips to each other, and style requirements. Ex. 23 at 2-7, https://www.bellingcat.com/resources/2020/05/25/investigate-tiktok-like-a-pro/#:~:text=A%20TikTok%20profile%20will%20have%20the%20following%. TikTok's algorithm has a plurality of variables corresponding to (a) information about the user, (b) viewing scenarios of two or more selected video clips in a temporal relationship to each other, and (c) style requirements. Ex. 18 at 1-3,

https://www.theverge.com/2021/12/6/22820305/tiktok-algorithm-explained-leak-how-it-works. TikTok Recommendation Engine is made up of algorithms (templates) which filter content based on each individual user profile.

145. TikTok presents the first video programming in a first area of a display on the screen (i.e. the "Following" feed), while also presenting one or more frames from other first video clips in a second area of display (i.e. the "For You" feed). Exhibit 8 at 13, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6.

146. TikTok receives an identification of a first video clip at the server. TikTok's servers provide the user's selection and user data to the recommendation servers (i.e. publishers) to start generating candidate videos and narrowing them down for presentation. Ex. 18 at , https://www.theverge.com/2021/12/6/22820305/tiktok-algorithm-explained-leak-how-it-works. TikTok searches for second video clips based on associations between the first video clip and the proposed second video clip. TikTok's Recommendation Engine generates a sequenced media program by selecting different media elements from the database that meet the rules received from the user and placing them into a sequence for playback. Ex.8 at 13, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6.

147. TikTok receives the results from the second search at the video server and identifies transitional clips to associate with the second video clips (i.e. previews, advertisements, etc.) just as it did with the first video clips. These second video clips are arranged in a second temporal sequence.

148. TikTok presents the second video programming in a display on the screen (i.e. the "Following" feed), while also presenting one or more frames from other first video clips in a second area of display (i.e. the "For You" feed). Ex. 8 at 13,

https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6.

149. TikTok adjusts the search results based on user history, estimated user preference, the relationship between the clips, and the style of the clips. TikTok's algorithm has a plurality of variables corresponding to (a) information about a user associated with the second computing device, (b) viewing scenarios of two or more selected video clips in a temporal relationship to each other, and (c) "style requirements".

150. The Accused Technologies store a user's previous search and the form of display, and utilize this stored data as a template to inform subsequent searches and video programming presentations to a use. *See* Ex. 9 at 4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you; *see also* Ex. 18 at 1-3, https://www.theverge.com/2021/12/6/22820305/tiktok-algorithm-explained-leak-how-it-works (describing TikTok's algorithm).

151. To the extent Defendants' users perform any steps of the claimed methods, Defendants further directly infringe by directing and controlling the infringing systems, and obtaining benefits from their control of the systems as a whole. For example, TikTok's Terms of Service demonstrate Defendants' direction and control of users to use the Accused Technologies in an infringing manner, including by directing users to make an account with TikTok and making use of the Accused Technologies conditional upon compliance with the Terms. Ex. 14 at 3-4, https://www.tiktok.com/legal/terms-of-service/en (Section 4 of TikTok's Terms of Service demonstrating TikTok's direction and control over its users use of the Accused Technologies by including in its Terms of Service instruction to create an account and provide TikTok with user data, and reserving the right to withhold user data upon deletion of an account); *id.* at 7 (Section 7 of TikTok's Terms of Service demonstrating TikTok's benefit

over the user's use of the Accused Technologies, stating "[y]ou acknowledge and agree that we may generate revenues, increase goodwill or otherwise increase our value from your use of the Services, including, by way of example and not limitation, through the sale of advertising, sponsorships, promotions, usage data and Gifts"); *id.* at 3 (Section 3 of TikTok's Terms of Service conditioning access and use of the Accused Technologies upon acceptance of the Terms and requiring the user to "stop accessing or using the Service" if the user does not "agree to the new Terms.").

152. Further, Defendants directly infringe because they direct and control the users when Defendants instruct users on how to operate the Accused Technologies in an infringing manner via Help Center articles. *See* Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you (TikTok's Help Center article, directing and controlling the user to manage their "For You" feed, including by sharing feedback on videos, refreshing their "For You" feed, and using filter video keywords); Ex. 24 at 10-11, https://support.tiktok.com/en/using-tiktok/exploring-videos/sharing (TikTok's Help Center article, directing and controlling the user to operate and share a tagging system (hashtags); Ex. 17 at 9, https://support.tiktok.com/en/using-tiktok/exploring-videos/accessibility-for-watching-videos (TikTok's Help Center article directing and controlling the user to configure the settings and systems preferences of their device, to enable the infringing display of media programming).

153. Defendants' infringement of the '597 Patent has injured and continues to injure NTECH in an amount to be proven at trial, but not less than a reasonable royalty. Defendants' infringement has caused and is continuing to cause irreparable injury to NTECH, and NTECH

will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

154. Pursuant to 35 U.S.C. §§ 283, 284, and 285, NTECH is entitled to injunctive relief, damages, and attorney's fees and costs.

COUNT X
(Indirect Infringement of the '597 Patent)

155. NTECH repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

156. As set forth with respect to Count I, Defendants directly infringe the '597 Patent. In addition to directly infringing the '597 Patent, as discussed above, Defendants have induced their users' direct infringement of the '597 Patent under 35 U.S.C. § 271(b).

157. Defendants knowingly and actively aided and abetted the direct infringement of the '597 Patent by instructing and encouraging its customers, users, and developers to use the Accused Technologies. Such instructions and encouragement include, but is not limited to, advising third parties to use the Accused Technologies in an infringing manner, providing a mechanism through which third parties may infringe the '597 Patent, and by advertising and promoting the use of the Accused Technologies in an infringing manner, and distributing guidelines and instructions to third parties on how to use the Accused Technologies in an infringing manner. Further examples of this instruction and encouragement includes TikTok's help and customer service sections on its website and mobile application, which it actively updates and maintains. It covers in-depth aspects of operating the Accused Technologies in an infringing manner including detailed instruction regarding all aspects of the "For You" and "Following" feed. *See* Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you.

158. Further, TikTok advertises on its website the Accused Technologies and infringing features, and instructs consumers on how to configure and use the Accused Technologies in an infringing manner. *See* Ex. 15 at 1-9, https://support.tiktok.com/en/using-tiktok (showing TikTok's online Help Center, where a customer is directed to TikTok's instructional articles); Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you (instructing the customer on how to manage their "For You" feed, including by sharing feedback on videos, refreshing their "For You" feed, and using filter video keywords); Ex. 24 at 10-11, https://support.tiktok.com/en/using-tiktok/exploring-videos/sharing (TikTok's Help Center article instructing the user to operate and share a tagging system (hashtags); Ex. 17 at 9, https://support.tiktok.com/en/using-tiktok/exploring-videos/accessibility-for-watching-videos (TikTok's Help Center article instructing the user to configure the settings and systems preferences of their device, to enable the infringing display of media programming).

159. Defendants' indirect infringement of the '597 Patent has injured and continues to injure NTECH in an amount to be proven at trial, but not less than a reasonable royalty. NTECH will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by the Court.

160. Pursuant to 35 U.S.C. §§ 283, 284, and 285, NTECH is entitled to injunctive relief, damages, and attorney's fees and costs.

COUNT XI
(Direct Infringement of the '185 Patent)

161. NTECH repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

162. Defendants have infringed and continue to infringe the ’185 Patent, including at least exemplary Claim 1, in violation of 35 U.S.C. § 271(a). The ‘185 Patent only has method claims.

163. Defendants’ infringement is based upon literal infringement, infringement under the doctrine of equivalents, or both.

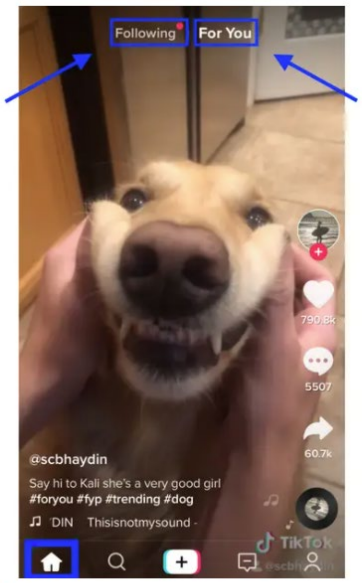
164. Defendants’ acts of making, using, importing, selling, and offering for sale the Accused Technologies have been without the permission, consent, authorization, or license of NTECH.

165. The Accused Technologies employ all elements of exemplary Claim 1 because they perform a method of providing video programming to a user, comprising the steps of: searching, by one or more computing devices, one or more databases of video clips in response to a user request wherein each video clip comprises a plurality of frames selecting, by one or more of said computing devices, a plurality of first video clips responsive to the user request, wherein each first video clip is associated with media content comprising one or more second video clips; selecting, by one or more of said computing devices, a plurality of first transitional clips for association with at least some of the selected first video clips; determining a first temporal sequence for concatenating the selected first video clips and first transitional clips; wherein said selecting, determining and concatenating is performed according to one or more first templates, to define first video programming, wherein said one or more first templates comprise a plurality of variables corresponding to (a) information about the user, (b) viewing scenarios of two or more selected video clips in a temporal relationship to each other, and (c) style requirements; and presenting said first video programming in a first area of a display associated with one of said computing devices; concurrently with said presenting said first

video programming, presenting one or more frames from one or more displayed first video clips from the first video programming in a second area of said display; receiving, by one or more of said computing devices, a user selection corresponding to at least one of the frames of at least one first video clip presented in the second area of the display; selecting, by one or more of said computing devices, a second video clip based on at least one stored association between the second video clip and at least one first video clip indicated by said user selection, selecting, by one or more of said computing devices, a plurality of video clips including the second video clip, and determining a second temporal sequence for concatenating the selected plurality of second video clips, wherein said selecting, determining, and concatenating is performed in accordance with one or more first or second templates, to define second video programming; wherein said one or more first or second templates comprises a plurality of variables corresponding to (a) information about the user, (b) viewing scenarios of two or more selected video clips in a temporal relationship to each other, and (c) style requirements; and presenting said second video programming on a display associated with one or more of said computing devices.

166. For example, the Accused Technologies perform a method of generating media programming to a user using its servers that support its app and website.

The TikTok home page, where your feed lives, is split up into two sections: "following," to only see content from users you follow, and "for you," which amasses popular content from across TikTok, similar to Instagram's Explore page.



TikTok/Business Insider

See Ex. 8 at 4, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6.

167. The Accused Technologies do this via a request and response client server architecture. TikTok searches multiple databases for video clips in response to a user request, each video clip comprises a plurality of frames (i.e. format, emoji, reactions etc.). A user requests video programming on their computing device within TikTok in a variety of ways including, at least, generating a search in the search bar, exploring a hashtag, selecting the "For You" or "Following" feeds and creating a playlist. TikTok's server receives this request and TikTok's database produces it.

In our last post, we introduced TikTokTruths and explored the facts about some of the most common misperceptions about how TikTok handles data related to things like location and GPS, keystrokes, and biometric information. In this next post in the series, we're updating the name of the series to TikTok Facts, and examining how we keep people's personal information secure as well as our approach to data storage.

We are committed to safeguarding our community and have a global workforce dedicated to ensuring the reliability, safety, and security of our platform. That includes a range of controls, authorization approval protocols, and localized storage mechanisms to restrict access to TikTok personal information. We store user data described in the What Information We Collect section in servers located in the United States, Singapore, and Malaysia. TikTok user data is protected by strong physical and logical security controls, including gated entry points, firewalls, and intrusion detection technologies.

See Ex. 13 at 1-2, https://newsroom.tiktok.com/en-us/tiktok-facts-how-we-secure-personal-information-and-store-data; Ex. 12 at 2-3, https://medium.com/@entrustech/tiktok-the-magic-behind-the-screen-9346a5b718f4.

168. TikTok uses metadata to associate first clips with second clips in a multitude of different ways, including commercials and advertisements, genre, length, title, description, features, date, etc. A subscriber can search different categories, channels, or create their own playlists. *See* https://www.youtube.com/watch?v=StNbxwqnKmc at 2:30 (showing a user creating a playlist on TikTok).

169. TikTok selects transitional clips for association with at least some of the selected first video clips. TikTok selects transitional clips to play after or between the first video clips. Such transitional clips can include additional clips related to the user's search in between clips responsive to the user's search, such as advertisements. *See generally* Ex. 21, https://blog.hootsuite.com/tiktok-advertising/ (showing a TikTok advertisement); Ex. 22, https://influencermarketinghub.com/tiktok-video-ad-specs/ (describing TikTok advertising).

170. TikTok determines a first temporal sequence for concatenating the selected first video clips and first transitional clips. This happens when information is packaged by concatenating clips together to form a stream of data. For example, an advertisement related to a user's search will play after the first video. TikTok concatenates content according to templates comprising a plurality of variables such as information about the user, relationship of clips to each other, and style requirements. Ex. 23 at 3-4, https://www.bellingcat.com/resources/2020/05/25/investigate-tiktok-like-a-pro/#:~:text=A%20TikTok%20profile%20will%20have%20the%20following%.

171. TikTok's Recommendation Engine is made up of algorithms (templates) which filter content based on each individual user profile. TikTok's algorithm has a plurality of variables corresponding to (a) information about the user, (b) viewing scenarios of two or more selected video clips in a temporal relationship to each other, and (c) style requirements. Ex. 18 at 1-4, https://www.theverge.com/2021/12/6/22820305/tiktok-algorithm-explained-leak-how-it-works.

172. TikTok presents the first video programming in a first area of a display on the screen (i.e. the "Following" feed), while also presenting one or more frames from other first video clips in a second area of display (i.e. the "For You" feed). Ex. 8 at 9 ,https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6.

173. TikTok will present the first video programming and concurrently present one or more frames from one or more displayed first video clips from the first video programming. Frames can be clips with emoji, text, captions. Ex. 8 at 11-12, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6(showing a TikTok video with reactions).

174. TikTok provides video clip search results from one or more databases pursuant to a user's search requests. This results in a plethora of video clips which are associated with one another and are presented in the form of transitional clips in a temporal sequence. This occurs in various ways including, at least, generating a search in the search bar, exploring a hashtag and curating a video playlist. *See* Ex. 8 at 6, https://www.businessinsider.com/tiktok-how-to-use-short-form-video-app-gen-z-2019-6; *see also* https://www.youtube.com/watch?v=StNbxwqnKmc at 2:30 (showing a user creating a playlist on TikTok).

175. The Accused Technologies utilize front end servers with memory and processors capable of adapting, to display video programming in a manner that is compatible with the user's device. *See* Ex. 19 at 1, https://www.crunchbase.com/organization/tiktok/technology.

176. The Accused Technologies also store a user's previous search and the form of display, and utilize this stored data as a template to inform subsequent searches and video programming presentations to a user. *See* Ex. 9 at 5, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you; Ex. 18 at 2-4, https://www.theverge.com/2021/12/6/22820305/tiktok-algorithm-explained-leak-how-it-works (describing TikTok's algorithm).

177. To the extent Defendants' users perform any steps of the claimed methods, Defendants further directly infringe by directing and controlling the infringing systems, and obtaining benefits from their control of the systems as a whole. For example, TikTok's Terms of Service demonstrate Defendants' direction and control of users to use the Accused Technologies in an infringing manner, including by directing users to make an account with

TikTok and making use of the Accused Technologies conditional upon compliance with the Terms. Ex. 14 at 3-4, https://www.tiktok.com/legal/terms-of-service/en (Section 4 of TikTok's Terms of Service demonstrating TikTok's direction and control over its users use of the Accused Technologies by including in its Terms of Service instruction to create an account and provide TikTok with user data, and reserving the right to withhold user data upon deletion of an account); *id.* at 7 (Section 7 of TikTok's Terms of Service demonstrating TikTok's benefit over the user's use of the Accused Technologies, stating "[y]ou acknowledge and agree that we may generate revenues, increase goodwill or otherwise increase our value from your use of the Services, including, by way of example and not limitation, through the sale of advertising, sponsorships, promotions, usage data and Gifts"); *id.* at 3 (Section 3 of TikTok's Terms of Service conditioning access and use of the Accused Technologies upon acceptance of the Terms and requiring the user to "stop accessing or using the Service" if the user does not "agree to the new Terms.").

178. Further, Defendants directly infringe because they direct and control the users when Defendants instruct users on how to operate the Accused Technologies in an infringing manner via Help Center articles. *See* Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you (TikTok's Help Center article, directing and controlling the user to manage their "For You" feed, including by sharing feedback on videos, refreshing their "For You" feed, and using filter video keywords); Ex. 24 at 10-11, https://support.tiktok.com/en/using-tiktok/exploring-videos/sharing (TikTok's Help Center article, directing and controlling the user to operate and share a tagging system (hashtags); Ex. 17 at 9, https://support.tiktok.com/en/using-tiktok/exploring-videos/accessibility-for-watching-videos (TikTok's Help Center article directing and controlling the user to configure the settings

and systems preferences of their device, to enable the infringing display of media programming).

179. Defendants' infringement of the '185 Patent has injured and continues to injure NTECH in an amount to be proven at trial, but not less than a reasonable royalty. Defendants' infringement has caused and is continuing to cause irreparable injury to NTECH, and NTECH will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by this Court.

180. Pursuant to 35 U.S.C. §§ 283, 284, and 285, NTECH is entitled to injunctive relief, damages, and attorney's fees and costs.

COUNT XII
(Indirect Infringement of the '185 Patent)

181. NTECH repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs.

182. As set forth with respect to Count XI, Defendants directly infringe the '185 Patent. In addition to directly infringing the '185 Patent, as discussed above, Defendants have induced their users' direct infringement of the '185 Patent under 35 U.S.C. § 271(b).

183. Defendants knowingly and actively aided and abetted the direct infringement of the '185 Patent by instructing and encouraging its customers, users, and developers to use the Accused Technologies. Such instructions and encouragement include, but is not limited to, advising third parties to use the Accused Technologies in an infringing manner, providing a mechanism through which third parties may infringe the '185 Patent, and by advertising and promoting the use of the Accused Technologies in an infringing manner, and distributing guidelines and instructions to third parties on how to use the Accused Technologies in an infringing manner. Further examples of this instruction and encouragement includes TikTok's

help and customer service sections on its website and mobile application, which it actively updates and maintains. It covers in-depth aspects of operating the Accused Technologies in an infringing manner including detailed instruction regarding all aspects of the "For You" and "Following" feed. *See* Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you.

184. Further, TikTok advertises on its website the Accused Technologies and infringing features, and instructs consumers on how to configure and use the Accused Technologies in an infringing manner. *See* Ex. 15 at 1-9, https://support.tiktok.com/en/using-tiktok (showing TikTok's online Help Center, where a customer is directed to TikTok's instructional articles); Ex. 9 at 3-4, https://support.tiktok.com/en/using-tiktok/exploring-videos/for-you (instructing the customer on how to manage their "For You" feed, including by sharing feedback on videos, refreshing their "For You" feed, and using filter video keywords); Ex. 24 at 10-11, https://support.tiktok.com/en/using-tiktok/exploring-videos/sharing (TikTok's Help Center article instructing the user to operate and share a tagging system (hashtags); Ex. 17 at 9, https://support.tiktok.com/en/using-tiktok/exploring-videos/accessibility-for-watching-videos#2 (TikTok's Help Center article instructing the user to configure the settings and systems preferences of their device, to enable the infringing display of media programming).

185. Defendants' indirect infringement of the '185 Patent has injured and continues to injure NTECH in an amount to be proven at trial, but not less than a reasonable royalty. NTECH will continue to suffer damage and irreparable injury unless and until that infringement is enjoined by the Court.

186. Pursuant to 35 U.S.C. §§ 283, 284, and 285, NTECH is entitled to injunctive relief, damages, and attorney's fees and costs.

PRAYER FOR RELIEF

WHEREFORE, NTECH prays for judgment and relief as follows:

A. An entry of judgment holding that Defendants have infringed and are infringing the Asserted Patents;

B. An entry of judgment that the Asserted Patents are valid and enforceable;

C. A preliminary and permanent injunction against Defendants and their officers, employees, agents, servants, attorneys, instrumentalities, and/or those in privity with them, from infringing the Asserted Patents;

D. An award to NTECH of such damages as it shall prove at trial against Defendants from up to six years prior to this complaint and that is adequate to fully compensate NTECH for Defendants' infringement of the Asserted Patents;

E. A determination that the damages against Defendants be trebled pursuant to 35 U.S.C. § 284 or for any other basis within the Court's discretion;

F. A finding that this case is "exceptional" and an award to NTECH of its costs and reasonable attorneys' fees, as provided by 35 U.S.C. § 285;

G. An accounting of all infringing sales and revenues, together with post judgment interest and prejudgment interest from the first date of infringement of the Asserted Patents; and

H. Such further and other relief as the Court may deem proper and just.

Respectfully submitted,

Dated: May 24, 2024

By: */s/ Elizabeth L. DeRieux*

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