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

VIRTUAL CREATIVE ARTISTS, LLC, Plaintiff, v. **PINTEREST, INC.,** Defendant.	C.A. No. 1:23-cv-04238 **JURY TRIAL DEMANDED** **PATENT CASE**

ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

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

I. THE PARTIES

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

2. On information and belief, Defendant Pinterest, Inc. ("Pinterest" or "Defendant") is a corporation organized and existing under the laws of Delaware. Defendant has a place of business at 111 N Canal St, Chicago, IL 60606. Defendant has a registered agent at Illinois Corporation Service Company, 801 Adlai Stevenson Drive, Springfield, IL 62703.

II. JURISDICTION AND VENUE

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

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

business in this forum, including at least a portion of the infringements alleged herein at 111 N Canal St, Chicago, IL 60606.

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

6. Venue is proper in this district under 28 U.S.C. § 1400(b). On information and belief, Defendant has businesses in this district at 111 N Canal St, Chicago, IL 60606. On information and belief, from and within this District Defendant has committed at least a portion of the infringements at issue in this case.

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

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

8. Plaintiff incorporates the above paragraphs herein by reference.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

22. **Direct Infringement.** Upon information and belief, Defendant has been directly infringing claim 1 of the '480 Patent in Illinois, and elsewhere in the United States, by employing a computer-based system using https://www.pinterest.com/ ("Accused Instrumentality") (*e.g.,* https://www.pinterest.com/). Pinterest uses a computer-based system for its Pinterest website and platform, for example to enable the provision of personalized feeds that show users multimedia content based, *inter alia*, on those that they follow and content that has been selected in the past. (https://newsroom.pinterest.com/en/post/new-ways-to-control-the-ideas-you-see-in-your-home-feed). For example, Pinterest, Inc. has employed, in order to operate its Pinterest Platform and Pinterest feeds, computer servers making use of Amazon S3 Amazon Web Services and object storage in and around 2019. (https://aws.amazon.com/blogs/storage/how-pinterest-worked-with-aws-to-create-a-new-way-to-manage-data-access-part-1/). Indeed, Pinterest, Inc. has employed, for a variety of subsystems of the Pinterest Platform and Pinterest feeds, several Amazon Web Services storages and computing solutions, in some cases employing machine learning engines. (https://aws.amazon.com/solutions/case-studies/innovators/pinterest/). Pinterest has, to operate its Pinterest Platform and Pinterest feeds and associated subsystems, purchased hundreds of millions of dollars of cloud computing from Amazon Web Services. (https://www.cnbc.com/2019/03/22/pinterest-must-spend-at-least-750-million-on-aws-ipo-

filing.html). Pinterest, during the relevant time period, created new clusters for new use cases for every time it had new data with different access permissions, (https://www.youtube.com/watch?v=Ud2BAx0Tfpk at 0:47 *et seq*.) thereby using separate server subsystems for all its meaningfully different functions, such as those indicated below. Pinterest uses and has used during the relevant time period, numerous different networks, IP addresses, and providers for, *inter alia*, cloud hosting, software-as-a-service, content delivery networks (CDNs), thereby using separate server subsystems for all its meaningfully different functions, such as those indicated below. (https://www.netify.ai/resources/applications/pinterest).

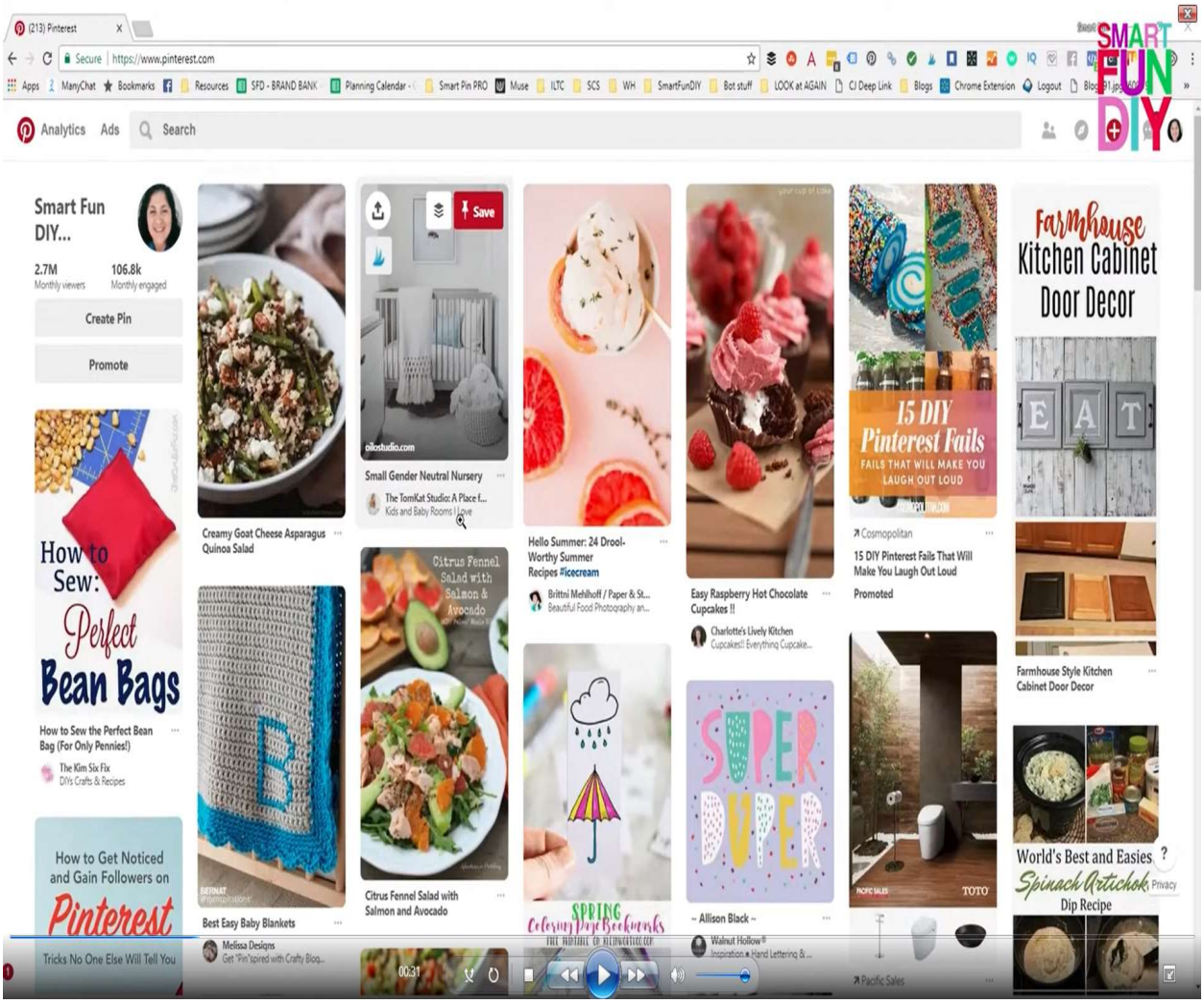
New ways to control the ideas you see in your home feed

October 15, 2019
News, Product, Technology

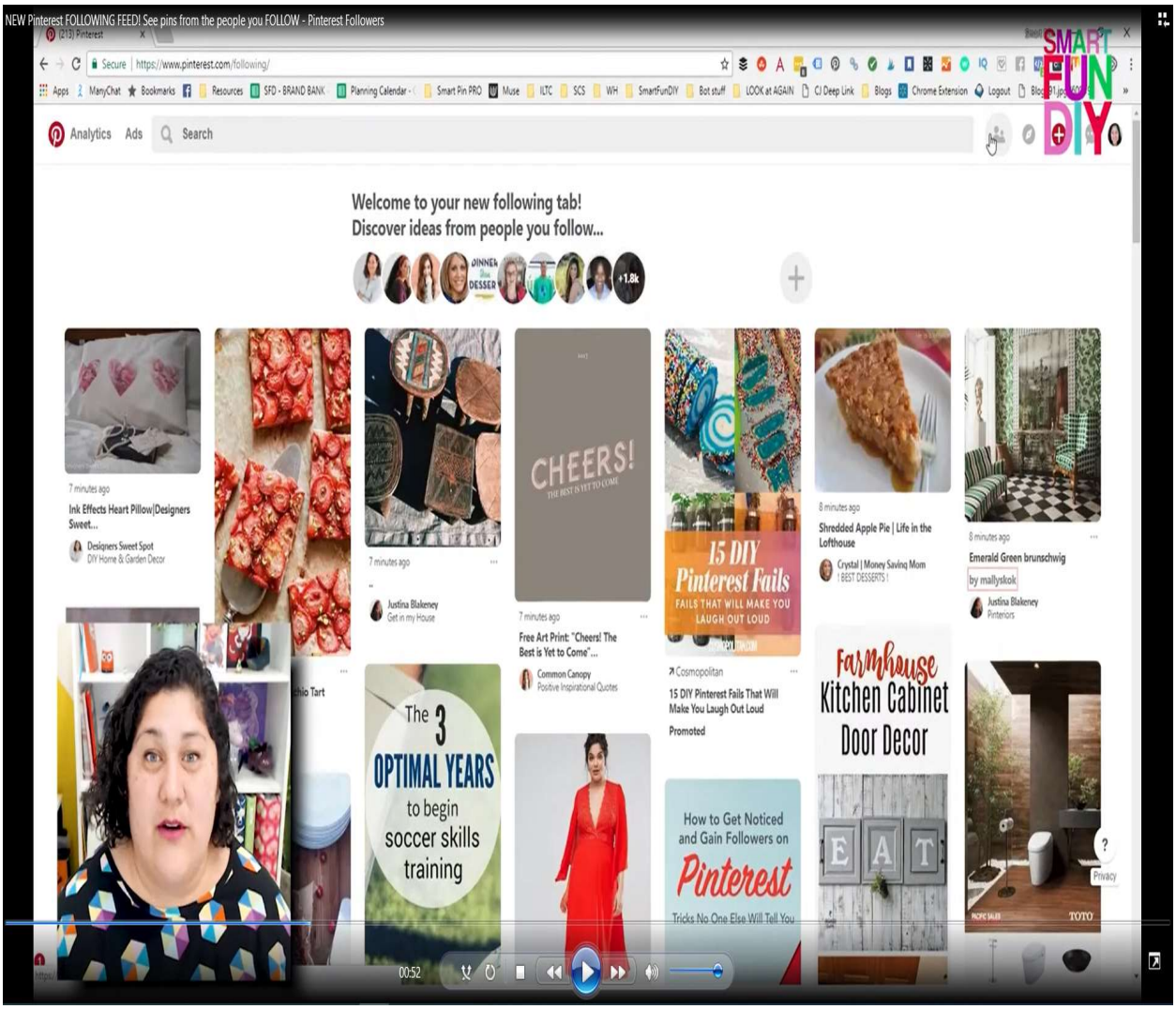
Pinterest is the place to discover and develop your taste, with inspiration for what you're doing now and what you're dreaming up for the future. But as your interests and plans change, your experience on Pinterest should evolve with you, too. In fact, one of our top Pinner requests is for more control over what you see in your home feed, and better ways to signal what you like and don't like over time.

Today, we're making it easier than ever to control the recommendations you see in your home feed with a new home feed tuner and Pin-level controls. Now you can easily see the boards, topics, followed accounts and recent history that contribute to your recommendations and make tweaks so your feed stays relevant and inspiring.

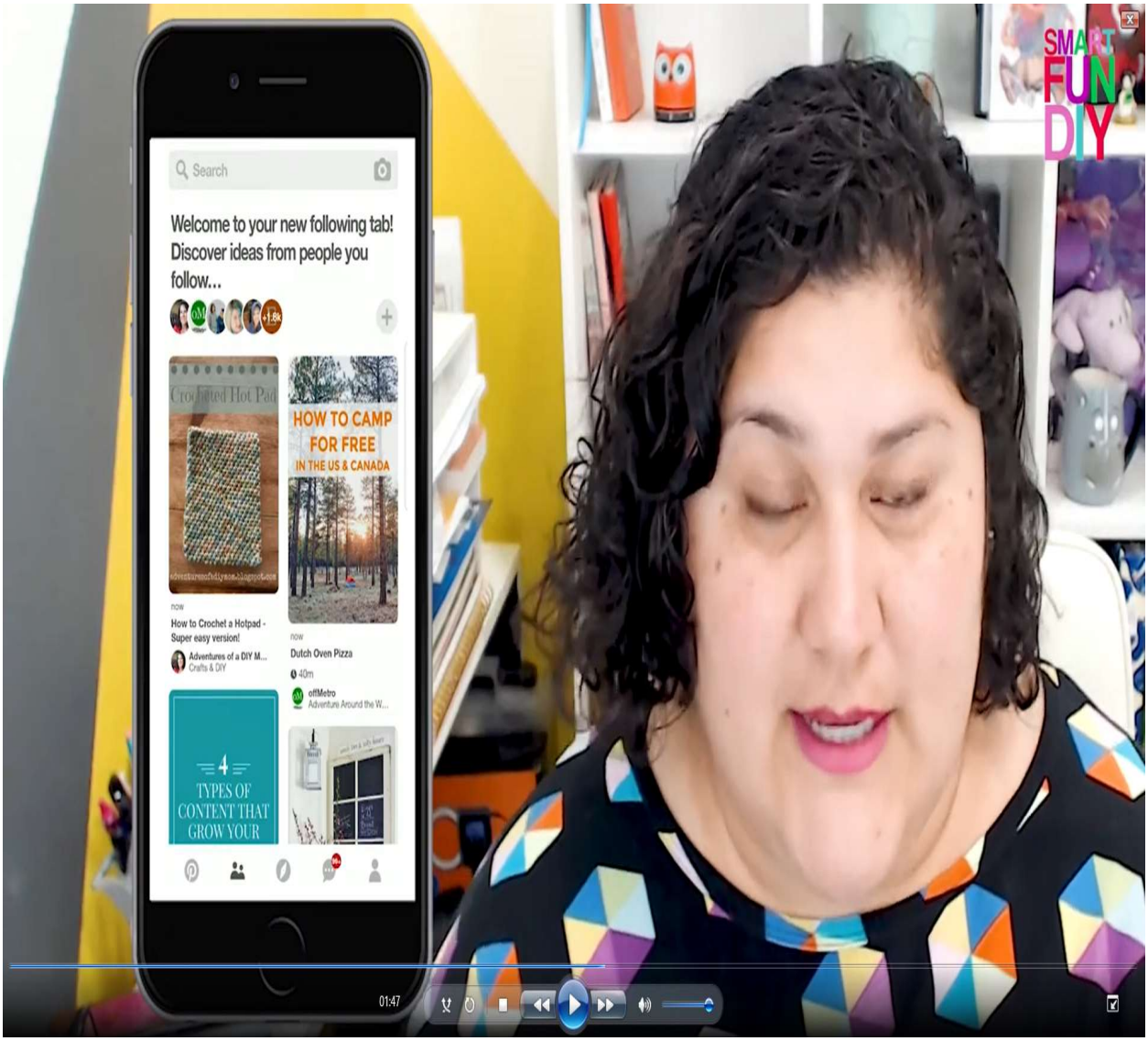
(*E.g.*, https://newsroom.pinterest.com/en/post/new-ways-to-control-the-ideas-you-see-in-your-home-feed (published October 25, 2019) (retrieved June 8, 2023)).



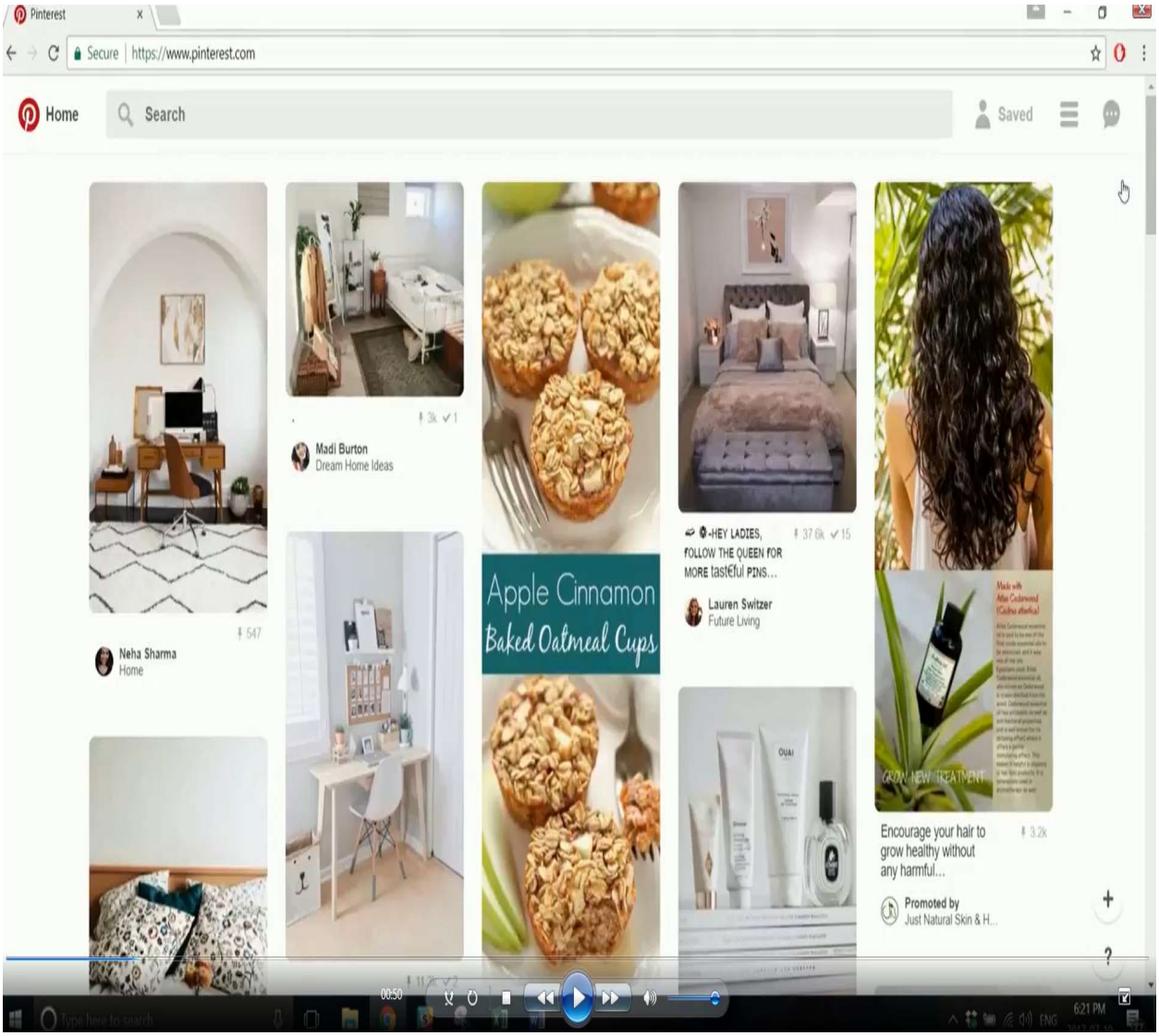
(*E.g.,* https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).



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



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



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

Controlling data access at the individual level

Pinterest and Amazon S3 developer teams got together in February 2019 to discuss new ways to ensure that specific data would be used only for the purposes Pinterest intended. The Pinterest team also needed to make sure that the rapidly expanding scale of Pinterest's data use wouldn't outgrow the access controls provided by the company's current data management system, built on Amazon S3.

At the time, Pinterest's storage was rapidly growing. Pinterest protected confidential data by creating clusters in Amazon S3 and assigning access permissions to those clusters for groups of users. Pinterest in particular wanted its developers to be able to grant data access to specific users and processes while blocking access to all others.

(*E.g.*, https://aws.amazon.com/blogs/storage/how-pinterest-worked-with-aws-to-create-a-new-way-to-manage-data-access-part-1/ (published July 26, 2021) (retrieved June 9, 2023)).

Pinterest on AWS

Pinterest is a visual-discovery platform and social commerce network with a mission to inspire. Building on AWS storage and compute solutions, Pinterest uses sophisticated machine learning engines to deliver personalized content to its users.

Customer Stories

EXECUTIVE SUMMARY

Pinterest hosts billions of images for users to browse and save as "Pins" to personalized digital inspiration boards. With more than 450 million monthly users and 300 billion Pins—and counting—Pinterest uses storage and compute solutions on Amazon Web Services (AWS) to provide the scale, speed, and security its platform requires, while keeping costs low and freeing engineers to focus on innovation. One such innovation, Pinterest Lens (Lens), uses machine learning (ML) to power visual search, so users can identify objects and discover related themes and products with

(*E.g.*, https://aws.amazon.com/solutions/case-studies/innovators/pinterest/ (retrieved June 9, 2023)).

Pinterest Scales Daily Log Search and Analytics from 500 GB to 1.7 TB, Reduces Costs by 30% on Amazon OpenSearch Service

2020

In this case study, learn how Pinterest migrated its log and search analytics workloads from self-managed and third-party Elasticsearch tools to Amazon OpenSearch Service. Following the migration, Pinterest scale its daily data-ingestion capabilities from 500 GB to 1.7 TB in only 1 year while reducing operational costs by 30 percent, improving data security, and increasing engineer productivity.

Read more

How Pinterest Uses Amazon S3 Glacier Deep Archive to Manage Storage for its Visual Discovery Engine

2021

As a large-scale user of Amazon Simple Storage Service (Amazon S3), Pinterest stores billions of objects and nearly an exabyte of data across multiple AWS Regions. In this blog, learn how Pinterest uses Amazon S3 Lifecycle to assign data to optimal Amazon S3 storage class assignments, helping meet large-scale S3 cost goals and maximize storage efficiency.

Read more

How Pinterest Worked with AWS to Create a New Way to Manage Data Access

2021

(*E.g.*, https://aws.amazon.com/solutions/case-studies/innovators/pinterest/ (retrieved June 9, 2023)).

ENTERPRISE

Pinterest has to spend at least $750 million on Amazon's cloud through mid-2023

PUBLISHED FRI, MAR 22 2019•6:07 PM EDT UPDATED WED, APR 17 2019•6:34 PM EDT

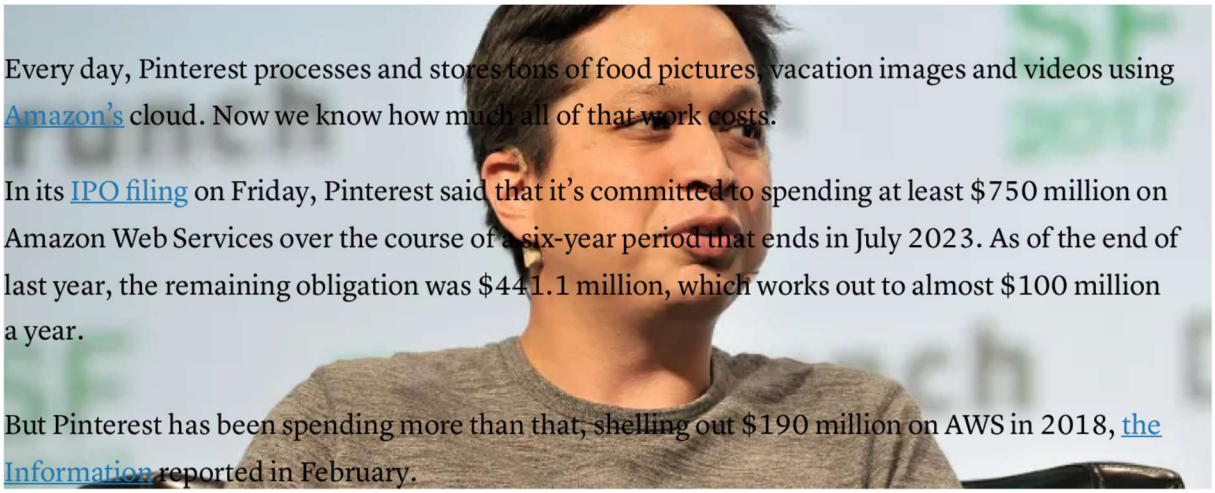
Jordan Novet
@JORDANNOVET

WATCH LIVE

KEY POINTS

Pinterest will have to pay Amazon Web Services at least $440 million for cloud services usage over the next four and a half years to reach its minimum commitment.

The disclosure in its IPO prospectus comes after Lyft said it's spending at least $80 million a year with AWS.



Every day, Pinterest processes and stores tons of food pictures, vacation images and videos using Amazon's cloud. Now we know how much all of that work costs.

In its IPO filing on Friday, Pinterest said that it's committed to spending at least $750 million on Amazon Web Services over the course of a six-year period that ends in July 2023. As of the end of last year, the remaining obligation was $441.1 million, which works out to almost $100 million a year.

But Pinterest has been spending more than that, shelling out $190 million on AWS in 2018, the Information reported in February.

(*E.g.*, https://www.cnbc.com/2019/03/22/pinterest-must-spend-at-least-750-million-on-aws-ipo-filing.html (published March 22, 2019, updated April 17, 2019)).

Pinterest cut a deal with Amazon Web Services that requires it to spend $750 million with the cloud leader by 2023

BY TOM KRAZIT (HTTPS://WWW.GEEKWIRE.COM/AUTHOR/TOMKRAZIT/) on March 22, 2019 at 2:15 pm

Amazon Web Services CEO Andy Jassy speaks at re:Invent 2018. (GeekWire Photo / Tom Krazit)

Back in 2017, as Pinterest's spending with Amazon Web Services skyrocketed thanks to user growth, the company cut a deal with AWS that traded pricing concessions with a commitment to spend $750 million with the cloud market share leader by 2023, a new filing reveals.

Pinterest (https://www.pinterest.com) had $441.1 million left to go on that commitment as of the end of 2018, and it expects to honor it, the company revealed with the release of its S-1 statement (https://www.sec.gov/Archives/edgar/data/1506293/000119312519083544/d674330ds1.htm) Friday. The company recorded $273 million in revenue during the fourth quarter of 2018, during which it eked out net income of $47 million.

Pinterest was born on AWS (https://www.geekwire.com/2017/born-cloud-behind-times-pinterest-doubled-containers-kubernetes/), and is one of the more prominent examples of how social media and web startups founded in the wake of the Great Recession used cloud services to get off the ground and grow into large businesses without the up-front investment required to build their own tech infrastructure. But costs were rising quickly when the agreement was altered in 2017: Pinterest's cost of revenue was $51.5 million in the first quarter of 2017, and after the agreement was reached that cost of revenue fell to $36 million the following quarter, as traffic continued to increase.

(*E.g.*, https://www.geekwire.com/2019/pinterest-cut-deal-amazon-web-services-requires-spend-750-million-cloud-leader-2023/ (published March 22, 2019)).

We depend on Amazon Web Services for the vast majority of our compute, storage, data transfer and other services. Any disruption of, degradation in or interference with our use of Amazon Web Services could negatively affect our operations and harm our business, revenue and financial results.

Amazon Web Services ("AWS") provides the cloud computing infrastructure we use to host our website, mobile application and many of the internal tools we use to operate our business. We have a long-term commitment with AWS and our website, mobile application and internal tools use compute, storage, data transfer and other services provided by AWS. Under the agreement with AWS, as amended by an addendum entered into in May 2017, in return for negotiated concessions, we currently are required to maintain a substantial majority of our monthly usage of certain compute, storage, data transfer and other services on AWS. This addendum is terminable only under certain conditions, including by either party following the other party's material breach, which may be the result of circumstances that are beyond our control. See "—We may be liable as a result of content or information that is published or made available on our service." A material breach of this addendum by us, or early termination of the addendum as a result of an acquisition of us by another cloud services provider, could carry substantial penalties, including liquidated damages.

Any significant disruption of, limitation of our access to or other interference with our use of AWS would negatively impact our operations and our business could be harmed. In addition, any transition of the cloud services currently provided by AWS to another cloud services provider would be difficult to implement and would cause us to incur significant time and expense and could disrupt or degrade our ability to deliver our products and services. Our business relies on the availability of our services for Pinners and advertisers. If Pinners or advertisers are not able to access our service or platform or encounter difficulties in doing so, we may lose Pinners or advertisers. The level of service provided by AWS could affect the availability or speed of our services, which may also impact the usage of and Pinners' and advertisers' satisfaction with our platform and could harm our business and reputation. If AWS increases pricing terms, terminates or seeks to terminate our contractual relationship, establishes more favorable relationships with our competitors, or changes or interprets its terms of service or policies in a manner that is unfavorable with respect to us, those actions could harm our business, revenue and financial results.

(*E.g.,* https://www.sec.gov/Archives/edgar/data/1506293/000095012319000057/filename1.htm (March 22, 2019 Pinterest, Inc. Form S-1)).

IP	Platform	Network Owner	Network	Location	Shar
2600:1407:3c00:1483::1931 (/resources/ips/2600:1407:3c00:1483::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:1484::1931 (/resources/ips/2600:1407:3c00:1484::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:1486::1931 (/resources/ips/2600:1407:3c00:1486::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:148a::1931 (/resources/ips/2600:1407:3c00:148a::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:148b::1931 (/resources/ips/2600:1407:3c00:148b::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:1490::1931 (/resources/ips/2600:1407:3c00:1490::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:895::1931 (/resources/ips/2600:1407:3c00:895::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:a800:2a2::1931 (/resources/ips/2600:1407:a800:2a2::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	

and 227 more

CONTENT DELIVERY NETWORKS - CDNS

IP	Platform	Network Owner	Network
2.17.236.194 (/resources/ips/2.17.236.194)	Akamai (/resources/platforms/akamai)	-	-
23.1.13.5 (/resources/ips/23.1.13.5)	Akamai (/resources/platforms/akamai)	Airtel (/resources/networks/airtel)	Core Net
2.16.12.194 (/resources/ips/2.16.12.194)	Akamai (/resources/platforms/akamai)	Akamai (/resources/networks/akamai)	Core Net
23.37.230.40 (/resources/ips/23.37.230.40)	Akamai (/resources/platforms/akamai)	Cox (/resources/networks/cox)	Core Net
2.17.204.220 (/resources/ips/2.17.204.220)	Akamai (/resources/platforms/akamai)	Dimension Data (/resources/networks/dimension-data)	Core Net
23.7.242.189 (/resources/ips/23.7.242.189)	Akamai (/resources/platforms/akamai)	PLDT (/resources/networks/pldt)	Core Net
2.17.125.76 (/resources/ips/2.17.125.76)	Akamai (/resources/platforms/akamai)	Sparkle (/resources/networks/sparkle)	Core Net
5.255.145.162 (/resources/ips/5.255.145.162)	Akamai (/resources/platforms/akamai)	Telefonica (/resources/networks/telefonica)	Core Net
2.22.72.239 (/resources/ips/2.22.72.239)	Akamai (/resources/platforms/akamai)	Telus (/resources/networks/telus)	Core Net
23.0.103.193 (/resources/ips/23.0.103.193)	Akamai (/resources/platforms/akamai)	TPG Telecom (/resources/networks/tpg-telecom)	Core Net
13.32.127.23 (/resources/ips/13.32.127.23)	Amazon CloudFront (/resources/platforms/amazon-cloudfront)	Amazon CloudFront (/resources/networks/amazon-cloudfront)	Global Ne

and 2071 more

(*E.g.,* https://www.netify.ai/resources/applications/pinterest (retrieved June 9, 2023)).

PLATFORM USAGE SUMMARY

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

Cloud Hosts	# of IPs
Amazon AWS (/resources/platforms/amazon-aws)	6
Oracle Cloud (/resources/platforms/oracle-cloud)	7
Google Hosted (/resources/platforms/google-hosted)	3

SaaS	# of IPs
Adobe Ads (/resources/platforms/adobe-ads)	237

CDNs	# of IPs
Akamai (/resources/platforms/akamai)	1895
Amazon CloudFront (/resources/platforms/amazon-cloudfront)	121
CloudFlare (/resources/platforms/cloudflare)	6
Fastly (/resources/platforms/fastly)	59

IP DETAILS

CORE NETWORKS

IP	Category	Network Owner	Network	Location	Shared
2001:500:90:1::60 (/resources/ips/2001:500:90:1::60)	Technology	Dyn (/resources/networks/dyn)	Core Network	United States	
2001:500:94:1::60 (/resources/ips/2001:500:94:1::60)	Technology	Dyn (/resources/networks/dyn)	Core Network	United States	
204.13.250.60 (/resources/ips/204.13.250.60)	Technology	Dyn (/resources/networks/dyn)	Core Network	United States	
204.13.251.60 (/resources/ips/204.13.251.60)	Technology	Dyn (/resources/networks/dyn)	Core Network	United States	

PLATFORM DETAILS

CLOUD HOSTING NETWORKS

IP	Platform	Network Owner	Network	Location	Share
23.20.165.22 (/resources/ips/23.20.165.22)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
50.17.2.67 (/resources/ips/50.17.2.67)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
142.251.132.225 (/resources/ips/142.251.132.225)	Google Hosted (/resources/platforms/google-hosted)	Google	Core Network	United States	
208.78.70.60 (/resources/ips/208.78.70.60)	Oracle Cloud (/resources/platforms/oracle-cloud)			United States	
108.59.161.60 (/resources/ips/108.59.161.60)	Oracle Cloud (/resources/platforms/oracle-cloud)	Dyn	Core Network	United States	
2600:2000:2240::60 (/resources/ips/2600:2000:2240::60)	Oracle Cloud (/resources/platforms/oracle-cloud)	Oracle Cloud	Core Network	United States	

and 11 more

CLOUD SOFTWARE-AS-A-SERVICE

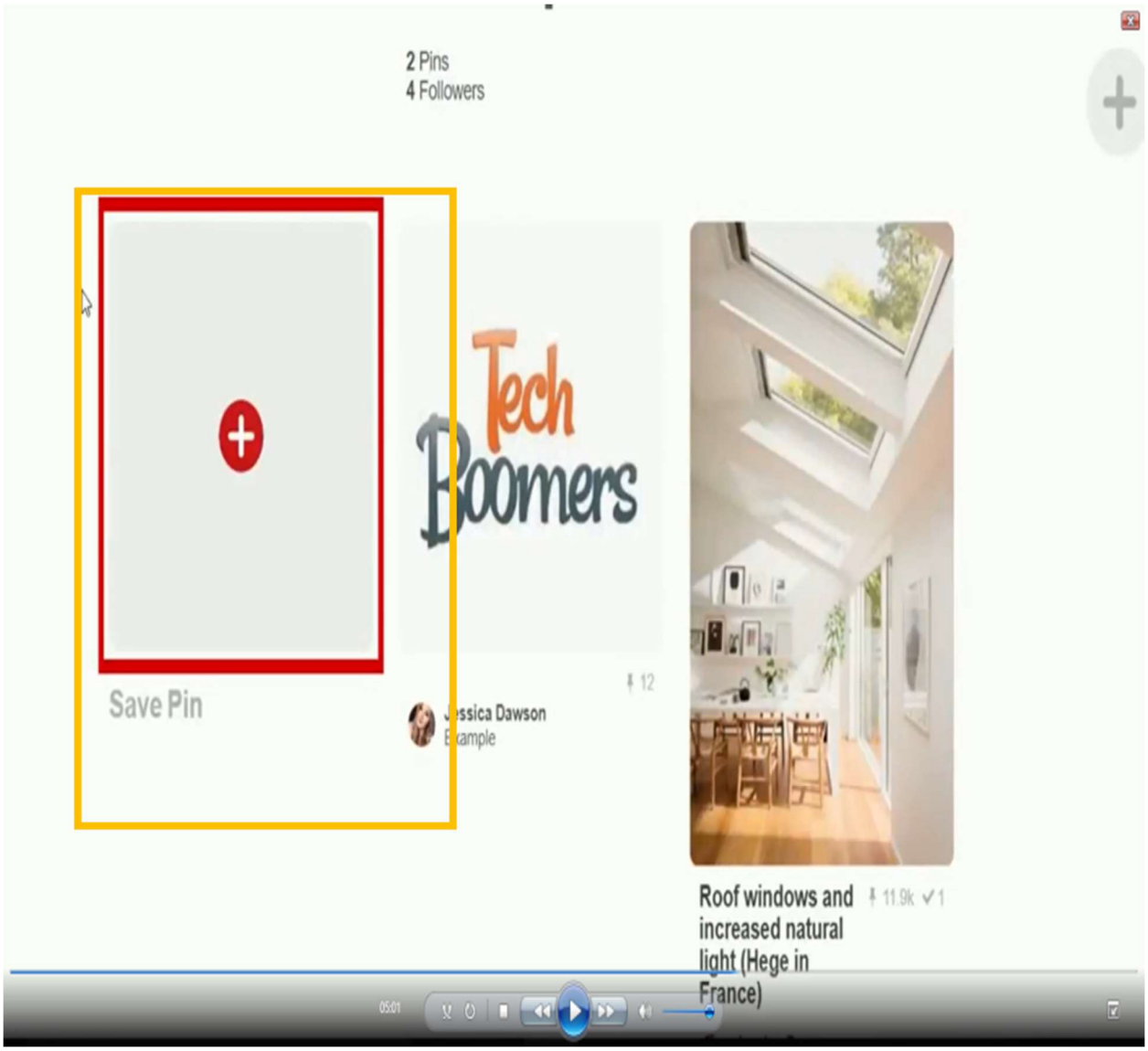
IP	Platform	Network Owner	Network	Location	Shar
2600:1406:3400:682::1931 (/resources/ips/2600:1406:3400:682::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1406:5400:58a::1931 (/resources/ips/2600:1406:5400:58a::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3400:48e::1931 (/resources/ips/2600:1407:3400:48e::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	

and 227 more

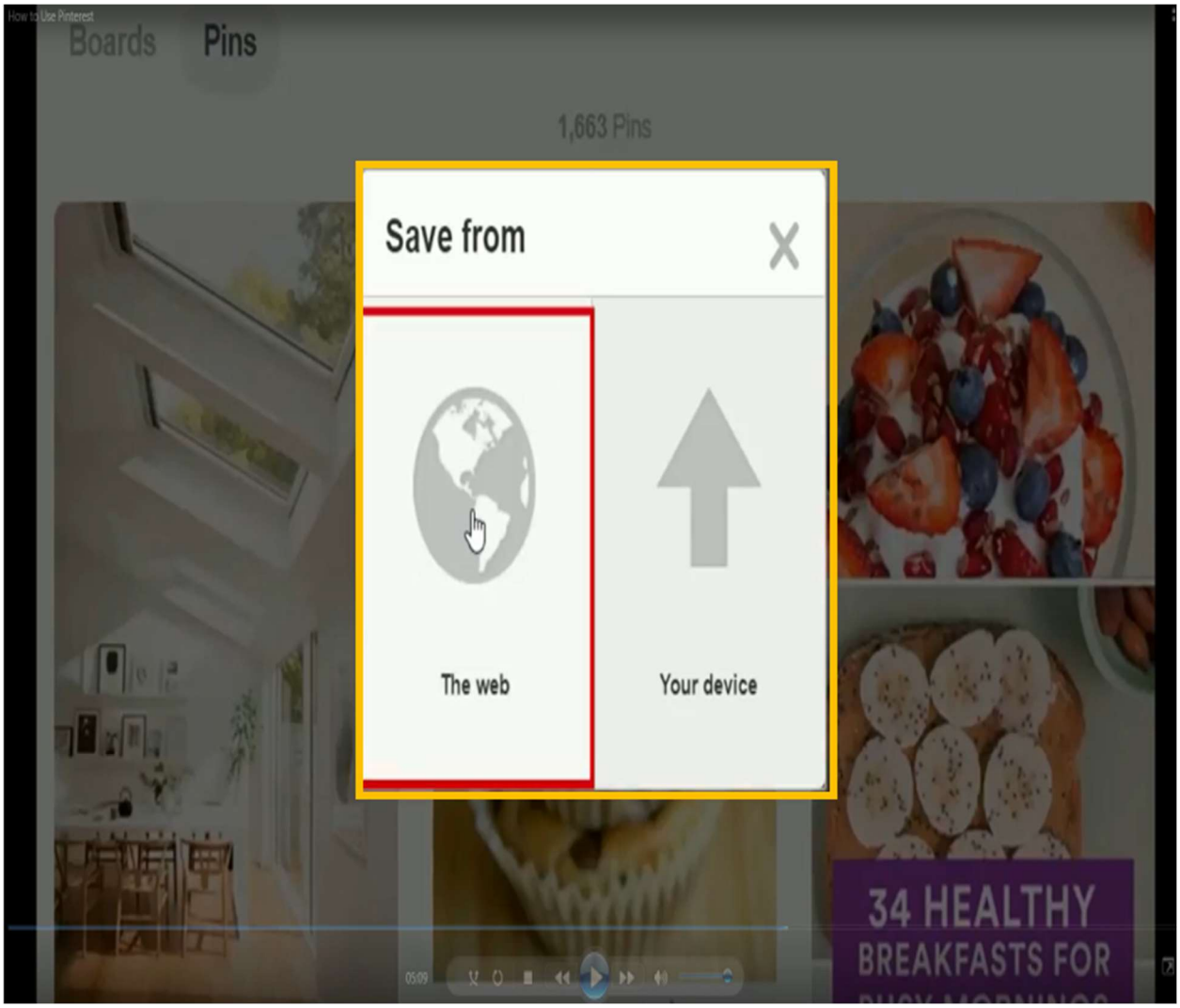
(*E.g.,* https://www.netify.ai/resources/applications/pinterest (retrieved June 9, 2023)).

23. The Accused Instrumentality includes an electronic media submissions server subsystem, having one or more data processing apparatus and an electronic media submissions database in order to process and store received submissions from users, for example as discussed above in connection with the Pinterest platform and the Pinterest feeds' servers. These submissions, which include *e.g.,* text and images, to be provided to the Pinterest platform via a submissions electronic interface configured to receive such electronic media submissions (*e.g.,* text and images) from a plurality of submitters (*e.g.,* Pinterest users with accompanying created

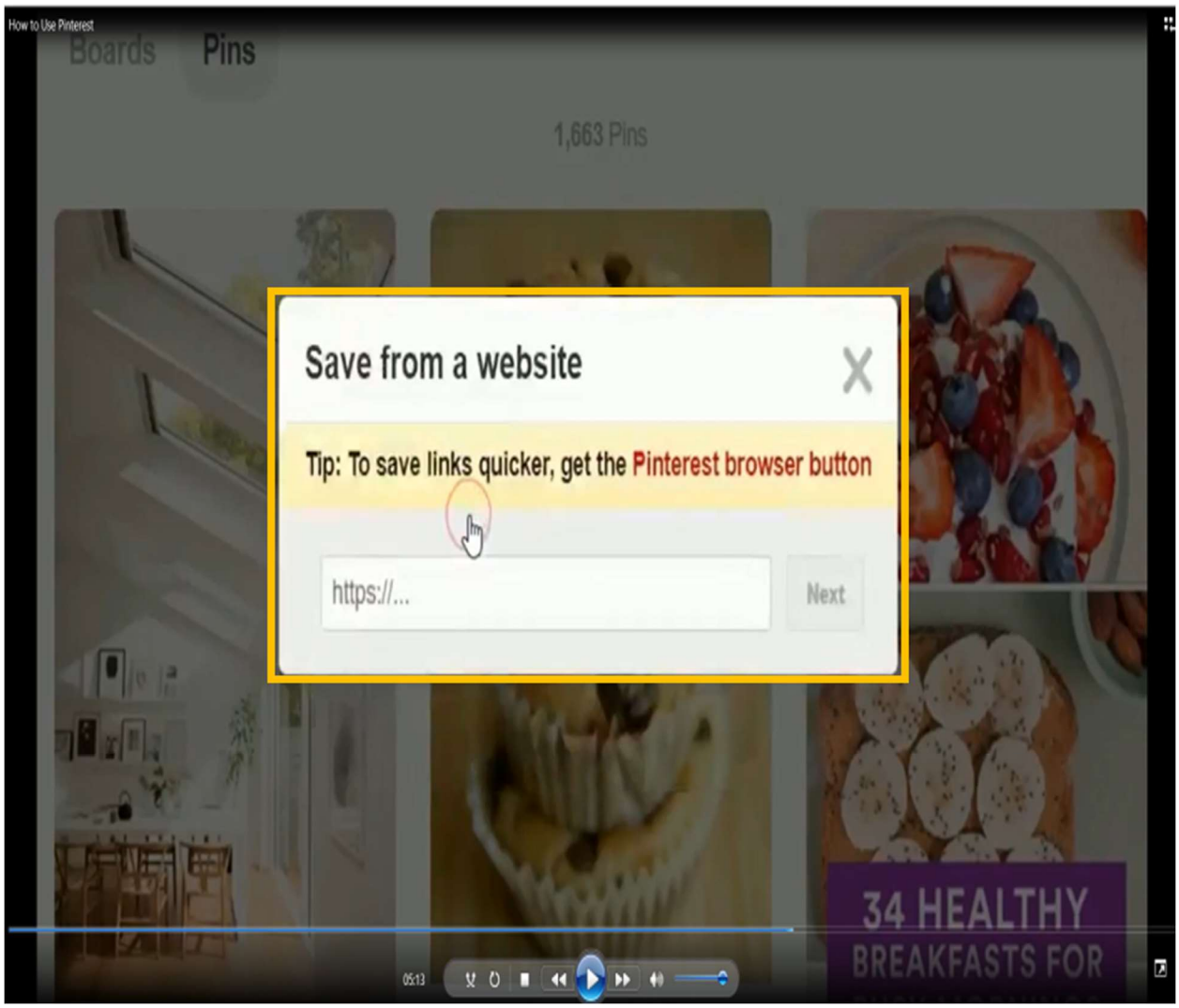
accounts) over a public network (*e.g.,* the Internet) and stored in said electronic media submissions database for use in distribution to other users.



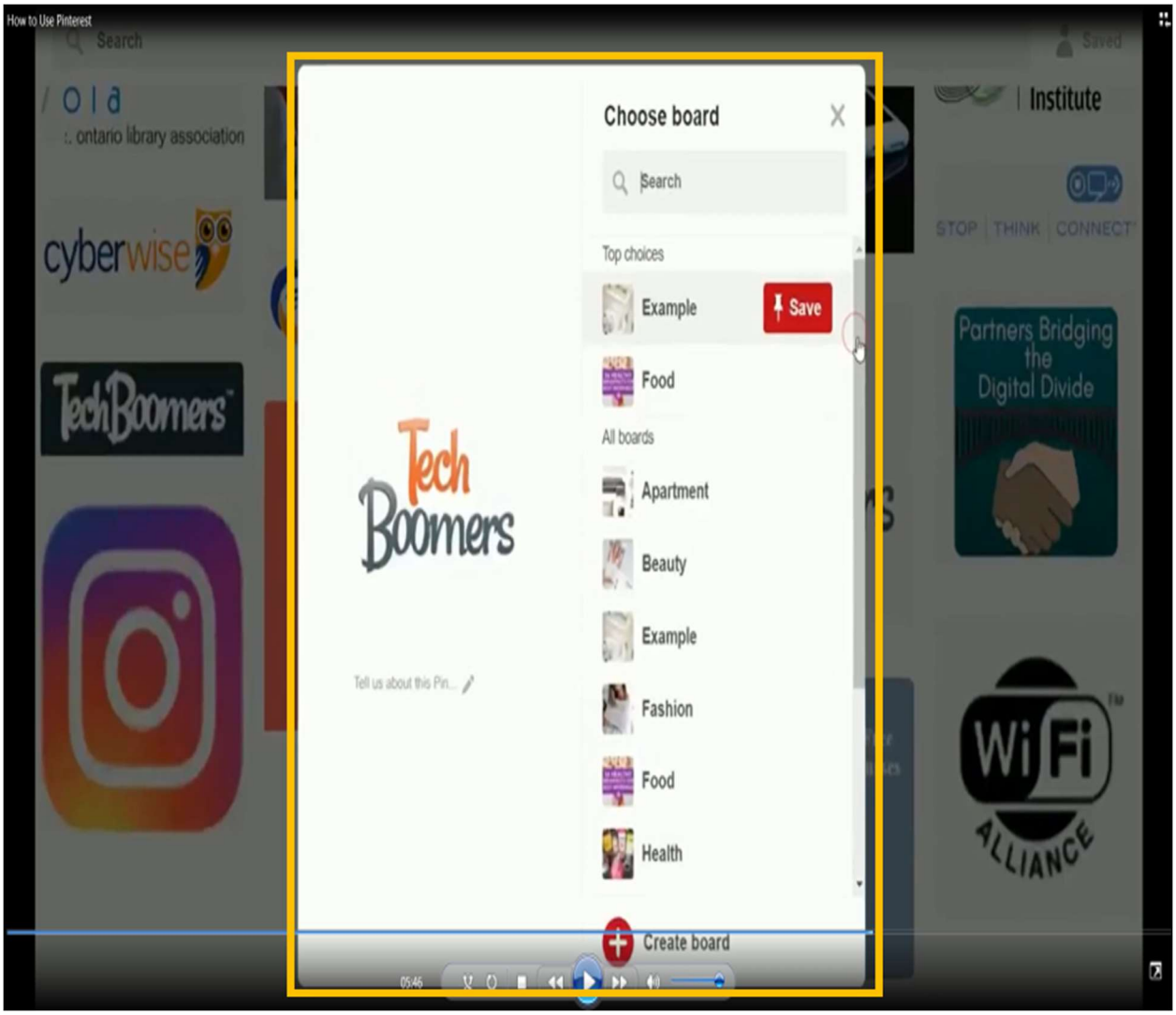
(*E.g.,* https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



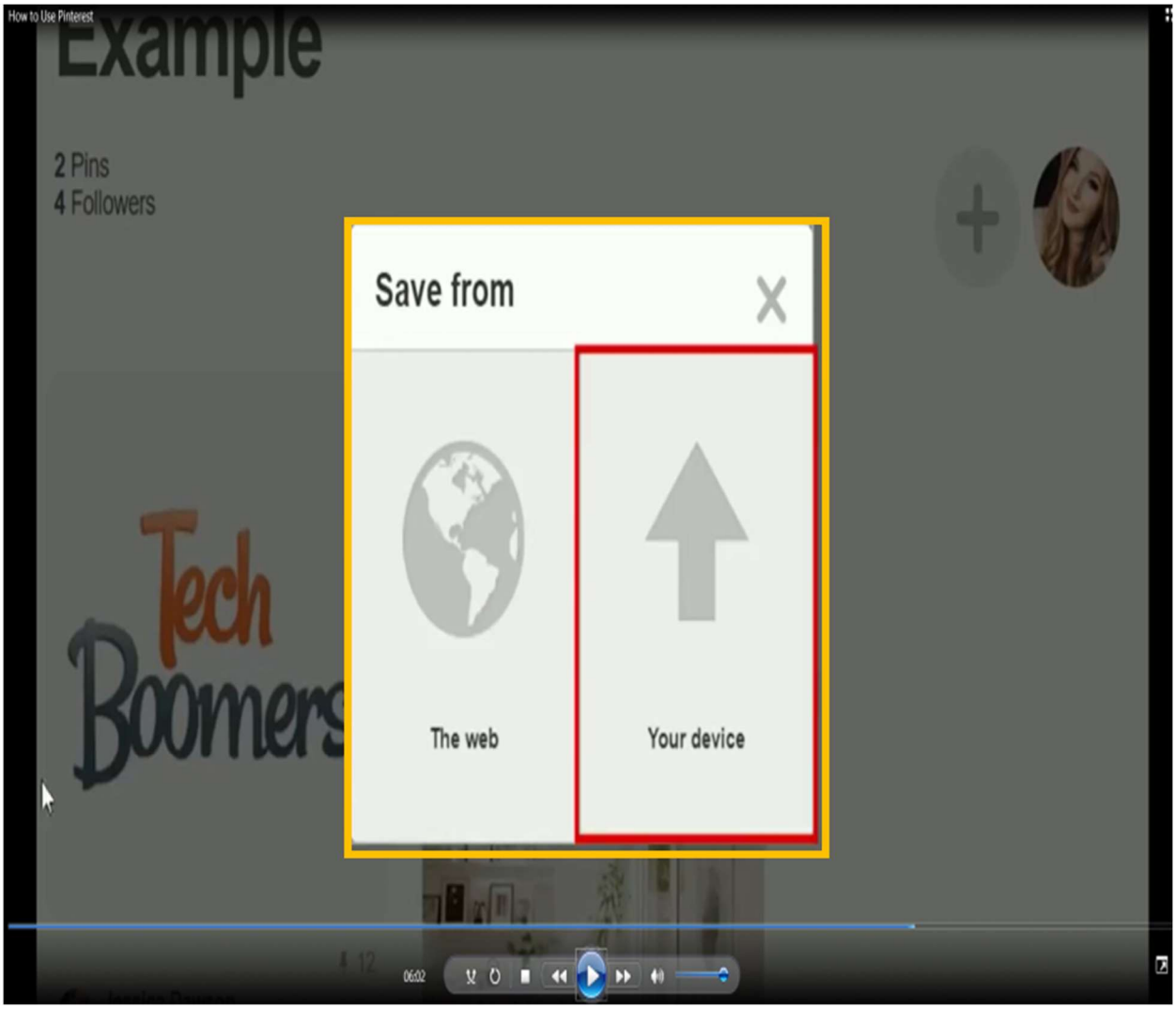
(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



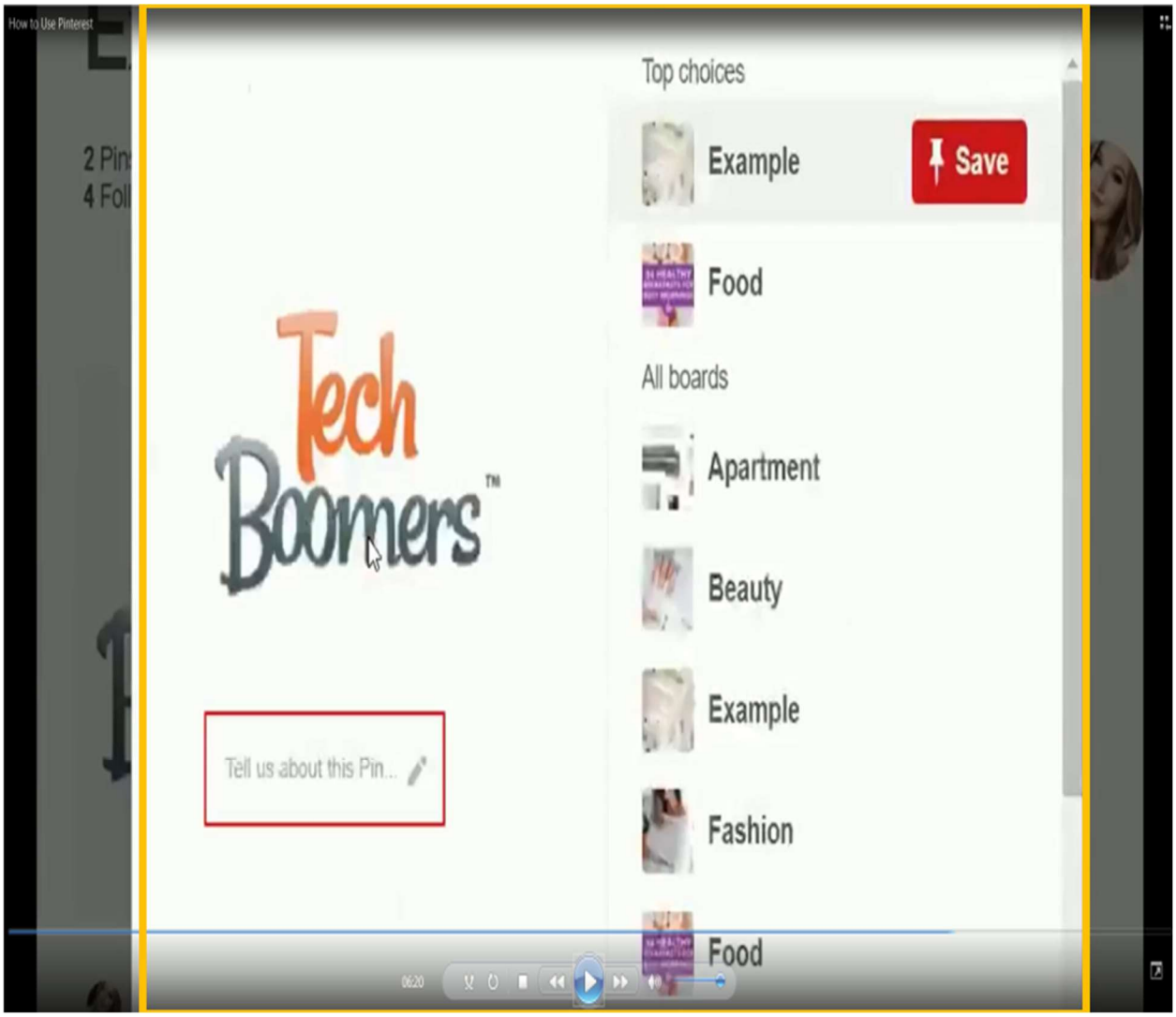
(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



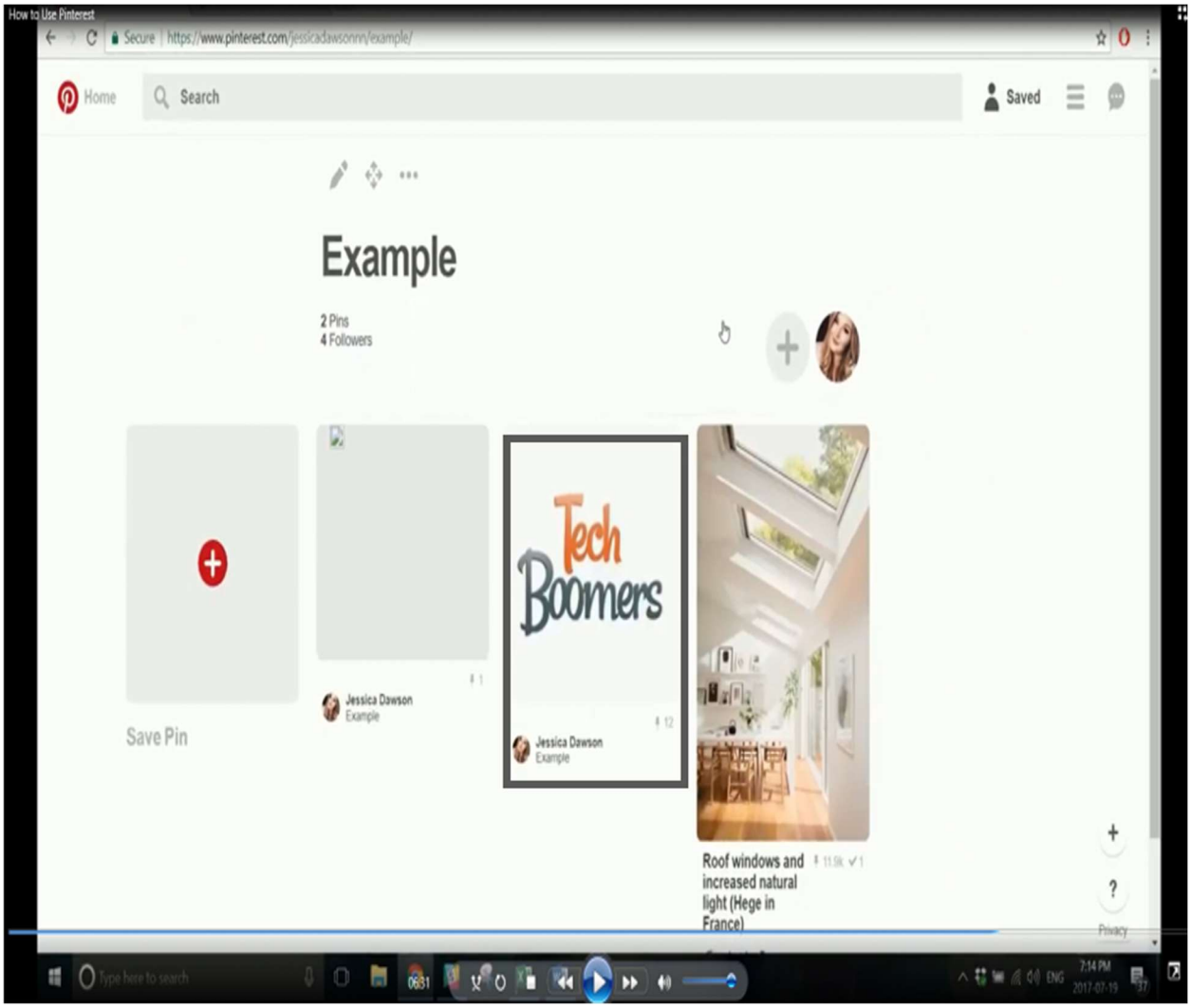
(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



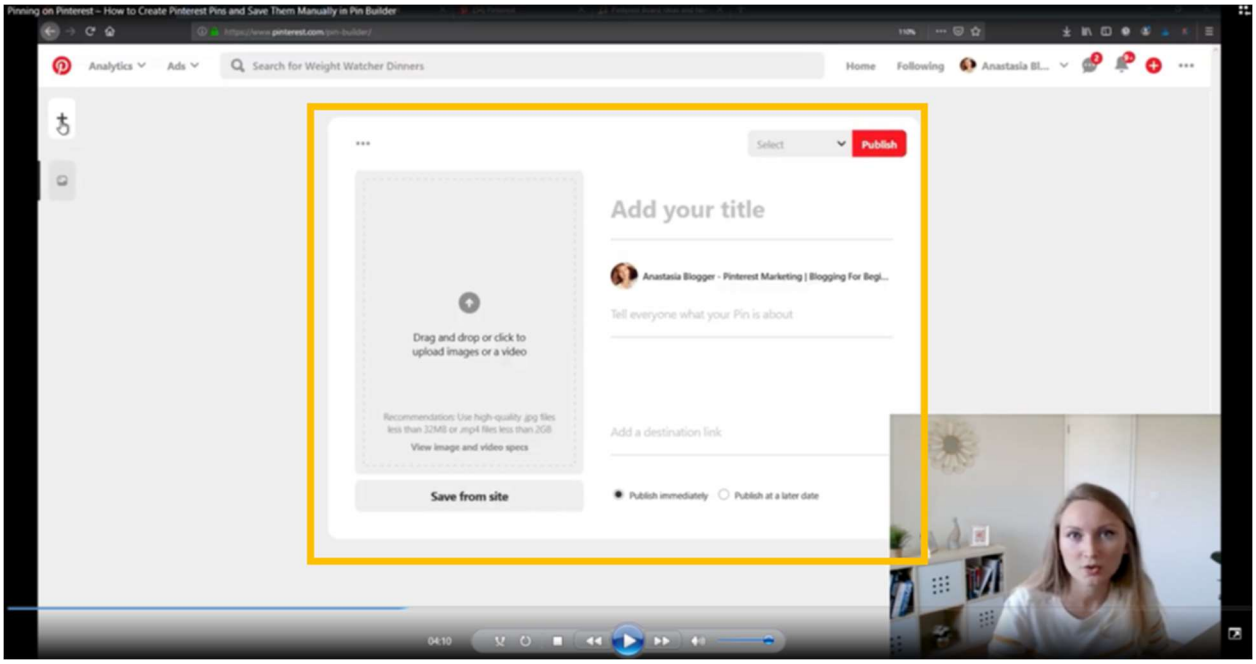
(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).

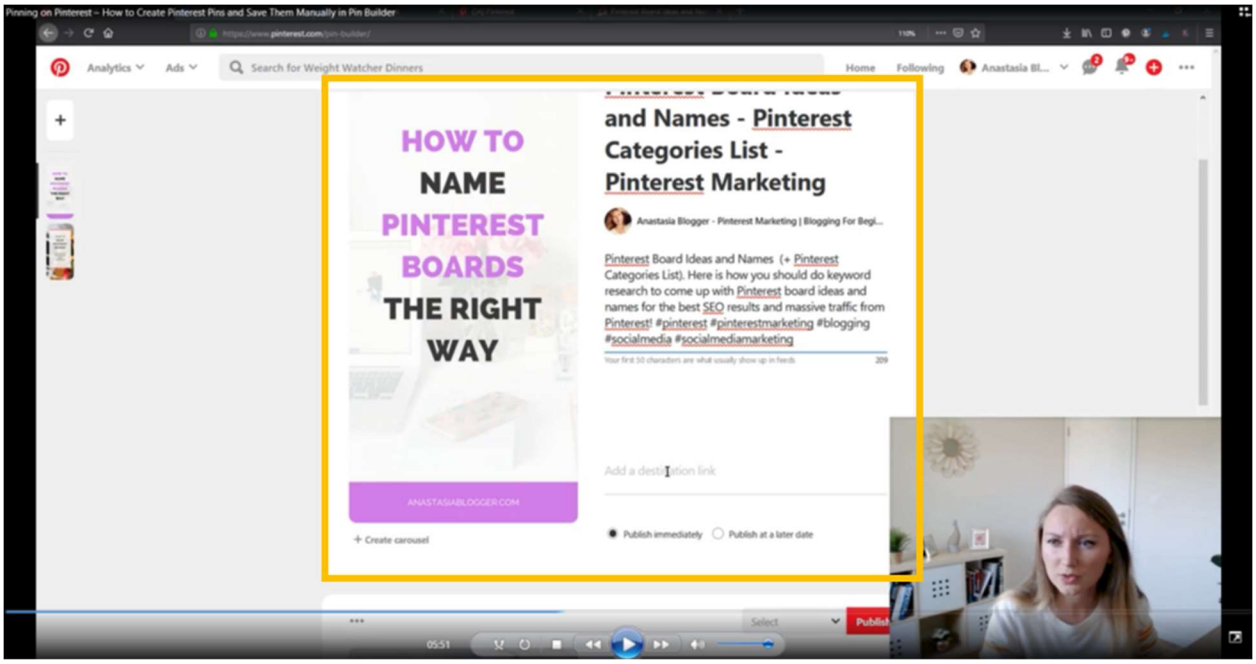


(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).

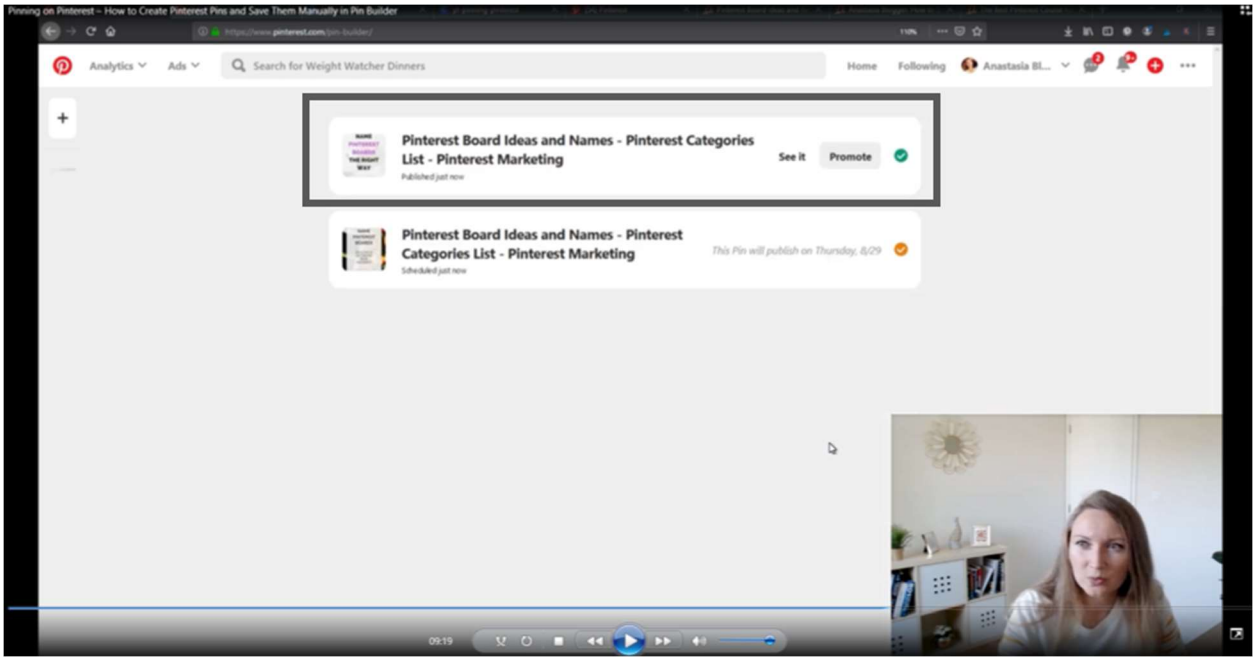


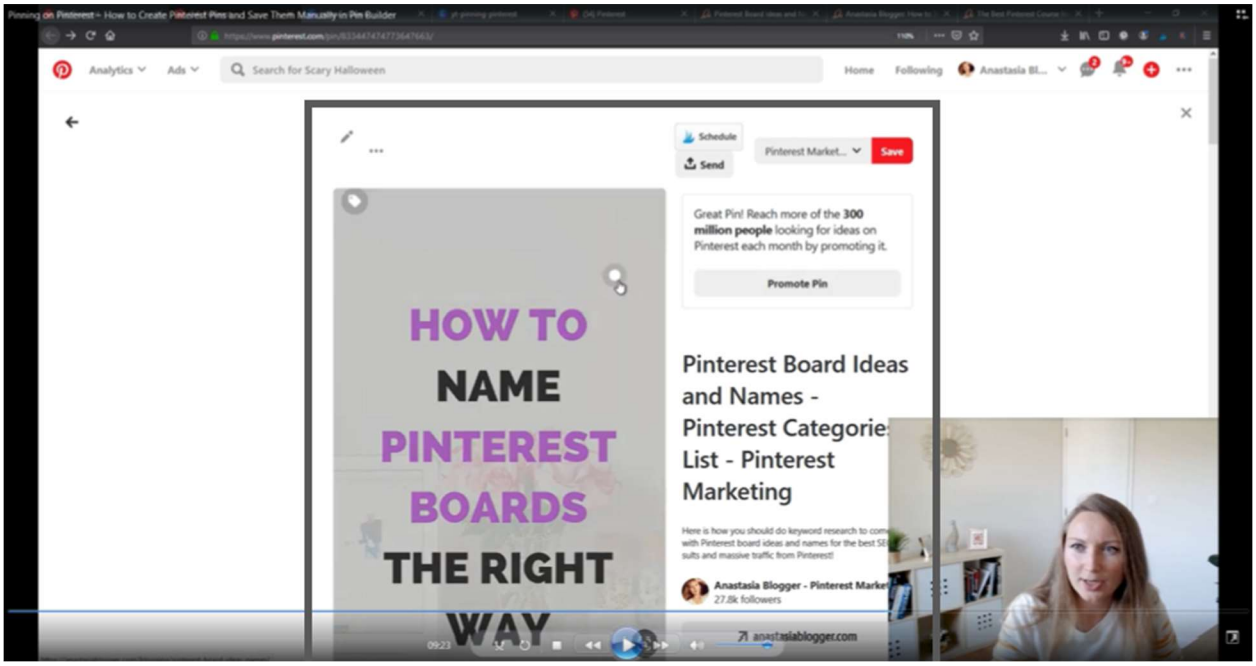
(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).





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

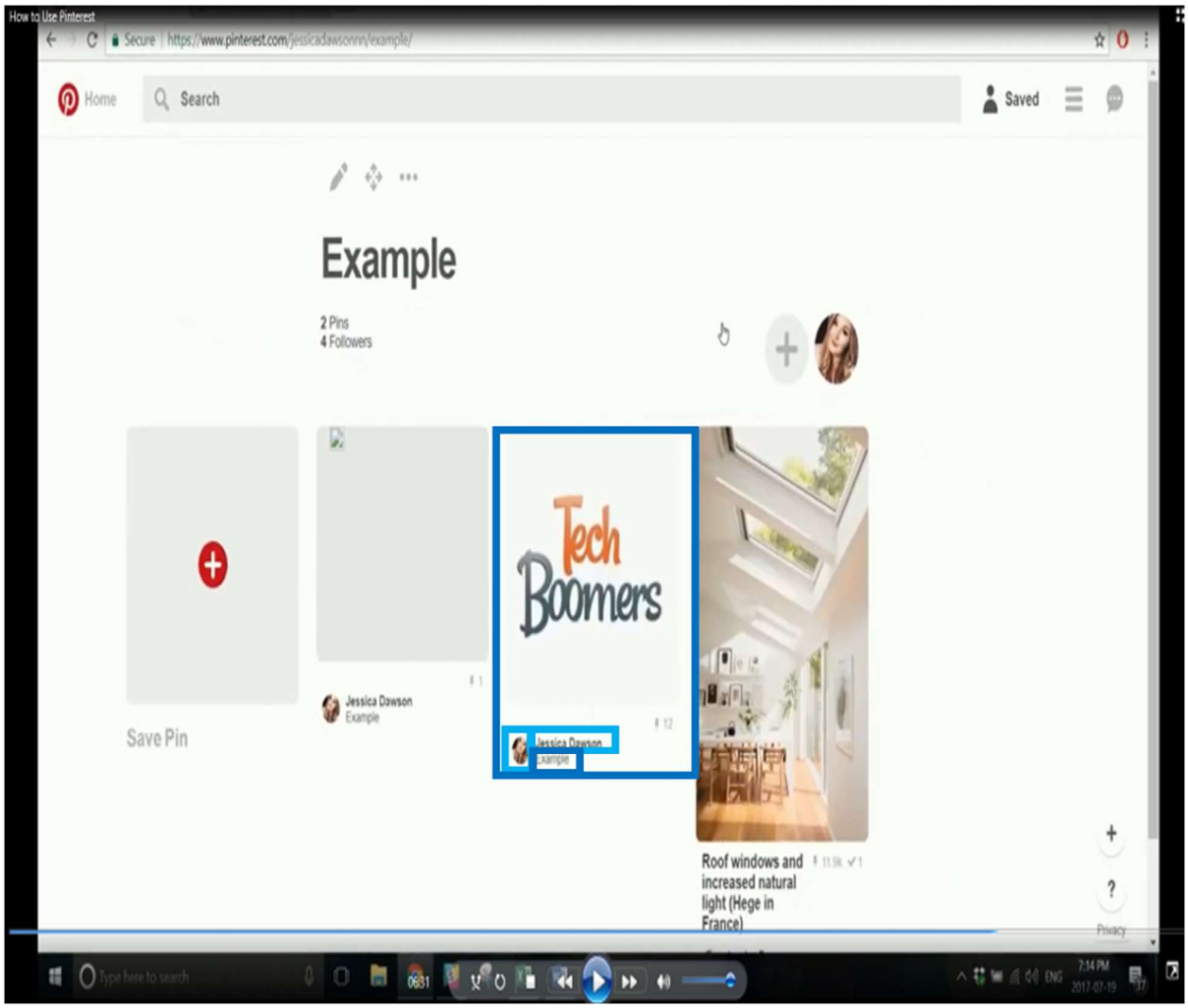




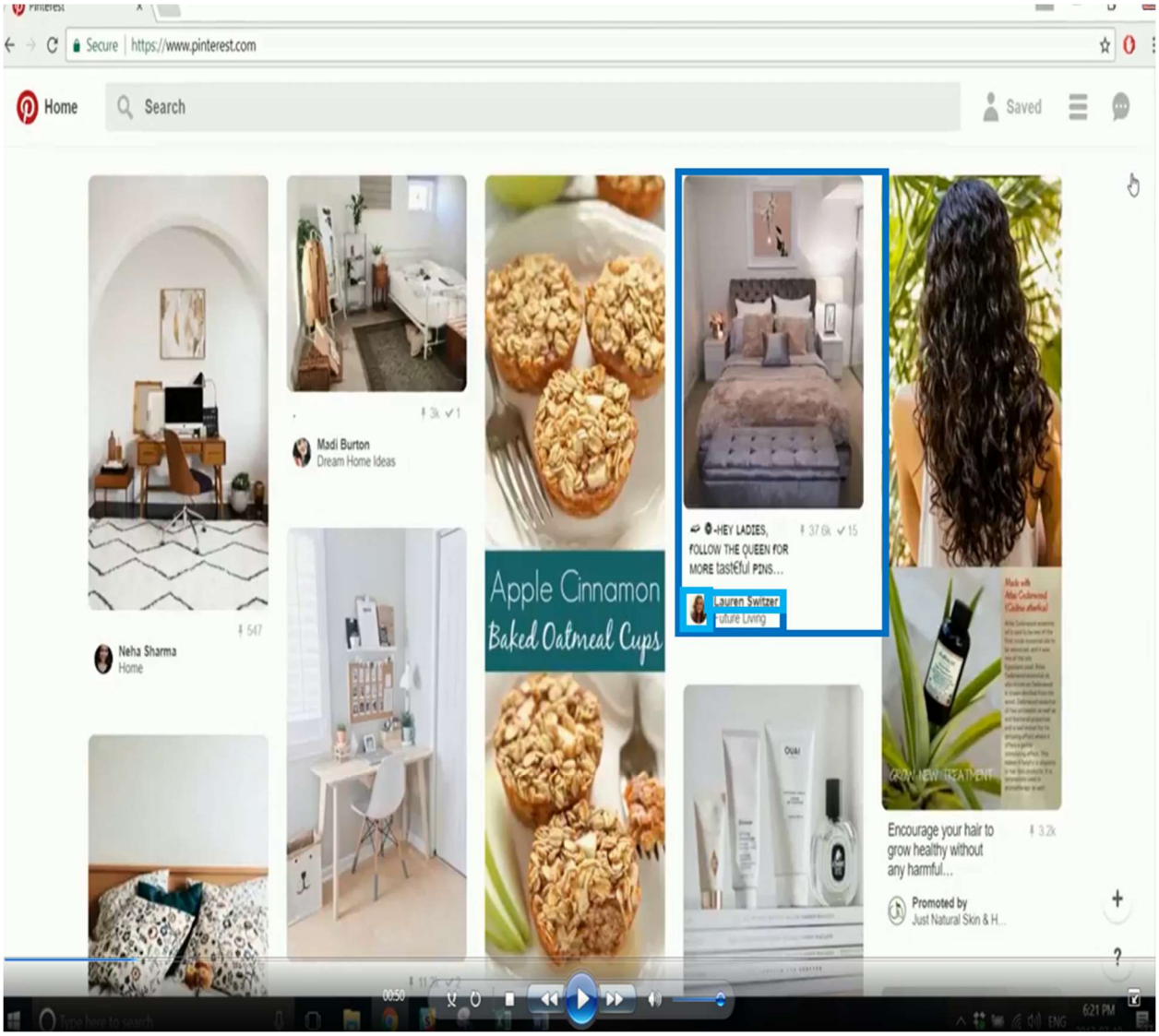
(*E.g.,* https://www.youtube.com/watch?v=EmqaleD5790 (published August 29, 2019)).

24. The electronic media submissions database of the Accused Instrumentality which stores the submissions (*e.g.,* text, images, forming a multimedia post, submitted by Pinterest users) further stores data identifying the submitter and data indicating content for each electronic media

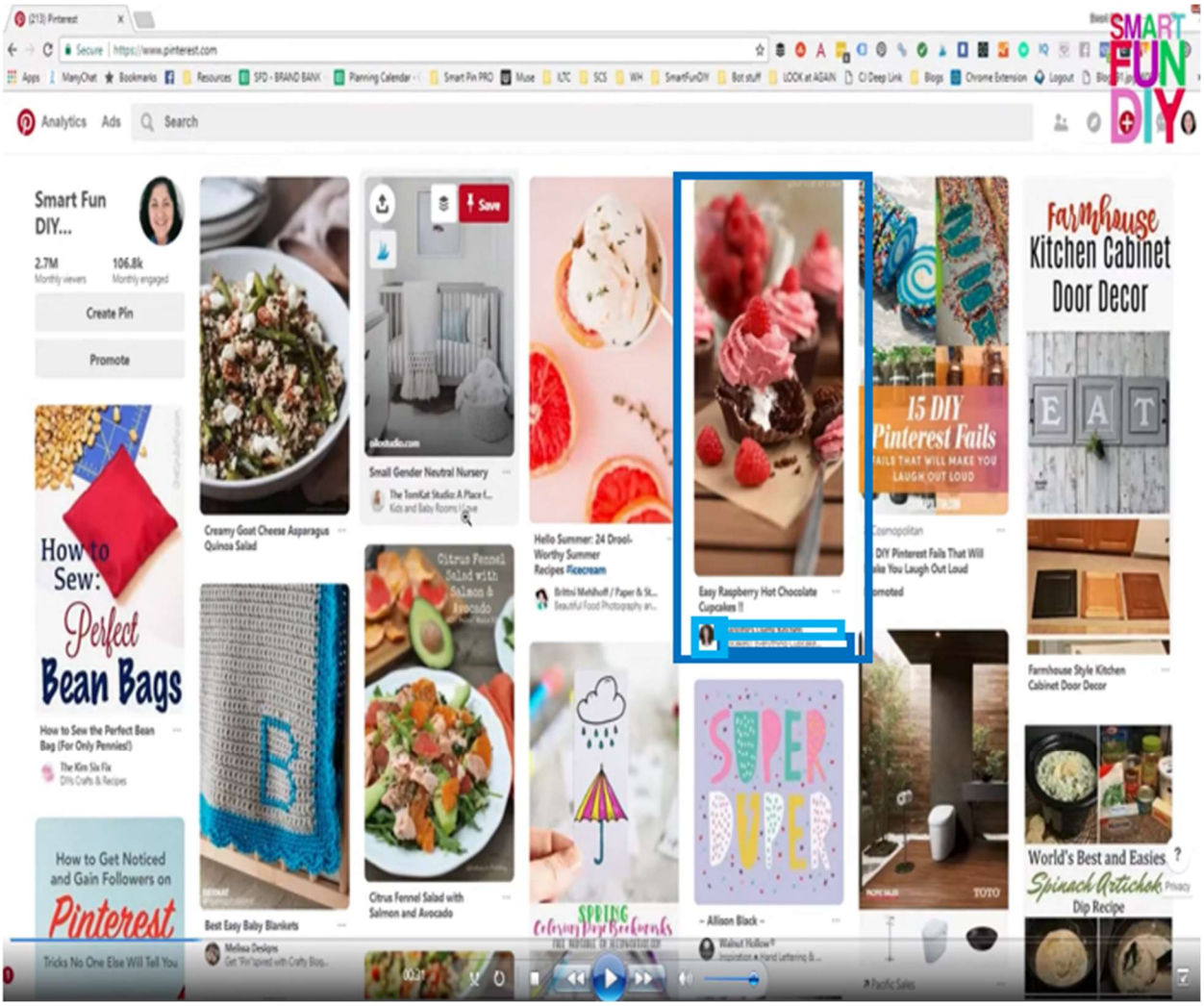
submission, *e.g.,* as shown below with a name and profile picture identifying the submitter and textual and image matter indicating content.



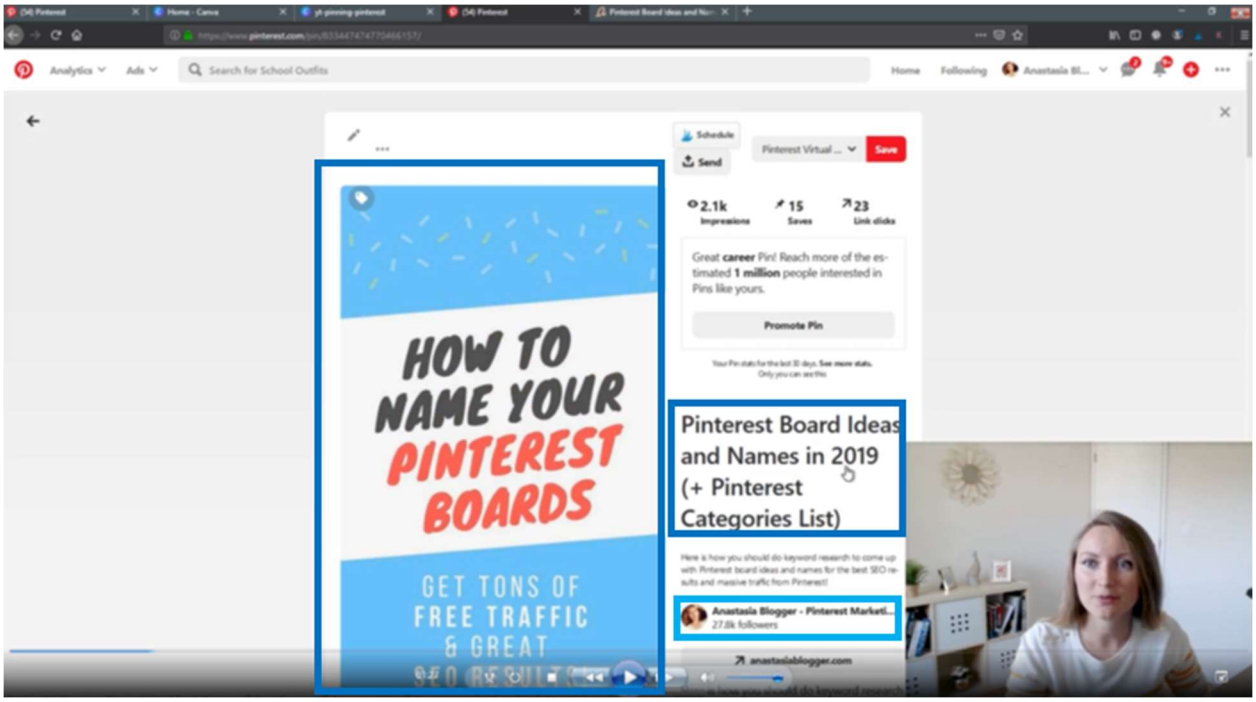
(*E.g.,* https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



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

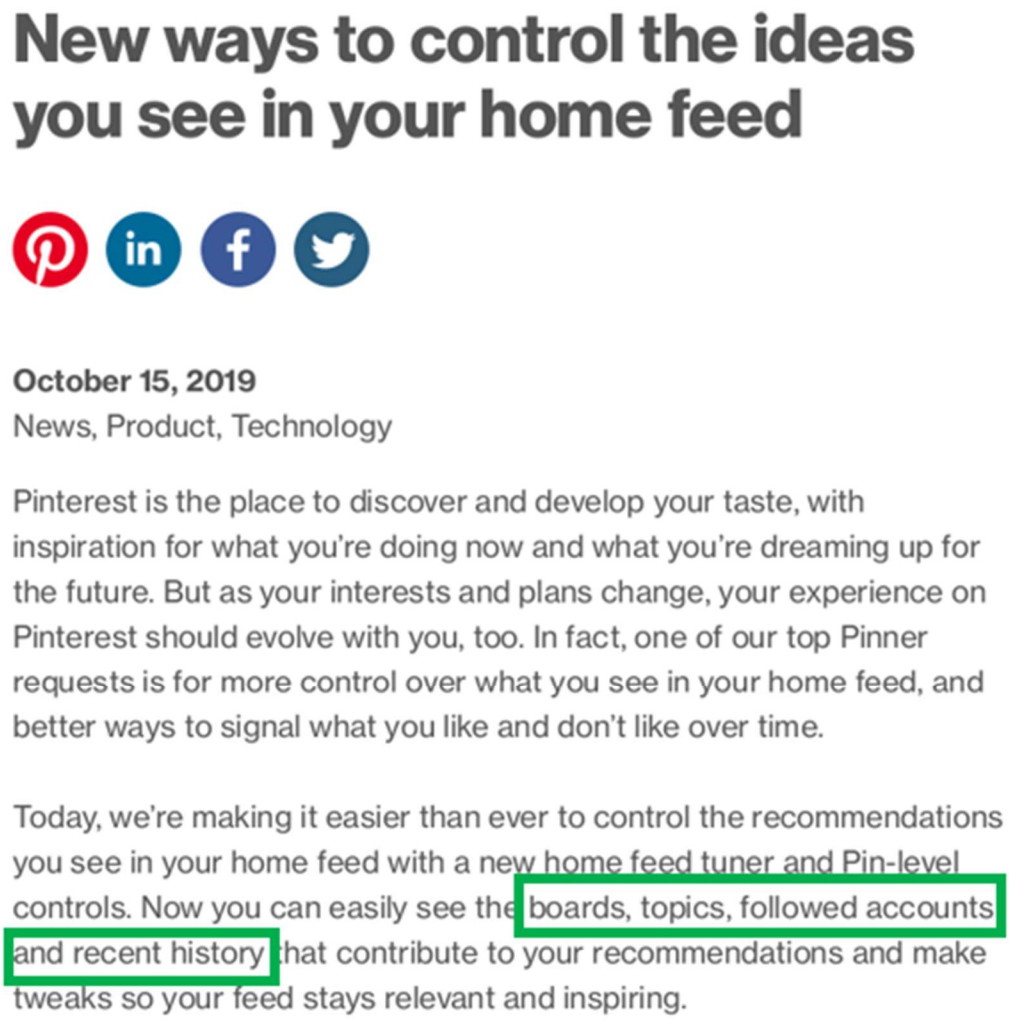


(*E.g.*, https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).



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

25. The Accused Instrumentality comprises a user database comprising one or more user attributes stored in such database. Such user database is stored in memory available through the Pinterest platform's and Pinterest feeds' servers, for example as discussed below. Some examples of such user attributes stored in such user database on the Accused Instrumentality are follows of other users, follows of boards and topics, that may be indicated by a user stored within such user database, as well as a user history, as shown and discussed for example below. Further examples of such user attributes stored in such user database on the Pinterest platform and Pinterest feeds are user profile pictures, a user name, and user viewing data, shown for example below.



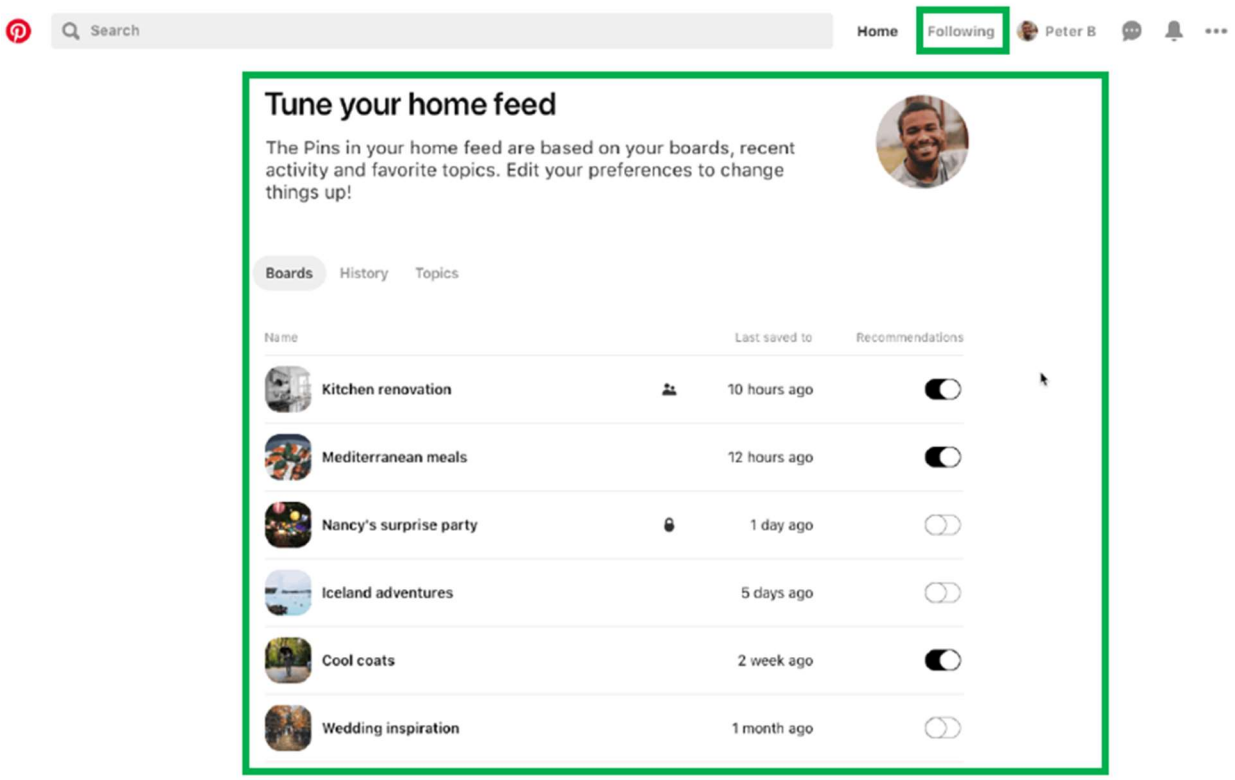
New ways to control the ideas you see in your home feed

October 15, 2019
News, Product, Technology

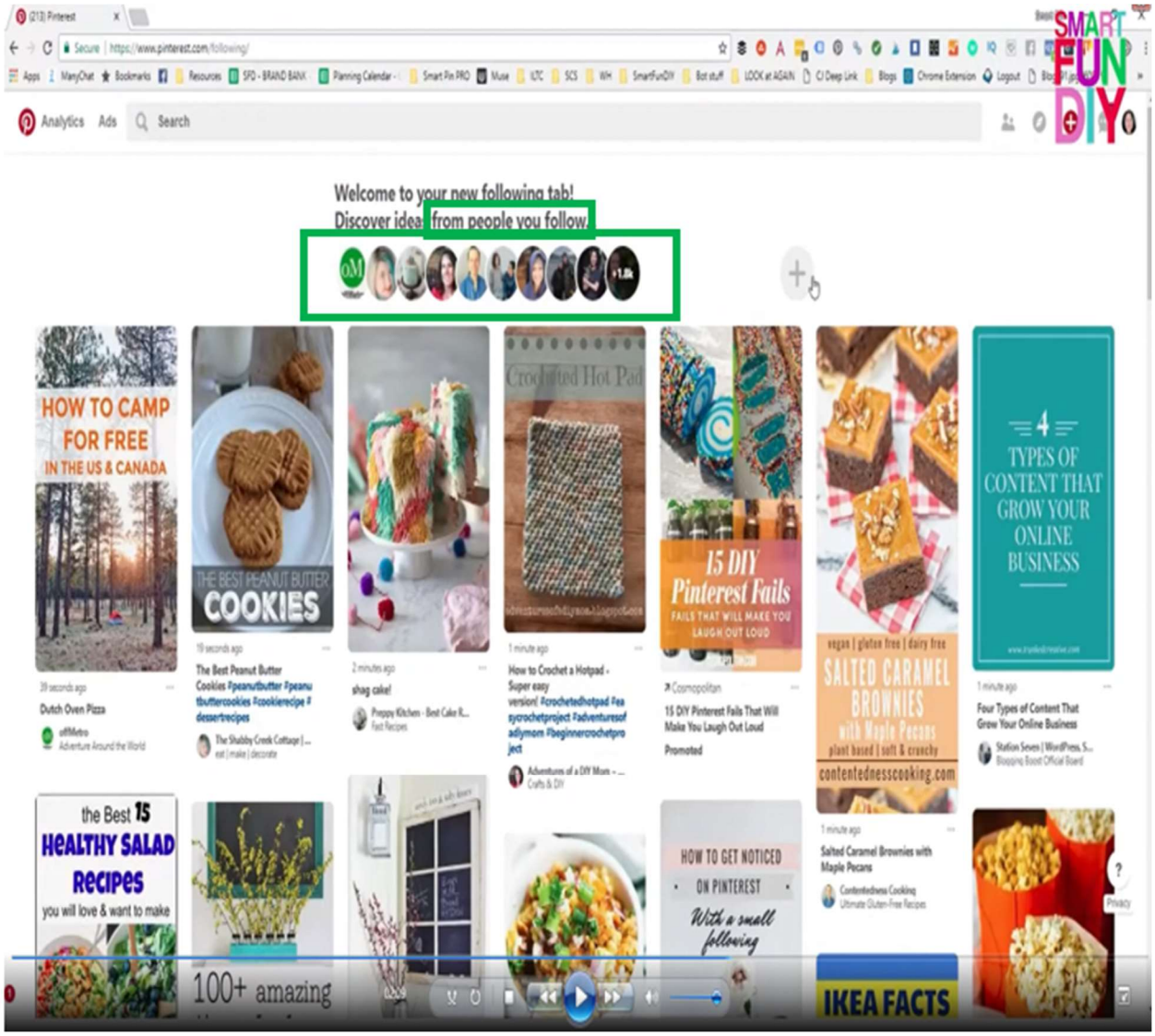
Pinterest is the place to discover and develop your taste, with inspiration for what you're doing now and what you're dreaming up for the future. But as your interests and plans change, your experience on Pinterest should evolve with you, too. In fact, one of our top Pinner requests is for more control over what you see in your home feed, and better ways to signal what you like and don't like over time.

Today, we're making it easier than ever to control the recommendations you see in your home feed with a new home feed tuner and Pin-level controls. Now you can easily see the boards, topics, followed accounts and recent history that contribute to your recommendations and make tweaks so your feed stays relevant and inspiring.

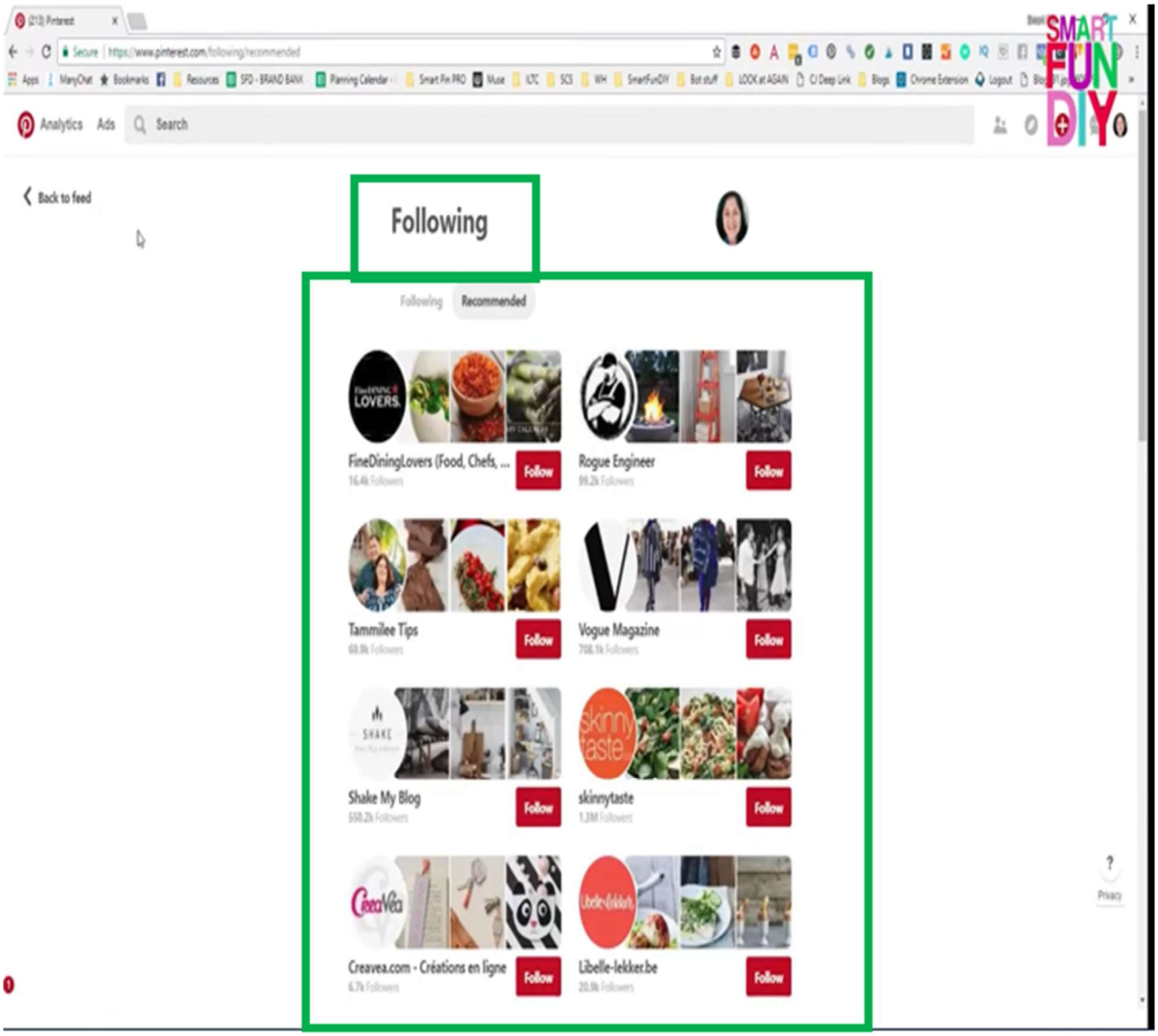
(*E.g.*, https://newsroom.pinterest.com/en/post/new-ways-to-control-the-ideas-you-see-in-your-home-feed (published October 25, 2019) (retrieved June 8, 2023)).



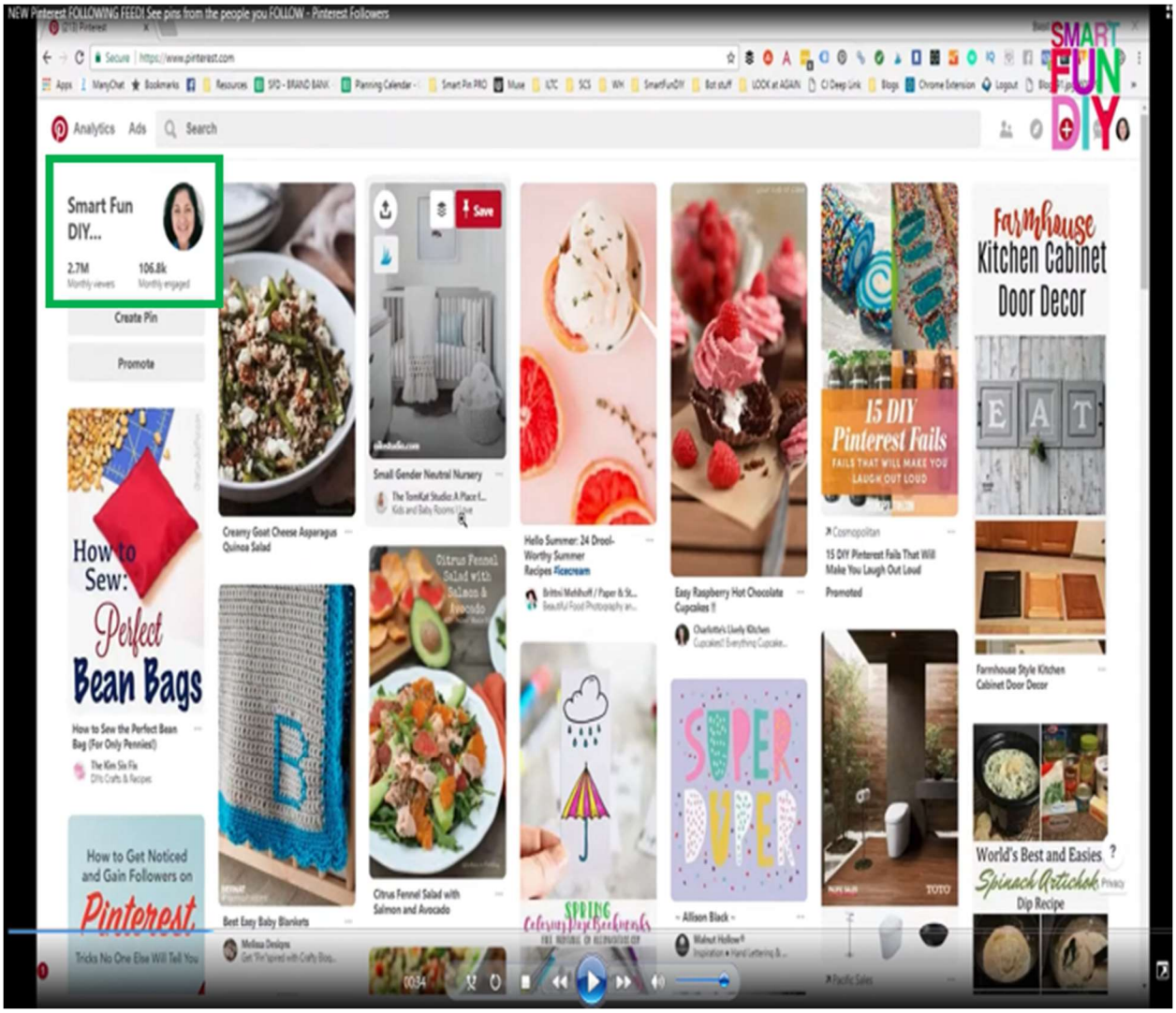
(*E.g.*, https://newsroom.pinterest.com/en/post/new-ways-to-control-the-ideas-you-see-in-your-home-feed (published October 25, 2019) (retrieved June 8, 2023)).



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



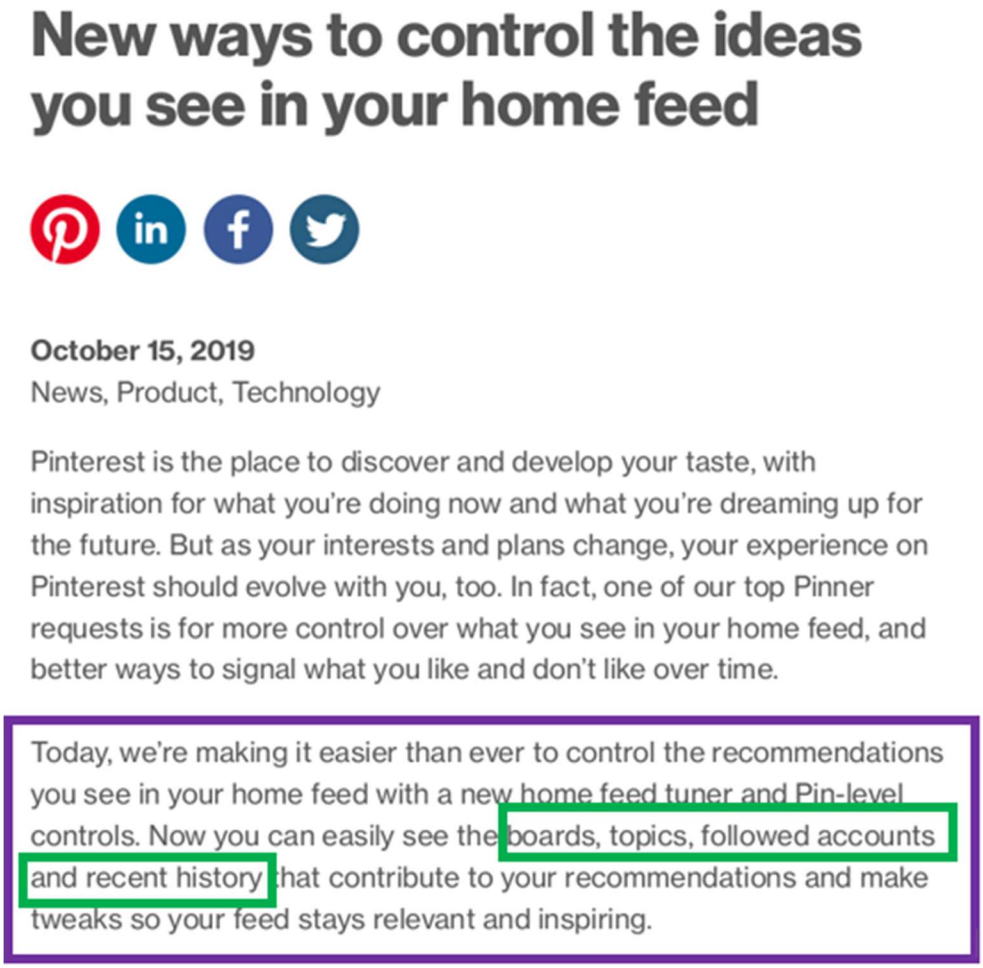
(*E.g.*, https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).



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

26. The Accused Instrumentality employs an electronic multimedia creator server subsystem operatively coupled to the electronic media submissions server subsystem, necessarily having one or more data processing apparatus in order to manage content, and an electronic creator multimedia database stored on a non-transitory medium, configured to select and retrieve a plurality of electronic media submissions from the electronic media submissions database using an electronic content filter located on the electronic multimedia creator server. As can be seen below, such electronic content filter as is used by Pinterest is based at least in part on at least one

of the one or more user attributes (*e.g.,* based on those other users a user is following, boards and topics followed, and history, which in turn affects which electronic media submissions appear on a given user's Pinterest feeds). For example, multimedia posts may be shown based on an individual who a user is following creating or "pinning" that post. Or, as an additional example, multimedia posts may be shown based on a variety of factors being weighed together, such as based on those other users a user is following, boards and topics followed, and history. Such function-specific subsystems may be contained within the Pinterest servers of Pinterest, Inc, for example as discussed below.



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October 15, 2019
News, Product, Technology

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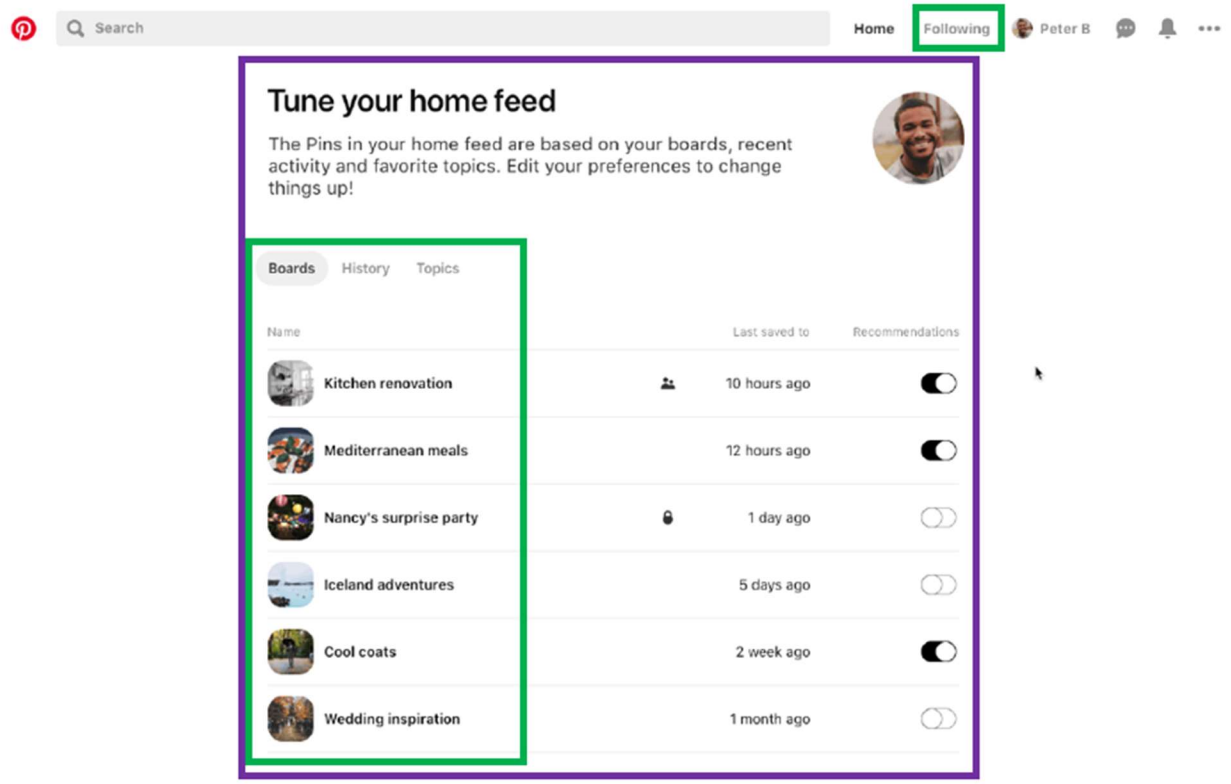
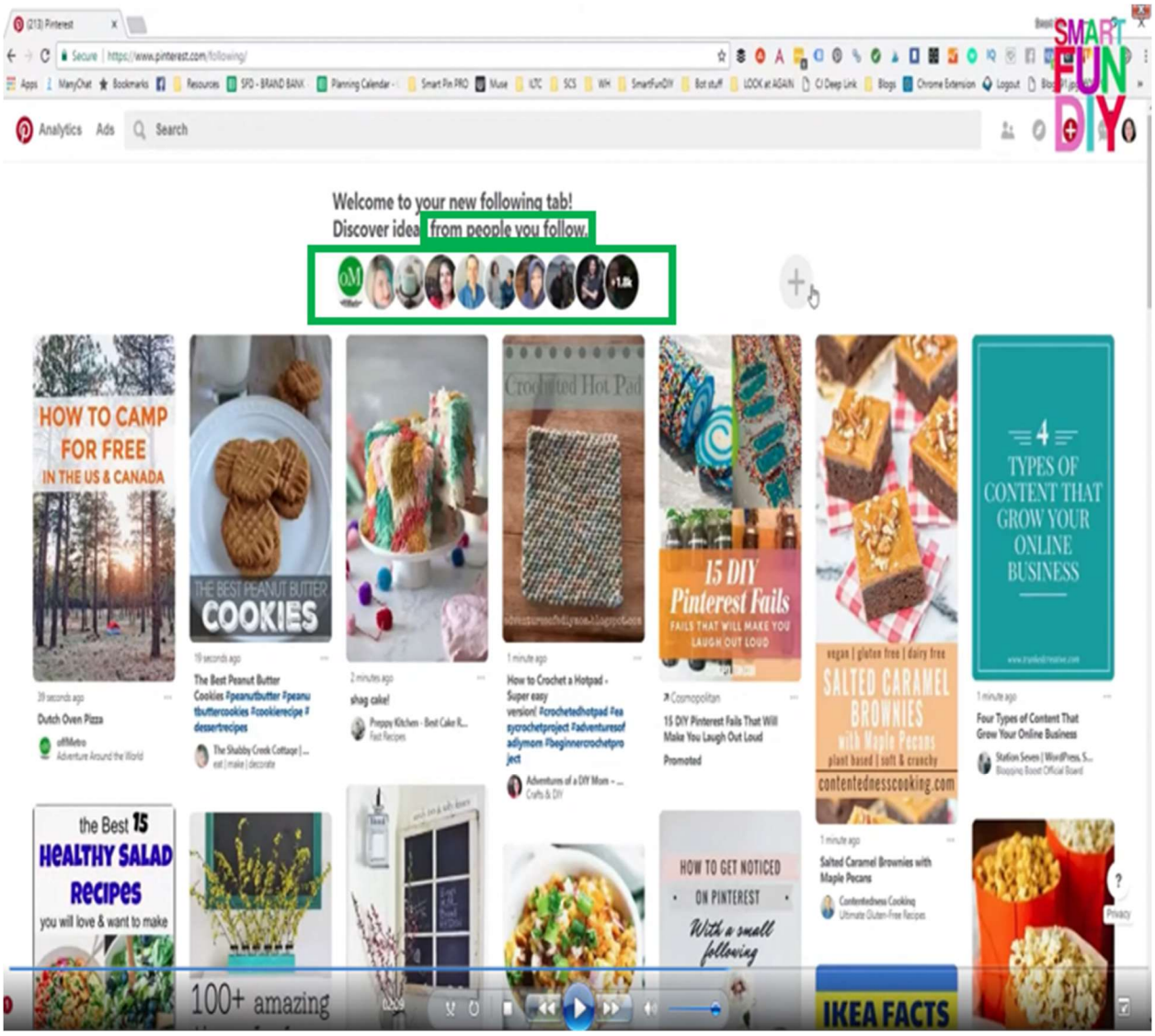
Today, we're making it easier than ever to control the recommendations you see in your home feed with a new home feed tuner and Pin-level controls. Now you can easily see the boards, topics, followed accounts and recent history that contribute to your recommendations and make tweaks so your feed stays relevant and inspiring.

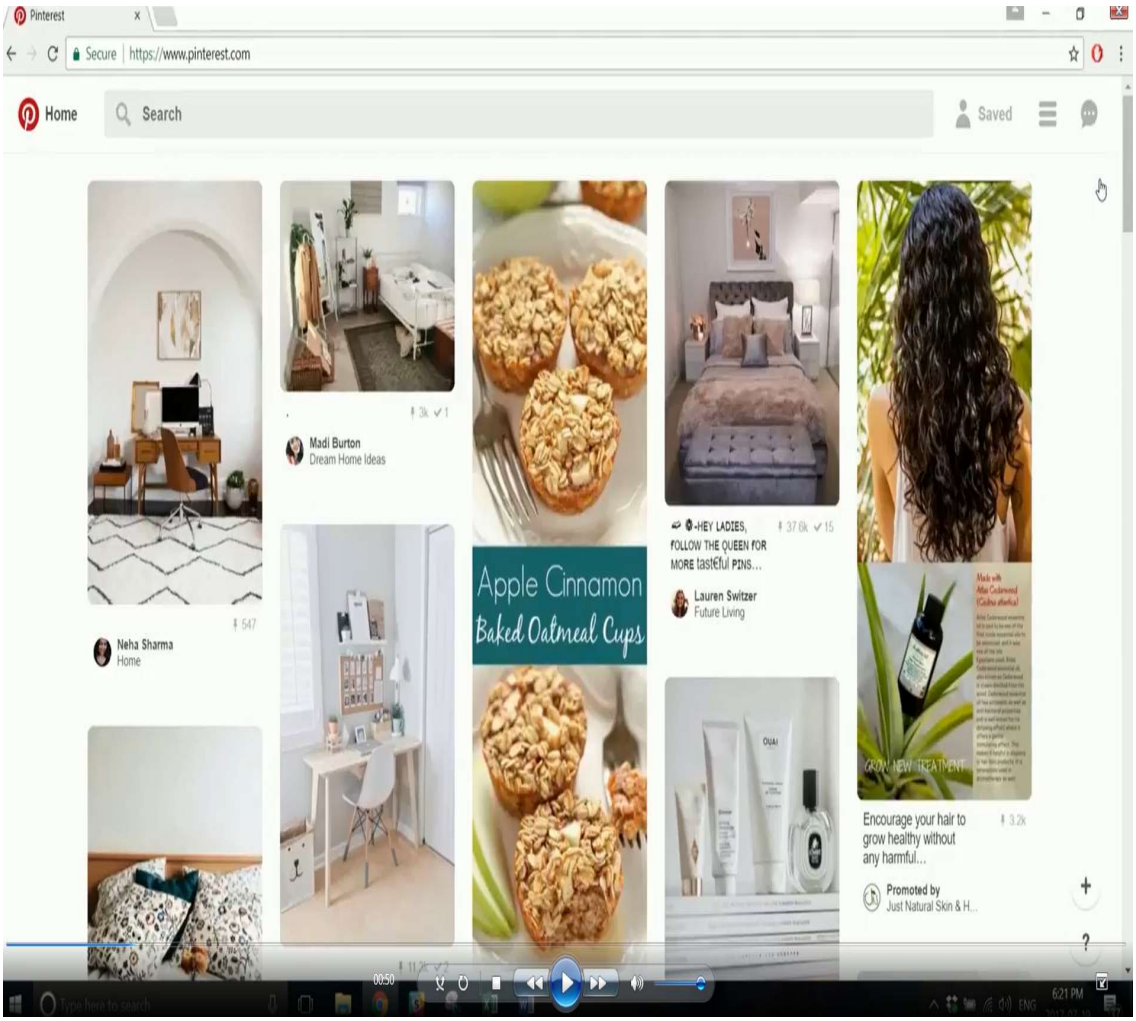
(*E.g.*, https://newsroom.pinterest.com/en/post/new-ways-to-control-the-ideas-you-see-in-your-home-feed (published October 25, 2019) (retrieved June 8, 2023)).



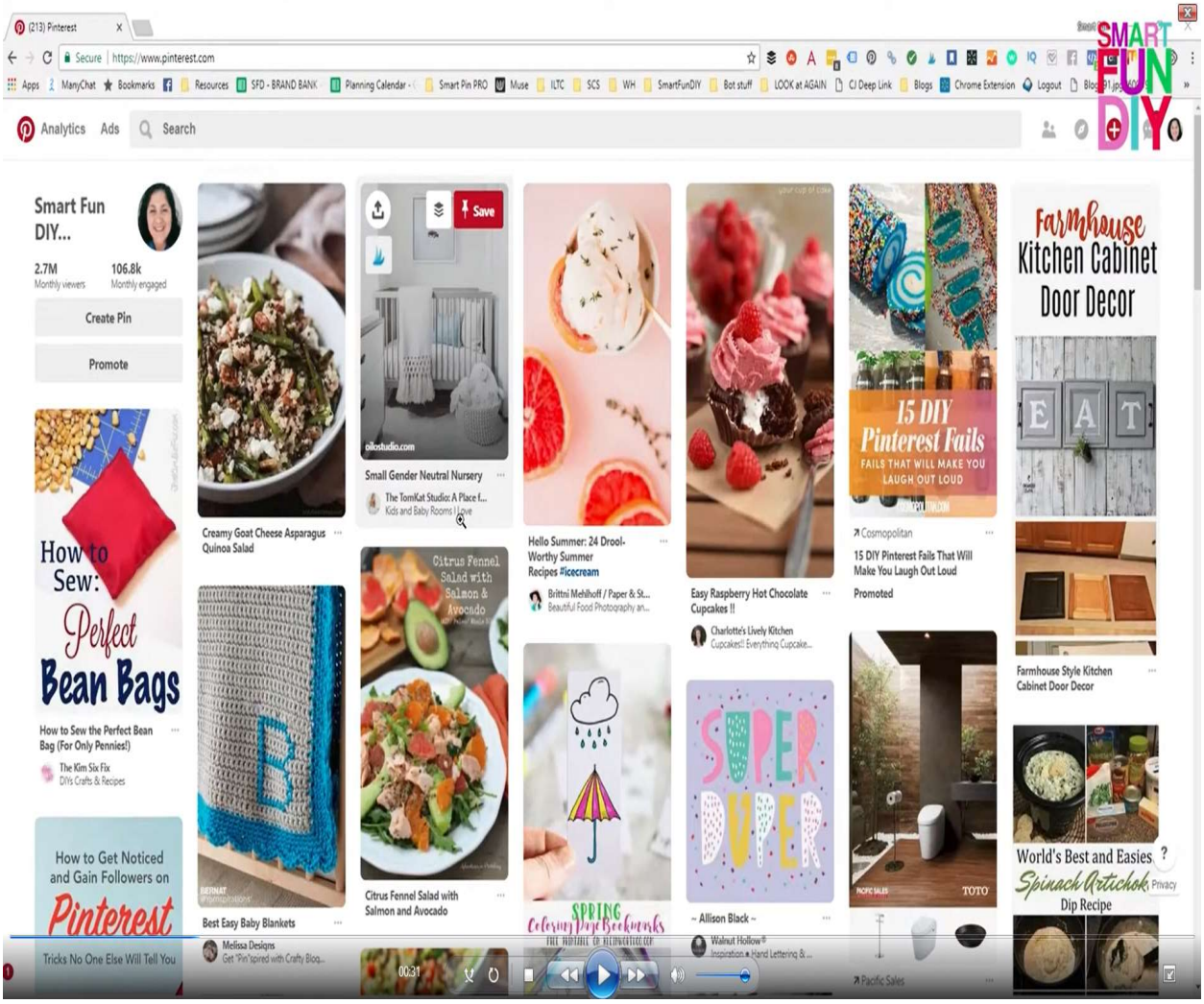
(*E.g.*, https://newsroom.pinterest.com/en/post/new-ways-to-control-the-ideas-you-see-in-your-home-feed (published October 25, 2019) (retrieved June 8, 2023)).



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

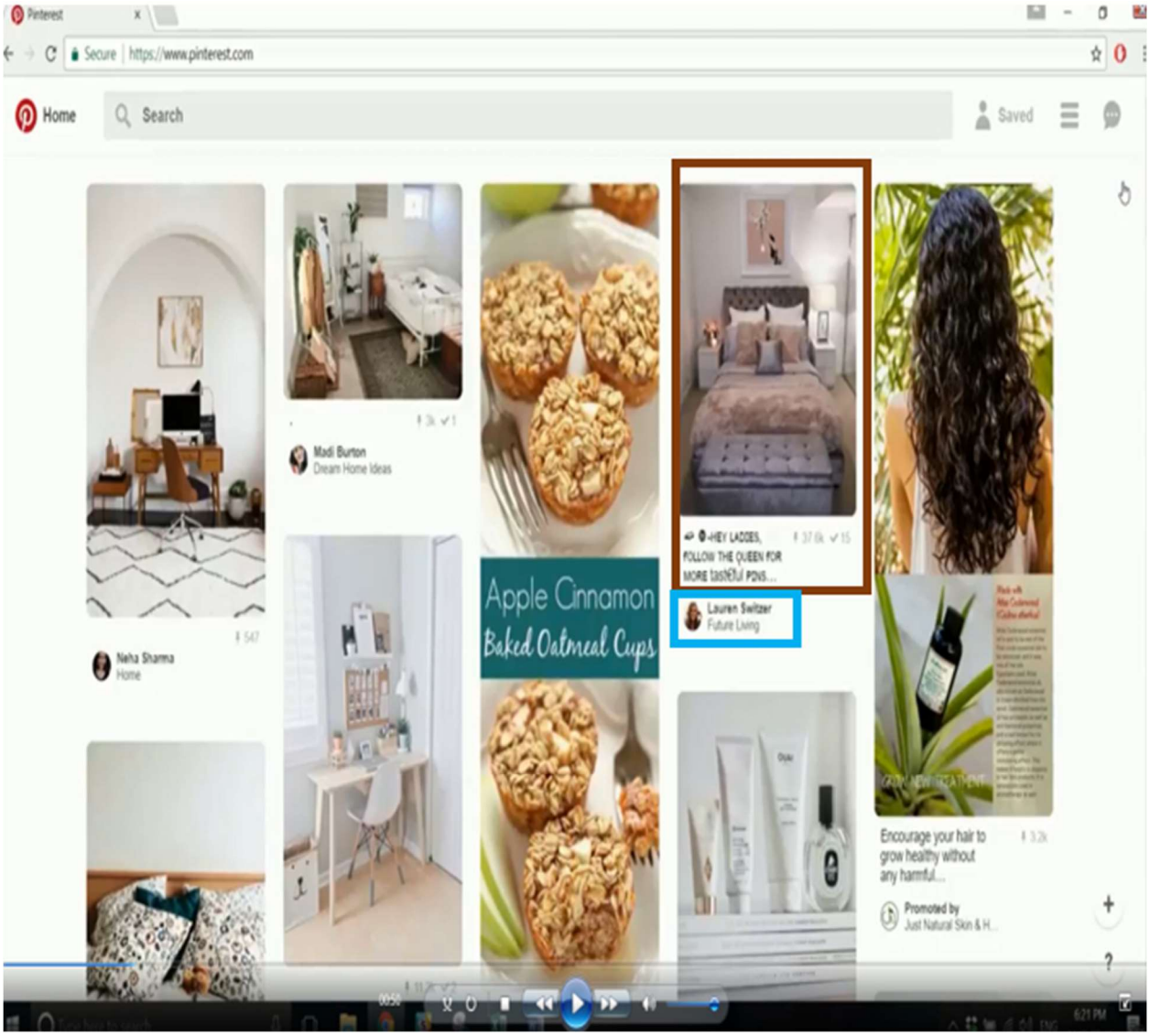


(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).

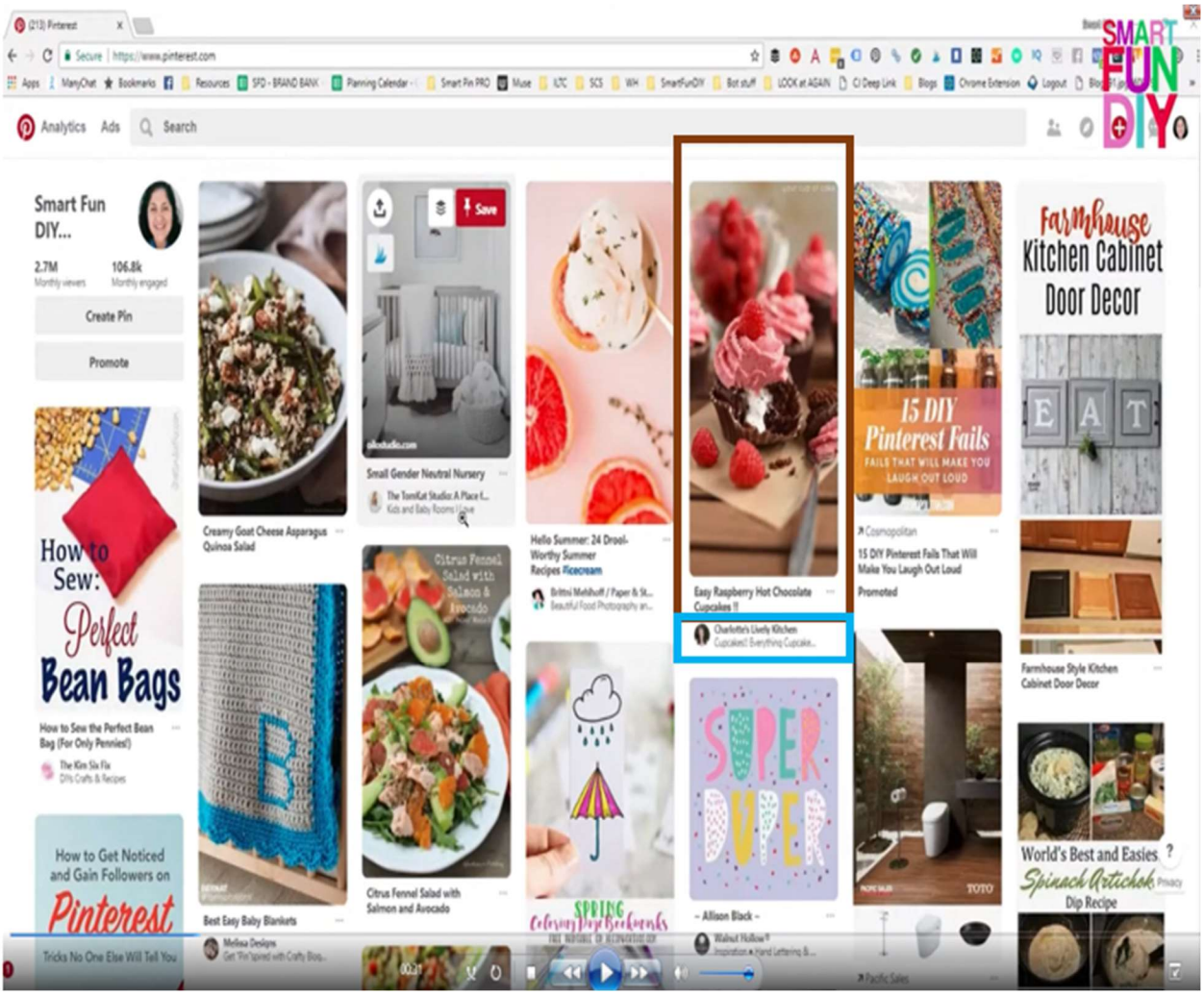


(*E.g.,* https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).

27. Such electronic content filter is used by the Accused Instrumentality to develop multimedia content (*e.g.,* content associated with text and images) to be electronically available for viewing on user devices (*e.g.,* computers or other devices incorporating browsers) wherein the identification of the submitter is maintained with each selected and retrieved submission within the multimedia content as shown below.



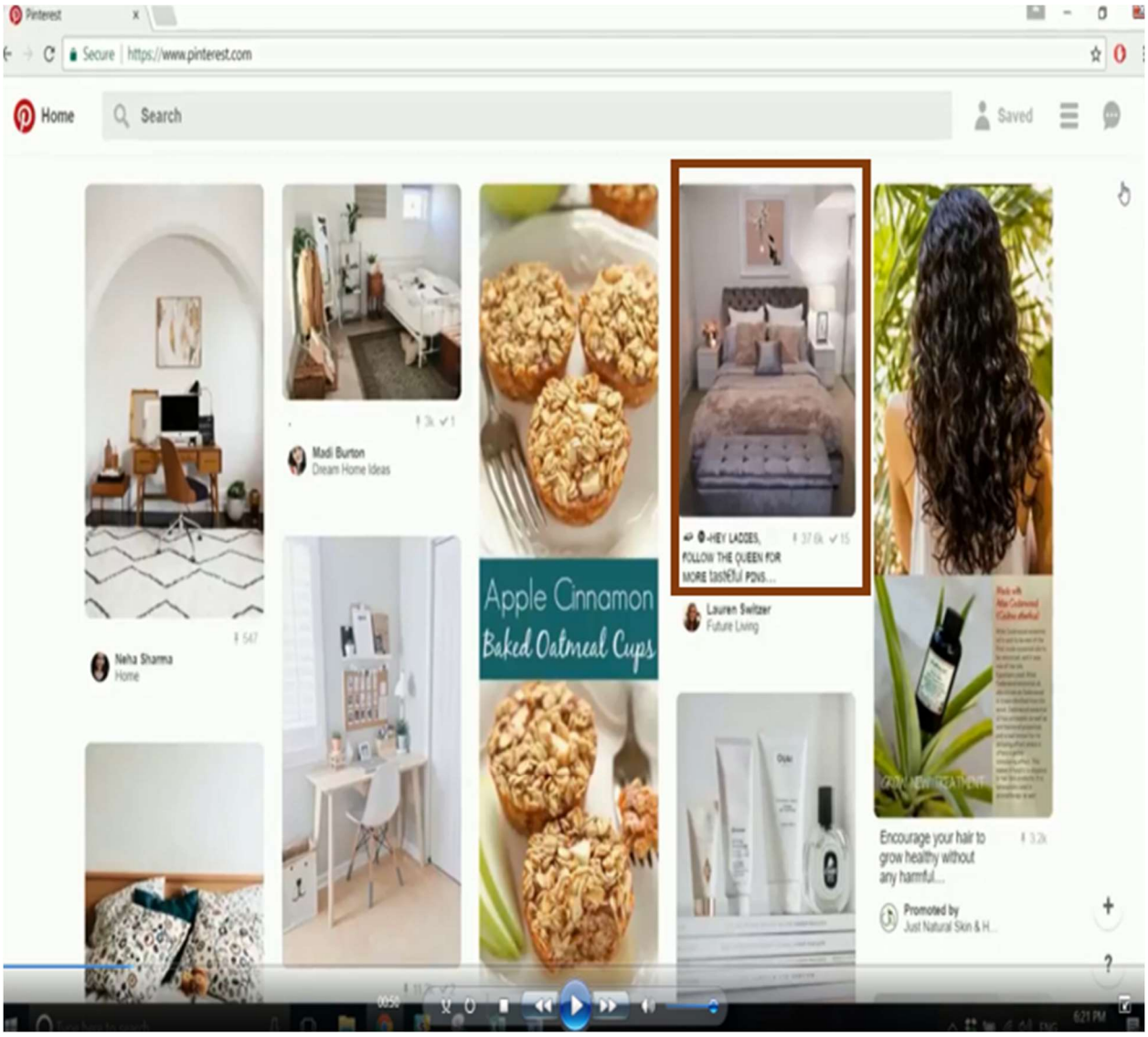
(*E.g.*, https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).



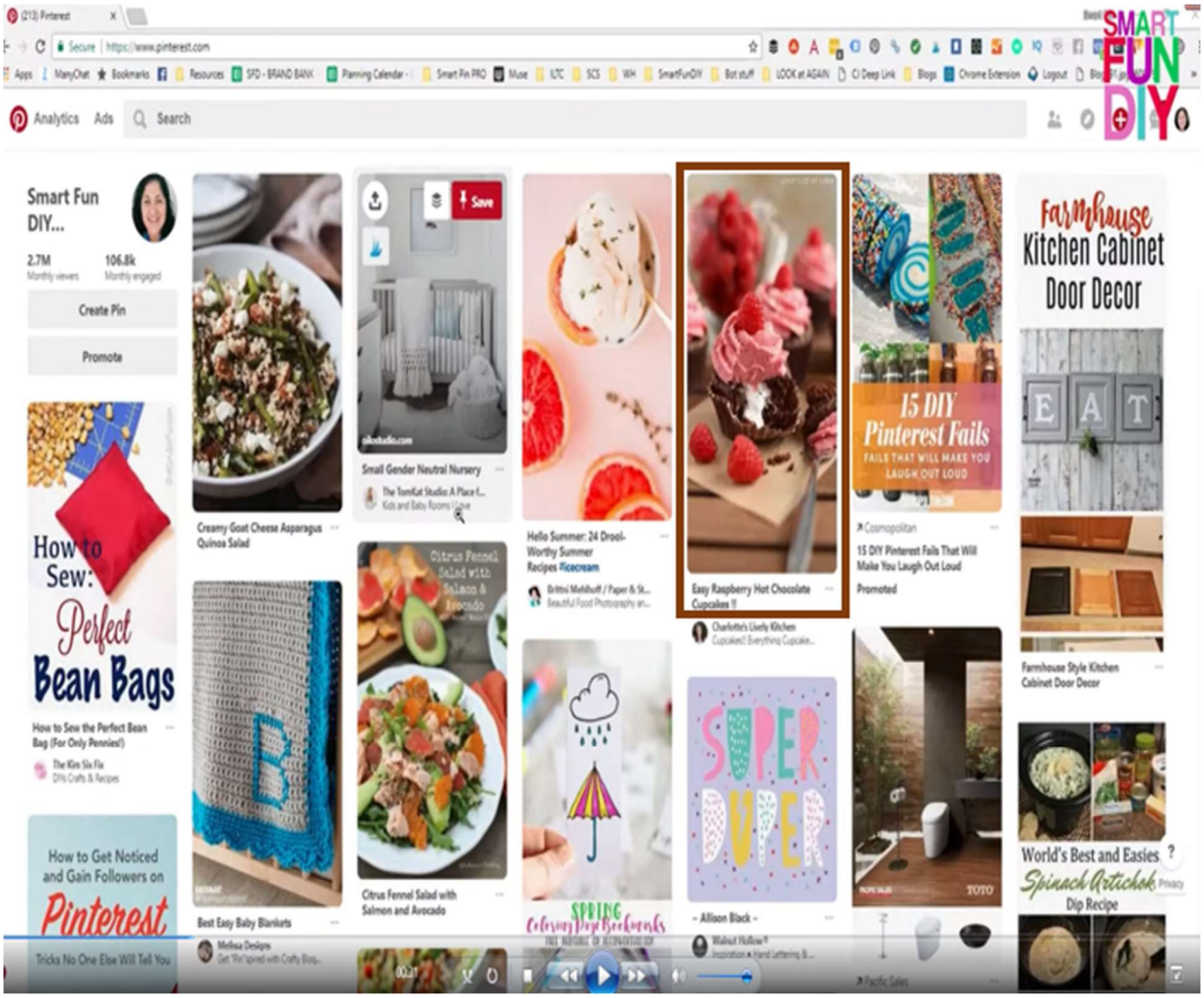
(*E.g.*, https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).

28. The Accused Instrumentality employs an electronic release subsystem operatively coupled to the electronic multimedia creator server subsystem, necessarily having one or more data processing apparatus in order to serve content to Pinterest users, configured to make the multimedia content electronically available for viewing on one or more user devices. For example, as shown below, multimedia content is provided on a user's device in response to a user logging in to Pinterest and viewing their Pinterest feed or feeds. Such subsystems may be contained within the Pinterest servers, from amongst communicatively connected Pinterest servers, a plurality of

which are publicly accessible and used to host content to the public, for example as discussed below.



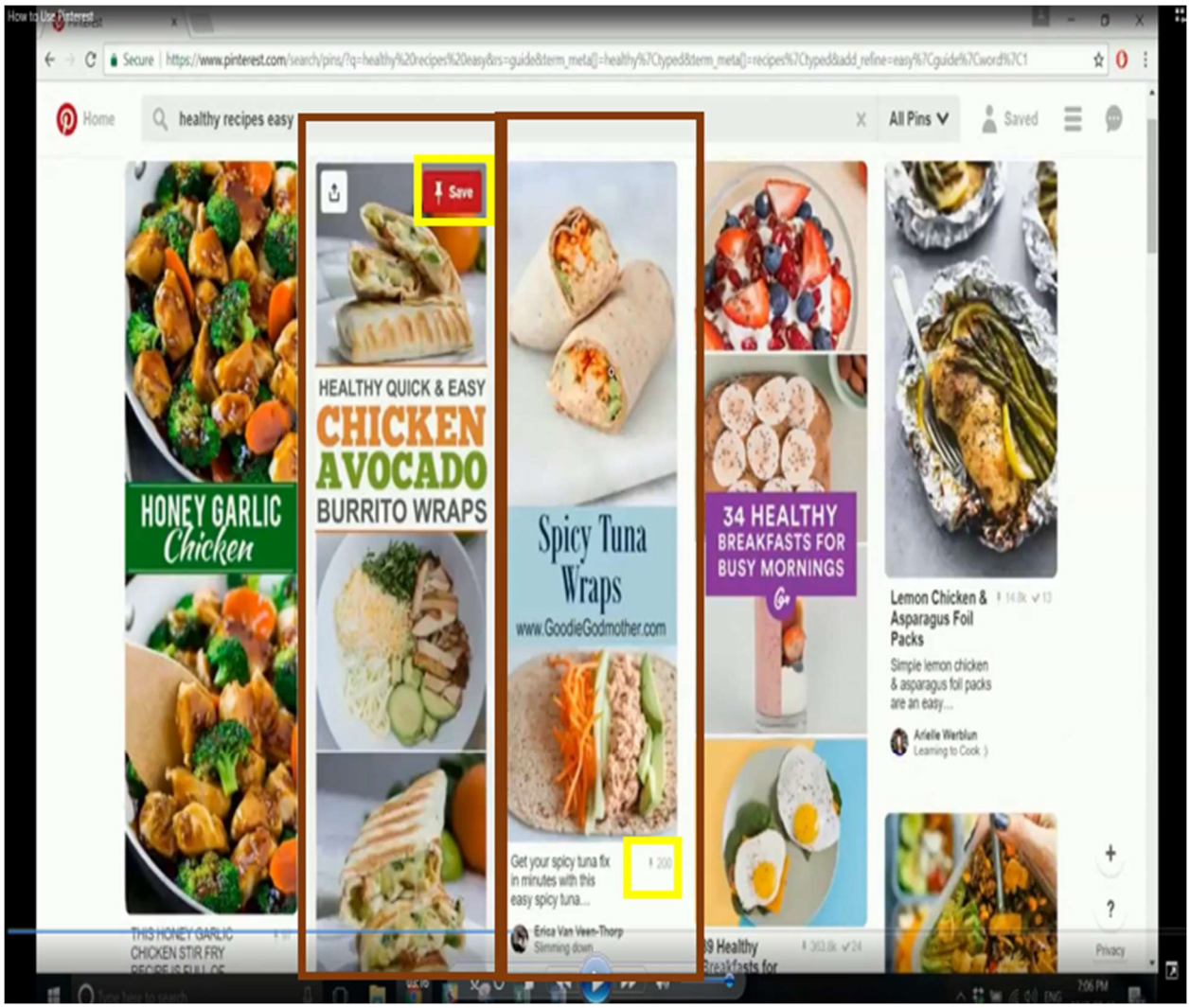
(*E.g.*, https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).



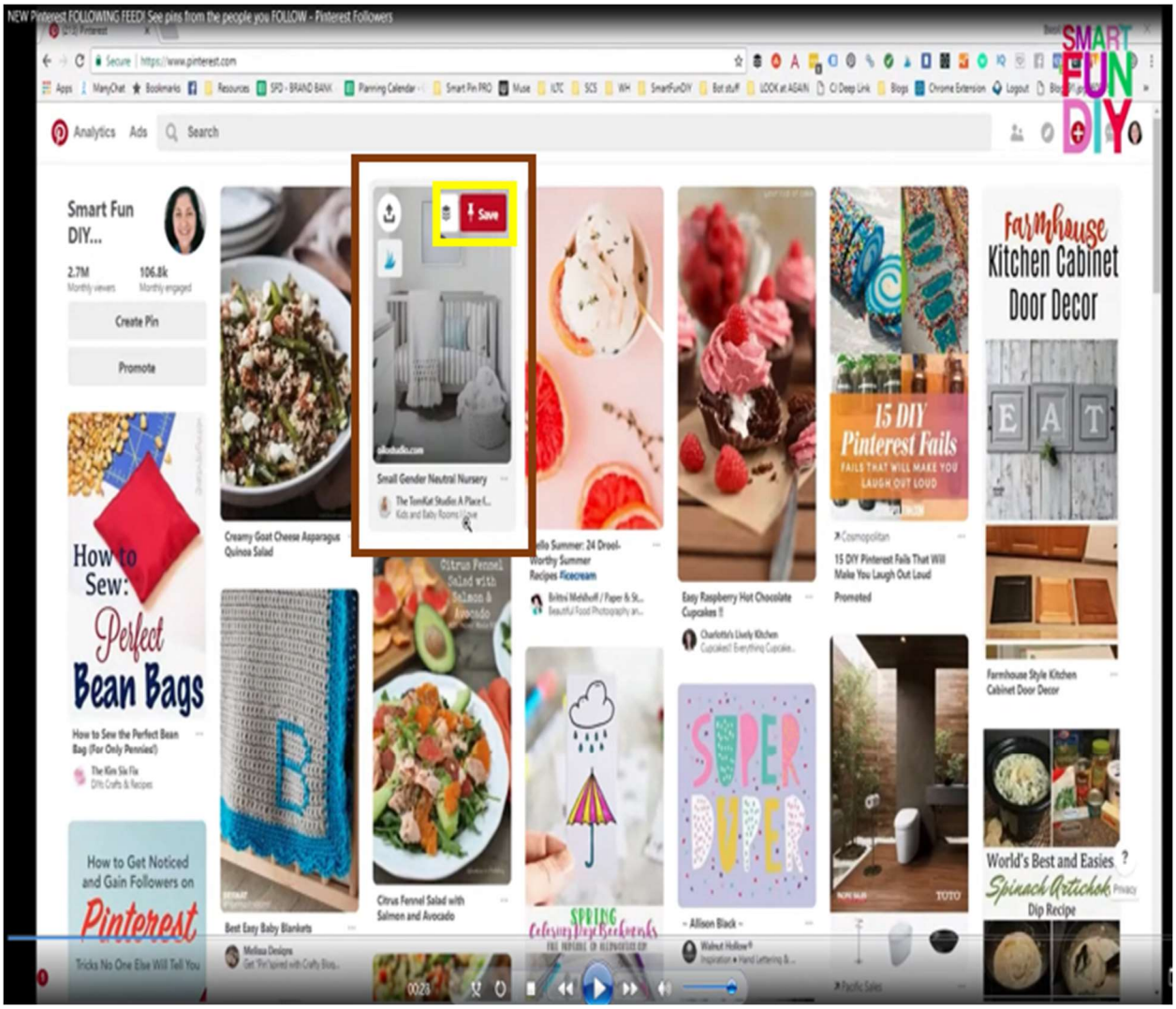
(*E.g.,* https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).

29. The Accused Instrumentality employs an electronic voting subsystem, necessarily having one or more data processing apparatus in order to track a number of votes, configured to enable a user to electronically vote for (*e.g.,* by selecting to "pin" or "save" the content) an electronically available multimedia content or an electronic media submission (*e.g.,* a user post) within a respective electronically available multimedia content. As can be seen below, the option to vote for electronically available multimedia content or an electronic media submission (*e.g.,* a post) within a respective electronically available multimedia content is made available to users via selecting a "pin" or "save" icon, and a total number of such selections is tracked and associated

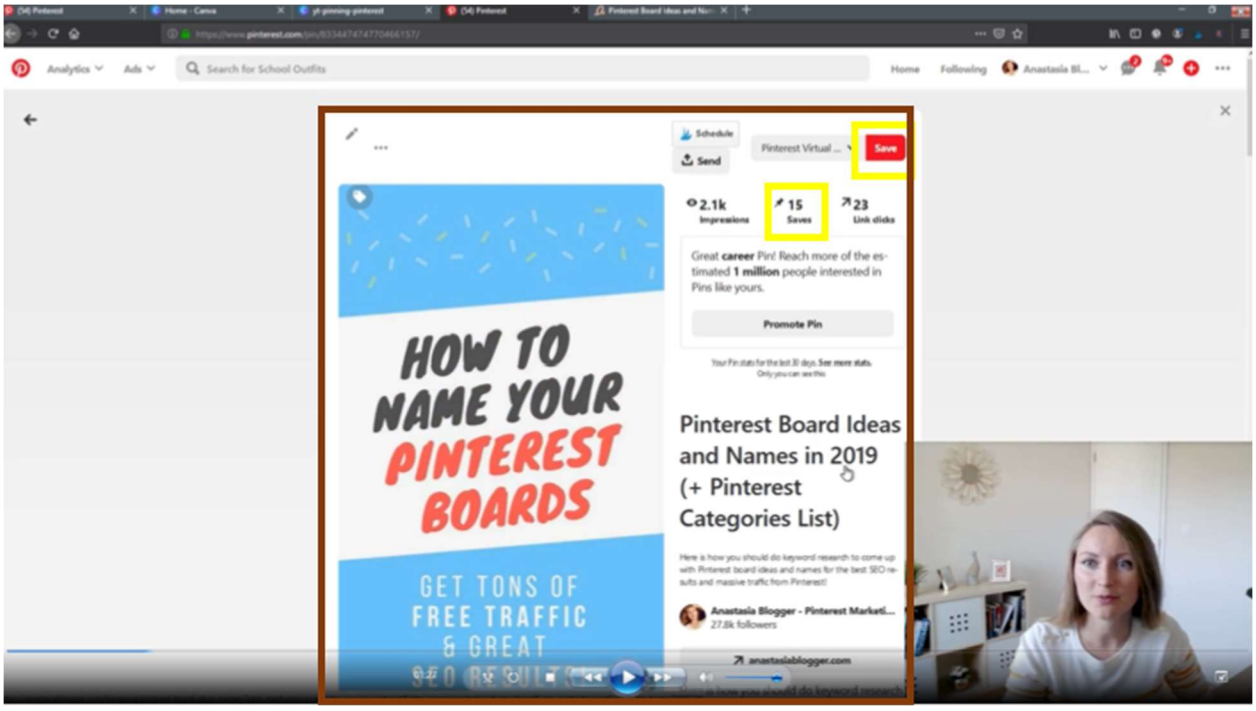
with the multimedia content and/or submission. Such function-specific subsystems may be contained within the communicatively coupled Pinterest servers, for example as discussed below.



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



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



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

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

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

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

32. Plaintiff incorporates the above paragraphs herein by reference.

33. On October 25, 2016, United States Patent No. 9,477,665 ("the '665 Patent") was duly and legally issued by the United States Patent and Trademark Office. The '665 Patent is titled "Revenue-Generating Electronic Multi-Media Exchange and Process of Operating Same." A true

and correct copy of the '665 Patent is attached hereto as Exhibit B and incorporated herein by reference.

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

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

36. The '665 Patent shares the identical specification as the '480 patent and therefore VCA incorporates the background and discussion of the invention in Paragraphs 11-18. Furthermore claim 1 involves a system for generating multimedia content. The claim requires, among other things, electronically generating a multimedia file from the retrieved electronic media Submissions in accordance with a selected digital format, wherein the identification of the submitter is maintained with each retrieved submission within the multimedia file. The claim requires electronically transmitting the multimedia file to a plurality of publicly accessible webservers to be electronically available for viewing on one or more user devices over a public network via a web-browser and. This allows electronically transmit data indicating votes or rating of multimedia content in a much quicker and easier fashion based on specific user criteria. There is nothing abstract about this very particular, unconventional, and non-routine system for the

generation of multimedia content as specifically claimed and there is no risk of preempting creating and distribution contention generally, or even within the context of the Internet.

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

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

38. Each of these subsystems are configured in a very specific (and not generic, unconventional and non-routine manner to offer the novel and non-obvious approach claimed invention. For example, claim 1 requires an "electronic media submissions database," which is a subsystem that receives media submissions from Internet users. This is not a generic database but rather a scalable database that must be able to receive, store, and manage multiple petabytes of multimedia data received from users all over the world. This is one of the many specialized databased required in the claim. In fact, the specification discloses the use of a sophisticated database management system known in the art at the time that was capable of handling data at this level, Oracle7. This type of database management system cannot operate on a generic computing system but rather requires specialized hardware and software.

39. The claim also provides details to explain how each step operates. For example, the claim requires "electronically retrieving a plurality of electronic media submissions from an electronic media submissions database using an electronic content filter located on one or more

data processing apparatus." Further, "the electronic media submissions database" in this step is further required to "store[] [1] data identifying the submitter and [2] data indicating content for each electronic media submission." The step further requires and "electronic content filter." The "filter" also includes a very specific algorithm of "being based at least in part on at least one of the one or more user attributes."

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

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

42. The also has inventive concepts. For example, the claim requires that he filtering tool be at a specific location, remote from the end-users, with customizable filtering features specific to each end user. The "electronic content filter" is located at the server, remote from the end user, and customizable based on user attributes. The "electron voting" step at the time of the invention was also novel, inventive, and added sufficient inventive contributions to avoid a risk of preempting the creation and distribution of media content. It is clearly possible to create and

distribute media content without every having to include a "voting" subsystem on what components should be included in such media content.

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

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

45. Pinterest, Inc. uses a computer-based system of its Accused Instrumentality, for example to enable the provision of personalized feeds that show users multimedia content based, *inter alia*, on those that they follow and content that has been selected in the past. This system makes use of one or more data processing apparatus, and a computer readable medium coupled to the one or more data processing apparatus having instructions stored thereon which, when executed by the one or more data processing apparatus, cause the one or more data processing apparatus to perform an electronic method comprising the functions as further discussed below. For example, Pinterest, Inc. has employed, in order to operate its Pinterest Platform and Pinterest feeds, computer servers making use of Amazon S3 Amazon Web Services and object storage in and around 2019. (https://news.Pinterest.com/2019/January/what-s-in-your-Pinterest-feed--people-you-know--talking-about-thi#:~:text=To%20summarize%2C%20your%20Pinterest%20feed,and%20hashtags%20that%20you%20follow). Indeed, Pinterest has employed, for a variety of subsystems of the Accused Instrumentality, several Amazon Web Services storages and computing solutions, in some cases employing machine learning engines.

(https://aws.amazon.com/solutions/case-studies/innovators/pinterest/) Indeed, Pinterest has, to operate its Accused Instrumentality and associated subsystems, purchased hundreds of millions of dollars of cloud computing from Amazon Web Services. (https://www.cnbc.com/2019/03/22/pinterest-must-spend-at-least-750-million-on-aws-ipo-filing.html) Pinterest, Inc., during the relevant time period, created new clusters for new use cases for every time it had new data with different access permissions, (https://www.youtube.com/watch?v=Ud2BAx0Tfpk at 0:47 *et seq*.) thereby using separate server subsystems for all its meaningfully different functions, such as those indicated below. Pinterest, Inc., uses and has used during the relevant time period, numerous different networks, IP addresses, and providers for, *inter alia*, cloud hosting, software-as-a-service, content delivery networks (CDNs), thereby using separate server subsystems for all its meaningfully different functions, such as those indicated below.

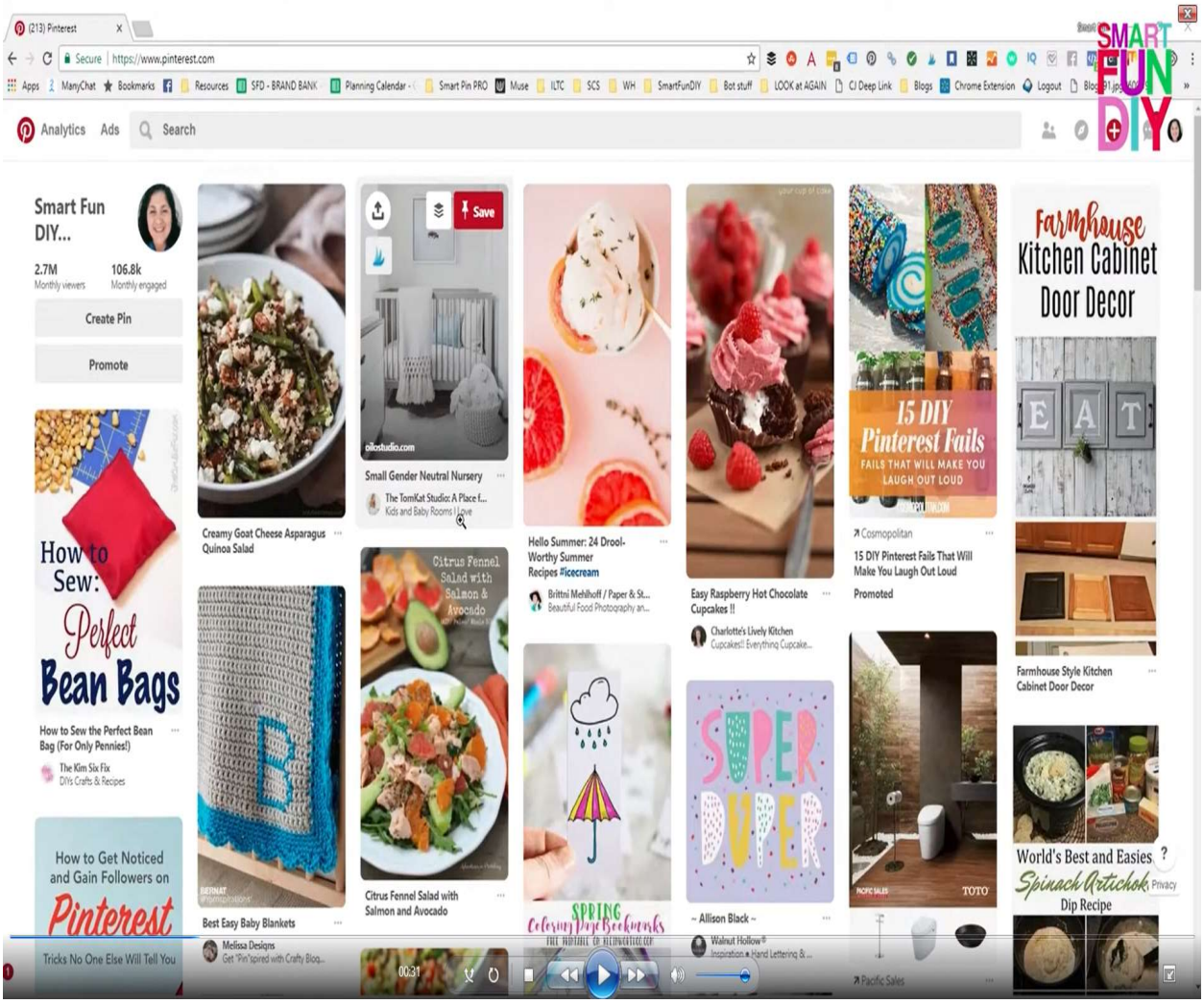
New ways to control the ideas you see in your home feed

October 15, 2019
News, Product, Technology

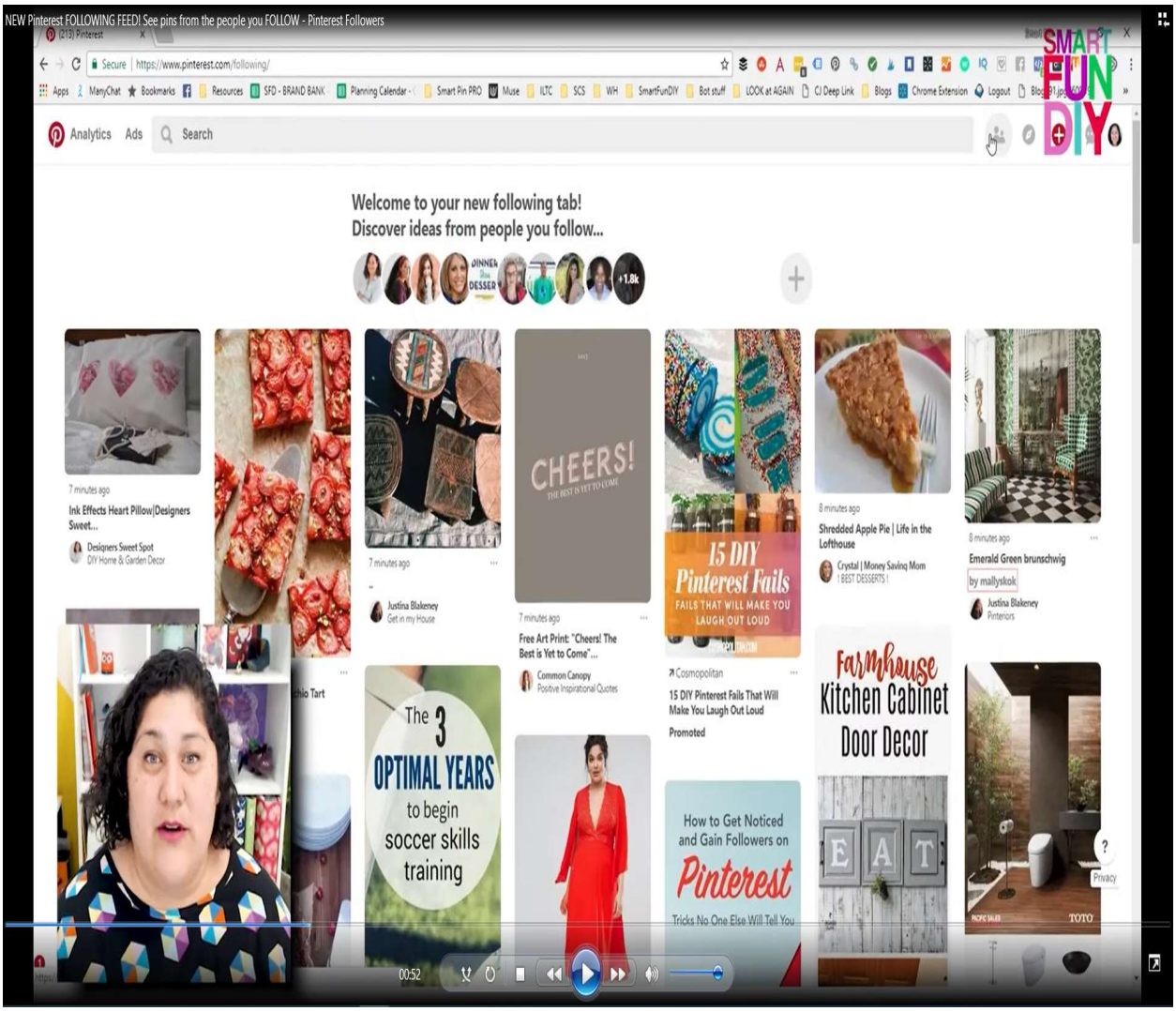
Pinterest is the place to discover and develop your taste, with inspiration for what you're doing now and what you're dreaming up for the future. But as your interests and plans change, your experience on Pinterest should evolve with you, too. In fact, one of our top Pinner requests is for more control over what you see in your home feed, and better ways to signal what you like and don't like over time.

Today, we're making it easier than ever to control the recommendations you see in your home feed with a new home feed tuner and Pin-level controls. Now you can easily see the boards, topics, followed accounts and recent history that contribute to your recommendations and make tweaks so your feed stays relevant and inspiring.

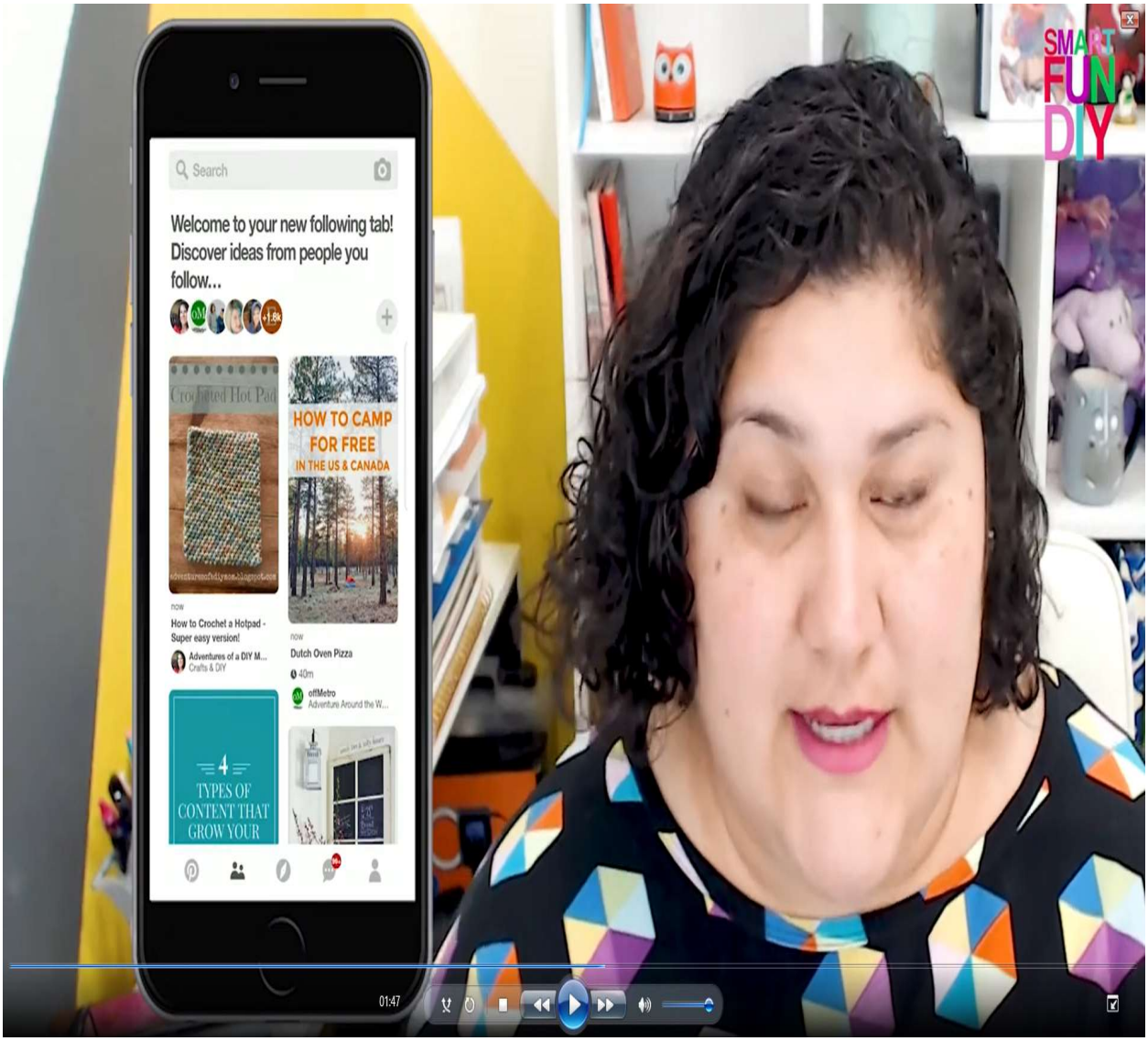
(*E.g.,* https://newsroom.pinterest.com/en/post/new-ways-to-control-the-ideas-you-see-in-your-home-feed (published October 25, 2019) (retrieved June 8, 2023)).



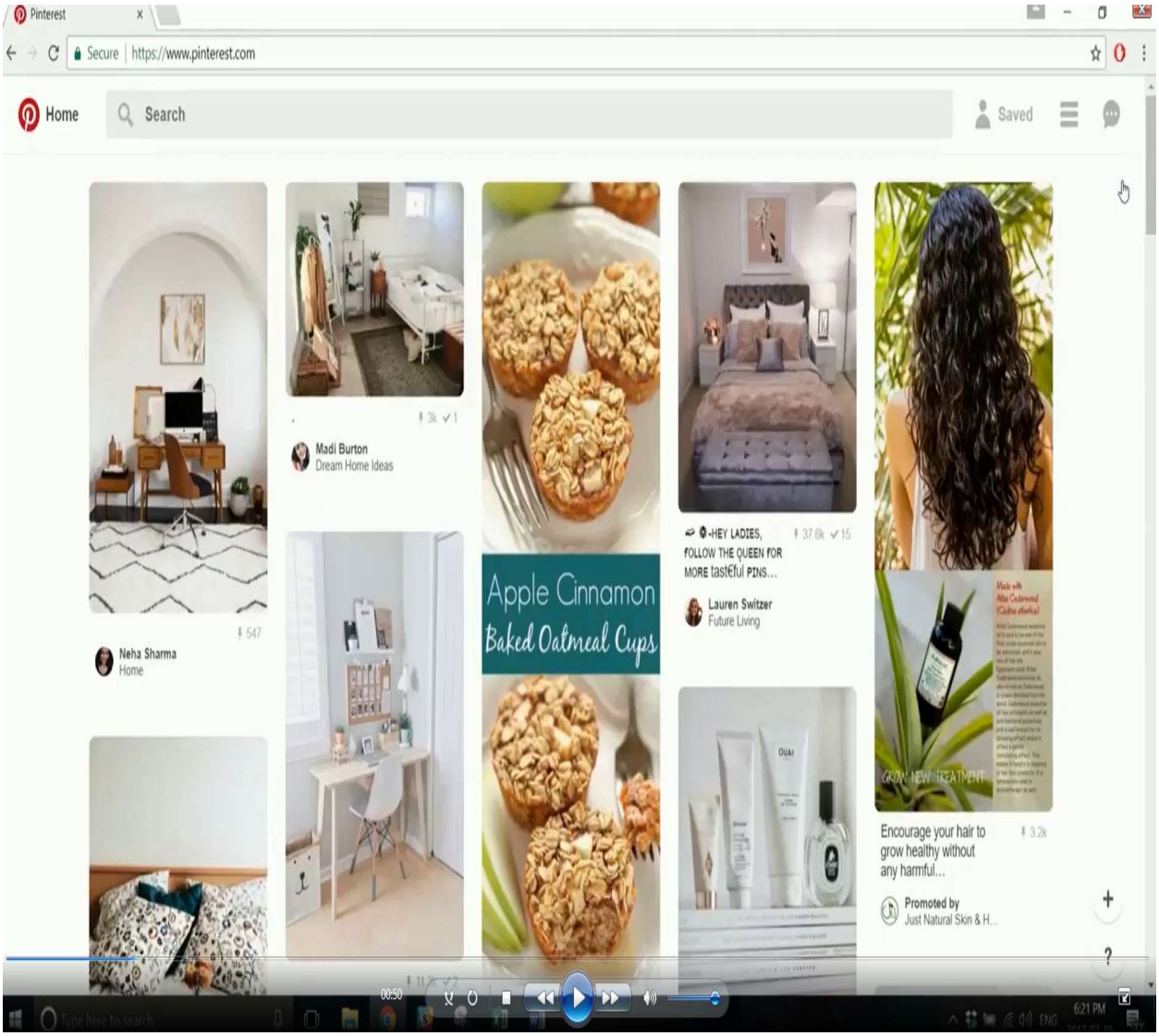
(*E.g.,* https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).



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



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



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

Controlling data access at the individual level

Pinterest and Amazon S3 developer teams got together in February 2019 to discuss new ways to ensure that specific data would be used only for the purposes Pinterest intended. The Pinterest team also needed to make sure that the rapidly expanding scale of Pinterest's data use wouldn't outgrow the access controls provided by the company's current data management system, built on Amazon S3.

At the time, Pinterest's storage was rapidly growing. Pinterest protected confidential data by creating clusters in Amazon S3 and assigning access permissions to those clusters for groups of users. Pinterest in particular wanted its developers to be able to grant data access to specific users and processes while blocking access to all others.

(*E.g.*, https://aws.amazon.com/blogs/storage/how-pinterest-worked-with-aws-to-create-a-new-way-to-manage-data-access-part-1/ (published July 26, 2021) (retrieved June 9, 2023)).

Pinterest on AWS

Pinterest is a visual-discovery platform and social commerce network with a mission to inspire. Building on AWS storage and compute solutions, Pinterest uses sophisticated machine learning engines to deliver personalized content to its users.

Customer Stories

EXECUTIVE SUMMARY

Pinterest hosts billions of images for users to browse and save as "Pins" to personalized digital inspiration boards. With more than 450 million monthly users and 300 billion Pins—and counting—Pinterest uses storage and compute solutions on Amazon Web Services (AWS) to provide the scale, speed, and security its platform requires, while keeping costs low and freeing engineers to focus on innovation. One such innovation, Pinterest Lens (Lens), uses machine learning (ML) to power visual search, so users can identify objects and discover related themes and products with

(*E.g.*, https://aws.amazon.com/solutions/case-studies/innovators/pinterest/ (retrieved June 9, 2023)).

Pinterest Scales Daily Log Search and Analytics from 500 GB to 1.7 TB, Reduces Costs by 30% on Amazon OpenSearch Service

2020

In this case study, learn how Pinterest migrated its log and search analytics workloads from self-managed and third-party Elasticsearch tools to Amazon OpenSearch Service. Following the migration, Pinterest scale its daily data-ingestion capabilities from 500 GB to 1.7 TB in only 1 year while reducing operational costs by 30 percent, improving data security, and increasing engineer productivity.

Read more

How Pinterest Uses Amazon S3 Glacier Deep Archive to Manage Storage for its Visual Discovery Engine

2021

As a large-scale user of Amazon Simple Storage Service (Amazon S3), Pinterest stores billions of objects and nearly an exabyte of data across multiple AWS Regions. In this blog, learn how Pinterest uses Amazon S3 Lifecycle to assign data to optimal Amazon S3 storage class assignments, helping meet large-scale S3 cost goals and maximize storage efficiency.

Read more

How Pinterest Worked with AWS to Create a New Way to Manage Data Access

2021

(*E.g.*, https://aws.amazon.com/solutions/case-studies/innovators/pinterest/ (retrieved June 9, 2023)).

ENTERPRISE

Pinterest has to spend at least $750 million on Amazon's cloud through mid-2023

PUBLISHED FRI, MAR 22 2019•6:07 PM EDT UPDATED WED, APR 17 2019•6:34 PM EDT

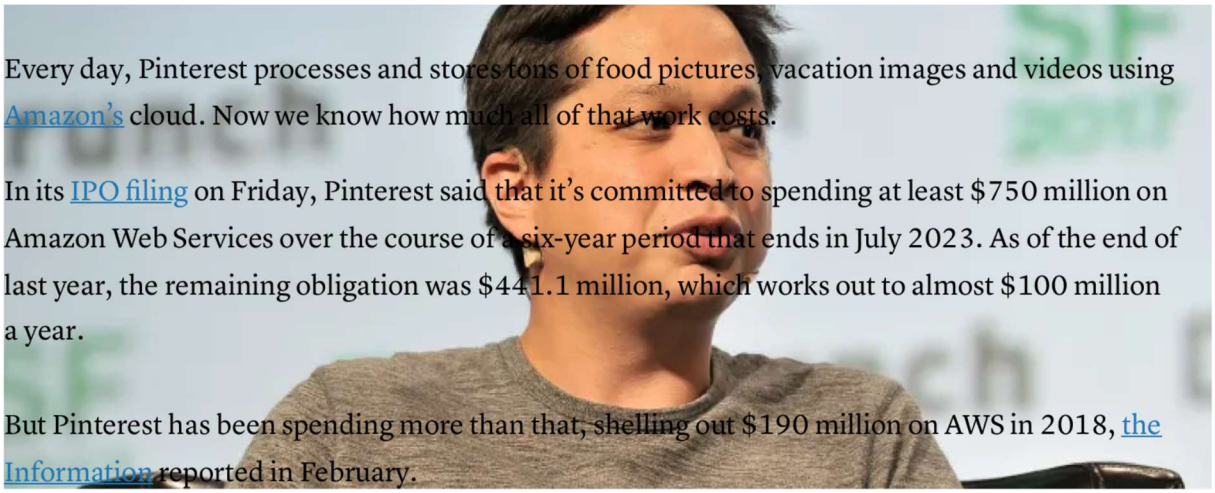
Jordan Novet
@JORDANNOVET

WATCH LIVE

KEY POINTS

Pinterest will have to pay Amazon Web Services at least $440 million for cloud services usage over the next four and a half years to reach its minimum commitment.

The disclosure in its IPO prospectus comes after Lyft said it's spending at least $80 million a year with AWS.



Every day, Pinterest processes and stores tons of food pictures, vacation images and videos using Amazon's cloud. Now we know how much all of that work costs.

In its IPO filing on Friday, Pinterest said that it's committed to spending at least $750 million on Amazon Web Services over the course of a six-year period that ends in July 2023. As of the end of last year, the remaining obligation was $441.1 million, which works out to almost $100 million a year.

But Pinterest has been spending more than that, shelling out $190 million on AWS in 2018, the Information reported in February.

(*E.g.*, https://www.cnbc.com/2019/03/22/pinterest-must-spend-at-least-750-million-on-aws-ipo-filing.html (published March 22, 2019, updated April 17, 2019)).

Pinterest cut a deal with Amazon Web Services that requires it to spend $750 million with the cloud leader by 2023

BY TOM KRAZIT (HTTPS://WWW.GEEKWIRE.COM/AUTHOR/TOMKRAZIT/) on March 22, 2019 at 2:15 pm

Amazon Web Services CEO Andy Jassy speaks at re:Invent 2018. (GeekWire Photo / Tom Krazit)

Back in 2017, as Pinterest's spending with Amazon Web Services skyrocketed thanks to user growth, the company cut a deal with AWS that traded pricing concessions with a commitment to spend $750 million with the cloud market share leader by 2023, a new filing reveals.

Pinterest (https://www.pinterest.com) had $441.1 million left to go on that commitment as of the end of 2018, and it expects to honor it, the company revealed with the release of its S-1 statement (https://www.sec.gov/Archives/edgar/data/1506293/000119312519083544/d674330ds1.htm) Friday. The company recorded $273 million in revenue during the fourth quarter of 2018, during which it eked out net income of $47 million.

Pinterest was born on AWS (https://www.geekwire.com/2017/born-cloud-behind-times-pinterest-doubled-containers-kubernetes/), and is one of the more prominent examples of how social media and web startups founded in the wake of the Great Recession used cloud services to get off the ground and grow into large businesses without the up-front investment required to build their own tech infrastructure. But costs were rising quickly when the agreement was altered in 2017: Pinterest's cost of revenue was $51.5 million in the first quarter of 2017, and after the agreement was reached that cost of revenue fell to $36 million the following quarter, as traffic continued to increase.

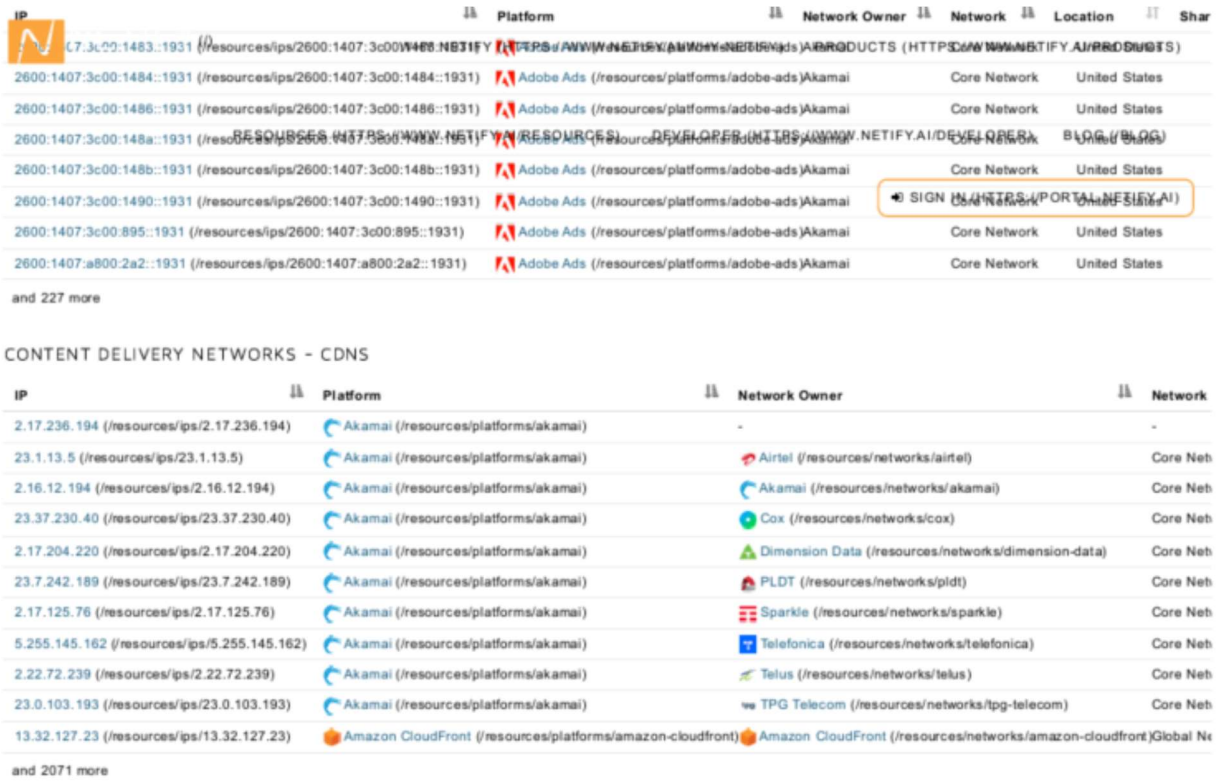
(*E.g.*, https://www.geekwire.com/2019/pinterest-cut-deal-amazon-web-services-requires-spend-750-million-cloud-leader-2023/ (published March 22, 2019)).

We depend on Amazon Web Services for the vast majority of our compute, storage, data transfer and other services. Any disruption of, degradation in or interference with our use of Amazon Web Services could negatively affect our operations and harm our business, revenue and financial results.

Amazon Web Services ("AWS") provides the cloud computing infrastructure we use to host our website, mobile application and many of the internal tools we use to operate our business. We have a long-term commitment with AWS and our website, mobile application and internal tools use compute, storage, data transfer and other services provided by AWS. Under the agreement with AWS, as amended by an addendum entered into in May 2017, in return for negotiated concessions, we currently are required to maintain a substantial majority of our monthly usage of certain compute, storage, data transfer and other services on AWS. This addendum is terminable only under certain conditions, including by either party following the other party's material breach, which may be the result of circumstances that are beyond our control. See "—We may be liable as a result of content or information that is published or made available on our service." A material breach of this addendum by us, or early termination of the addendum as a result of an acquisition of us by another cloud services provider, could carry substantial penalties, including liquidated damages.

Any significant disruption of, limitation of our access to or other interference with our use of AWS would negatively impact our operations and our business could be harmed. In addition, any transition of the cloud services currently provided by AWS to another cloud services provider would be difficult to implement and would cause us to incur significant time and expense and could disrupt or degrade our ability to deliver our products and services. Our business relies on the availability of our services for Pinners and advertisers. If Pinners or advertisers are not able to access our service or platform or encounter difficulties in doing so, we may lose Pinners or advertisers. The level of service provided by AWS could affect the availability or speed of our services, which may also impact the usage of and Pinners' and advertisers' satisfaction with our platform and could harm our business and reputation. If AWS increases pricing terms, terminates or seeks to terminate our contractual relationship, establishes more favorable relationships with our competitors, or changes or interprets its terms of service or policies in a manner that is unfavorable with respect to us, those actions could harm our business, revenue and financial results.

(*E.g.,* https://www.sec.gov/Archives/edgar/data/1506293/000095012319000057/filename1.htm (March 22, 2019 Pinterest, Inc. Form S-1)).



IP	Platform	Network Owner	Network	Location	Shar
2600:1407:3c00:1483::1931 (/resources/ips/2600:1407:3c00:1483::1931)	[illegible]	[illegible]	[illegible]	[illegible]	
2600:1407:3c00:1484::1931 (/resources/ips/2600:1407:3c00:1484::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:1486::1931 (/resources/ips/2600:1407:3c00:1486::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:148a::1931 (/resources/ips/2600:1407:3c00:148a::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:148b::1931 (/resources/ips/2600:1407:3c00:148b::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:1490::1931 (/resources/ips/2600:1407:3c00:1490::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:895::1931 (/resources/ips/2600:1407:3c00:895::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:a800:2a2::1931 (/resources/ips/2600:1407:a800:2a2::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	

and 227 more

CONTENT DELIVERY NETWORKS - CDNS

IP	Platform	Network Owner	Network
2.17.236.194 (/resources/ips/2.17.236.194)	Akamai (/resources/platforms/akamai)	-	-
23.1.13.5 (/resources/ips/23.1.13.5)	Akamai (/resources/platforms/akamai)	Airtel (/resources/networks/airtel)	Core Net
2.16.12.194 (/resources/ips/2.16.12.194)	Akamai (/resources/platforms/akamai)	Akamai (/resources/networks/akamai)	Core Net
23.37.230.40 (/resources/ips/23.37.230.40)	Akamai (/resources/platforms/akamai)	Cox (/resources/networks/cox)	Core Net
2.17.204.220 (/resources/ips/2.17.204.220)	Akamai (/resources/platforms/akamai)	Dimension Data (/resources/networks/dimension-data)	Core Net
23.7.242.189 (/resources/ips/23.7.242.189)	Akamai (/resources/platforms/akamai)	PLDT (/resources/networks/pldt)	Core Net
2.17.125.76 (/resources/ips/2.17.125.76)	Akamai (/resources/platforms/akamai)	Sparkle (/resources/networks/sparkle)	Core Net
5.255.145.162 (/resources/ips/5.255.145.162)	Akamai (/resources/platforms/akamai)	Telefonica (/resources/networks/telefonica)	Core Net
2.22.72.239 (/resources/ips/2.22.72.239)	Akamai (/resources/platforms/akamai)	Telus (/resources/networks/telus)	Core Net
23.0.103.193 (/resources/ips/23.0.103.193)	Akamai (/resources/platforms/akamai)	TPG Telecom (/resources/networks/tpg-telecom)	Core Net
13.32.127.23 (/resources/ips/13.32.127.23)	Amazon CloudFront (/resources/platforms/amazon-cloudfront)	Amazon CloudFront (/resources/networks/amazon-cloudfront)	Global Ne

and 2071 more

(*E.g.,* https://www.netify.ai/resources/applications/pinterest (retrieved June 9, 2023)).

PLATFORM USAGE SUMMARY

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

Cloud Hosts	# of IPs
Amazon AWS (/resources/platforms/amazon-aws)	6
Oracle Cloud (/resources/platforms/oracle-cloud)	7
Google Hosted (/resources/platforms/google-hosted)	3

SaaS	# of IPs
Adobe Ads (/resources/platforms/adobe-ads)	237

CDNs	# of IPs
Akamai (/resources/platforms/akamai)	1895
Amazon CloudFront (/resources/platforms/amazon-cloudfront)	121
CloudFlare (/resources/platforms/cloudflare)	6
Fastly (/resources/platforms/fastly)	59

IP DETAILS

CORE NETWORKS

IP	Category	Network Owner	Network	Location	Shared
2001:500:90:1::60 (/resources/ips/2001:500:90:1::60)	Technology	Dyn (/resources/networks/dyn)	Core Network	United States	
2001:500:94:1::60 (/resources/ips/2001:500:94:1::60)	Technology	Dyn (/resources/networks/dyn)	Core Network	United States	
204.13.250.60 (/resources/ips/204.13.250.60)	Technology	Dyn (/resources/networks/dyn)	Core Network	United States	
204.13.251.60 (/resources/ips/204.13.251.60)	Technology	Dyn (/resources/networks/dyn)	Core Network	United States	

PLATFORM DETAILS

CLOUD HOSTING NETWORKS

IP	Platform	Network Owner	Network	Location	Share
23.20.165.22 (/resources/ips/23.20.165.22)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
50.17.2.67 (/resources/ips/50.17.2.67)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
142.251.132.225 (/resources/ips/142.251.132.225)	Google Hosted (/resources/platforms/google-hosted)	Google	Core Network	United States	
208.78.70.60 (/resources/ips/208.78.70.60)	Oracle Cloud (/resources/platforms/oracle-cloud)			United States	
108.59.161.60 (/resources/ips/108.59.161.60)	Oracle Cloud (/resources/platforms/oracle-cloud)	Dyn	Core Network	United States	
2600:2000:2240::60 (/resources/ips/2600:2000:2240::60)	Oracle Cloud (/resources/platforms/oracle-cloud)	Oracle Cloud	Core Network	United States	

and 11 more

CLOUD SOFTWARE-AS-A-SERVICE

IP	Platform	Network Owner	Network	Location	Shar
2600:1406:3400:682::1931 (/resources/ips/2600:1406:3400:682::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1406:5400:58a::1931 (/resources/ips/2600:1406:5400:58a::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3400:48e::1931 (/resources/ips/2600:1407:3400:48e::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	

and 227 more

(*E.g.,* https://www.netify.ai/resources/applications/pinterest (retrieved June 9, 2023)).

46. The Accused Instrumentality comprises a user database comprising one or more user attributes stored in such database. Such user database is stored in memory available through the Pinterest platform's servers, for example as discussed below. Some examples of such user attributes stored in such user database on the Pinterest platform and Pinterest feeds are follows of other users, boards and topics, that may be indicated by a user stored within such user database, and user history. The Accused Instrumentality electronically retrieve, from storage in an electronic media submissions database on a non-transitory medium, a plurality of electronic media

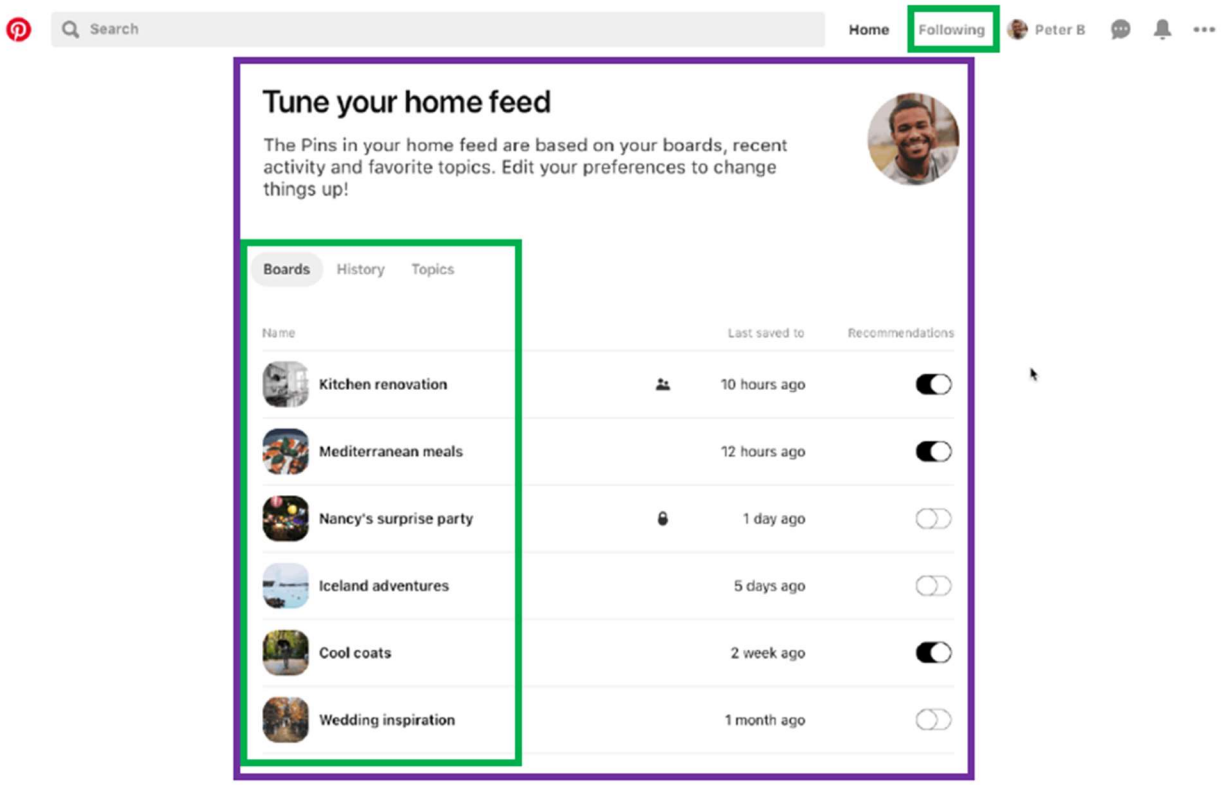
submissions from an electronic media submissions database using this electronic content filter necessarily located on and associated with one or more data processing apparatus in order to manage content. As can be seen below, such electronic content filter as is used by the Pinterest feeds is based at least in part on at least one of the one or more user attributes (*e.g.,* based on those other users a user is following, boards and topics followed, and history, which in turn affects which electronic media submissions appear on a given user's Pinterest feeds), with examples of such retrieved electronic media submissions, forming multimedia content, being shown below. For example, multimedia posts may be shown based on an individual who a user is following creating or "pinning" that post. Additionally, multimedia posts may be shown based on a variety of factors being weighed together, such as based on those other users a user is following, boards and topics followed, and history. Such function-specific subsystems may be contained within the Accused Instrumentality, for example as discussed below.

New ways to control the ideas you see in your home feed

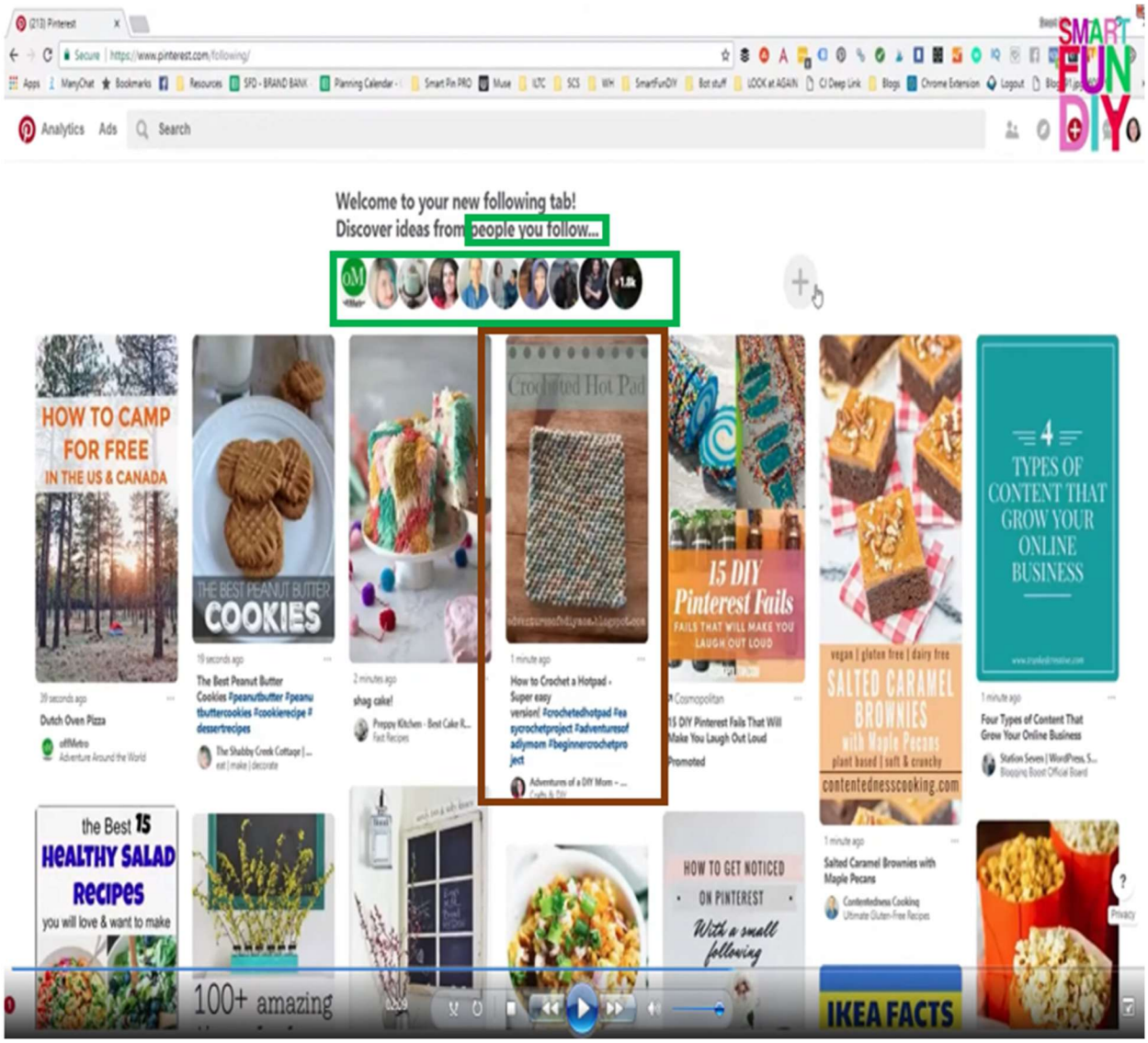
October 15, 2019
News, Product, Technology

Pinterest is the place to discover and develop your taste, with inspiration for what you're doing now and what you're dreaming up for the future. But as your interests and plans change, your experience on Pinterest should evolve with you, too. In fact, one of our top Pinner requests is for more control over what you see in your home feed, and better ways to signal what you like and don't like over time.

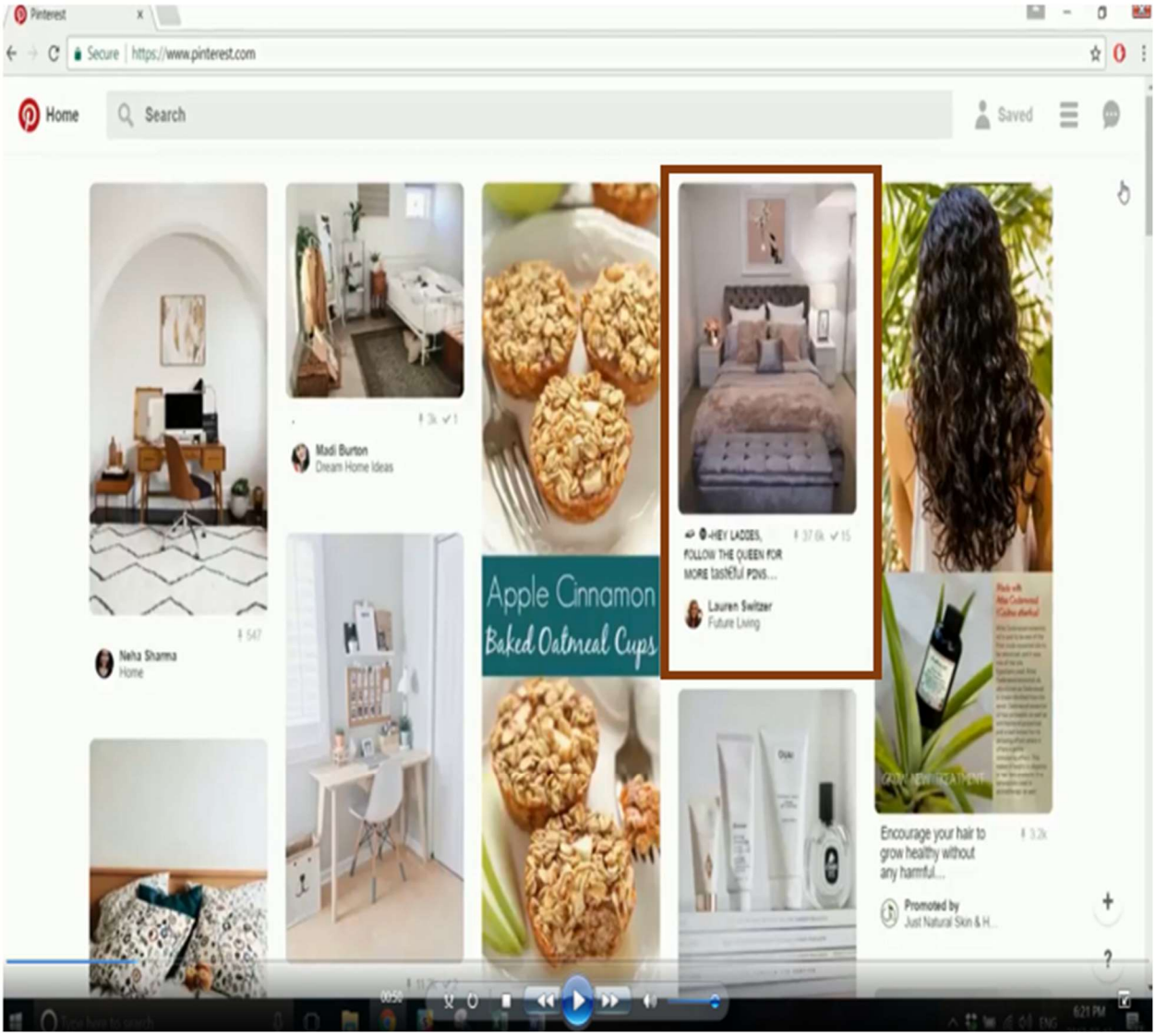
Today, we're making it easier than ever to control the recommendations you see in your home feed with a new home feed tuner and Pin-level controls. Now you can easily see the boards, topics, followed accounts and recent history that contribute to your recommendations and make tweaks so your feed stays relevant and inspiring.



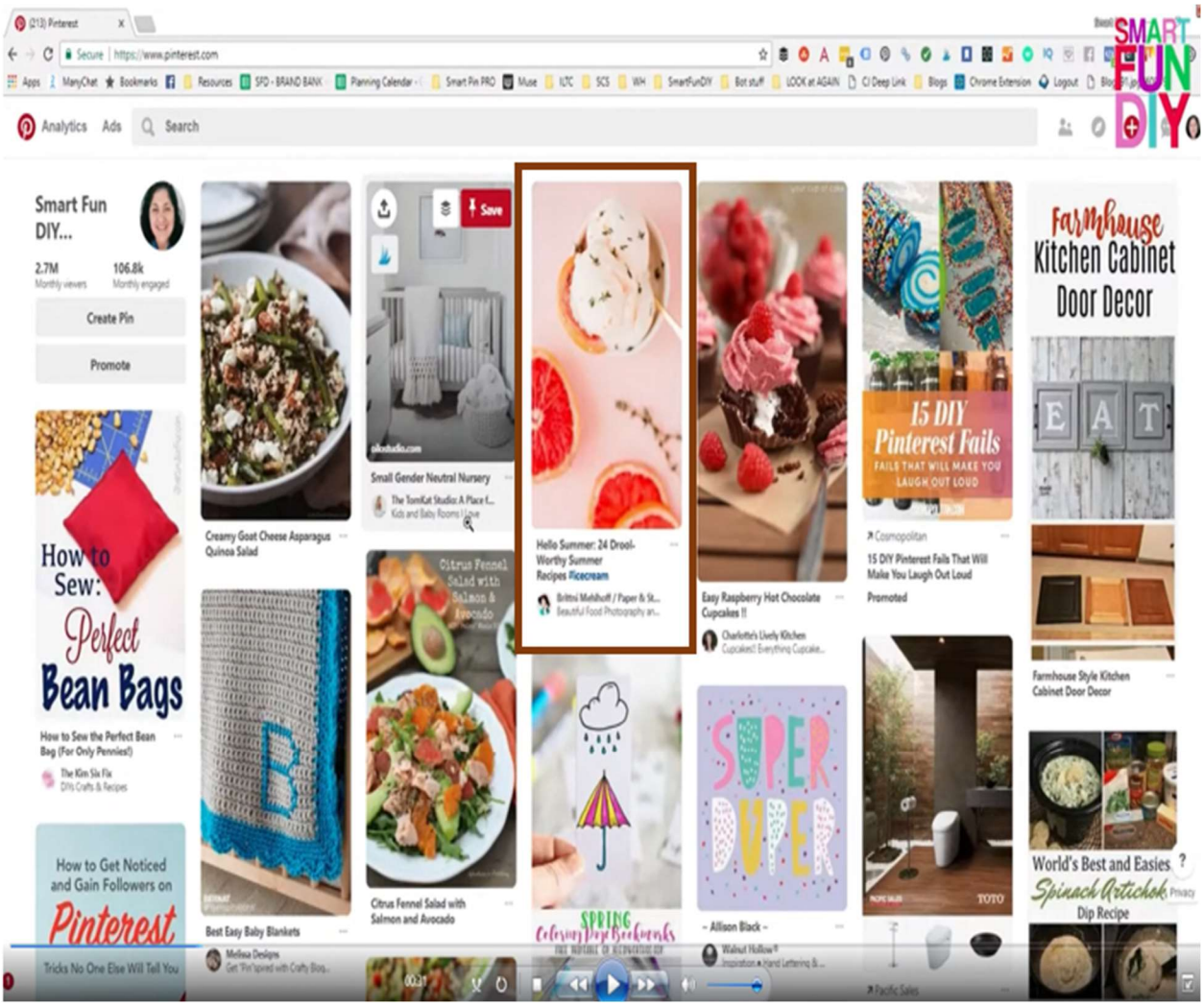
(*E.g.*, https://newsroom.pinterest.com/en/post/new-ways-to-control-the-ideas-you-see-in-your-home-feed (published October 25, 2019) (retrieved June 8, 2023)).



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

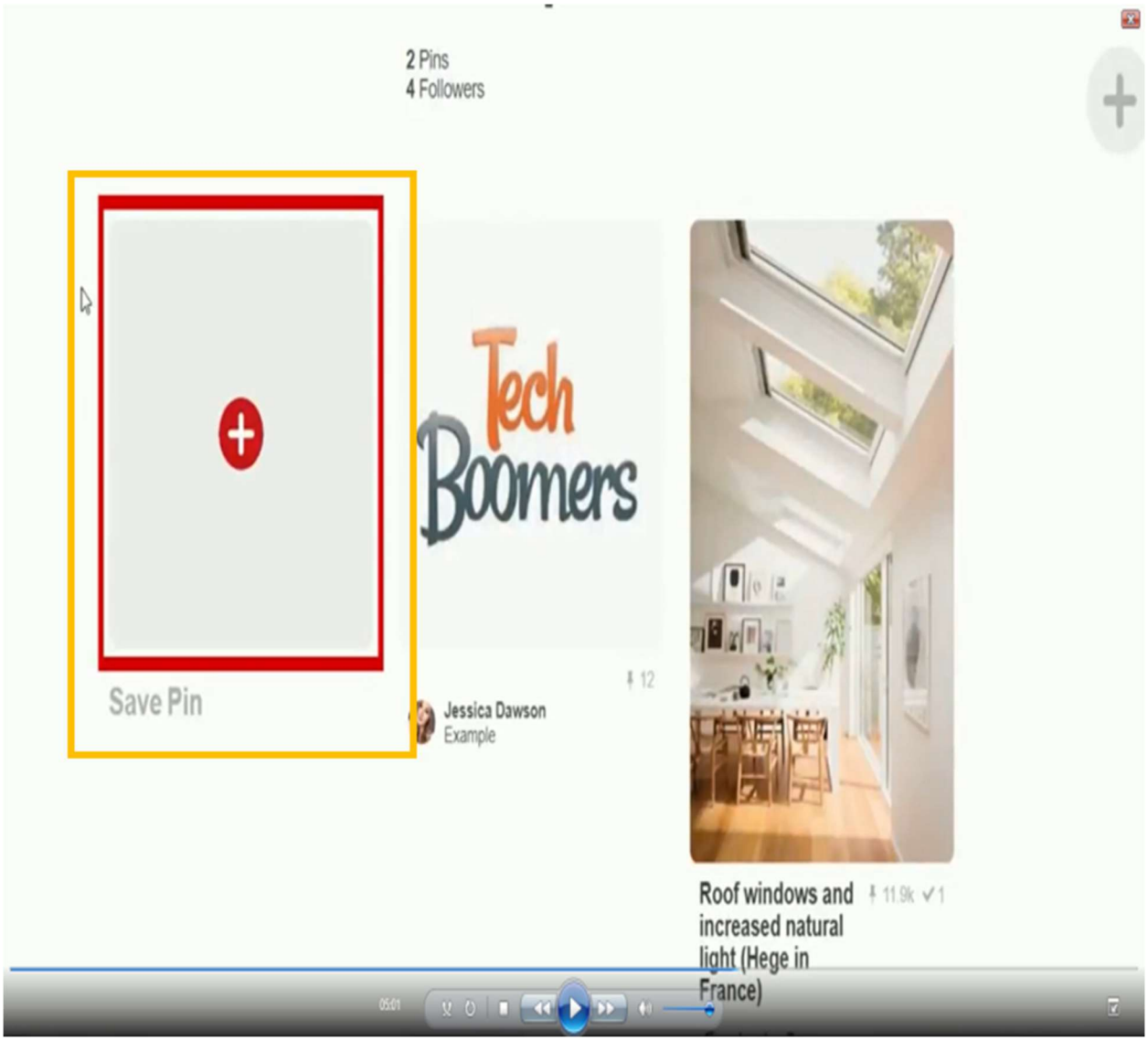


(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).

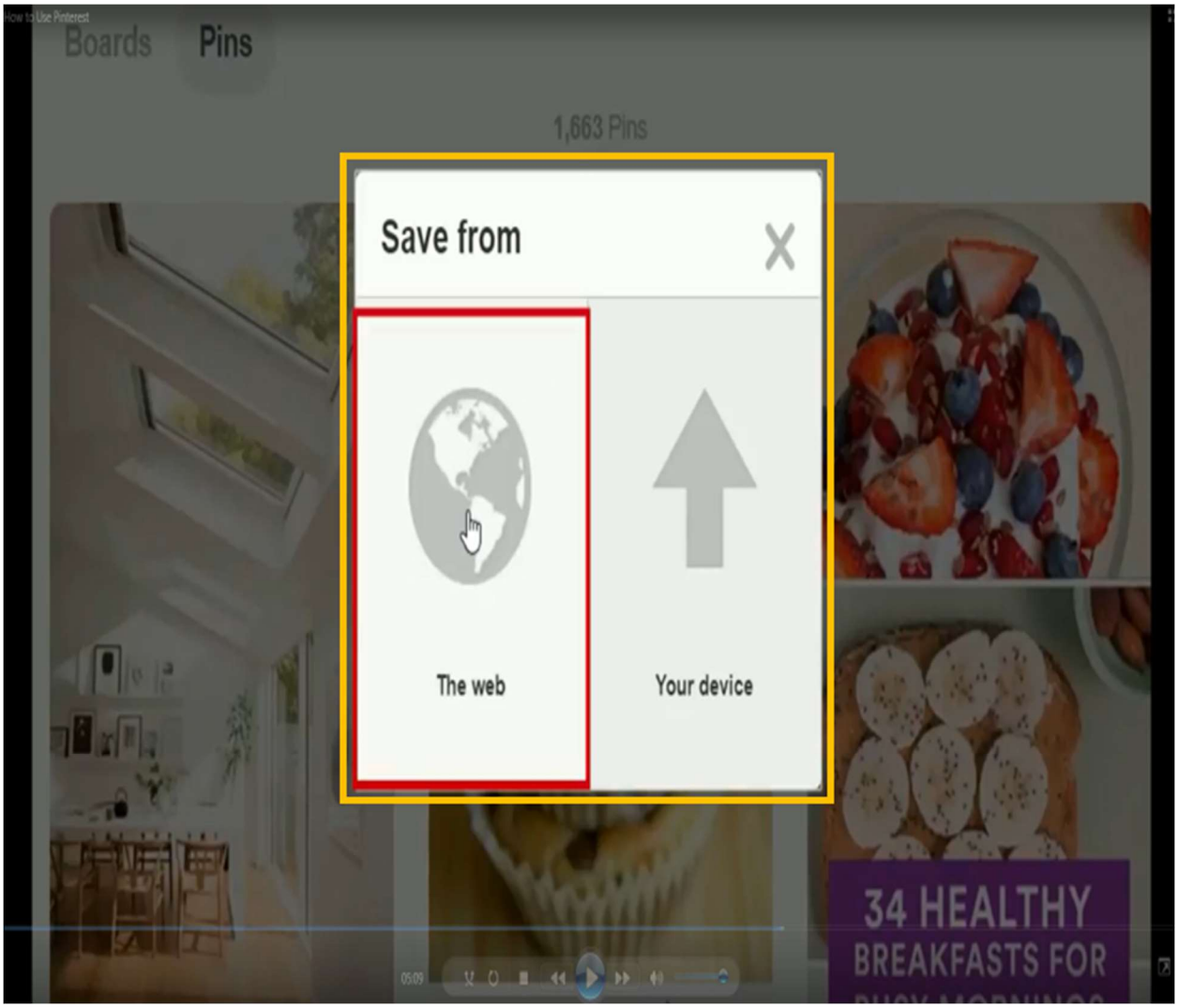


(*E.g.,* https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).

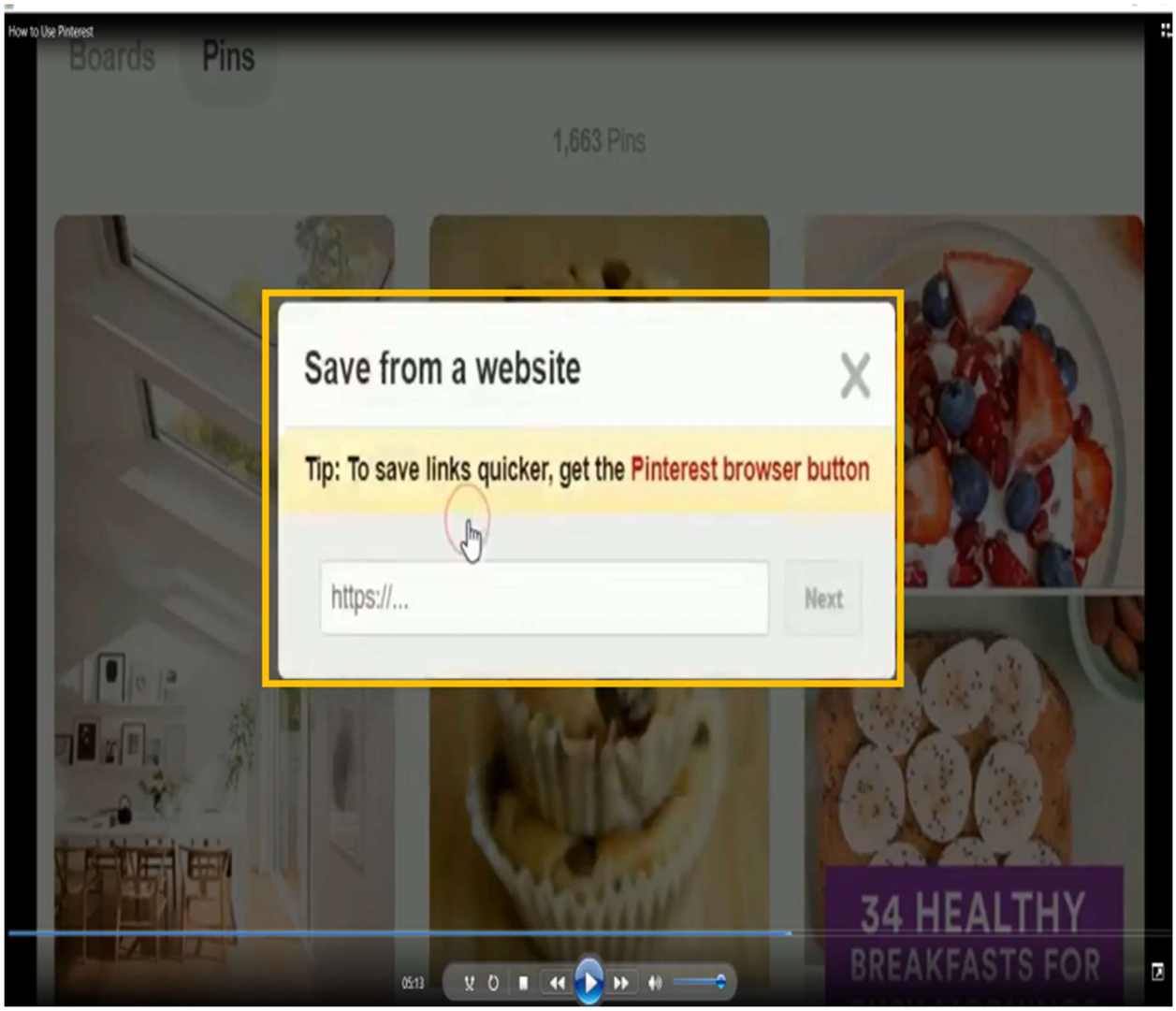
47. The Accused Instrumentality feeds enable electronic media submissions, which include *e.g.,* text and images, to be provided to the Pinterest platform via a submissions electronic interface configured to receive such electronic media submissions (*e.g.,* text and images) from a plurality of submitters (*e.g.,* Pinterest users with accompanying created accounts) over a public network (*e.g.,* the Internet) and for such electronic media submissions to be stored in said electronic media submissions database (*e.g.,* upon the user hitting selecting to publish the content upon which it becomes stored in such database for use in distribution to other users).



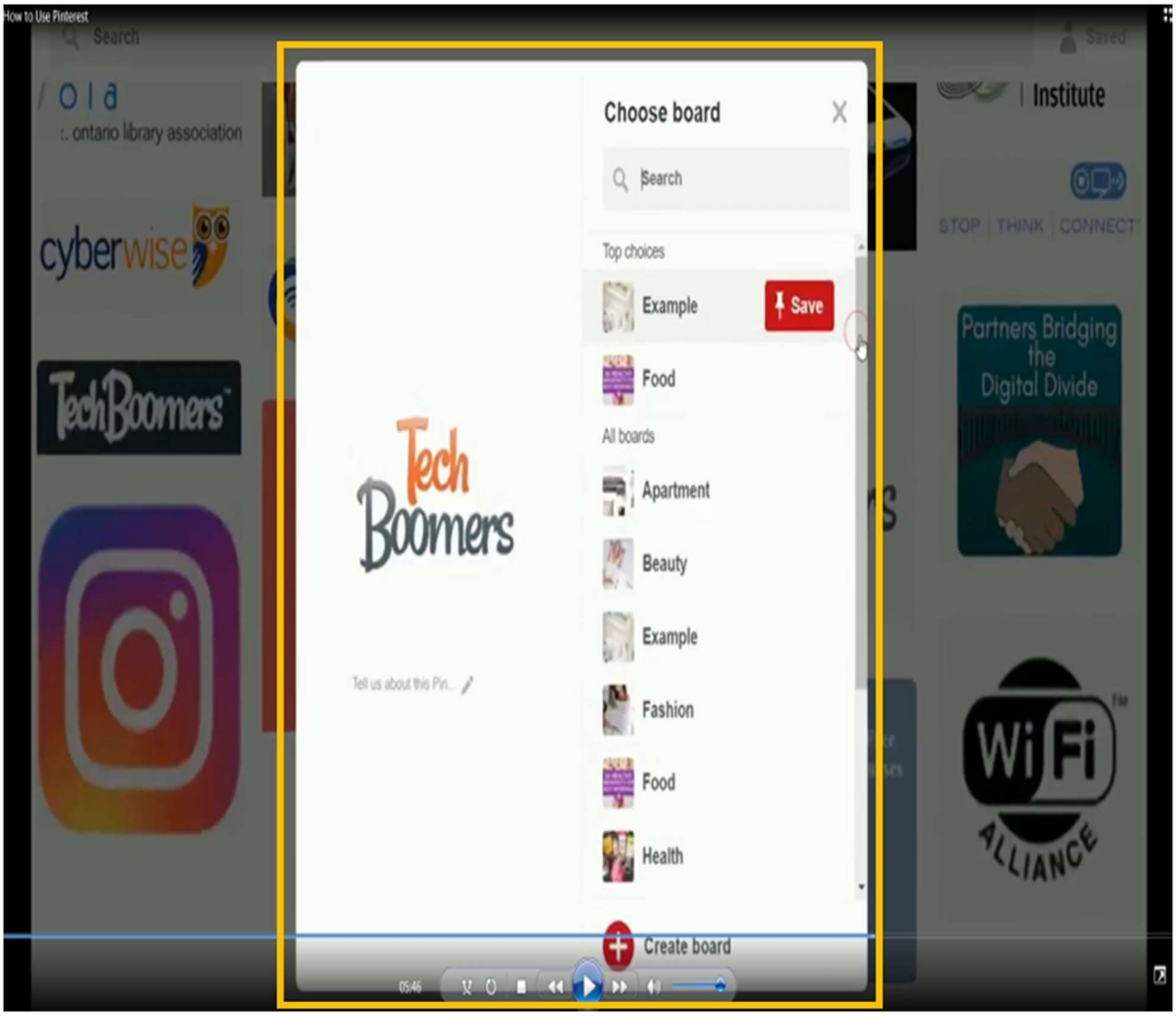
(*E.g.,* https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



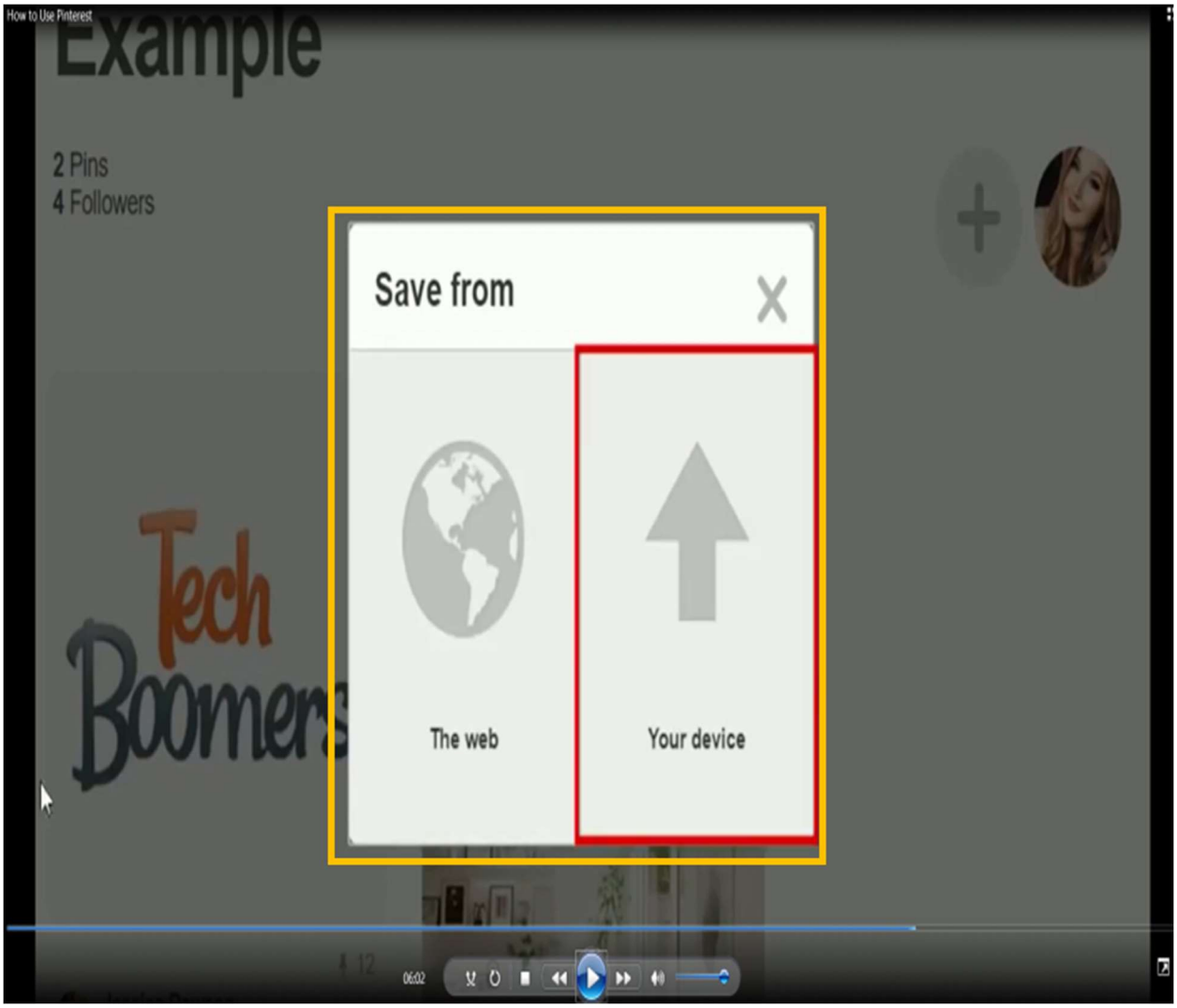
(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



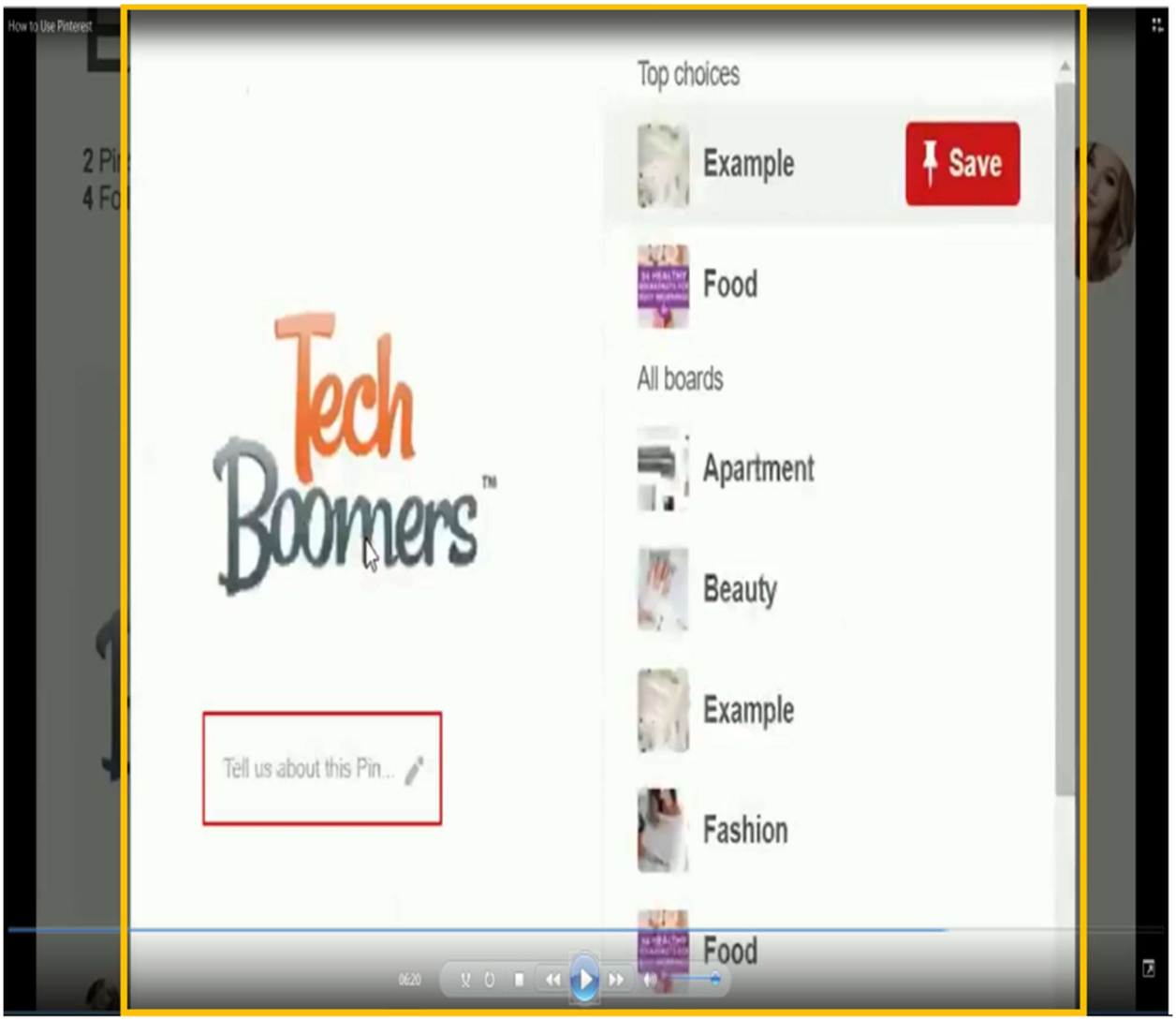
(*E.g.,* https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



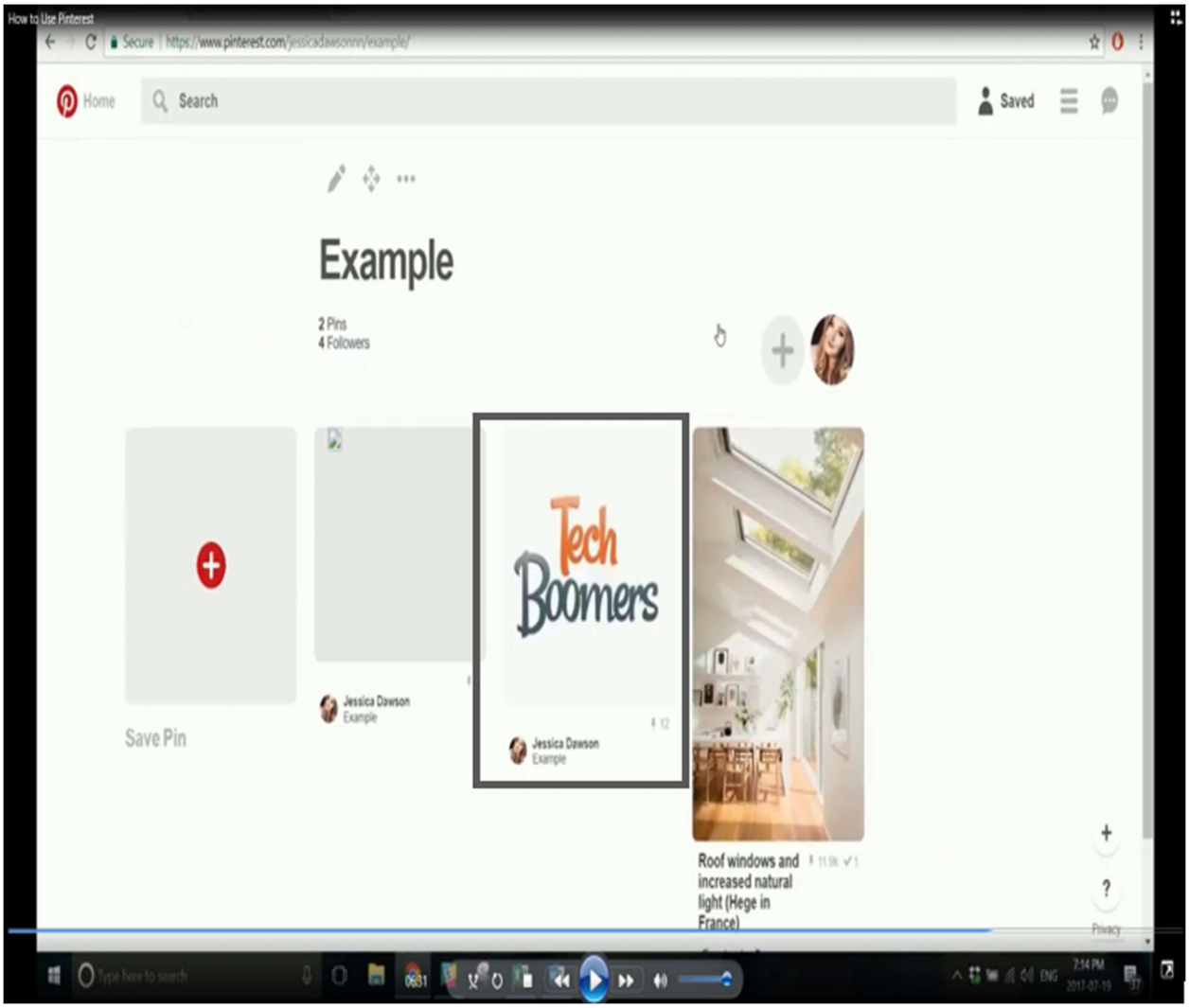
(*E.g.,* https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



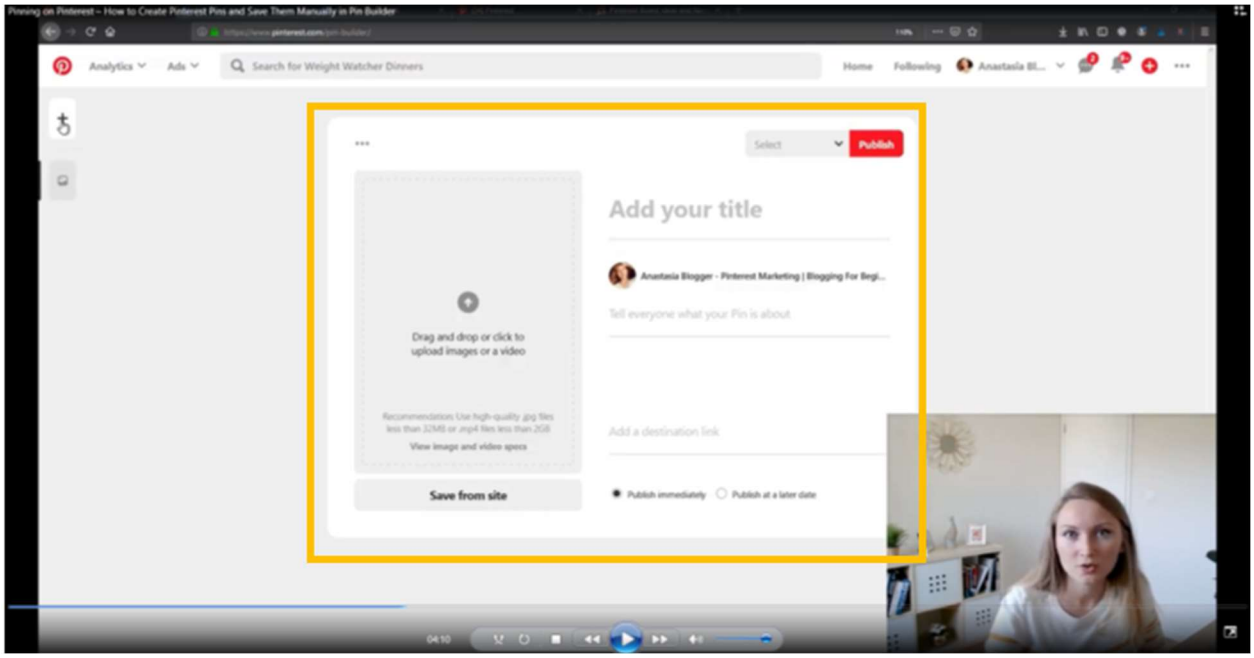
(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).

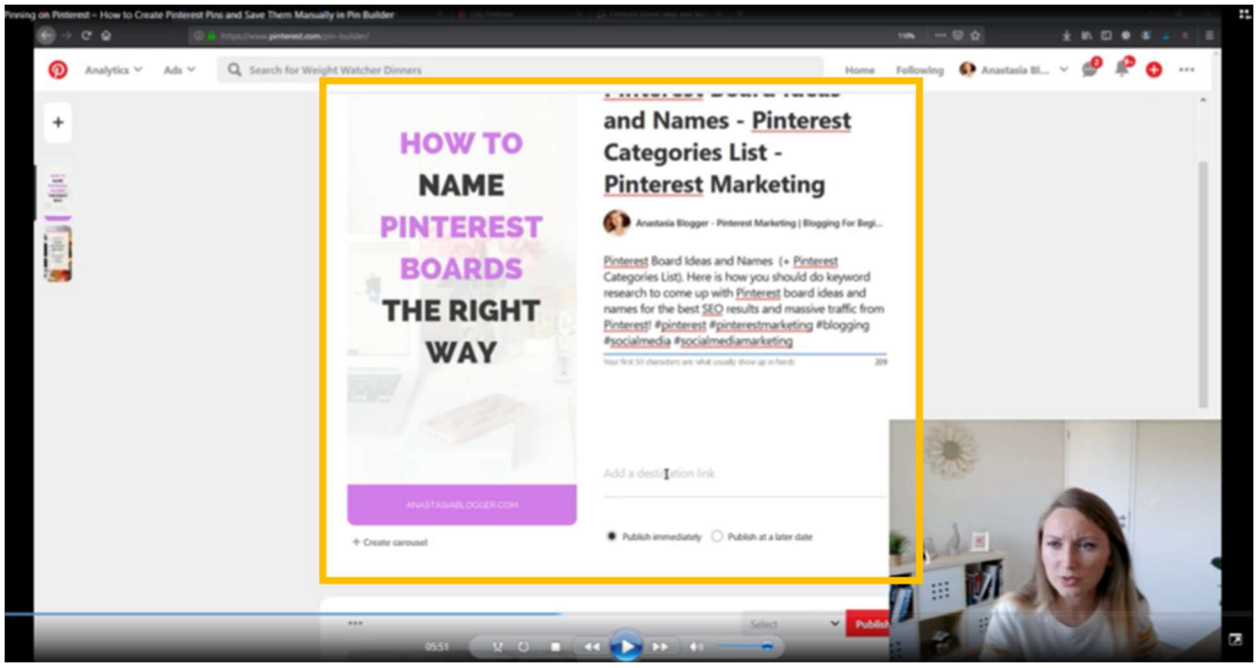


(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).

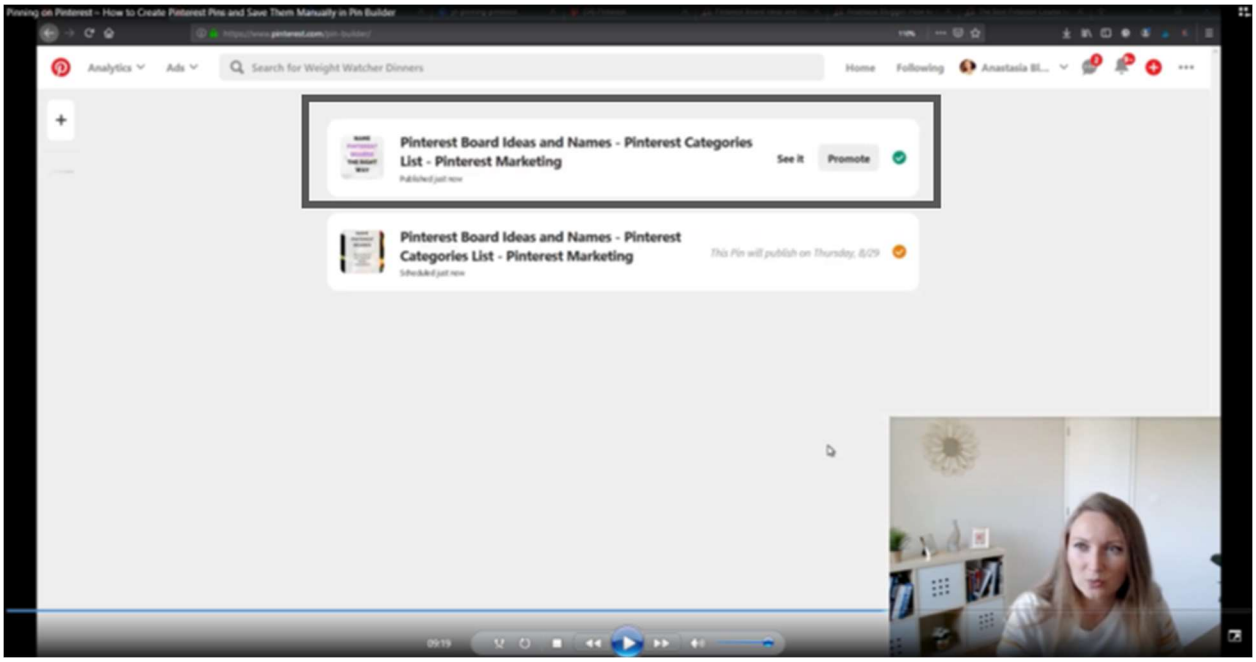


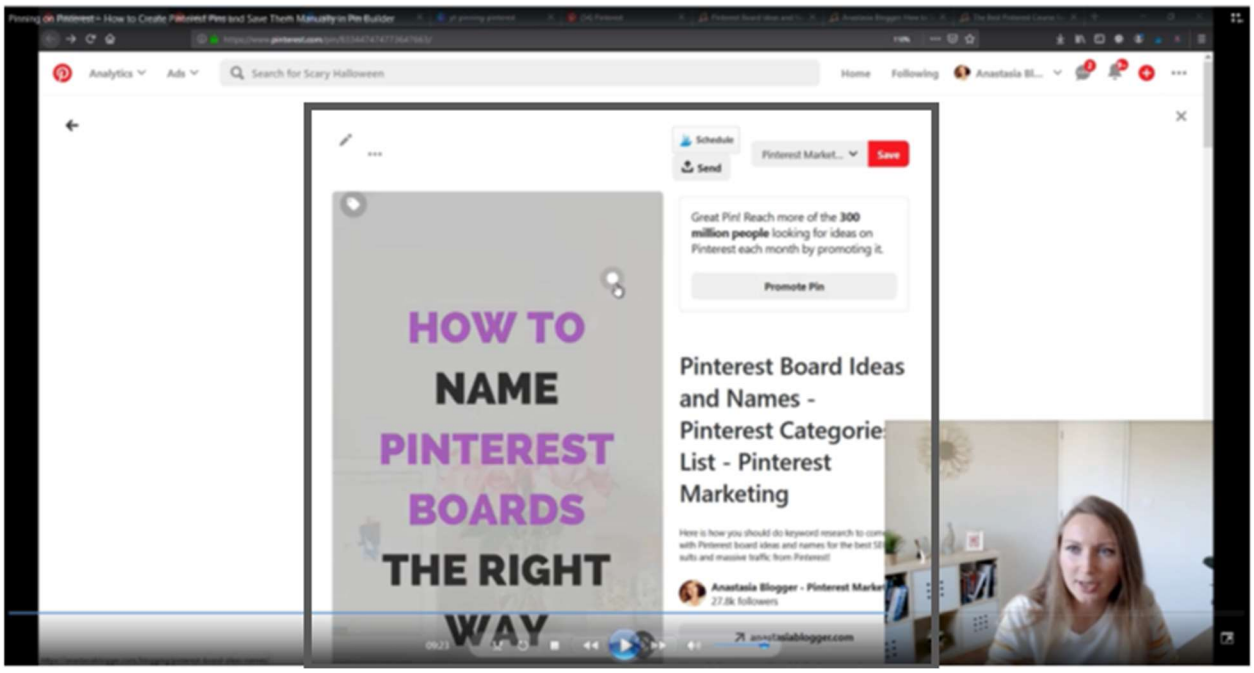
(*E.g.,* https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).





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

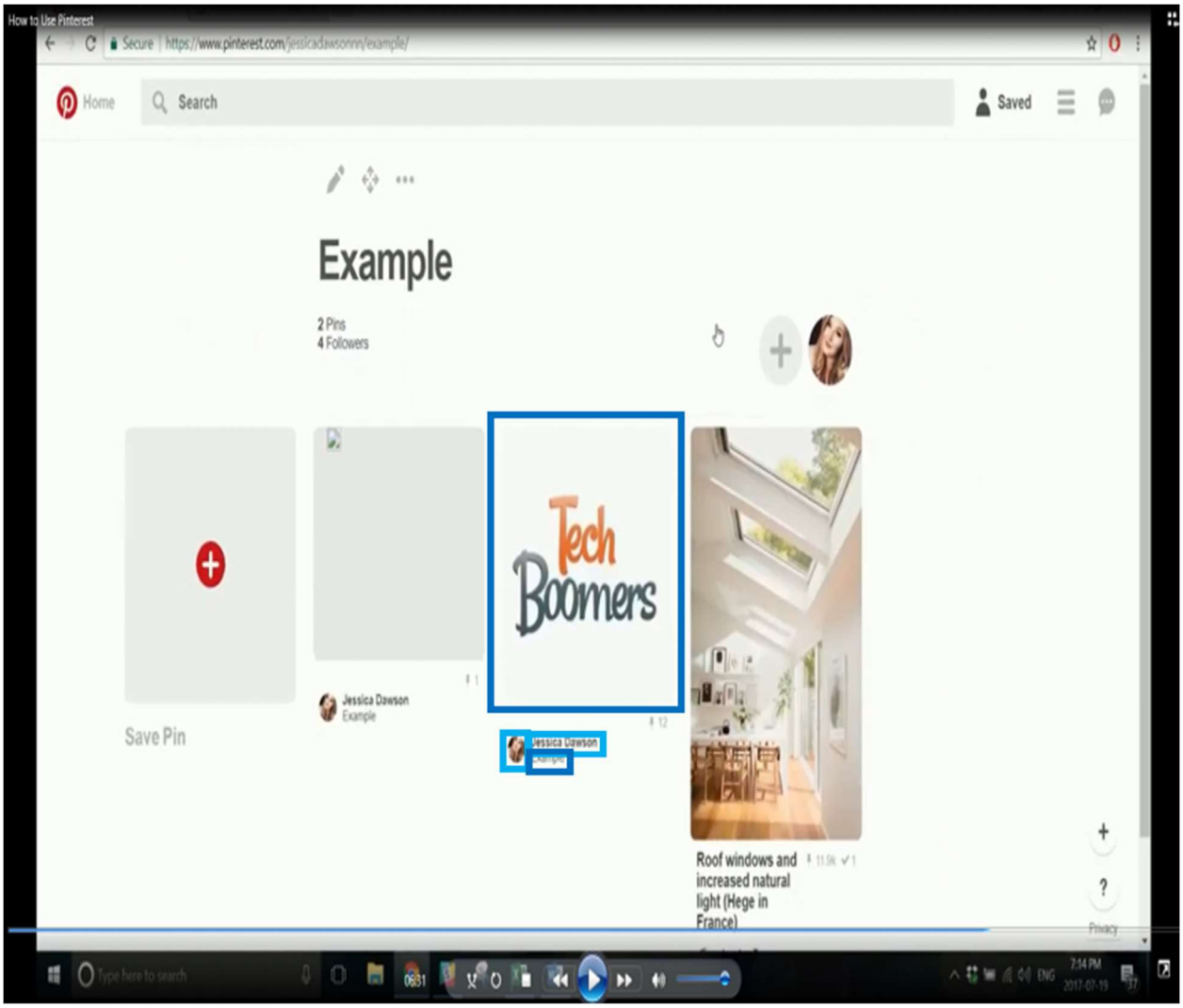




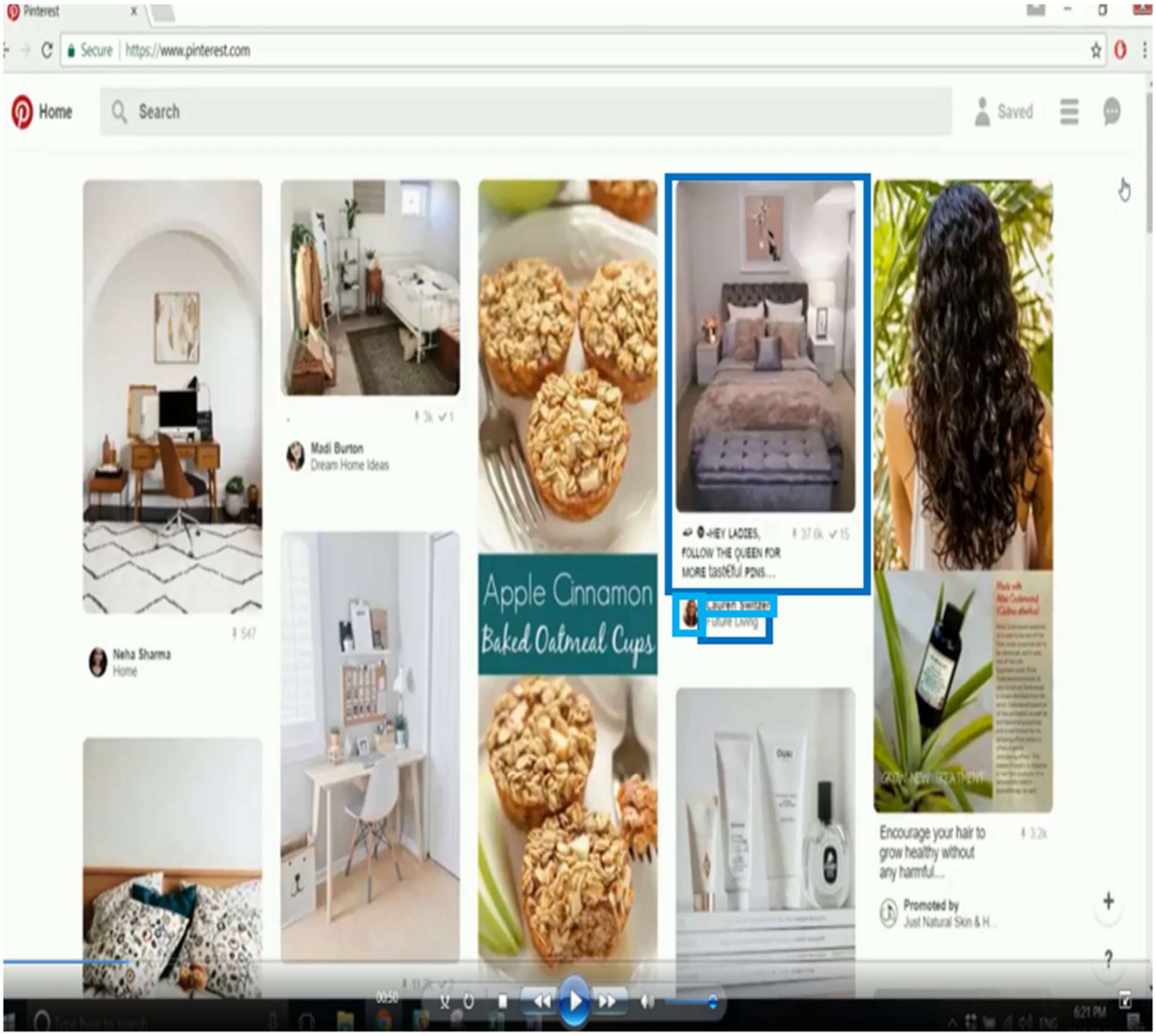
(*E.g.,* https://www.youtube.com/watch?v=EmqaleD5790 (published August 29, 2019)).

48. The electronic media submissions database of the Accused Instrumentality used by Pinterest, Inc. which stores the submissions (*e.g.,* text, images, forming a multimedia post, submitted by Pinterest users) further stores data identifying the submitter and data indicating

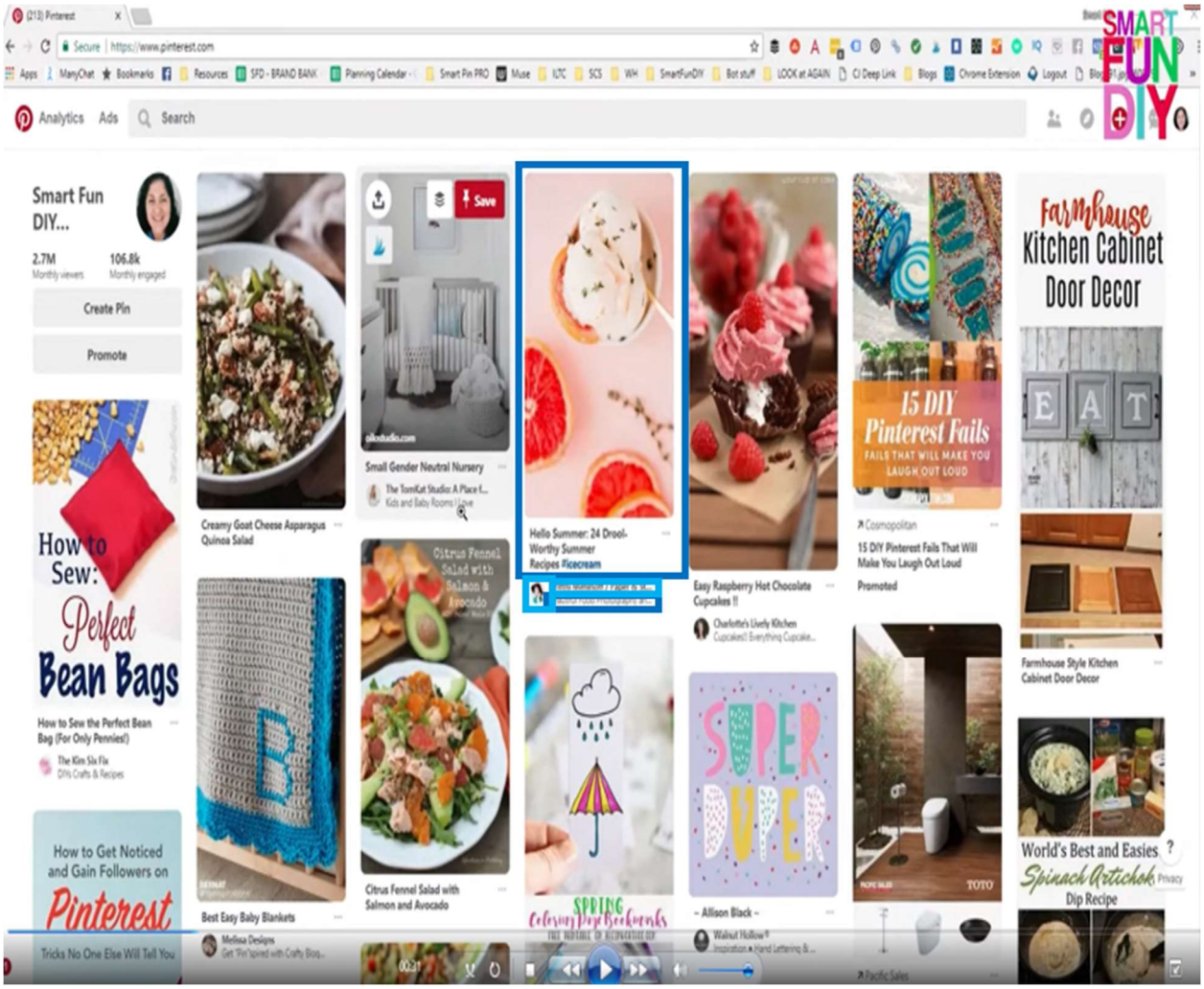
content for each electronic media submission, *e.g.,* as shown below with a name and profile picture identifying the submitter and textual and image matter indicating content.



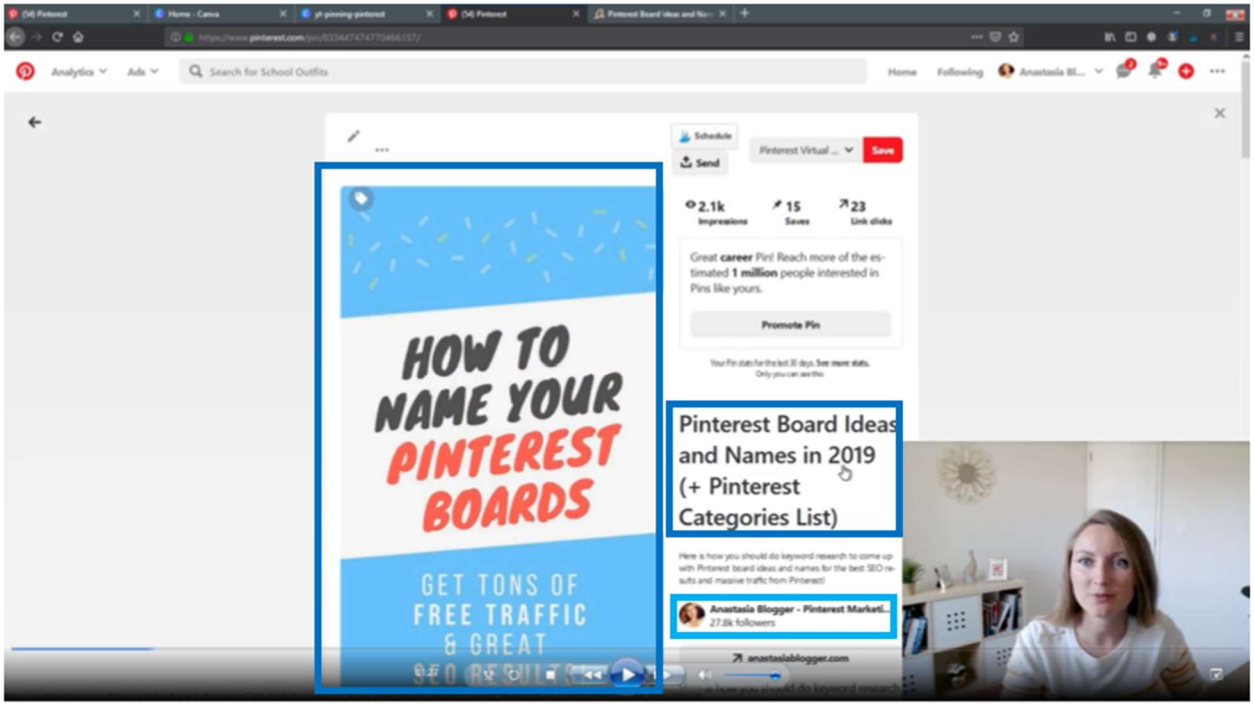
(*E.g.,* https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



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

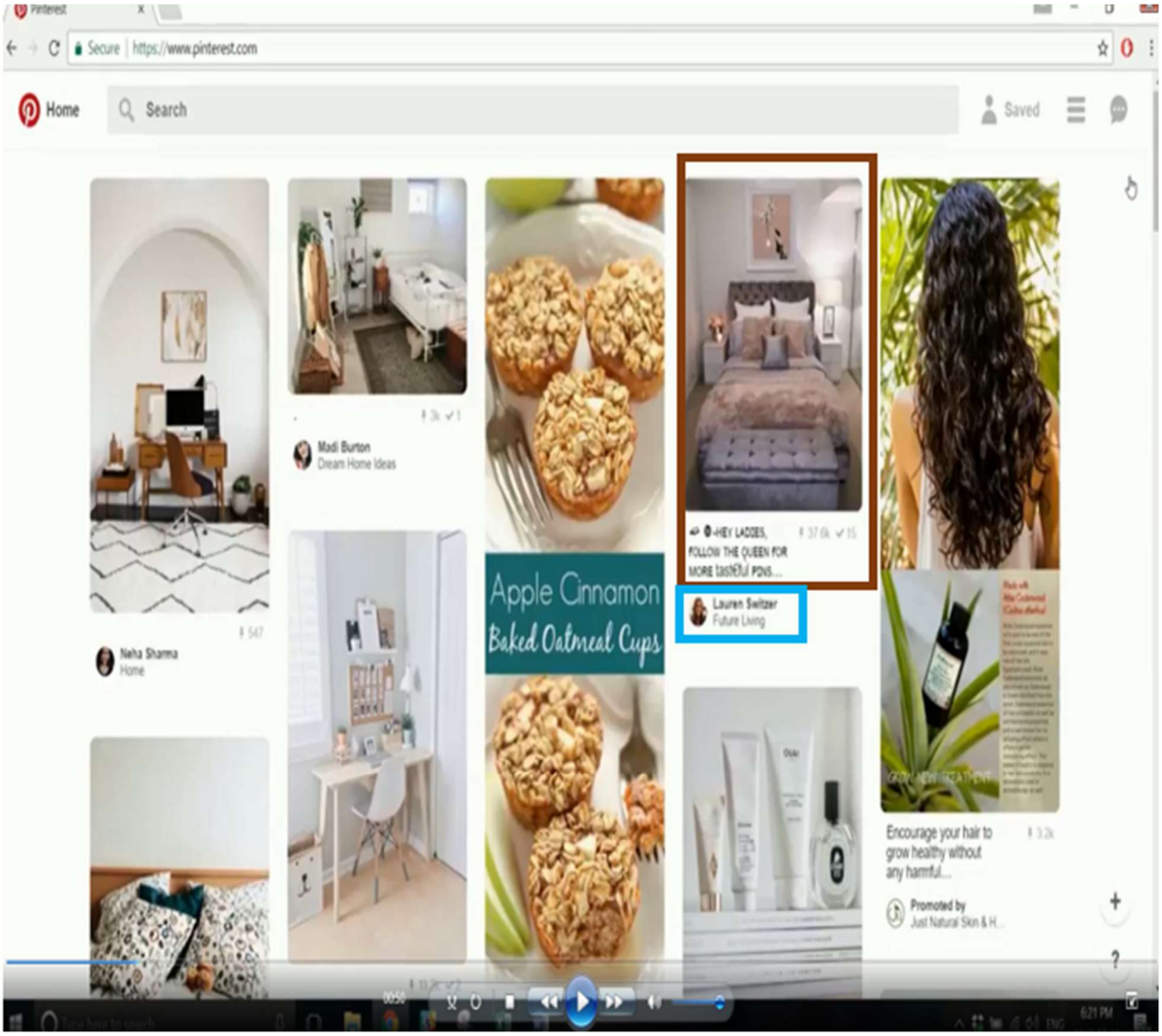


(*E.g.*, https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).

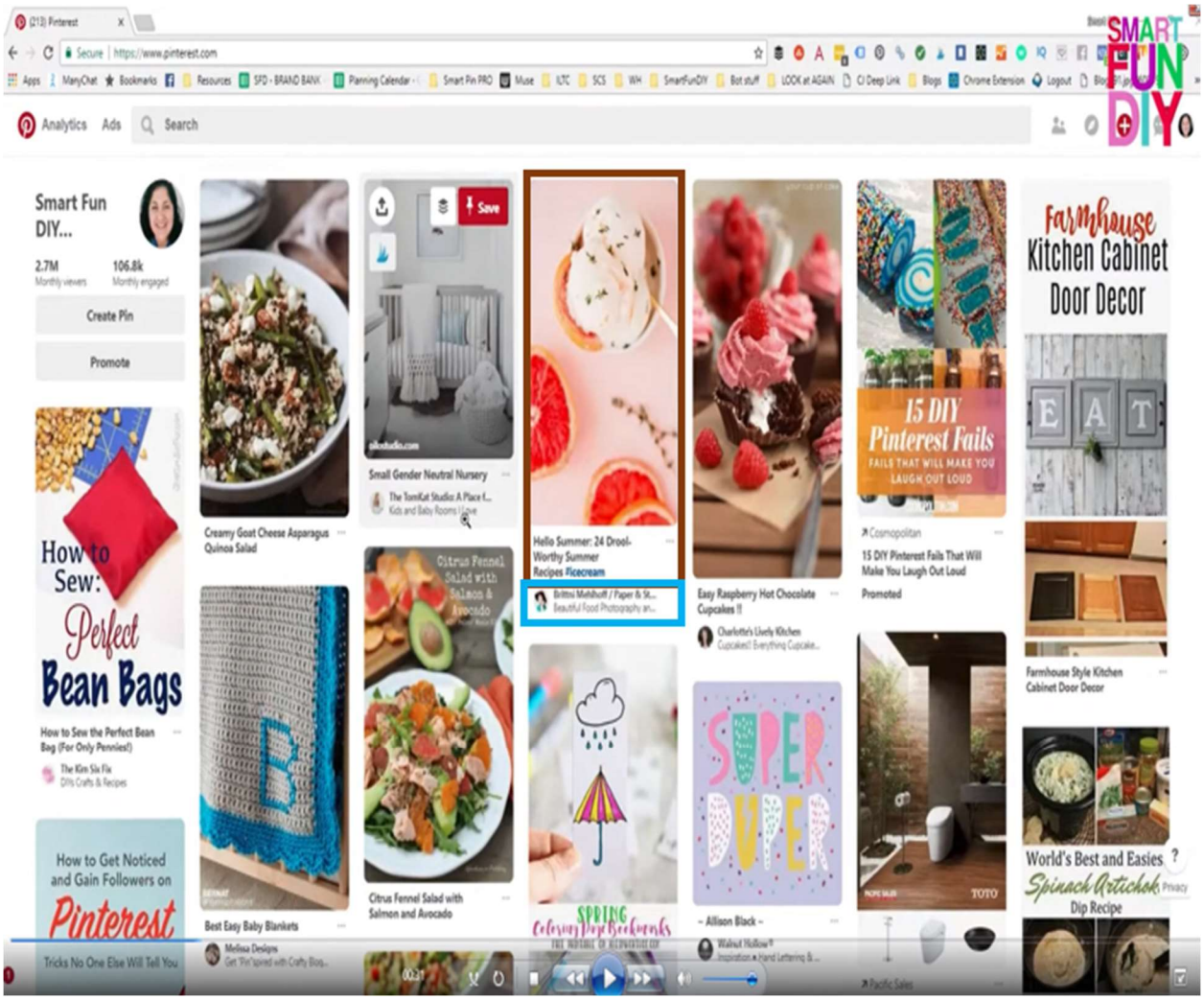


(*E.g.,* https://www.youtube.com/watch?v=EmqaleD5790 (published August 29, 2019)).

49. Pinterest, Inc.'s Accused Instrumentality electronically generate multimedia files from the retrieved electronic media submissions in accordance with a selected digital format (*e.g.,* a digital format compatible with a selected digital format compatible with the particular computer, browser, or application of a particular user), wherein the identification of the submitter is maintained with each retrieved submission within the multimedia file. For example, below are examples of such multimedia files being displayed within a user's browser, on user devices (*e.g.,* computers incorporating browsers), in association with the identification of the submitter for each retrieved submission within the multimedia file and its associated multimedia content (*e.g.,* content associated with text and images), for example as shown below.



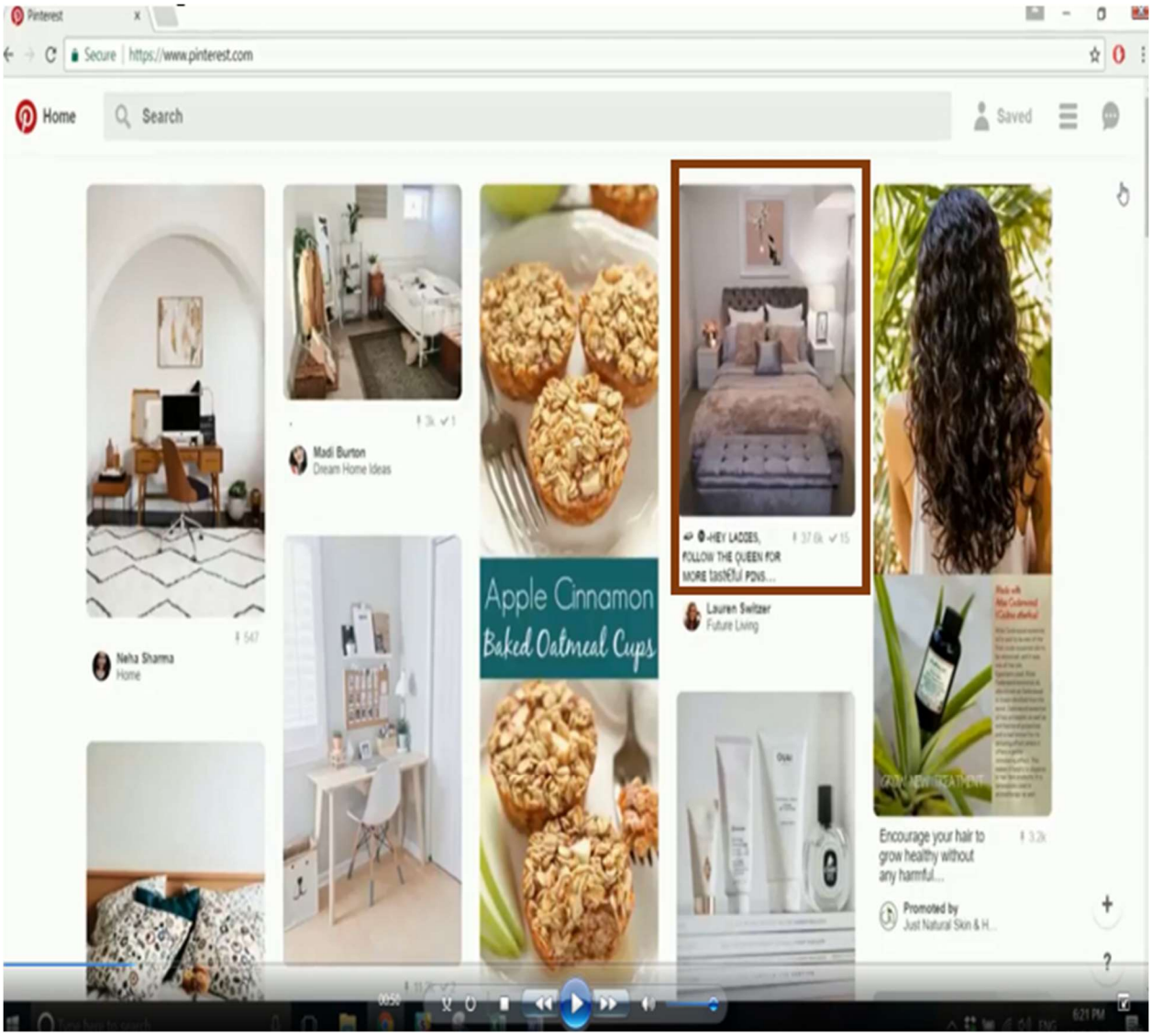
(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



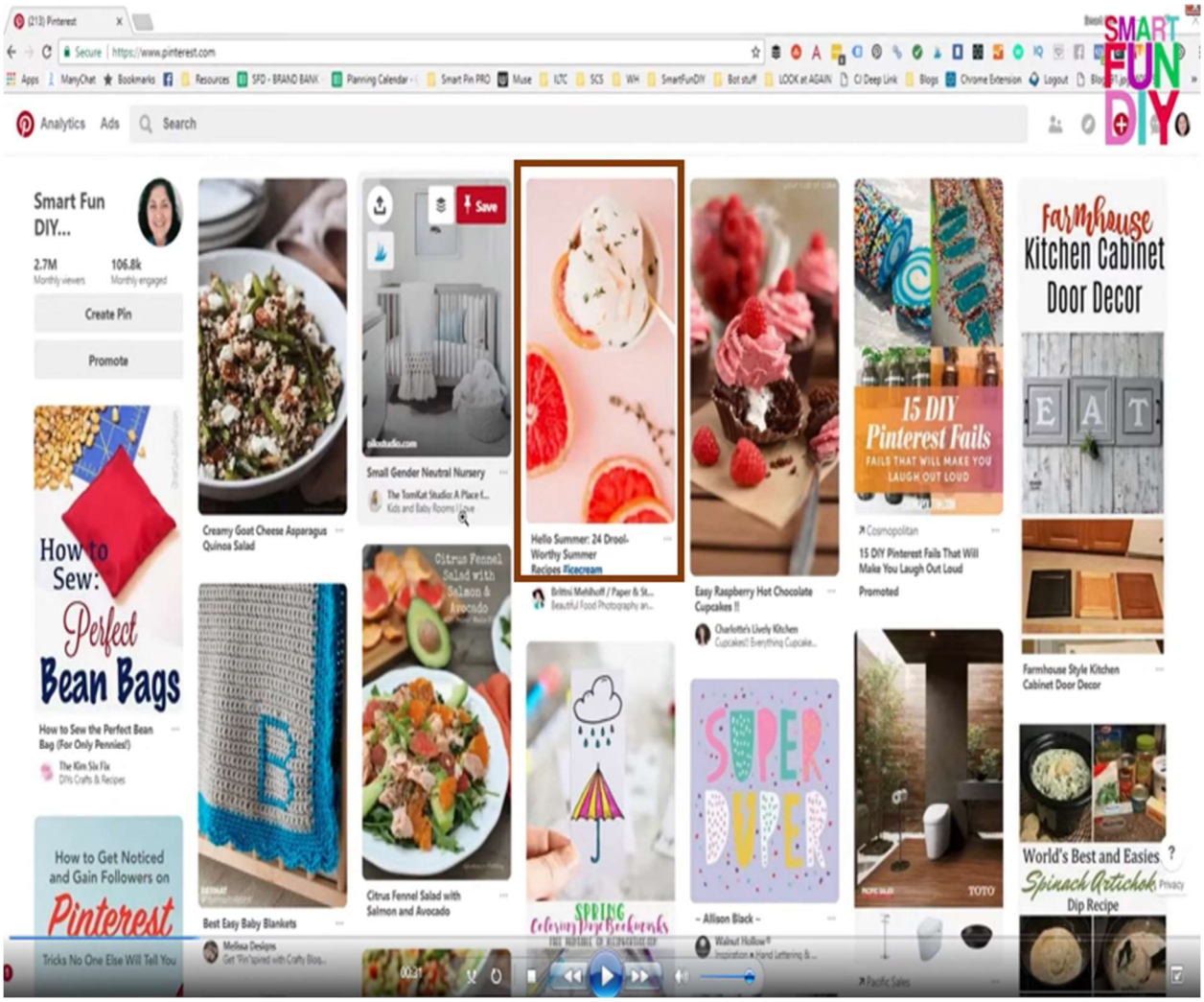
(*E.g.,* https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).

50. Pinterest, Inc.'s Accused Instrumentality electronically transmit the multimedia file to a plurality of publicly available webservers, for example as discussed above in connection with Pinterest's servers, in order to ensure rapid delivery to any of various users from amongst a geographically-distributed userbase, to be electronically available for viewing on one or more user devices of such userbase over a public network (*e.g.,* the Internet) via a web-browser. Examples of viewing of such multimedia files and their associated multimedia content on user devices via a public network via a web-browser is shown below. Such function-specific subsystems may be contained within the function-specific servers, from amongst communicatively connected

Pinterest servers, a plurality of which are publicly accessible and used to host content to the public, for example as discussed below.



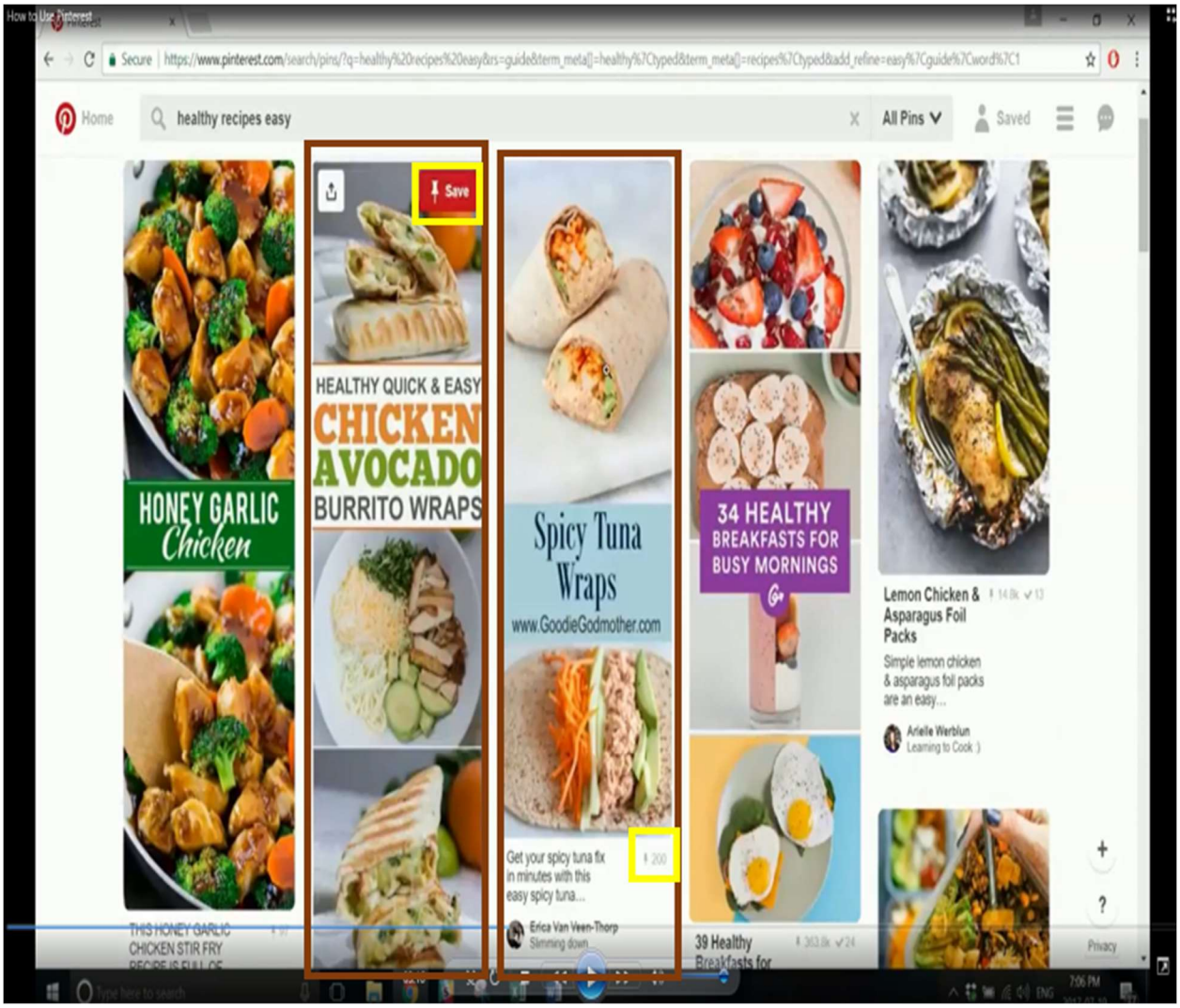
(*E.g.,* https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



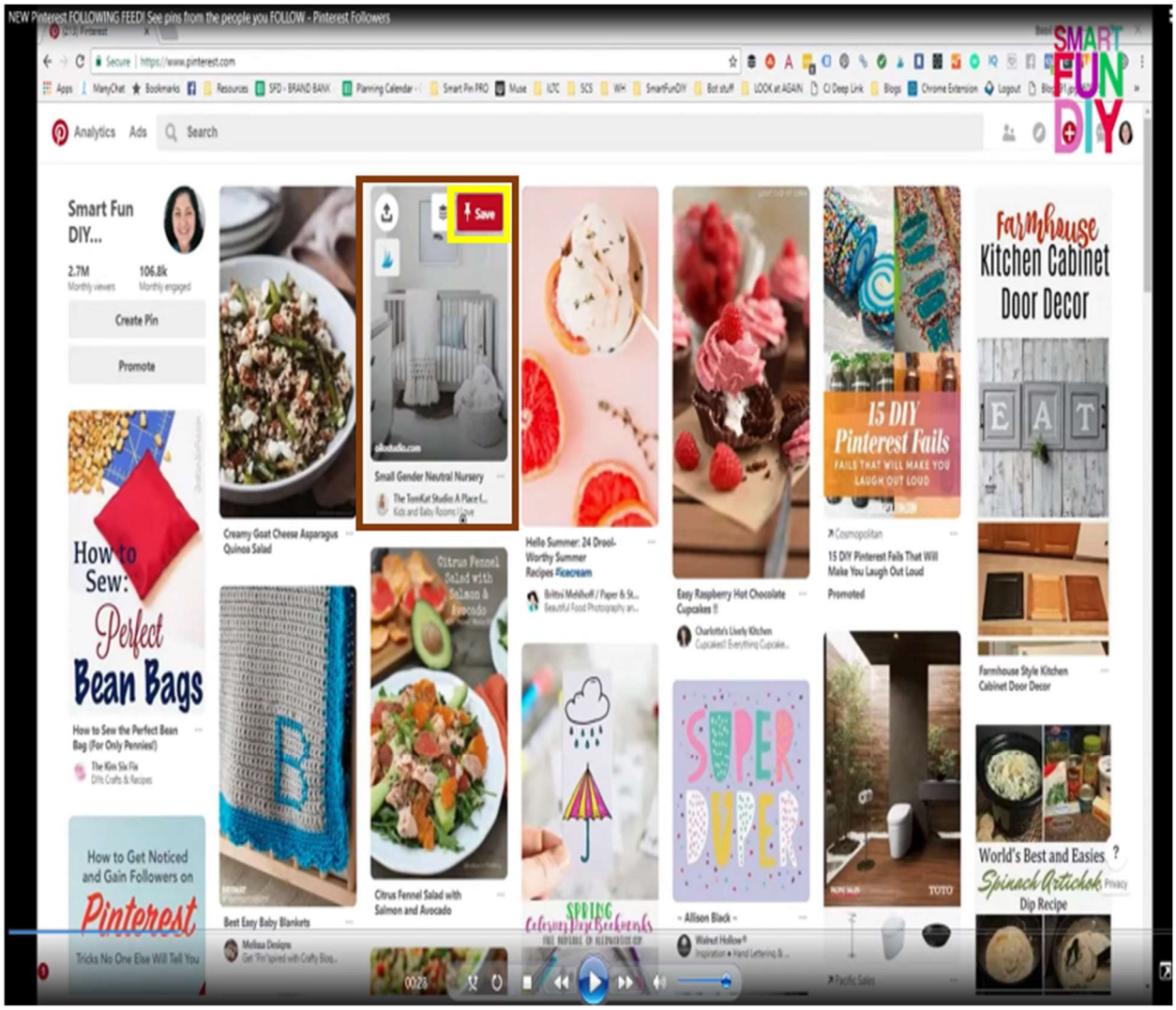
(*E.g.,* https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).

51. Pinterest, Inc.'s Accused Instrumentality provides (*e.g.,* via its website's user interface) a web-based graphical user interface that enables a user to electronically transmit data (*e.g.,* data indicative of the selection of a "save" or "pin" icon) indicating a vote or rating for an electronically available multimedia content or an electronic submission (*e.g.,* an image or video) within a respective electronically available multimedia content. As can be seen below, the Pinterest platform and Pinterest feeds' web-based graphical user interface enables selection of such a "save" or "pin" icon to indicate a vote or rating for electronically available multimedia content or an electronic media submission within a respective electronically available multimedia content, and

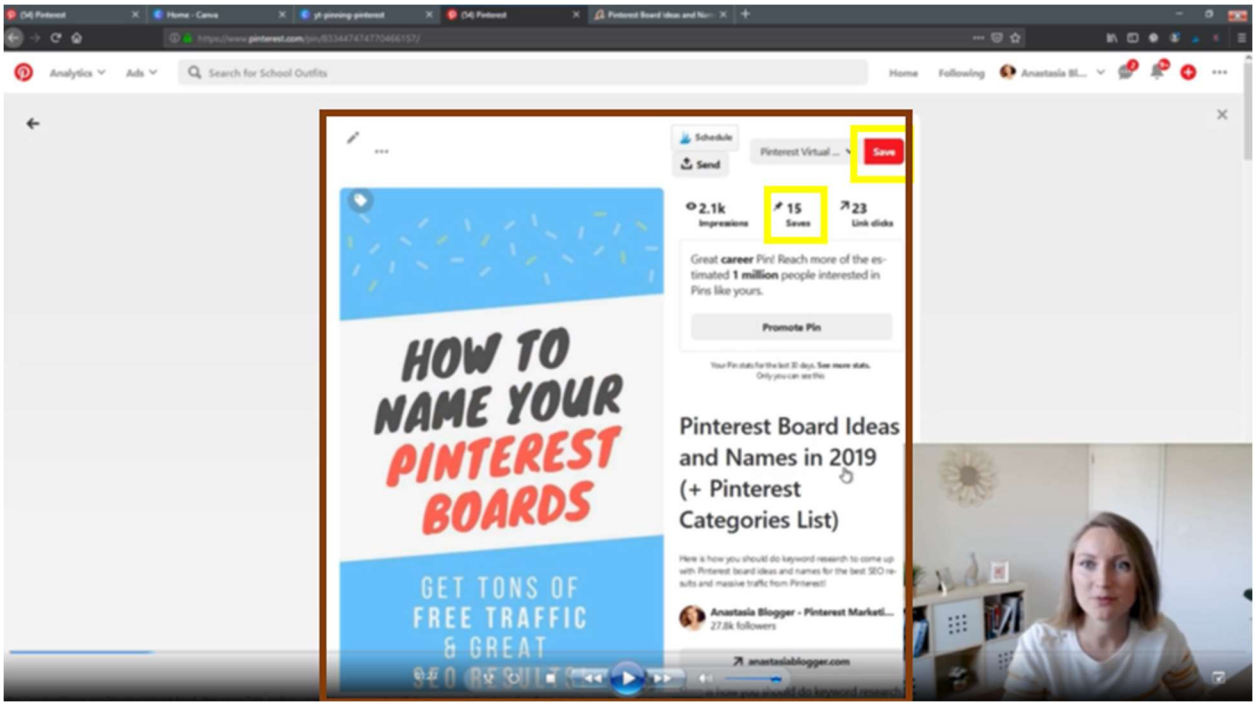
this data is transmitted to the Pinterest platform such that a total number of such selections is tracked and associated with the multimedia content and/or submission. Such function-specific subsystems may be contained within the communicatively coupled Pinterest servers, for example as discussed below.



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



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



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

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

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

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

54. Plaintiff incorporates the above paragraphs herein by reference.

55. On July 2, 2019, United States Patent No. 10,339,576 ("the '576 Patent") was duly and legally issued by the United States Patent and Trademark Office. The '576 Patent is titled "Revenue-Generating Electronic Multi-Media Exchange and Process of Operating Same." A true

and correct copy of the '576 Patent is attached hereto as Exhibit C and incorporated herein by reference.

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

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

58. The '576 Patent shares the identical specification as the '480 patent and therefore VCA incorporates the background and discussion of the invention in Paragraphs 11-18. Furthermore claim 1 involves a system for generating multimedia content. The claim requires, among other things, the automatic generation of multimedia content for view on a plurality of user devices. The claim requires that the content be generated in a very specific way by applying an electronic filter to a plurality of electronic media submissions stored on one or more database, the filter having criteria associated with one or more users. This allows automatic generation of multimedia content in a much quicker and easier fashion based on specific user criteria. There is nothing abstract about this very particular, unconventional, and non-routine system for the generation of multimedia content as specifically claimed and there is no risk of preempting creating and distribution contention generally, or even within the context of the Internet.

59. **Direct Infringement.** Upon information and belief, Defendant has been directly infringing claims 17 and 18 of the '576 Patent in Illinois, and elsewhere in the United States, by

employing a computer-based system using https://www.pinterest.com/ ("Accused Instrumentality") (*e.g.,* https://www.pinterest.com/).

60. Pinterest, Inc. uses a cloud computing-enabled computer-based system for its Accused Instrumentality, for example to enable the generation of multimedia content by various users for, and provision of, personalized feeds that show these and other users this multimedia content from plural users based, *inter alia*, on those that they follow and content that has been selected in the past. For example, Pinterest, Inc. has employed, in order to operate its Accused Instrumentality, computer servers making use of the cloud-based Amazon S3 Amazon Web Services and object storage in and around 2019. Indeed, Pinterest, Inc. has employed, for a variety of subsystems of the Accused Instrumentality, several Amazon Web Services storages and computing solutions, in some cases employing machine learning engines. Indeed, Pinterest, Inc. has, to operate its Accused Instrumentality and associated subsystems, purchased hundreds of millions of dollars of cloud computing from Amazon Web Services. Pinterest, Inc., uses and has used during the relevant time period, numerous different networks, IP addresses, and providers for, *inter alia*, cloud hosting, software-as-a-service, content delivery networks (CDNs), thereby using separate server subsystems for all its meaningfully different functions, such as those indicated below.

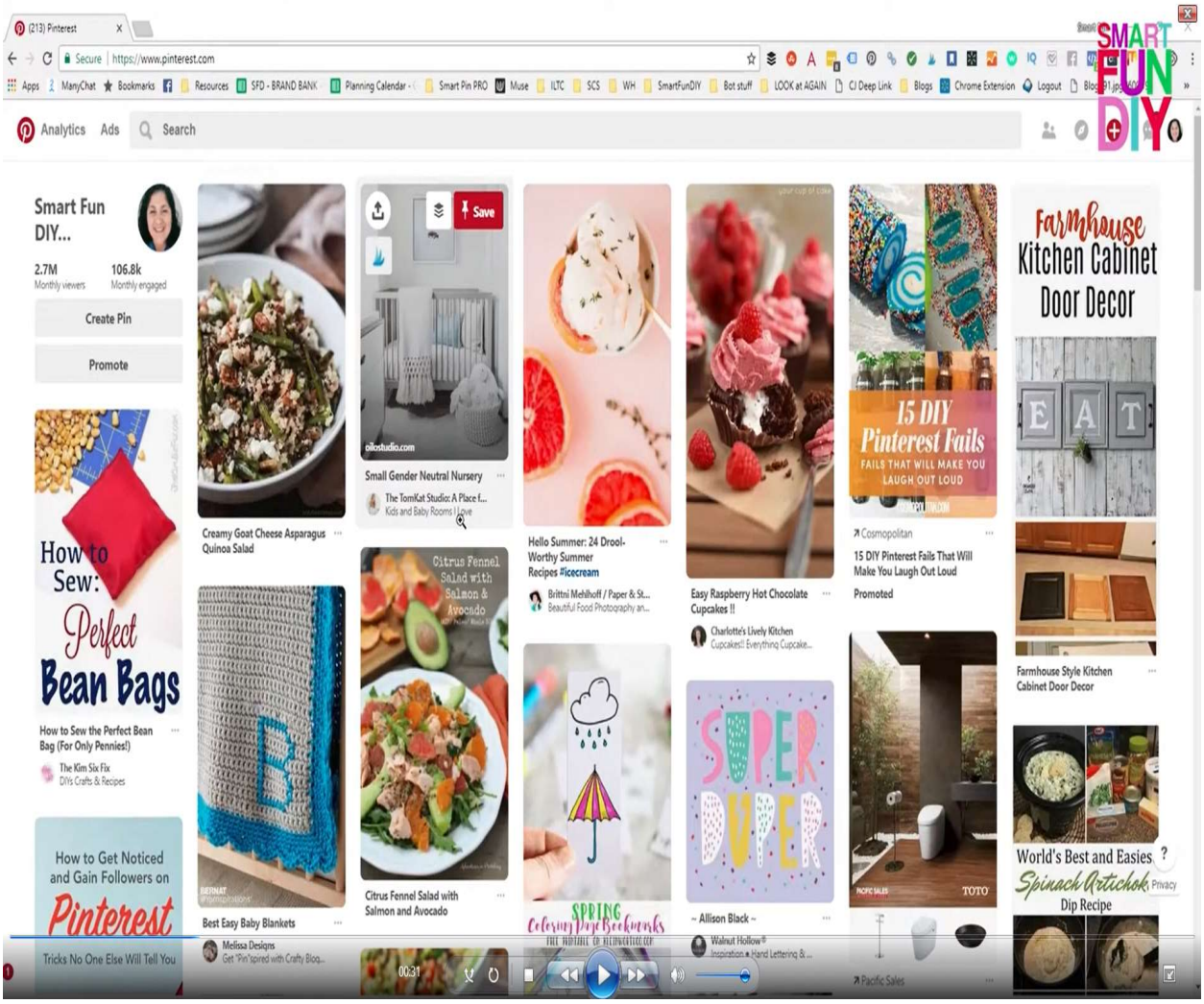
New ways to control the ideas you see in your home feed

October 15, 2019
News, Product, Technology

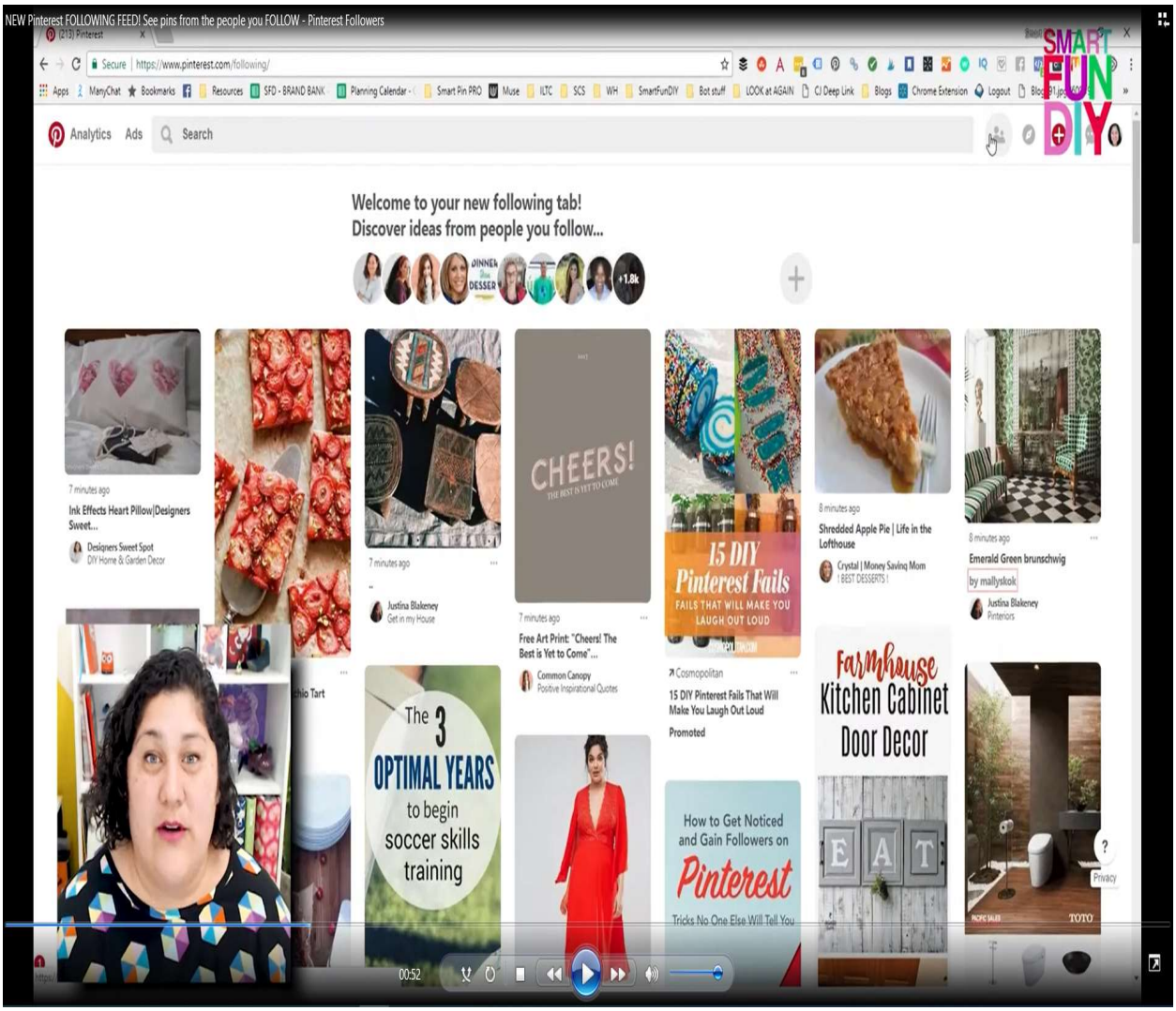
Pinterest is the place to discover and develop your taste, with inspiration for what you're doing now and what you're dreaming up for the future. But as your interests and plans change, your experience on Pinterest should evolve with you, too. In fact, one of our top Pinner requests is for more control over what you see in your home feed, and better ways to signal what you like and don't like over time.

Today, we're making it easier than ever to control the recommendations you see in your home feed with a new home feed tuner and Pin-level controls. Now you can easily see the boards, topics, followed accounts and recent history that contribute to your recommendations and make tweaks so your feed stays relevant and inspiring.

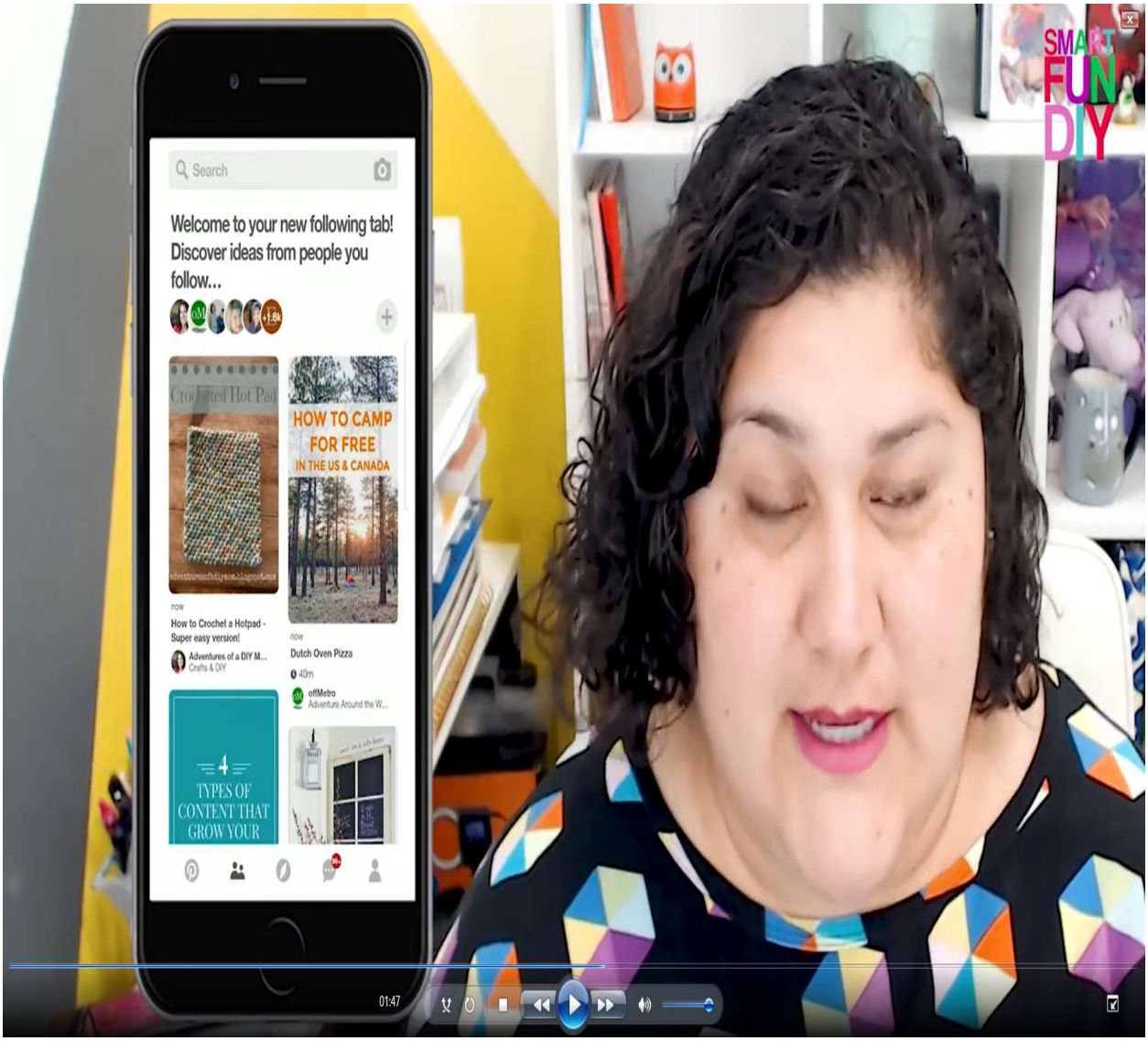
(*E.g.*, https://newsroom.pinterest.com/en/post/new-ways-to-control-the-ideas-you-see-in-your-home-feed (published October 25, 2019) (retrieved June 8, 2023)).



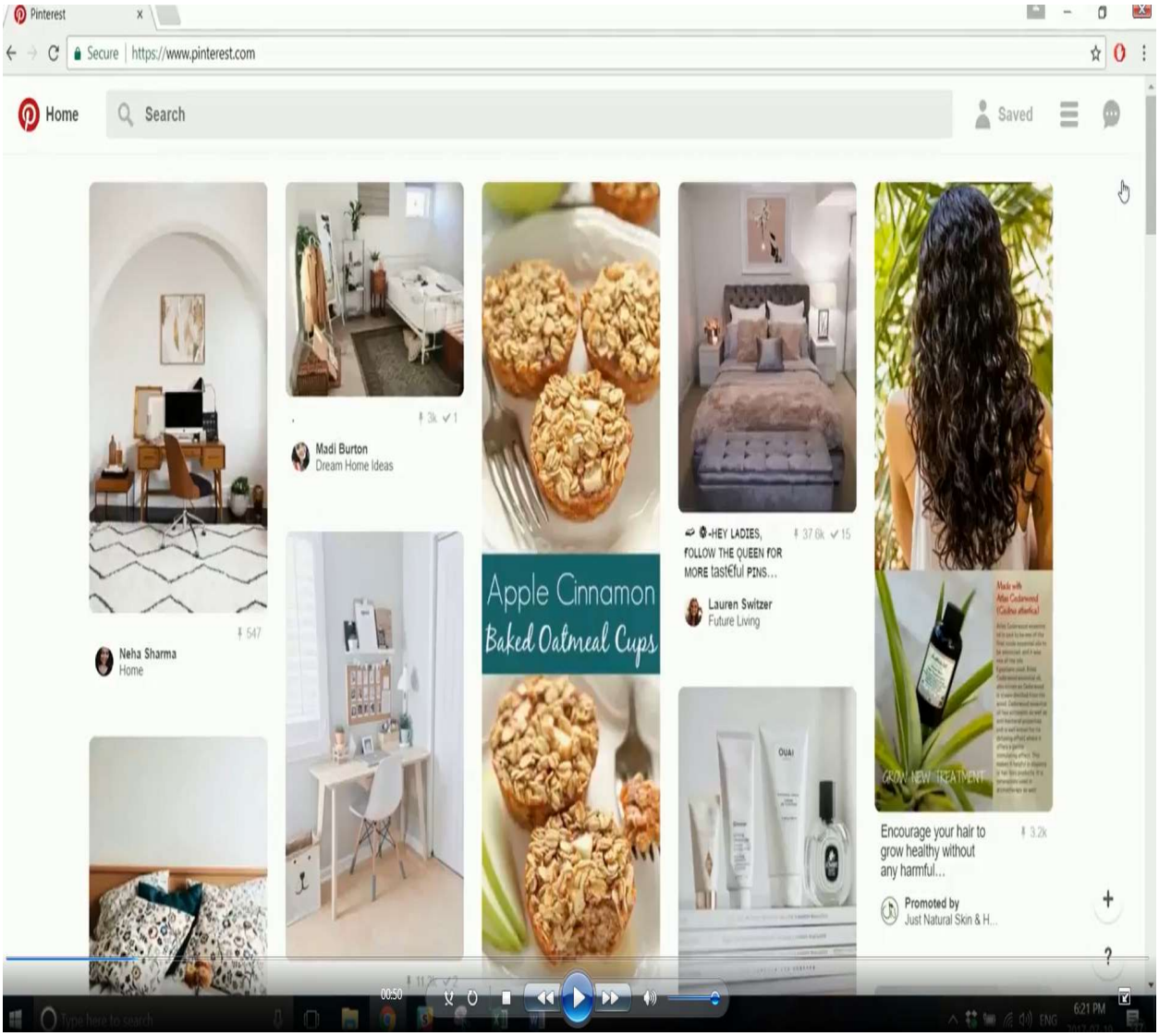
(*E.g.,* https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).



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



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



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

Controlling data access at the individual level

Pinterest and Amazon S3 developer teams got together in February 2019 to discuss new ways to ensure that specific data would be used only for the purposes Pinterest intended. The Pinterest team also needed to make sure that the rapidly expanding scale of Pinterest's data use wouldn't outgrow the access controls provided by the company's current data management system, built on Amazon S3.

At the time, Pinterest's storage was rapidly growing. Pinterest protected confidential data by creating clusters in Amazon S3 and assigning access permissions to those clusters for groups of users. Pinterest in particular wanted its developers to be able to grant data access to specific users and processes while blocking access to all others.

(*E.g.*, https://aws.amazon.com/blogs/storage/how-pinterest-worked-with-aws-to-create-a-new-way-to-manage-data-access-part-1/ (published July 26, 2021) (retrieved June 9, 2023)).

Pinterest on AWS

Pinterest is a visual-discovery platform and social commerce network with a mission to inspire. Building on AWS storage and compute solutions, Pinterest uses sophisticated machine learning engines to deliver personalized content to its users.

Customer Stories

EXECUTIVE SUMMARY

Pinterest hosts billions of images for users to browse and save as "Pins" to personalized digital inspiration boards. With more than 450 million monthly users and 300 billion Pins—and counting—Pinterest uses storage and compute solutions on Amazon Web Services (AWS) to provide the scale, speed, and security its platform requires, while keeping costs low and freeing engineers to focus on innovation. One such innovation, Pinterest Lens (Lens), uses machine learning (ML) to power visual search, so users can identify objects and discover related themes and products with

(*E.g.*, https://aws.amazon.com/solutions/case-studies/innovators/pinterest/ (retrieved June 9, 2023)).

Pinterest Scales Daily Log Search and Analytics from 500 GB to 1.7 TB, Reduces Costs by 30% on Amazon OpenSearch Service

2020

In this case study, learn how Pinterest migrated its log and search analytics workloads from self-managed and third-party Elasticsearch tools to Amazon OpenSearch Service. Following the migration, Pinterest scale its daily data-ingestion capabilities from 500 GB to 1.7 TB in only 1 year while reducing operational costs by 30 percent, improving data security, and increasing engineer productivity.

Read more

How Pinterest Uses Amazon S3 Glacier Deep Archive to Manage Storage for its Visual Discovery Engine

2021

As a large-scale user of Amazon Simple Storage Service (Amazon S3), Pinterest stores billions of objects and nearly an exabyte of data across multiple AWS Regions. In this blog, learn how Pinterest uses Amazon S3 Lifecycle to assign data to optimal Amazon S3 storage class assignments, helping meet large-scale S3 cost goals and maximize storage efficiency.

Read more

How Pinterest Worked with AWS to Create a New Way to Manage Data Access

2021

(*E.g.*, https://aws.amazon.com/solutions/case-studies/innovators/pinterest/ (retrieved June 9, 2023)).

ENTERPRISE

Pinterest has to spend at least $750 million on Amazon's cloud through mid-2023

PUBLISHED FRI, MAR 22 2019•6:07 PM EDT UPDATED WED, APR 17 2019•6:34 PM EDT

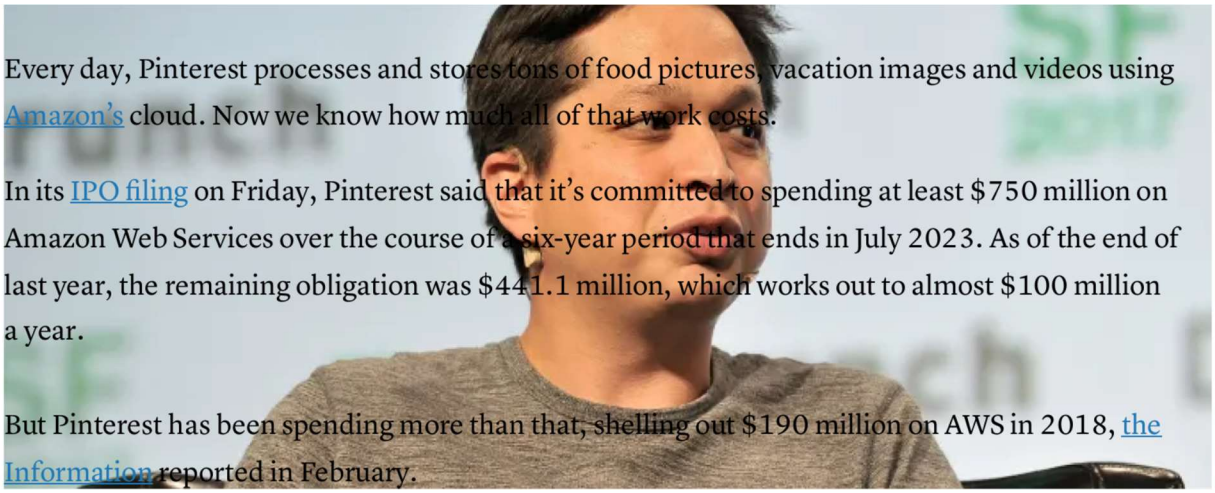
Jordan Novet
@JORDANNOVET

WATCH LIVE

KEY POINTS

Pinterest will have to pay Amazon Web Services at least $440 million for cloud services usage over the next four and a half years to reach its minimum commitment.

The disclosure in its IPO prospectus comes after Lyft said it's spending at least $80 million a year with AWS.



Every day, Pinterest processes and stores tons of food pictures, vacation images and videos using Amazon's cloud. Now we know how much all of that work costs.

In its IPO filing on Friday, Pinterest said that it's committed to spending at least $750 million on Amazon Web Services over the course of a six-year period that ends in July 2023. As of the end of last year, the remaining obligation was $441.1 million, which works out to almost $100 million a year.

But Pinterest has been spending more than that, shelling out $190 million on AWS in 2018, the Information reported in February.

(*E.g.*, https://www.cnbc.com/2019/03/22/pinterest-must-spend-at-least-750-million-on-aws-ipo-filing.html (published March 22, 2019, updated April 17, 2019)).

Pinterest cut a deal with Amazon Web Services that requires it to spend $750 million with the cloud leader by 2023

BY TOM KRAZIT (HTTPS://WWW.GEEKWIRE.COM/AUTHOR/TOMKRAZIT/) on March 22, 2019 at 2:15 pm

Amazon Web Services CEO Andy Jassy speaks at re:Invent 2018. (GeekWire Photo / Tom Krazit)

Back in 2017, as Pinterest's spending with Amazon Web Services skyrocketed thanks to user growth, the company cut a deal with AWS that traded pricing concessions with a commitment to spend $750 million with the cloud market share leader by 2023, a new filing reveals.

Pinterest (https://www.pinterest.com) had $441.1 million left to go on that commitment as of the end of 2018, and it expects to honor it, the company revealed with the release of its S-1 statement (https://www.sec.gov/Archives/edgar/data/1506293/000119312519083544/d674330ds1.htm) Friday. The company recorded $273 million in revenue during the fourth quarter of 2018, during which it eked out net income of $47 million.

Pinterest was born on AWS (https://www.geekwire.com/2017/born-cloud-behind-times-pinterest-doubled-containers-kubernetes/), and is one of the more prominent examples of how social media and web startups founded in the wake of the Great Recession used cloud services to get off the ground and grow into large businesses without the up-front investment required to build their own tech infrastructure. But costs were rising quickly when the agreement was altered in 2017: Pinterest's cost of revenue was $51.5 million in the first quarter of 2017, and after the agreement was reached that cost of revenue fell to $36 million the following quarter, as traffic continued to increase.

(*E.g.*, https://www.geekwire.com/2019/pinterest-cut-deal-amazon-web-services-requires-spend-750-million-cloud-leader-2023/ (published March 22, 2019)).

We depend on Amazon Web Services for the vast majority of our compute, storage, data transfer and other services. Any disruption of, degradation in or interference with our use of Amazon Web Services could negatively affect our operations and harm our business, revenue and financial results.

Amazon Web Services ("AWS") provides the cloud computing infrastructure we use to host our website, mobile application and many of the internal tools we use to operate our business. We have a long-term commitment with AWS and our website, mobile application and internal tools use compute, storage, data transfer and other services provided by AWS. Under the agreement with AWS, as amended by an addendum entered into in May 2017, in return for negotiated concessions, we currently are required to maintain a substantial majority of our monthly usage of certain compute, storage, data transfer and other services on AWS. This addendum is terminable only under certain conditions, including by either party following the other party's material breach, which may be the result of circumstances that are beyond our control. See "—We may be liable as a result of content or information that is published or made available on our service." A material breach of this addendum by us, or early termination of the addendum as a result of an acquisition of us by another cloud services provider, could carry substantial penalties, including liquidated damages.

Any significant disruption of, limitation of our access to or other interference with our use of AWS would negatively impact our operations and our business could be harmed. In addition, any transition of the cloud services currently provided by AWS to another cloud services provider would be difficult to implement and would cause us to incur significant time and expense and could disrupt or degrade our ability to deliver our products and services. Our business relies on the availability of our services for Pinners and advertisers. If Pinners or advertisers are not able to access our service or platform or encounter difficulties in doing so, we may lose Pinners or advertisers. The level of service provided by AWS could affect the availability or speed of our services, which may also impact the usage of and Pinners' and advertisers' satisfaction with our platform and could harm our business and reputation. If AWS increases pricing terms, terminates or seeks to terminate our contractual relationship, establishes more favorable relationships with our competitors, or changes or interprets its terms of service or policies in a manner that is unfavorable with respect to us, those actions could harm our business, revenue and financial results.

(*E.g.,* https://www.sec.gov/Archives/edgar/data/1506293/000095012319000057/filename1.htm (March 22, 2019 Pinterest, Inc. Form S-1)).

IP	Platform	Network Owner	Network	Location	Shar
2600:1407:3c00:1483::1931 (/resources/ips/2600:1407:3c00:1483::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:1484::1931 (/resources/ips/2600:1407:3c00:1484::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:1486::1931 (/resources/ips/2600:1407:3c00:1486::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:148a::1931 (/resources/ips/2600:1407:3c00:148a::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:148b::1931 (/resources/ips/2600:1407:3c00:148b::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:1490::1931 (/resources/ips/2600:1407:3c00:1490::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3c00:895::1931 (/resources/ips/2600:1407:3c00:895::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:a800:2a2::1931 (/resources/ips/2600:1407:a800:2a2::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	

and 227 more

CONTENT DELIVERY NETWORKS - CDNS

IP	Platform	Network Owner	Network
2.17.236.194 (/resources/ips/2.17.236.194)	Akamai (/resources/platforms/akamai)	-	-
23.1.13.5 (/resources/ips/23.1.13.5)	Akamai (/resources/platforms/akamai)	Airtel (/resources/networks/airtel)	Core Net
2.16.12.194 (/resources/ips/2.16.12.194)	Akamai (/resources/platforms/akamai)	Akamai (/resources/networks/akamai)	Core Net
23.37.230.40 (/resources/ips/23.37.230.40)	Akamai (/resources/platforms/akamai)	Cox (/resources/networks/cox)	Core Net
2.17.204.220 (/resources/ips/2.17.204.220)	Akamai (/resources/platforms/akamai)	Dimension Data (/resources/networks/dimension-data)	Core Net
23.7.242.189 (/resources/ips/23.7.242.189)	Akamai (/resources/platforms/akamai)	PLDT (/resources/networks/pldt)	Core Net
2.17.125.76 (/resources/ips/2.17.125.76)	Akamai (/resources/platforms/akamai)	Sparkle (/resources/networks/sparkle)	Core Net
5.255.145.162 (/resources/ips/5.255.145.162)	Akamai (/resources/platforms/akamai)	Telefonica (/resources/networks/telefonica)	Core Net
2.22.72.239 (/resources/ips/2.22.72.239)	Akamai (/resources/platforms/akamai)	Telus (/resources/networks/telus)	Core Net
23.0.103.193 (/resources/ips/23.0.103.193)	Akamai (/resources/platforms/akamai)	TPG Telecom (/resources/networks/tpg-telecom)	Core Net
13.32.127.23 (/resources/ips/13.32.127.23)	Amazon CloudFront (/resources/platforms/amazon-cloudfront)	Amazon CloudFront (/resources/networks/amazon-cloudfront)	Global Ne

and 2071 more

(*E.g.,* https://www.netify.ai/resources/applications/pinterest (retrieved June 9, 2023)).

PLATFORM USAGE SUMMARY

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

Cloud Hosts	# of IPs
Amazon AWS (/resources/platforms/amazon-aws)	6
Oracle Cloud (/resources/platforms/oracle-cloud)	7
Google Hosted (/resources/platforms/google-hosted)	3

SaaS	# of IPs
Adobe Ads (/resources/platforms/adobe-ads)	237

CDNs	# of IPs
Akamai (/resources/platforms/akamai)	1895
Amazon CloudFront (/resources/platforms/amazon-cloudfront)	121
CloudFlare (/resources/platforms/cloudflare)	6
Fastly (/resources/platforms/fastly)	59

IP DETAILS

CORE NETWORKS

IP	Category	Network Owner	Network	Location	Shared
2001:500:90:1::60 (/resources/ips/2001:500:90:1::60)	Technology	Dyn (/resources/networks/dyn)	Core Network	United States	
2001:500:94:1::60 (/resources/ips/2001:500:94:1::60)	Technology	Dyn (/resources/networks/dyn)	Core Network	United States	
204.13.250.60 (/resources/ips/204.13.250.60)	Technology	Dyn (/resources/networks/dyn)	Core Network	United States	
204.13.251.60 (/resources/ips/204.13.251.60)	Technology	Dyn (/resources/networks/dyn)	Core Network	United States	

PLATFORM DETAILS

CLOUD HOSTING NETWORKS

IP	Platform	Network Owner	Network	Location	Share
23.20.165.22 (/resources/ips/23.20.165.22)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
50.17.2.67 (/resources/ips/50.17.2.67)	Amazon AWS (/resources/platforms/amazon-aws)	Amazon AWS	US East (N. Virginia)	United States	
142.251.132.225 (/resources/ips/142.251.132.225)	Google Hosted (/resources/platforms/google-hosted)	Google	Core Network	United States	
208.78.70.60 (/resources/ips/208.78.70.60)	Oracle Cloud (/resources/platforms/oracle-cloud)			United States	
108.59.161.60 (/resources/ips/108.59.161.60)	Oracle Cloud (/resources/platforms/oracle-cloud)	Dyn	Core Network	United States	
2600:2000:2240::60 (/resources/ips/2600:2000:2240::60)	Oracle Cloud (/resources/platforms/oracle-cloud)	Oracle Cloud	Core Network	United States	

and 11 more

CLOUD SOFTWARE-AS-A-SERVICE

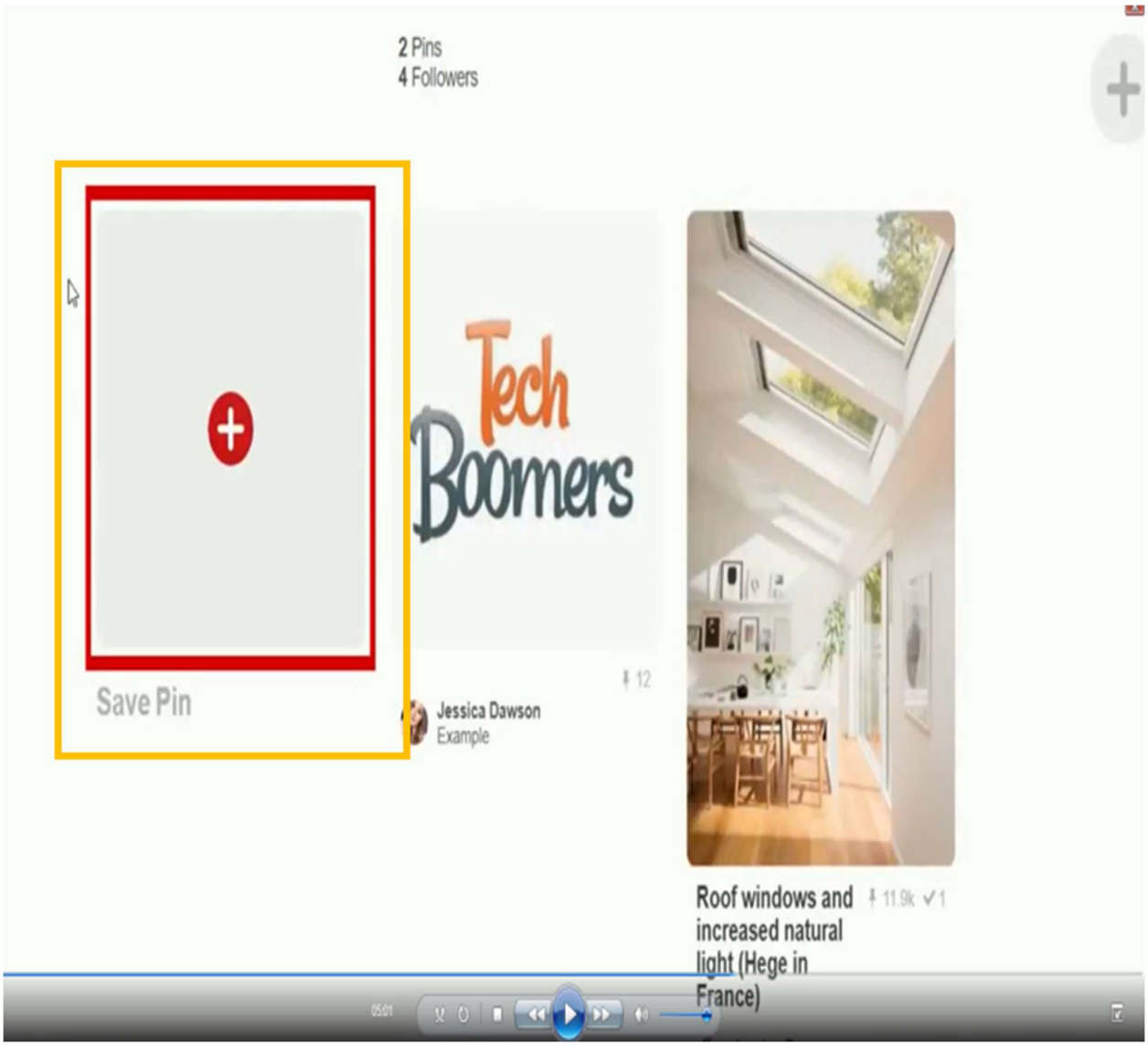
IP	Platform	Network Owner	Network	Location	Shar
2600:1406:3400:682::1931 (/resources/ips/2600:1406:3400:682::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1406:5400:58a::1931 (/resources/ips/2600:1406:5400:58a::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	
2600:1407:3400:48e::1931 (/resources/ips/2600:1407:3400:48e::1931)	Adobe Ads (/resources/platforms/adobe-ads)	Akamai	Core Network	United States	

and 227 more

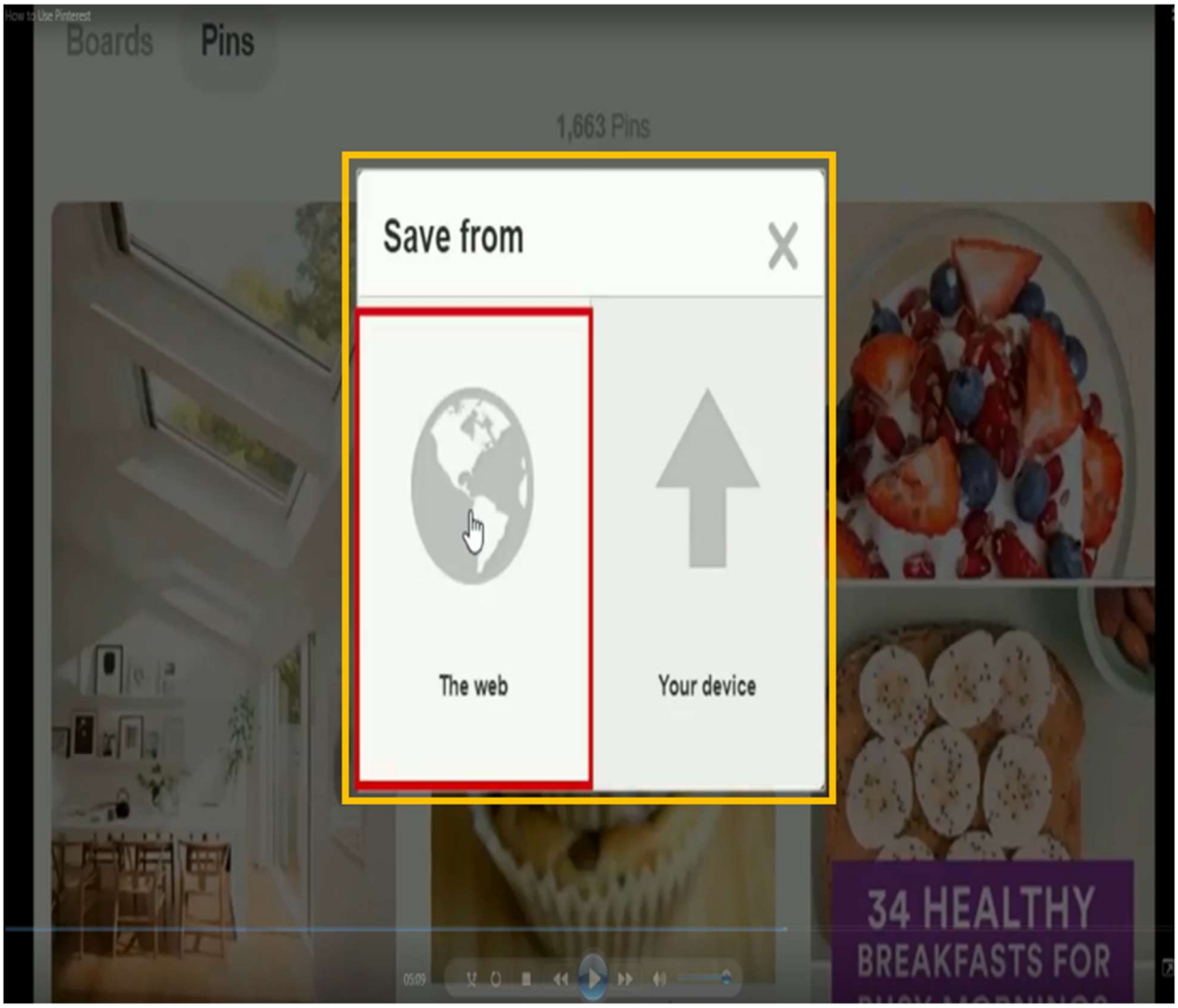
(*E.g.,* https://www.netify.ai/resources/applications/pinterest (retrieved June 9, 2023)).

61. The Accused Instrumentality is a cloud-enabled computer-based includes an electronic media submissions server subsystem, having one or more data processing apparatus and one or more database stored on a non-transitory medium in order to process and store received submissions from various users, for example as discussed above in connection with the Pinterest platform and the Pinterest feeds' servers. These submissions, which include *e.g.,* text and images, to be provided to the Pinterest platform via a submissions electronic interface configured to receive such electronic media submissions (*e.g.,* text and images) from a plurality of submitters (*e.g.,*

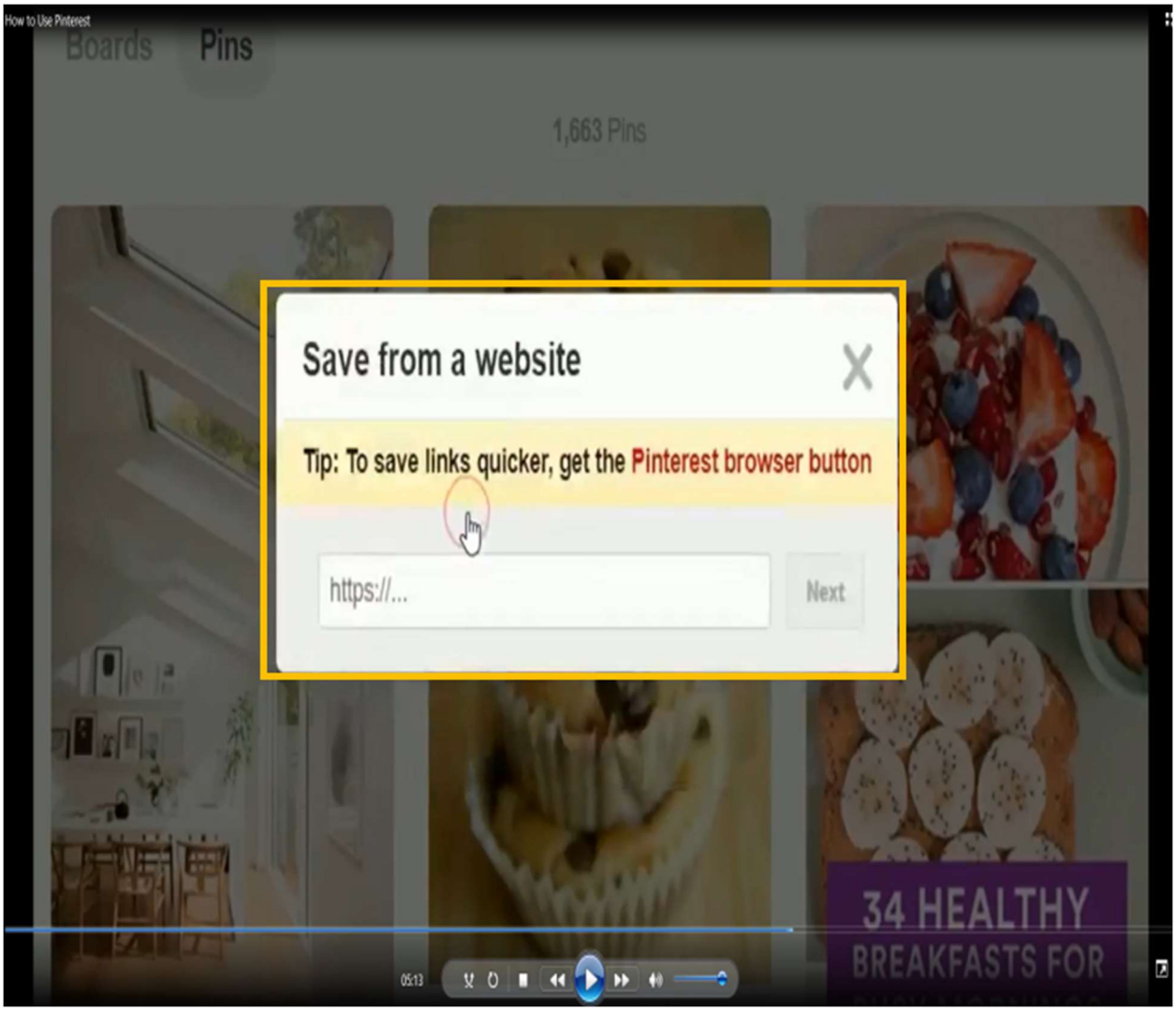
Pinterest users with accompanying created accounts, including at least a first and different a second user) over a public network (*e.g.,* the Internet) and stored in said electronic media submissions database for use in distribution to the first user and the second user and other users.



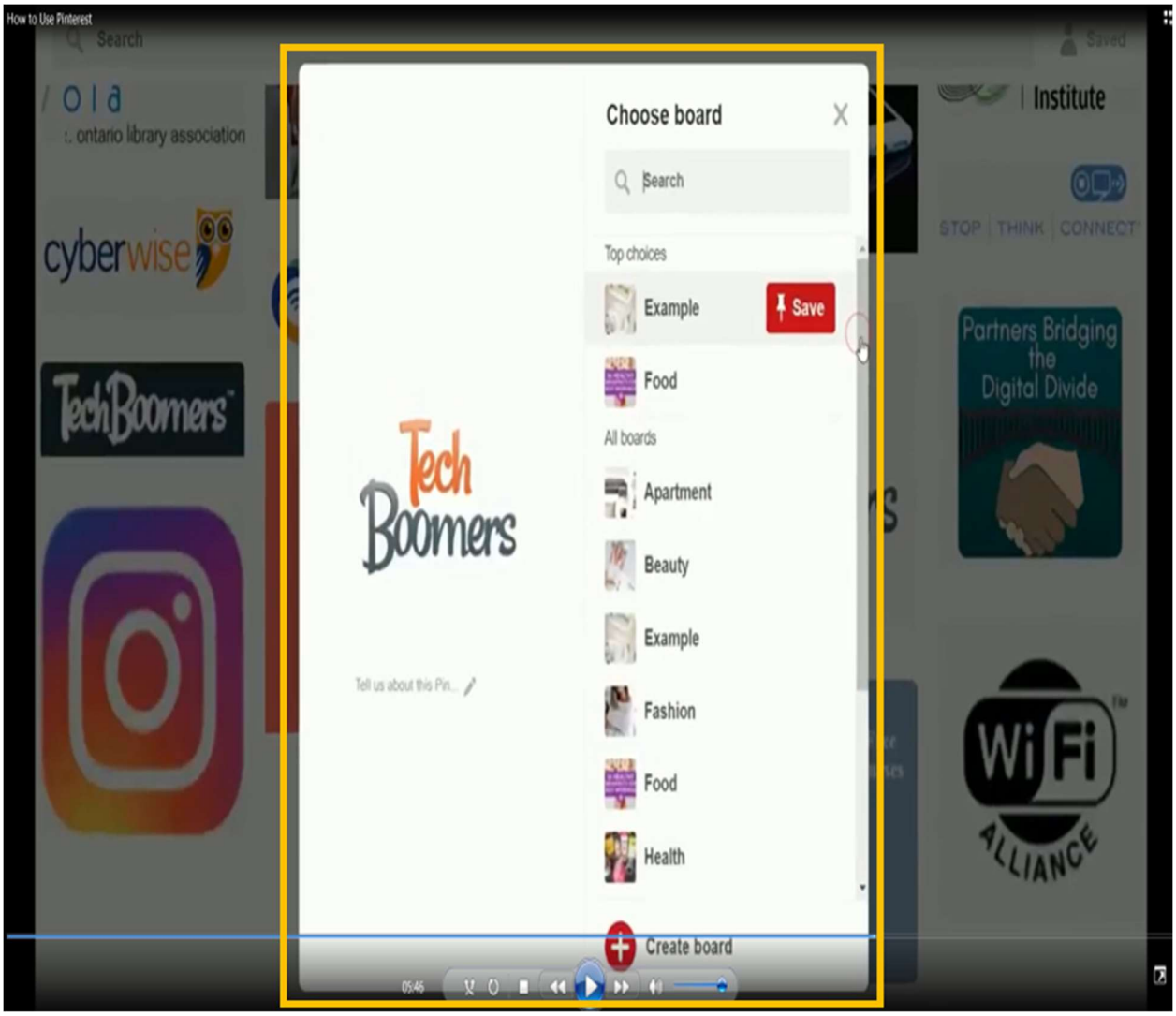
(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



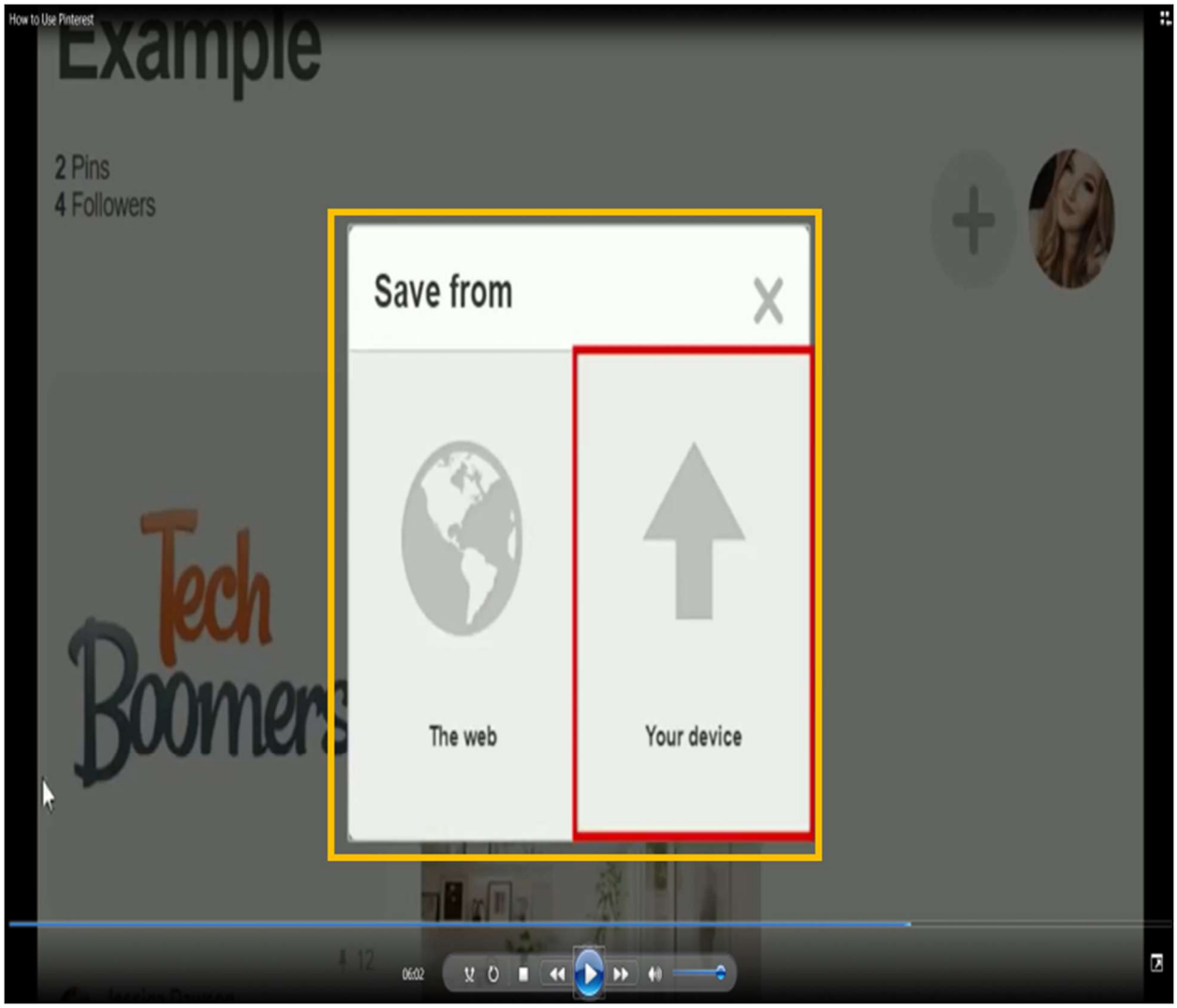
(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



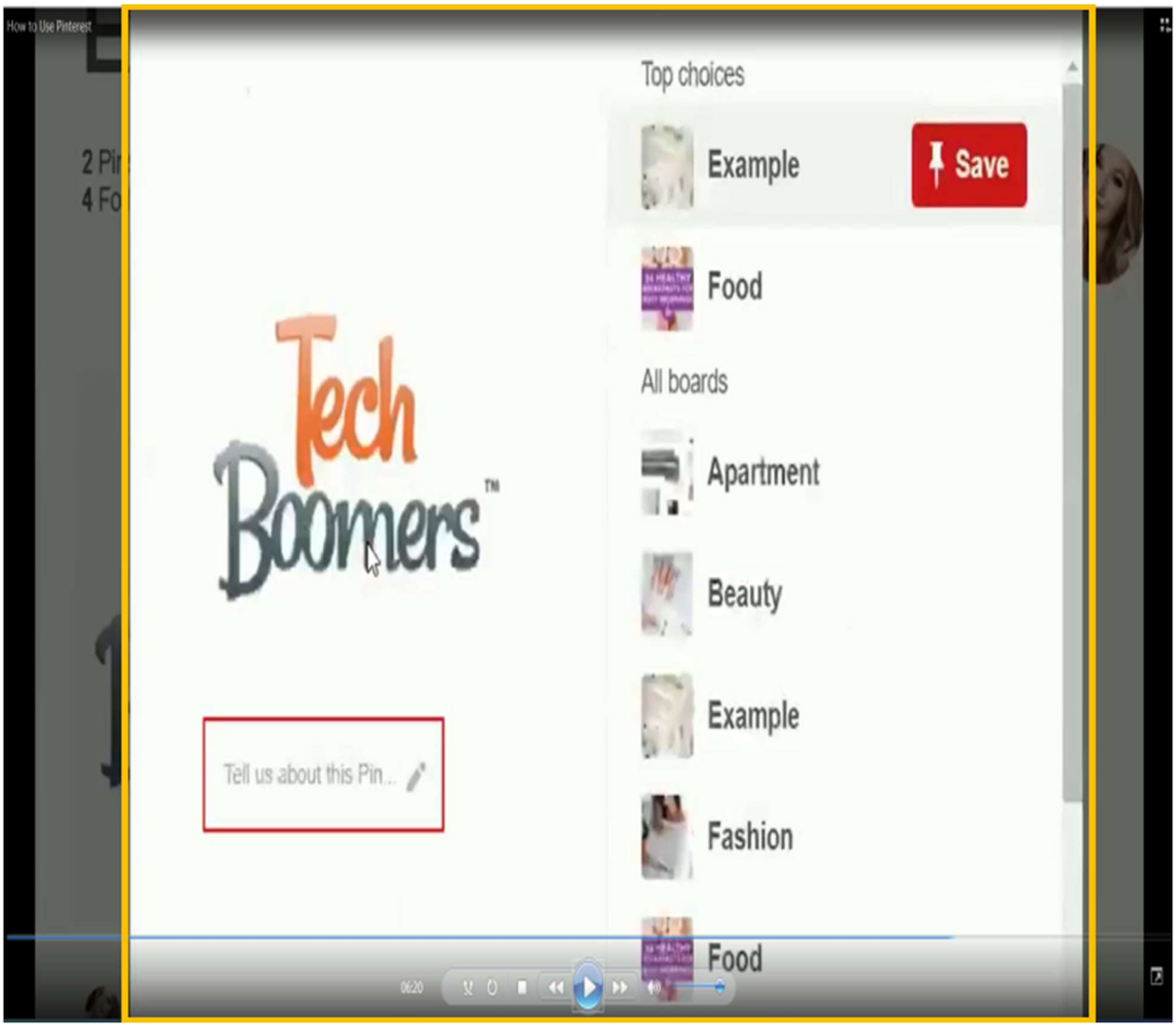
(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



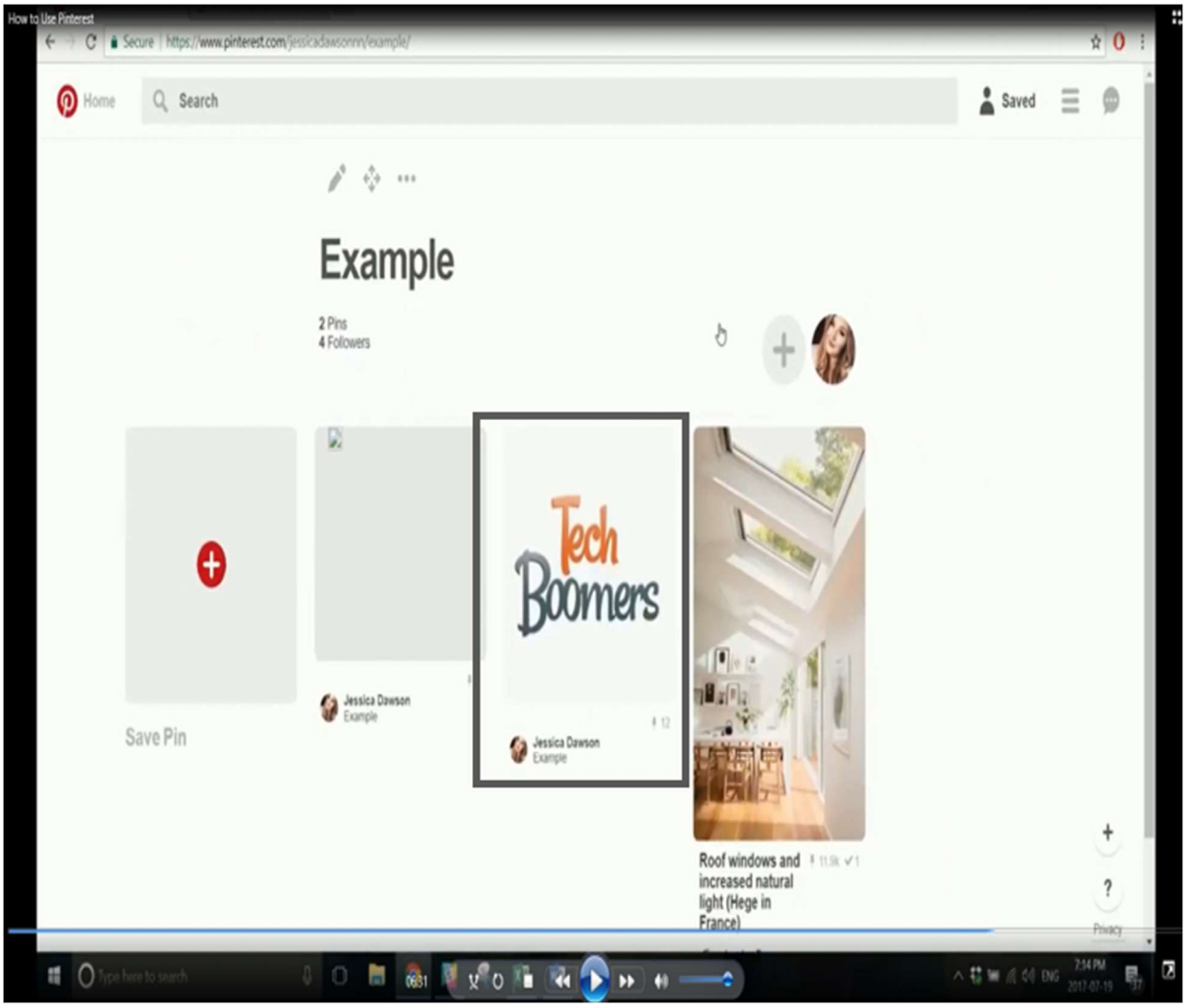
(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).



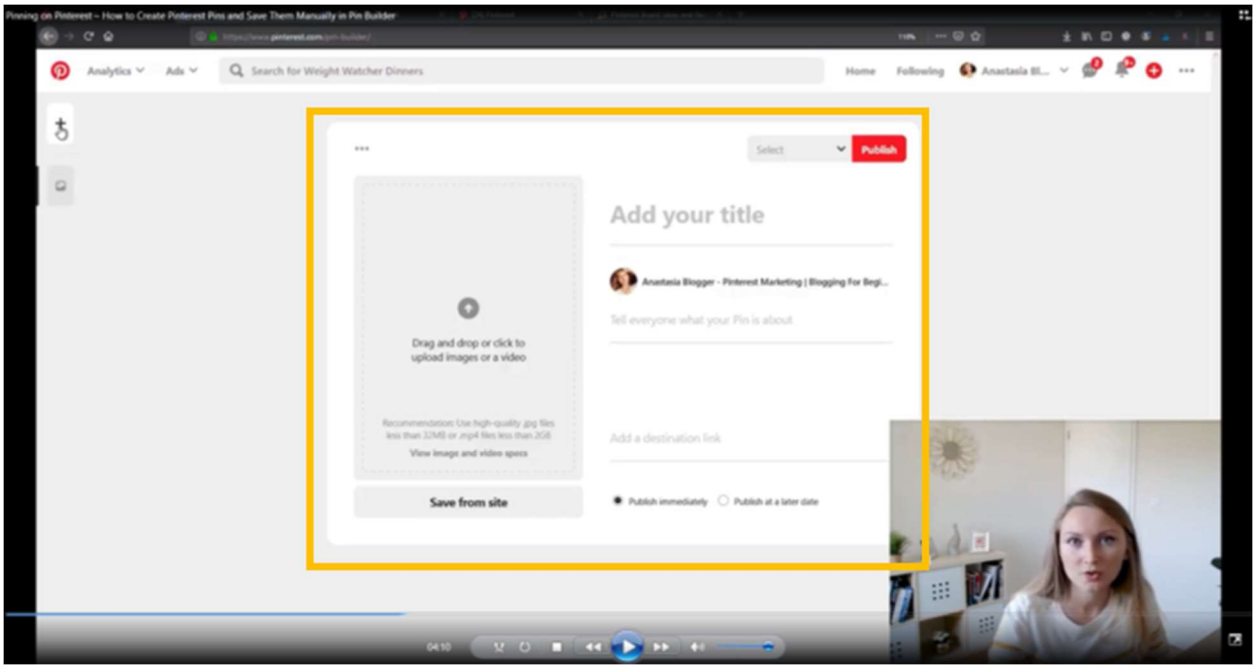
(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).

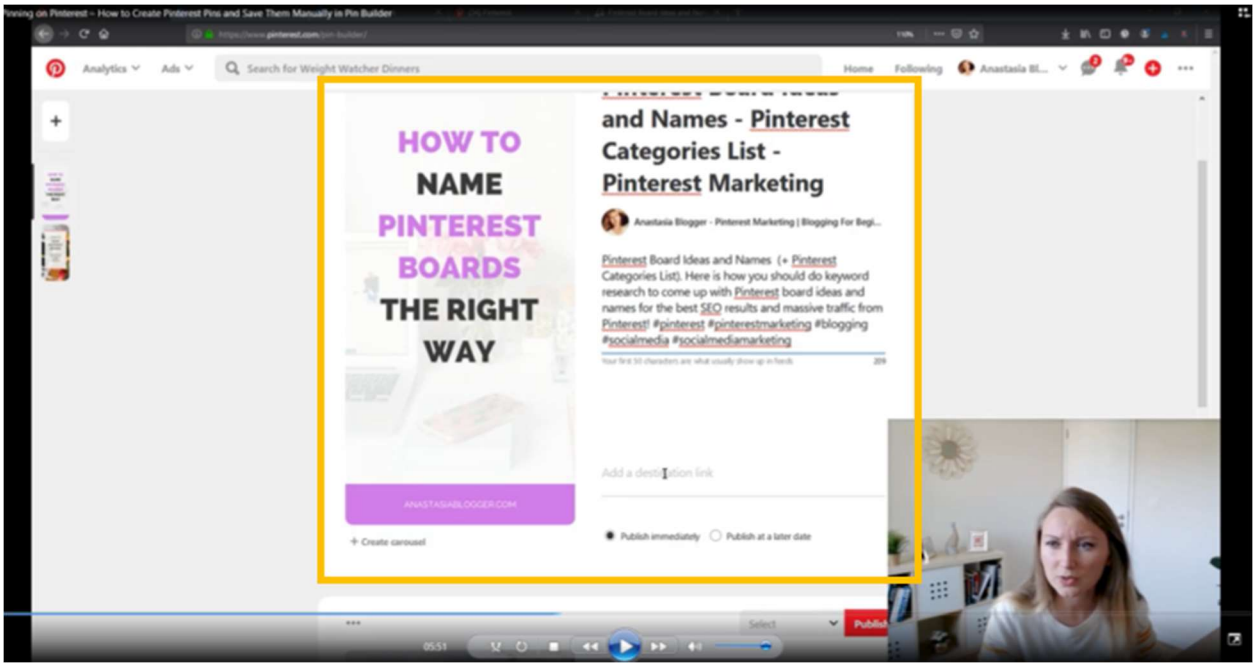


(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).

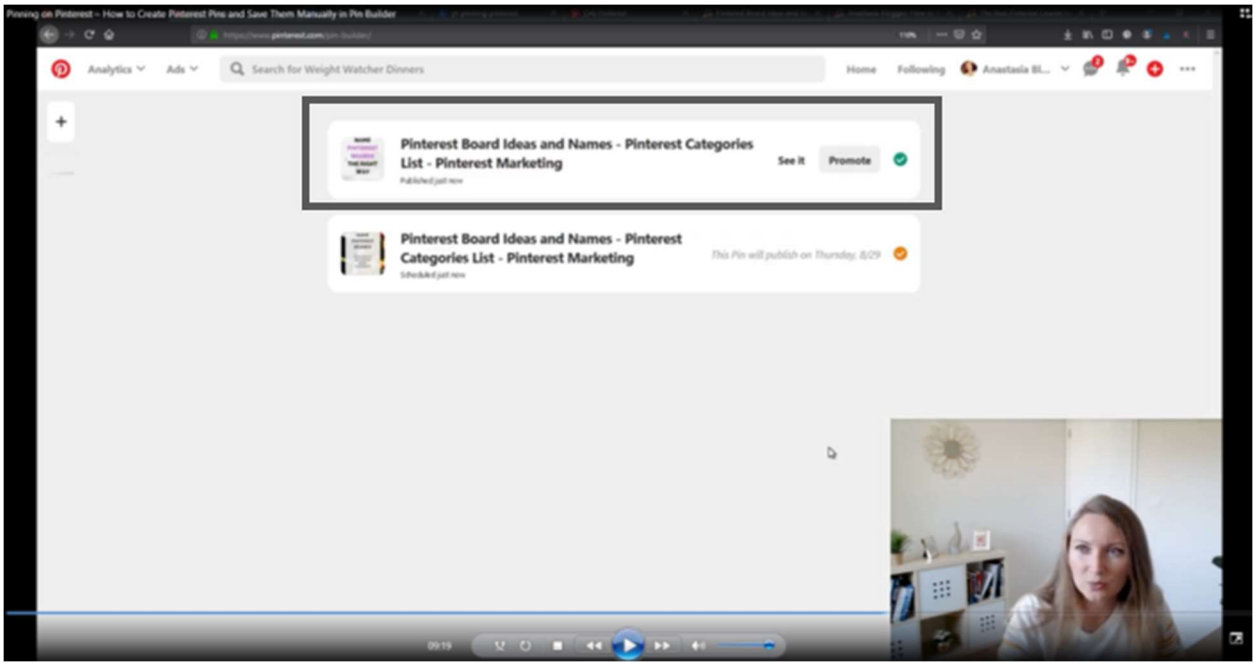


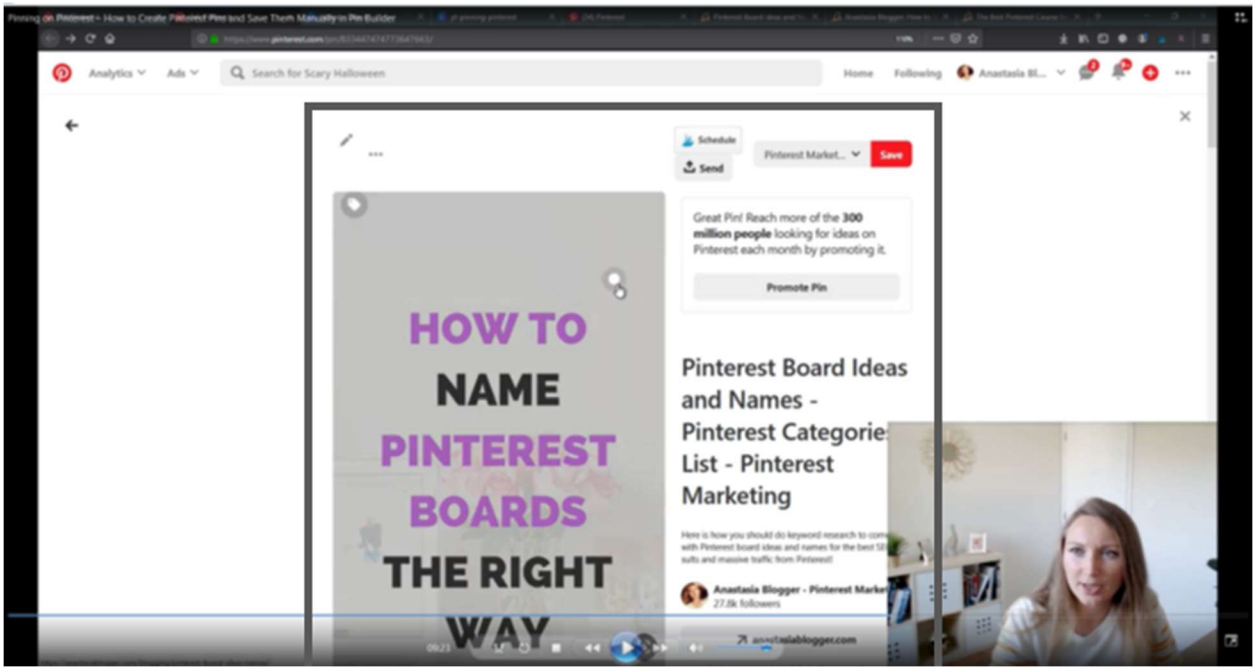
(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).





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

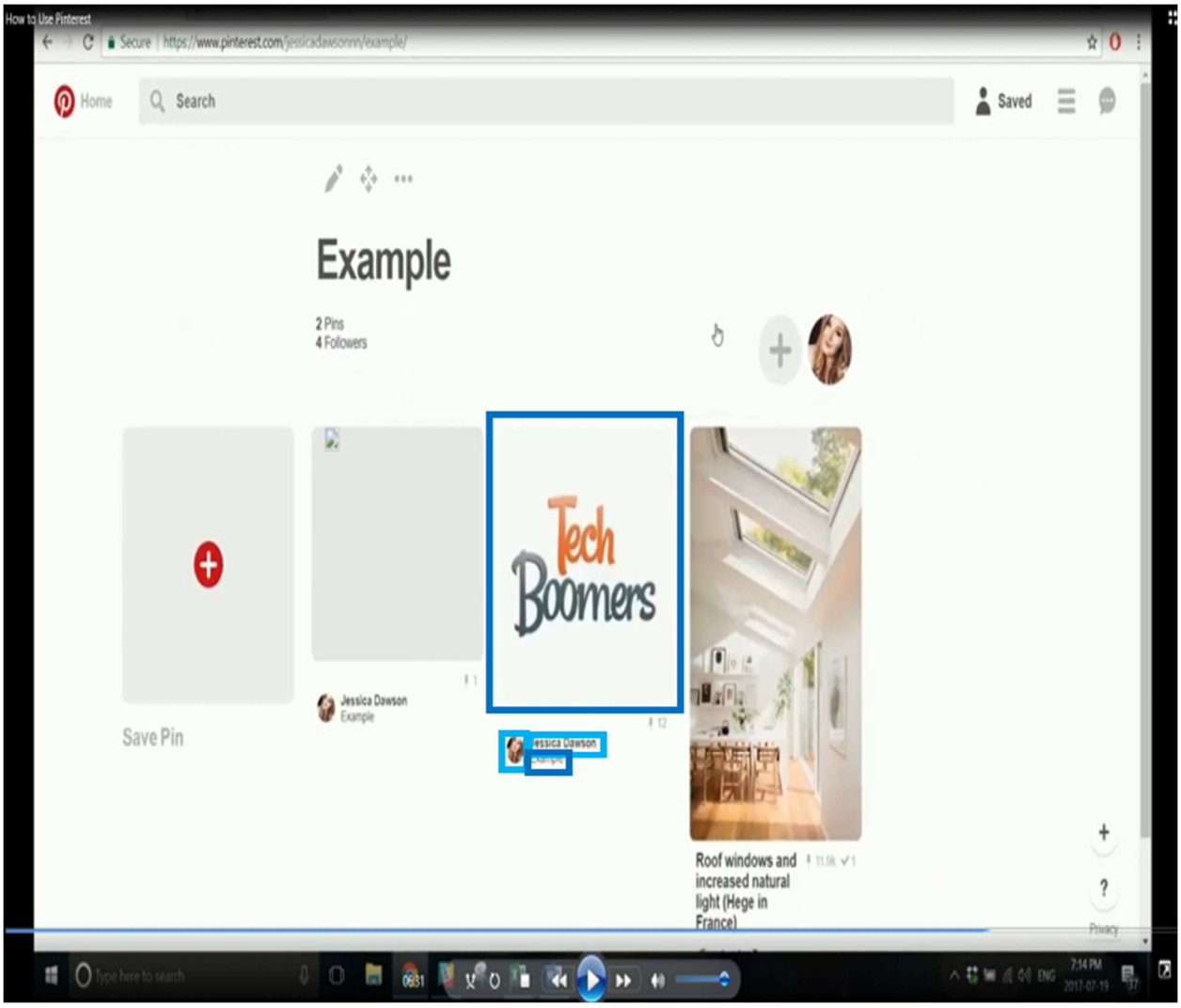




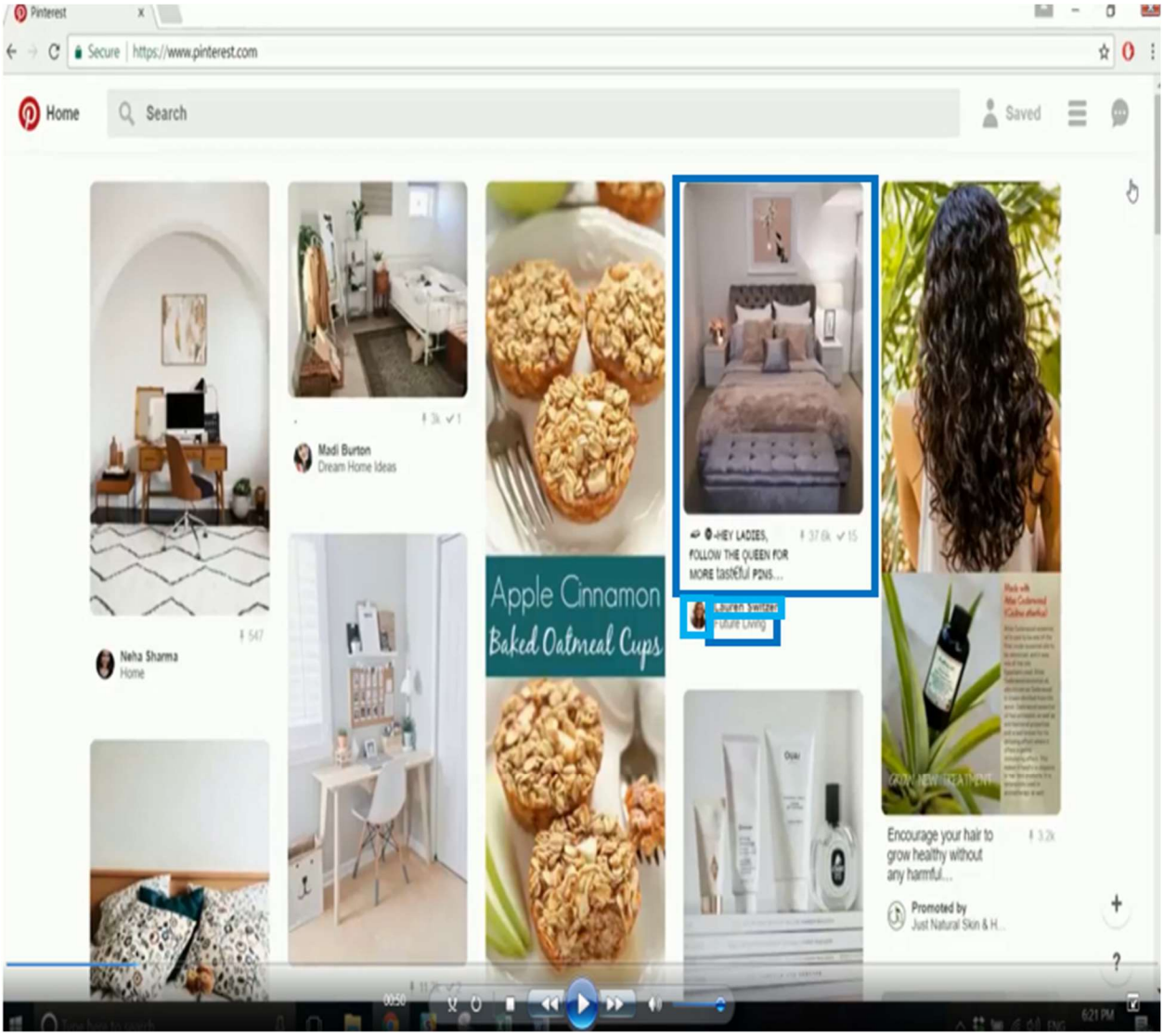
(*E.g.*, https://www.youtube.com/watch?v=EmqaleD5790 (published August 29, 2019)).

62. The stored electronic media submissions submitted via the Accused Instrumentality used by Pinterest, Inc., with respect to the first electronic media submission (*e.g.,* text, images, forming a multimedia post, submitted by a first user of Pinterest) includes data identifying the first user and data indicating content for the first electronic media submission, *e.g.,* as shown below

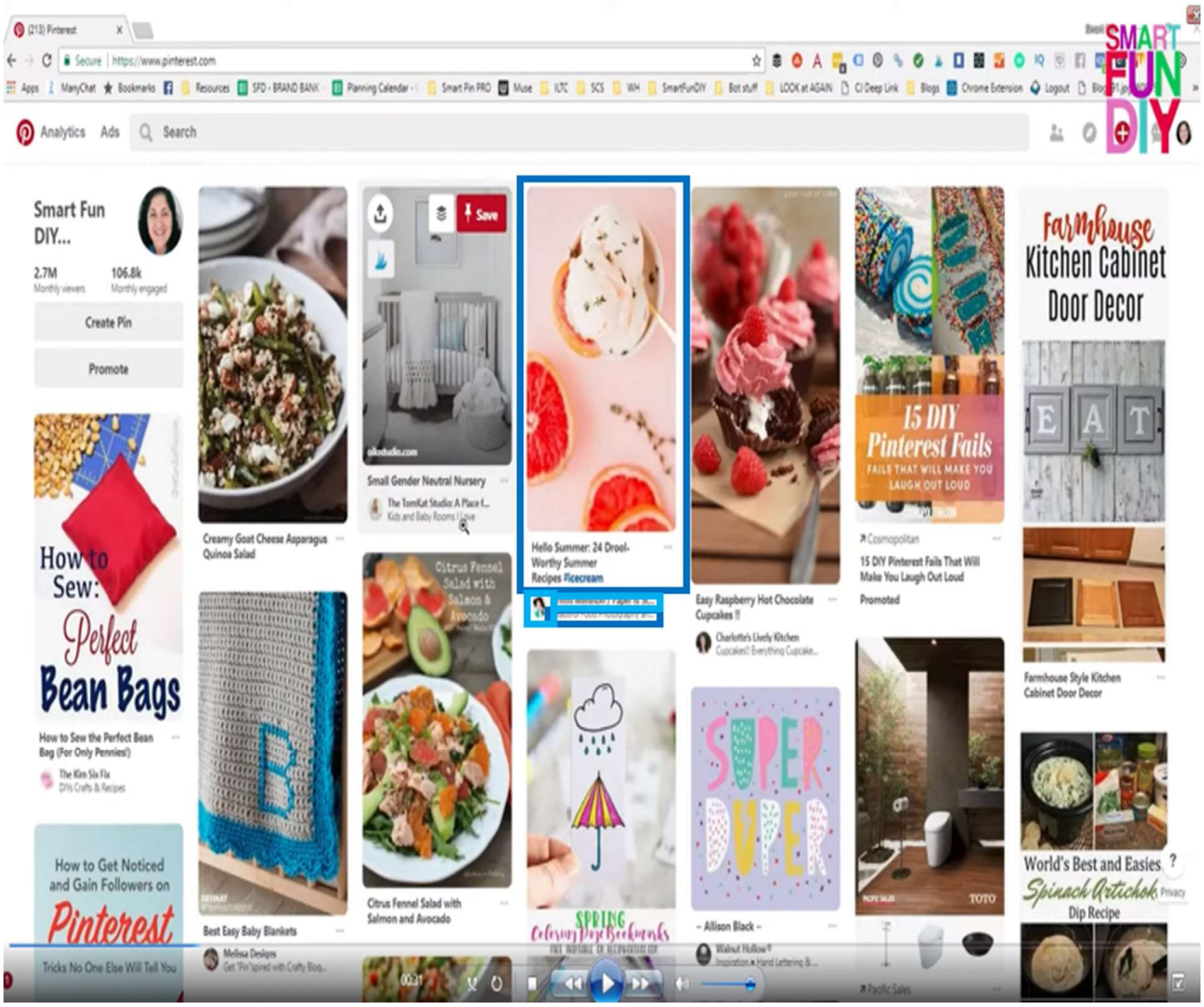
with a name and profile picture identifying the submitter and textual and image matter indicating content. The stored electronic media submissions submitted via the Accused Instrumentality used by Pinterest, Inc., with respect to the first electronic media submission (*e.g.,* text, images, forming a multimedia post, submitted by a first user of Pinterest) further includes data identifying date and time associated with receipt of the first electronic media submission. This can be seen for example below, where a date is made visible with the submission and where a date and time is associated with an electronic media submission, similarly when a first user chooses to publish immediately or to publish at a selected time, *e.g.,* as shown below.



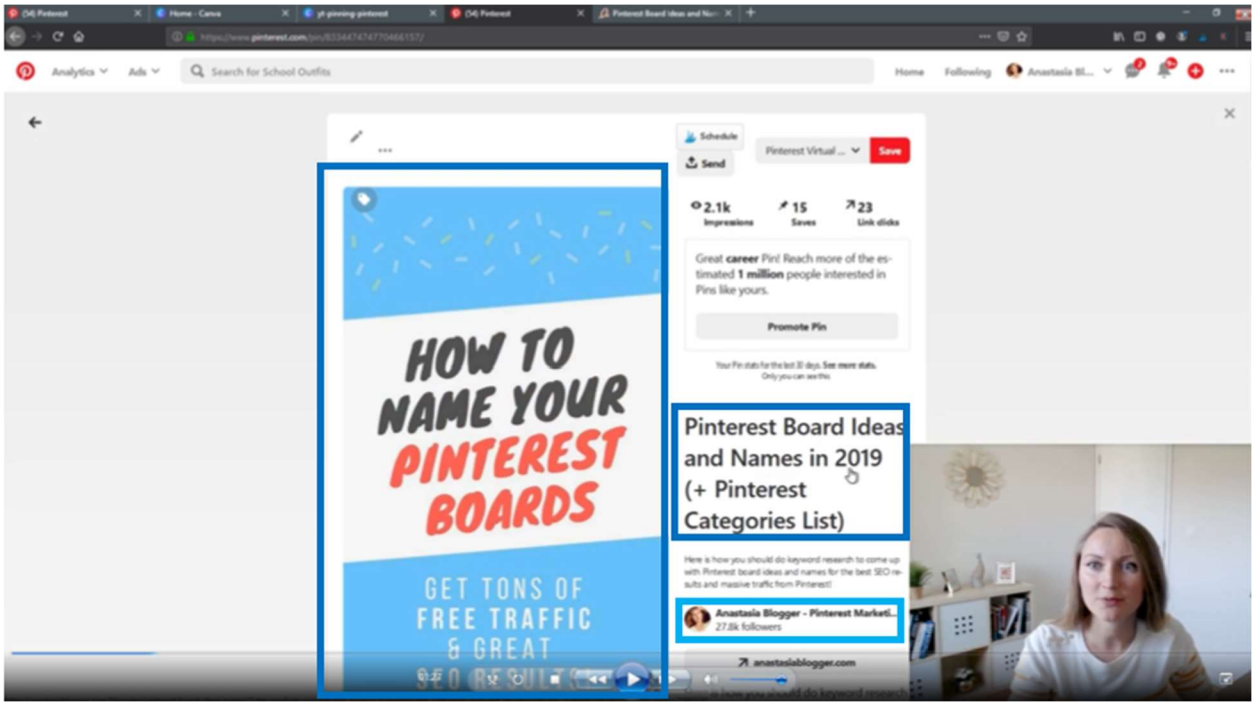
(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).

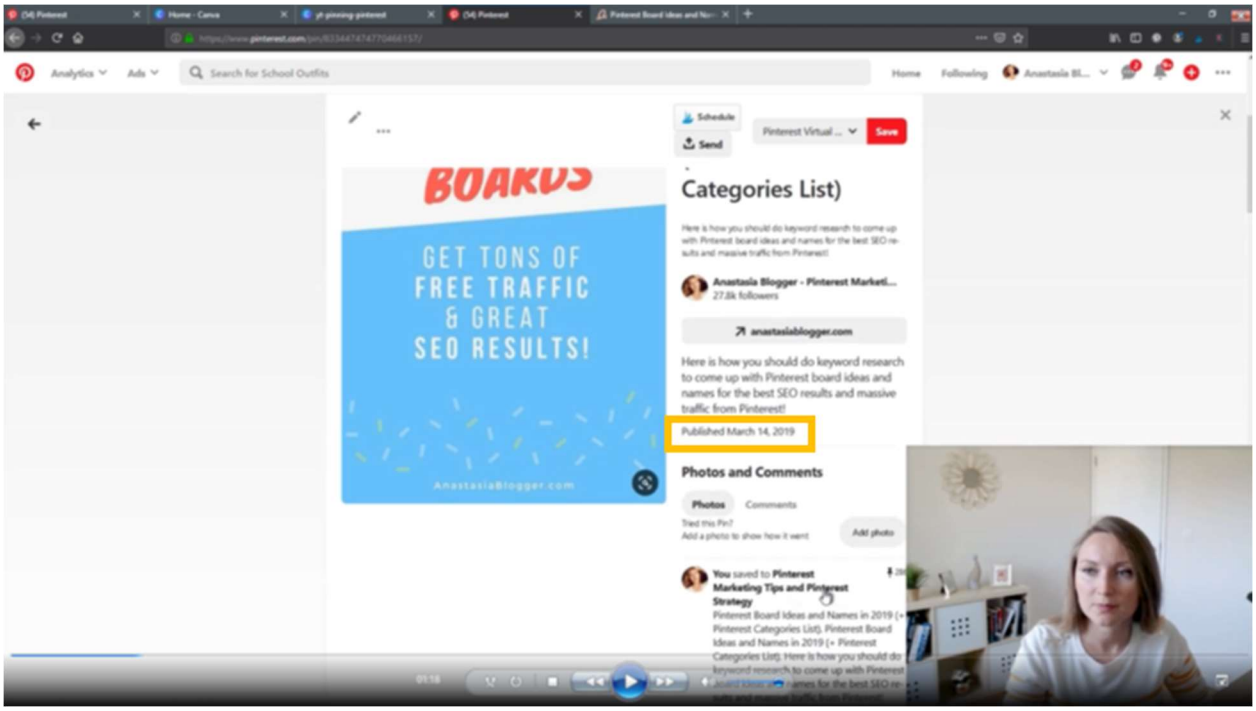


(*E.g.*, https://www.youtube.com/watch?v=letk2hPOXzc (published September 2, 2017)).

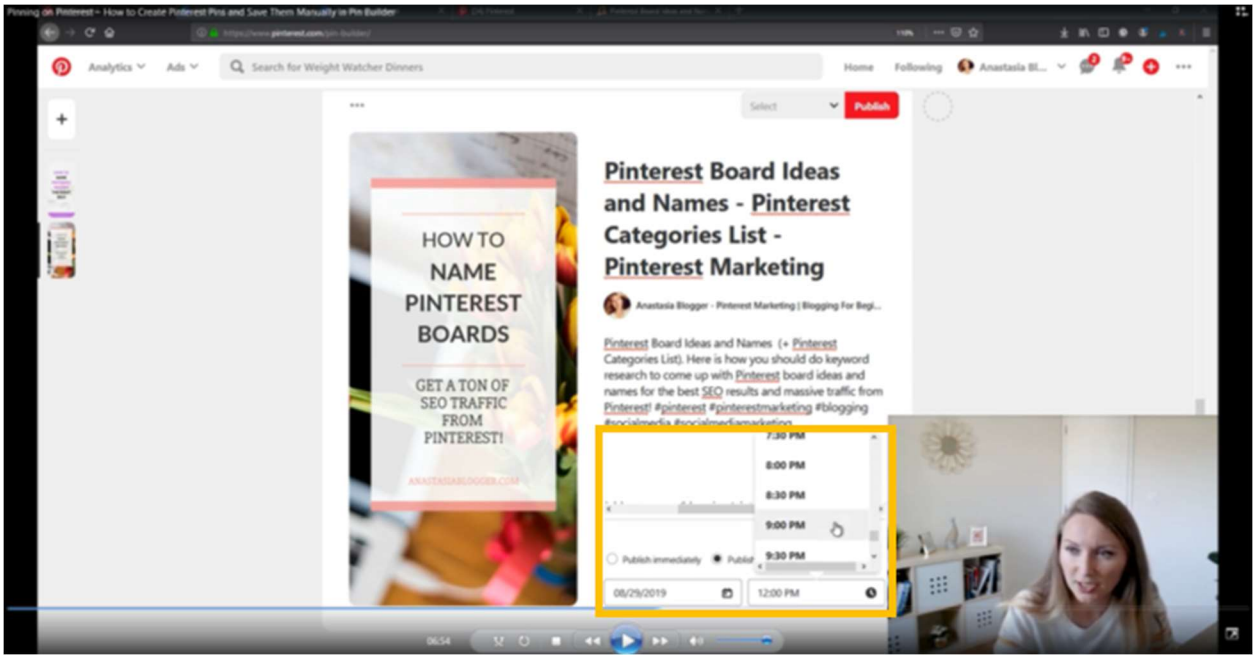


(*E.g.*, https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).





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



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

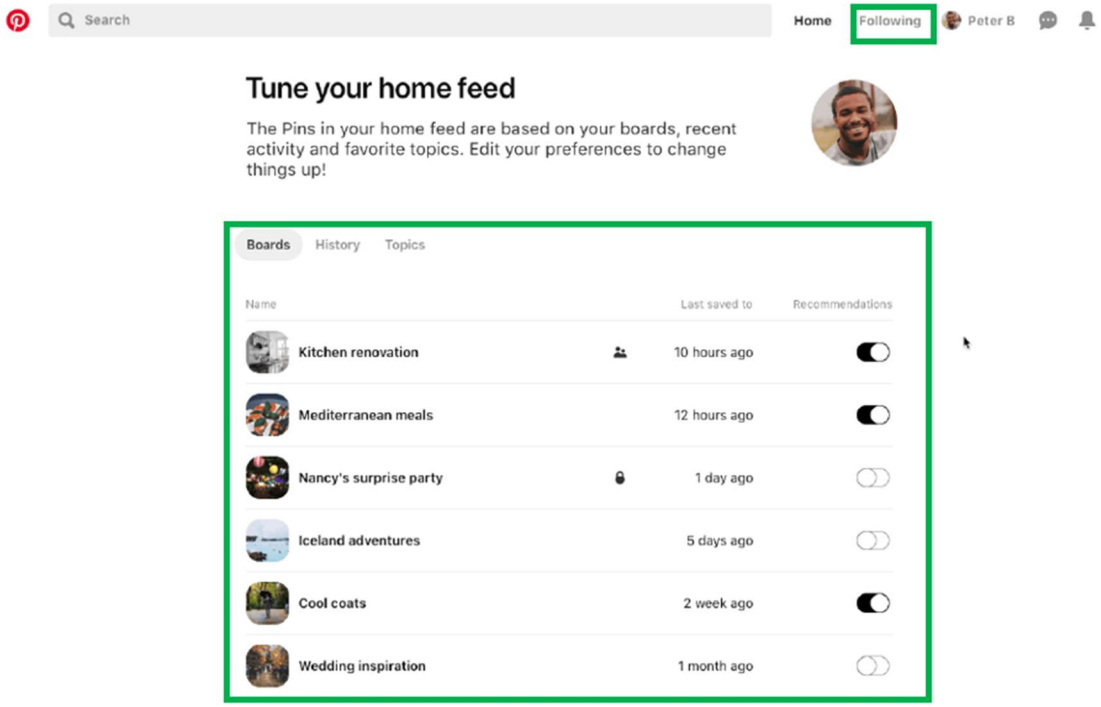
63. The Accused Instrumentality comprises a user database comprising one or more user criteria associated with one or multiple users stored in such database. Such user database is stored in memory available through the Accused Instrumentality's servers, for example as discussed below. Some examples of such criteria stored in such user database on the Accused Instrumentality are follows of other users, follows of boards and topics, that may be indicated by a user stored within such user database, as well as a user history, as shown and discussed for example below. Further examples of such criteria stored in such user database on the Accused Instrumentality are user profile pictures, a user name, and user viewing data, shown for example below.

New ways to control the ideas you see in your home feed

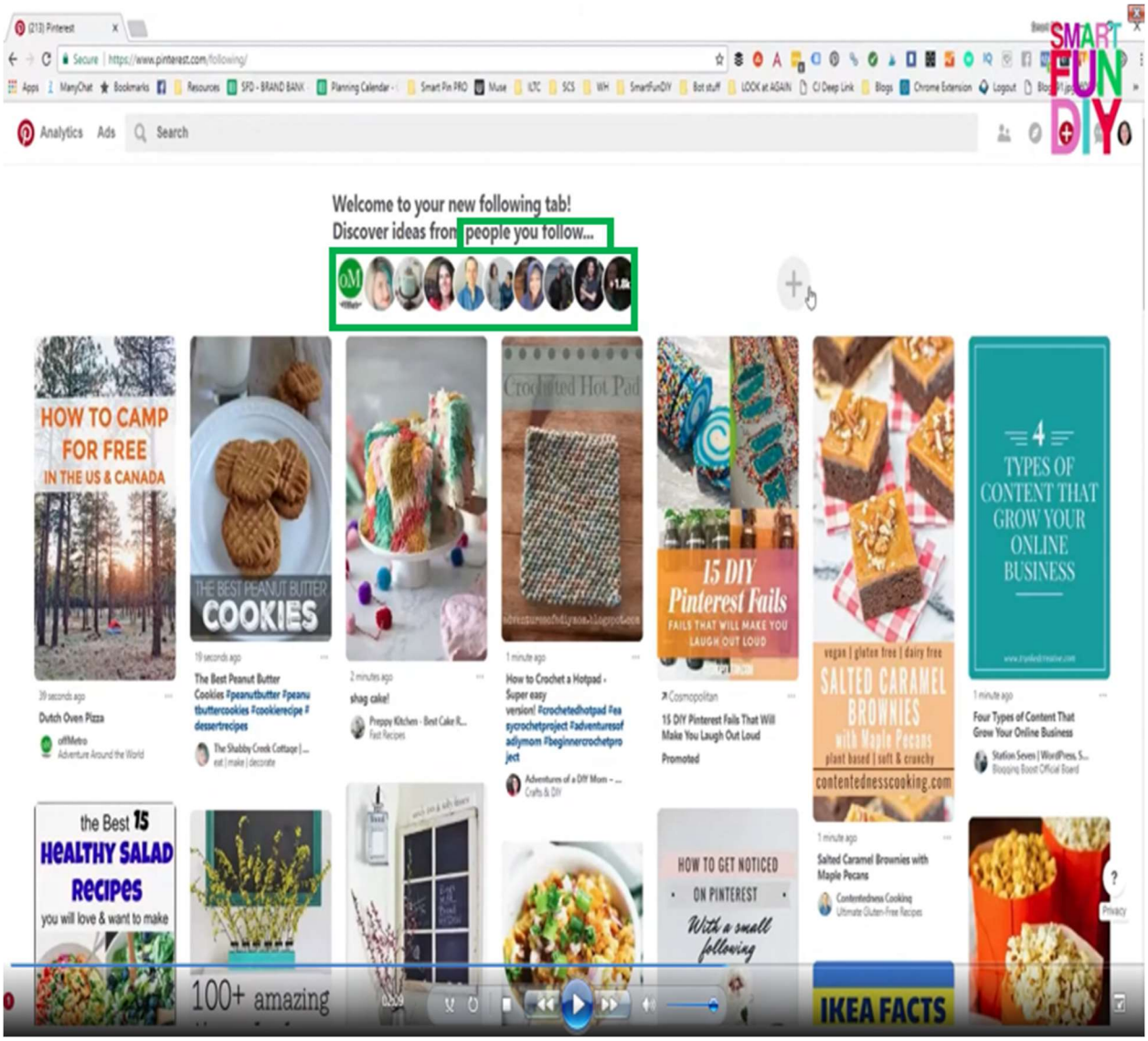
October 15, 2019
News, Product, Technology

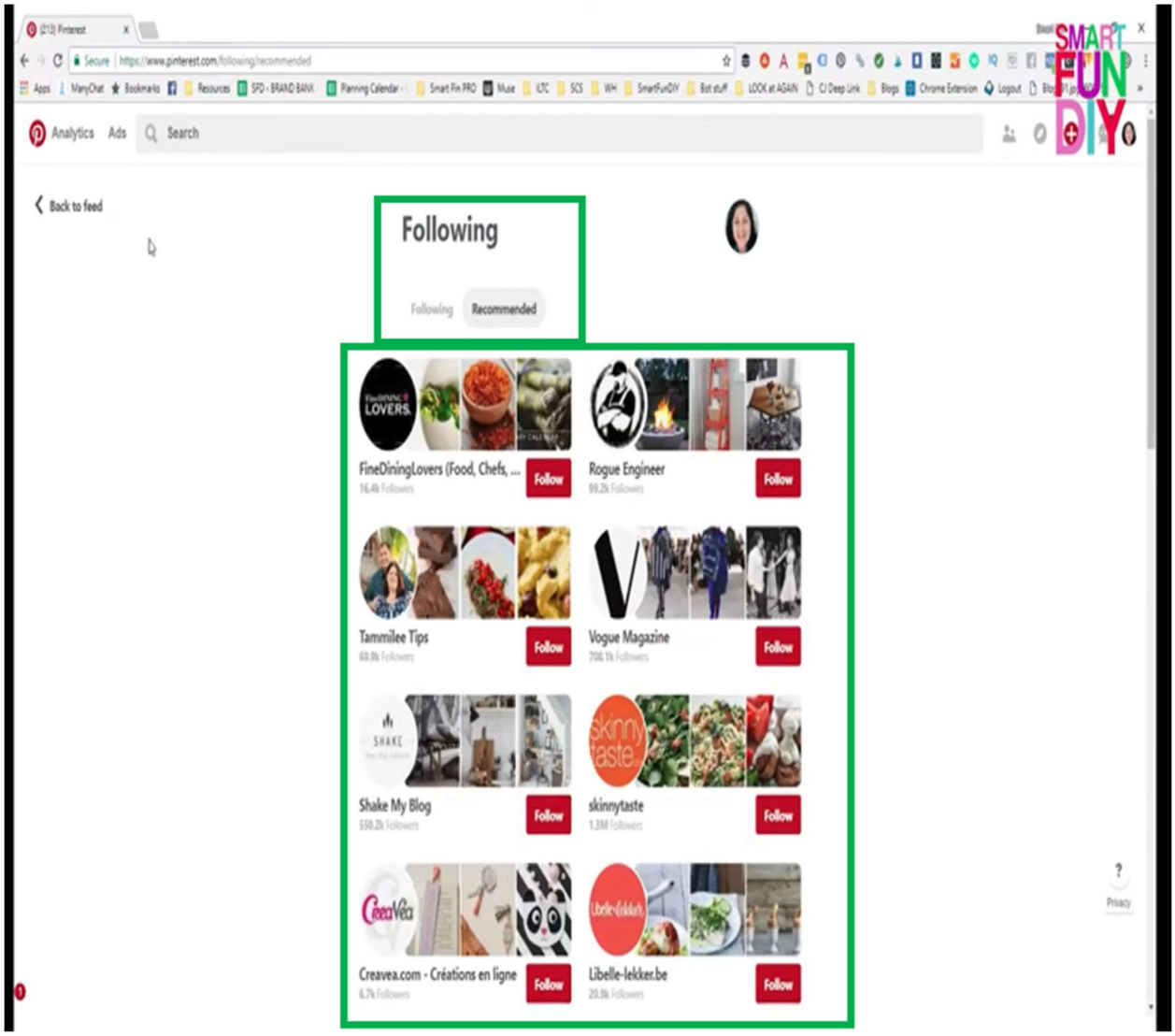
Pinterest is the place to discover and develop your taste, with inspiration for what you're doing now and what you're dreaming up for the future. But as your interests and plans change, your experience on Pinterest should evolve with you, too. In fact, one of our top Pinner requests is for more control over what you see in your home feed, and better ways to signal what you like and don't like over time.

Today, we're making it easier than ever to control the recommendations you see in your home feed with a new home feed tuner and Pin-level controls. Now you can easily see the boards, topics, followed accounts and recent history that contribute to your recommendations and make tweaks so your feed stays relevant and inspiring.

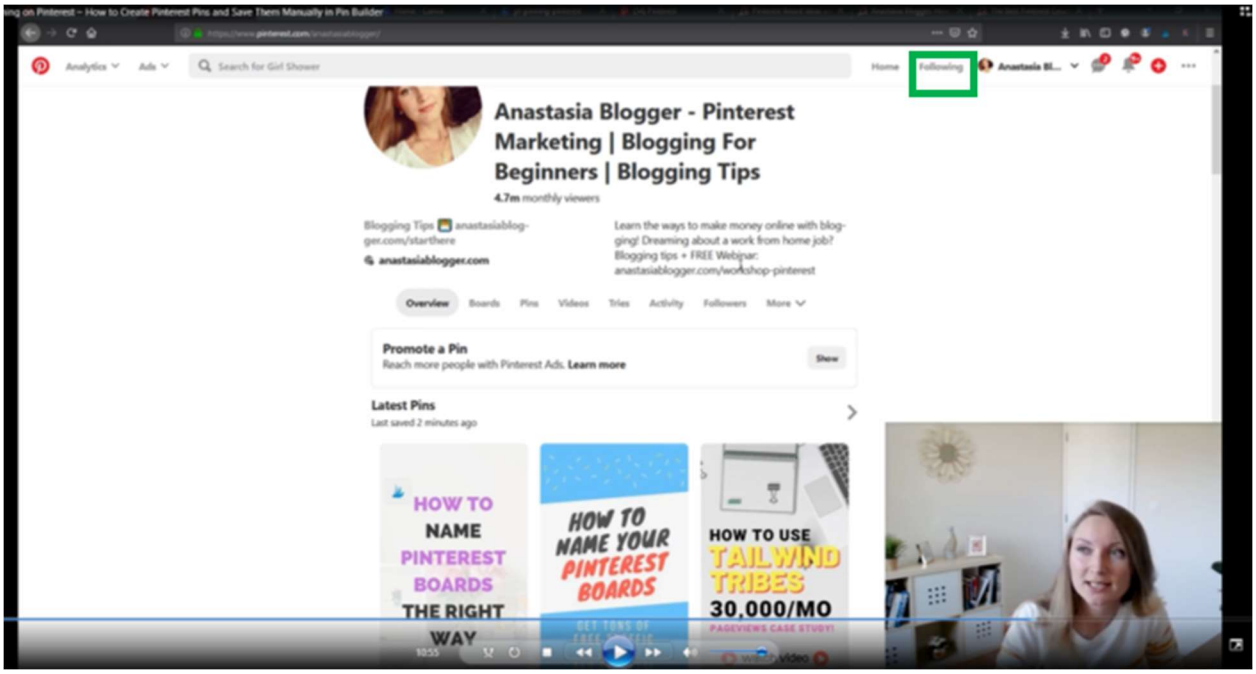


(*E.g.*, https://newsroom.pinterest.com/en/post/new-ways-to-control-the-ideas-you-see-in-your-home-feed (published October 25, 2019) (retrieved June 8, 2023)).

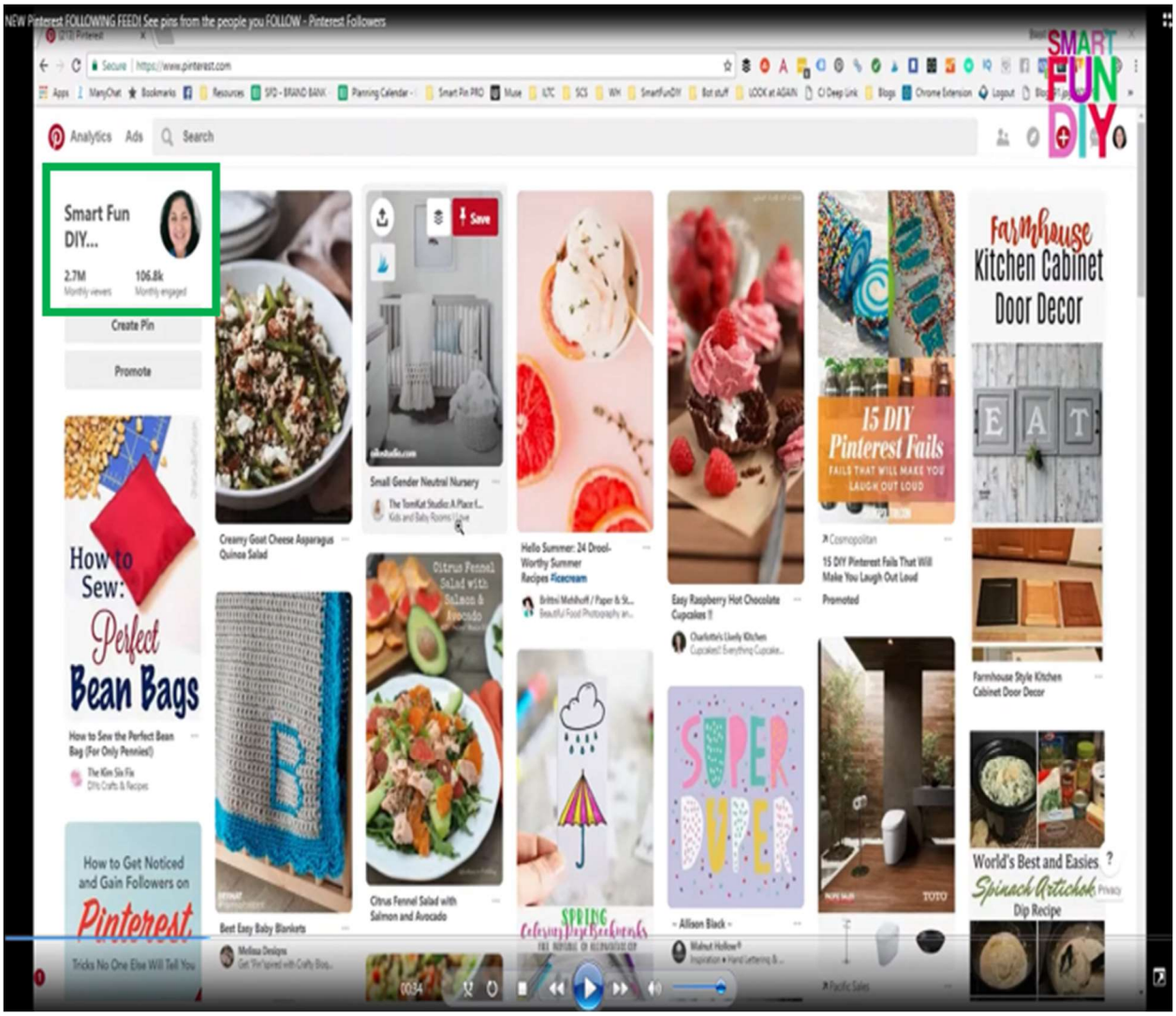




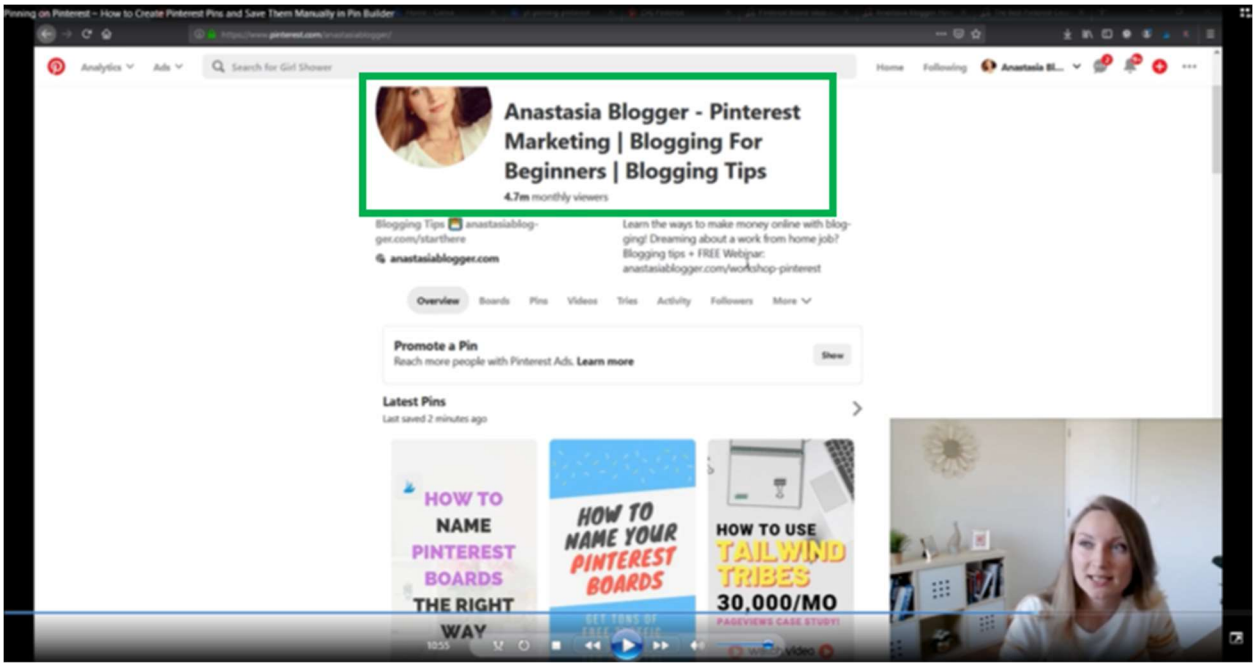
(https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).



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



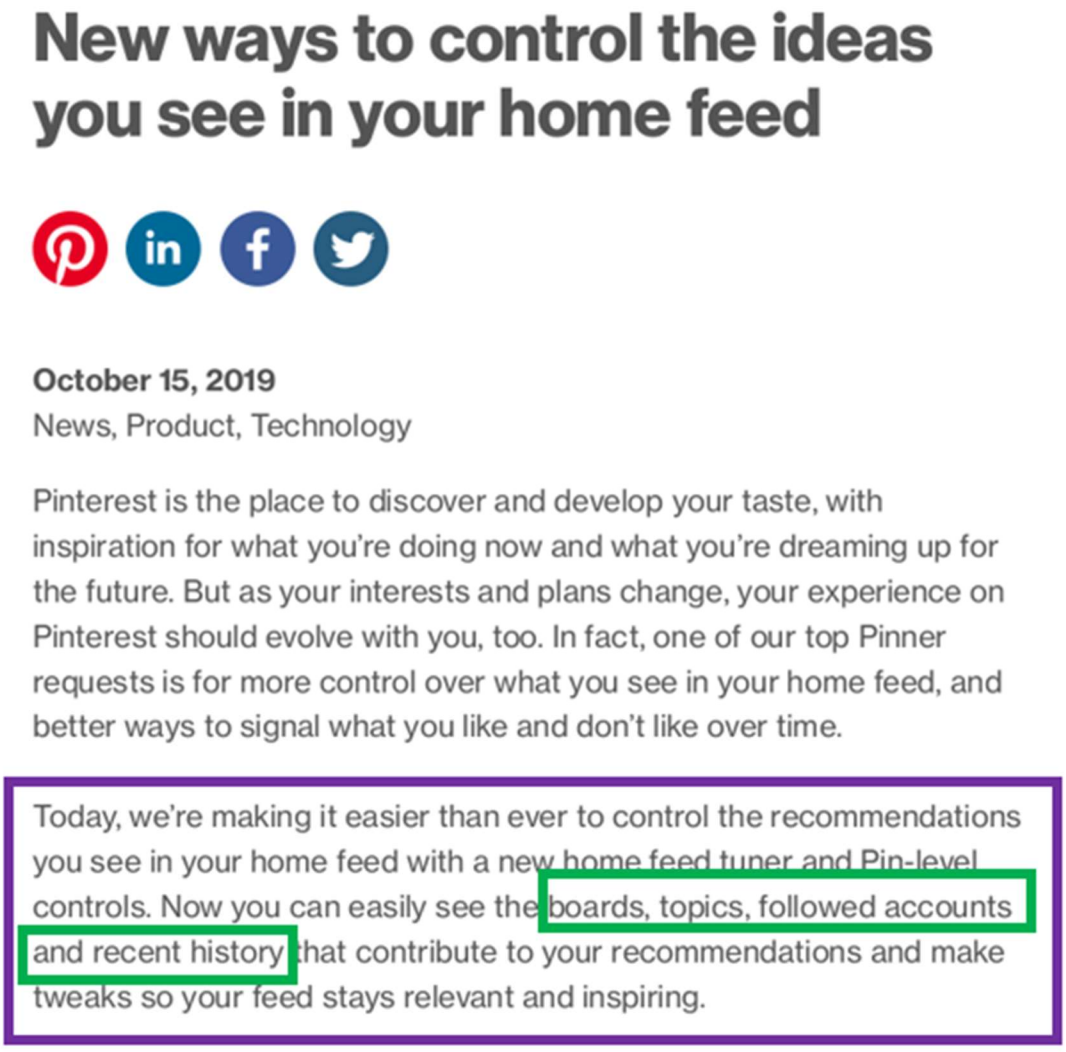
(*E.g.*, https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).



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

64. The Accused Instrumentality employs an electronic multimedia creator server subsystem operatively coupled to the electronic media submissions server subsystem, necessarily having one or more data processing apparatus in order to manage content, and an electronic content filter, configured to, based on criteria associated with one or more of the Pinterest users such as are discussed above, obtain and make available a plurality of electronic media submissions from the database using an electronic content filter, for electronic viewing by the Pinterest users including the first user, using their respective electronic devices. As can be seen below, such electronic content filter as is used by Pinterest is based at least in part on at least one of the criteria (*e.g.,* based on those other users a user is following, boards and topics followed, and history, which in turn affects which electronic media submissions appear on any given user's Pinterest feeds, including the first user). For example, multimedia posts may be shown based on an individual who a user is following creating or "pinning" that post. Or, as an additional example, multimedia posts may be shown based on a variety of factors being weighed together, such as based on those other

users a user is following, boards and topics followed, and history. Such function-specific subsystems may be contained within the Accused Instrumentality with cloud-based functionality of Pinterest, Inc, for example as discussed below.



New ways to control the ideas you see in your home feed

October 15, 2019

News, Product, Technology

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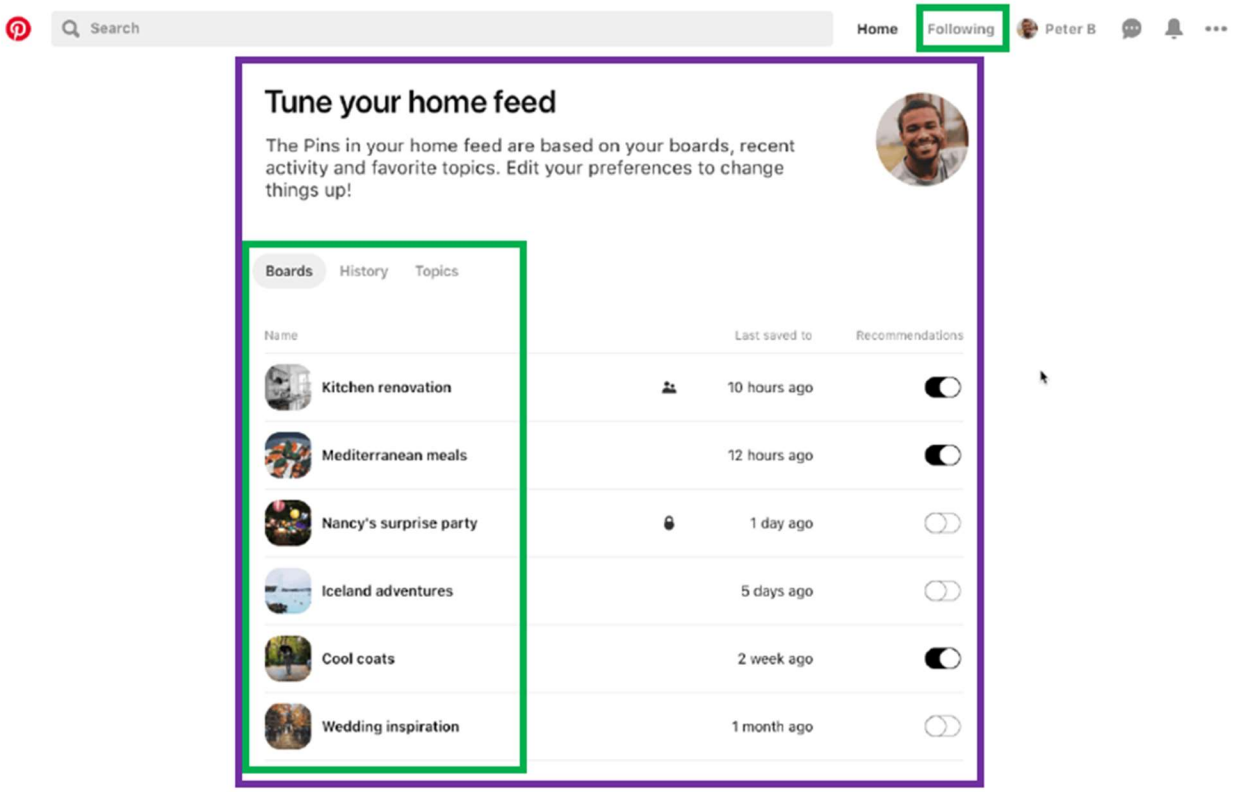
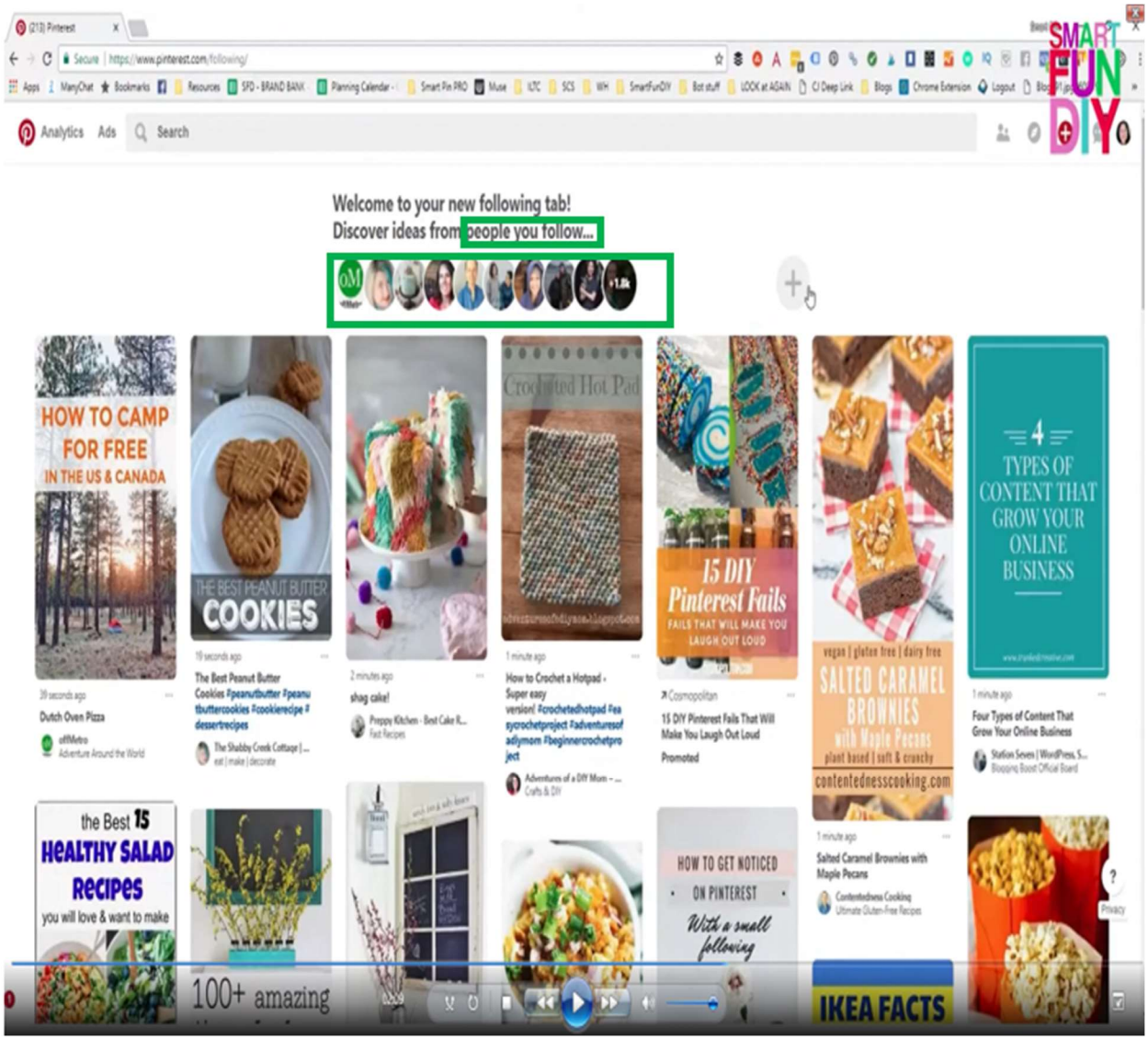
Today, we're making it easier than ever to control the recommendations you see in your home feed with a new home feed tuner and Pin-level controls. Now you can easily see the boards, topics, followed accounts and recent history that contribute to your recommendations and make tweaks so your feed stays relevant and inspiring.

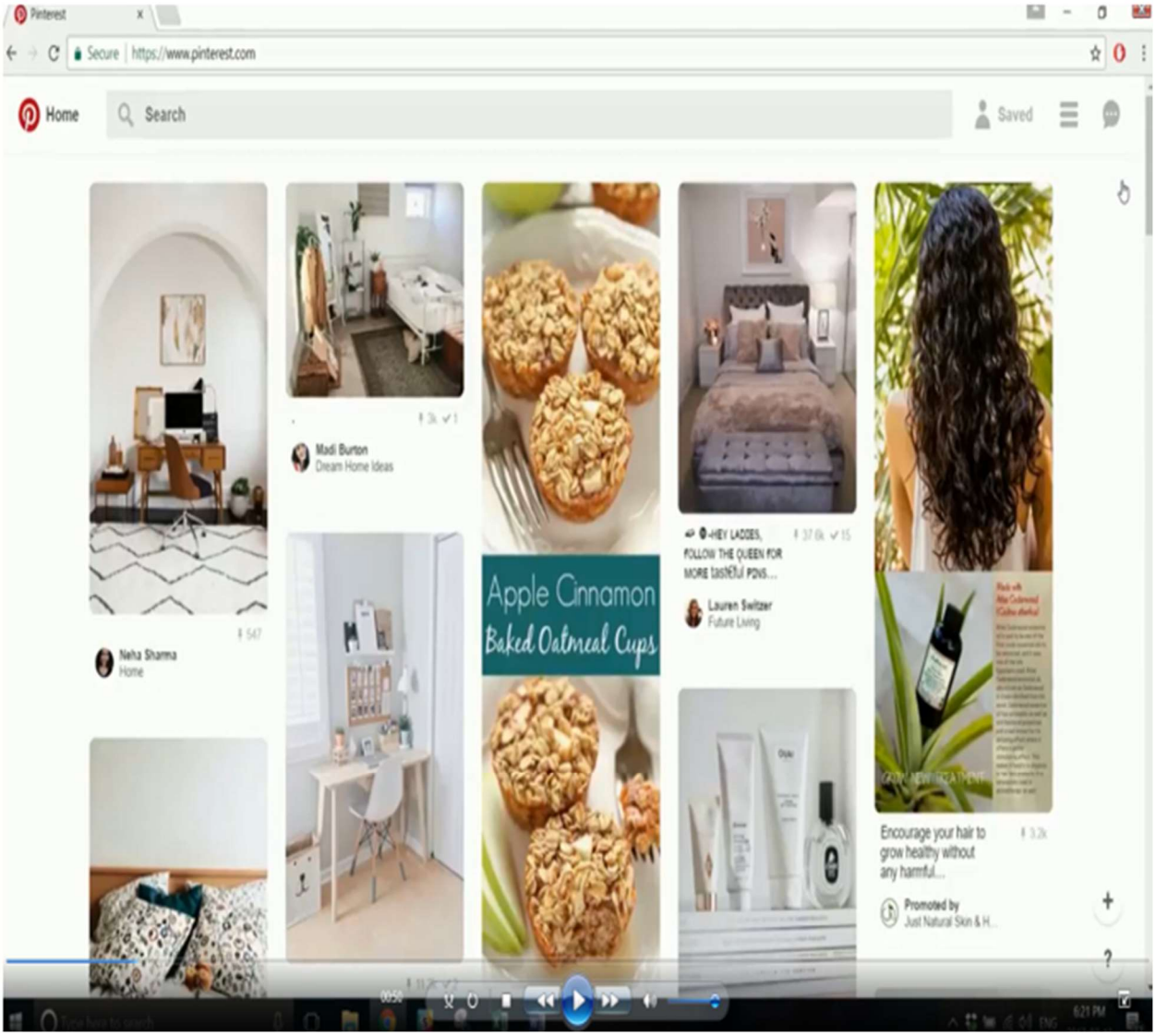
(*E.g.*, https://newsroom.pinterest.com/en/post/new-ways-to-control-the-ideas-you-see-in-your-home-feed (published October 25, 2019) (retrieved June 8, 2023)).



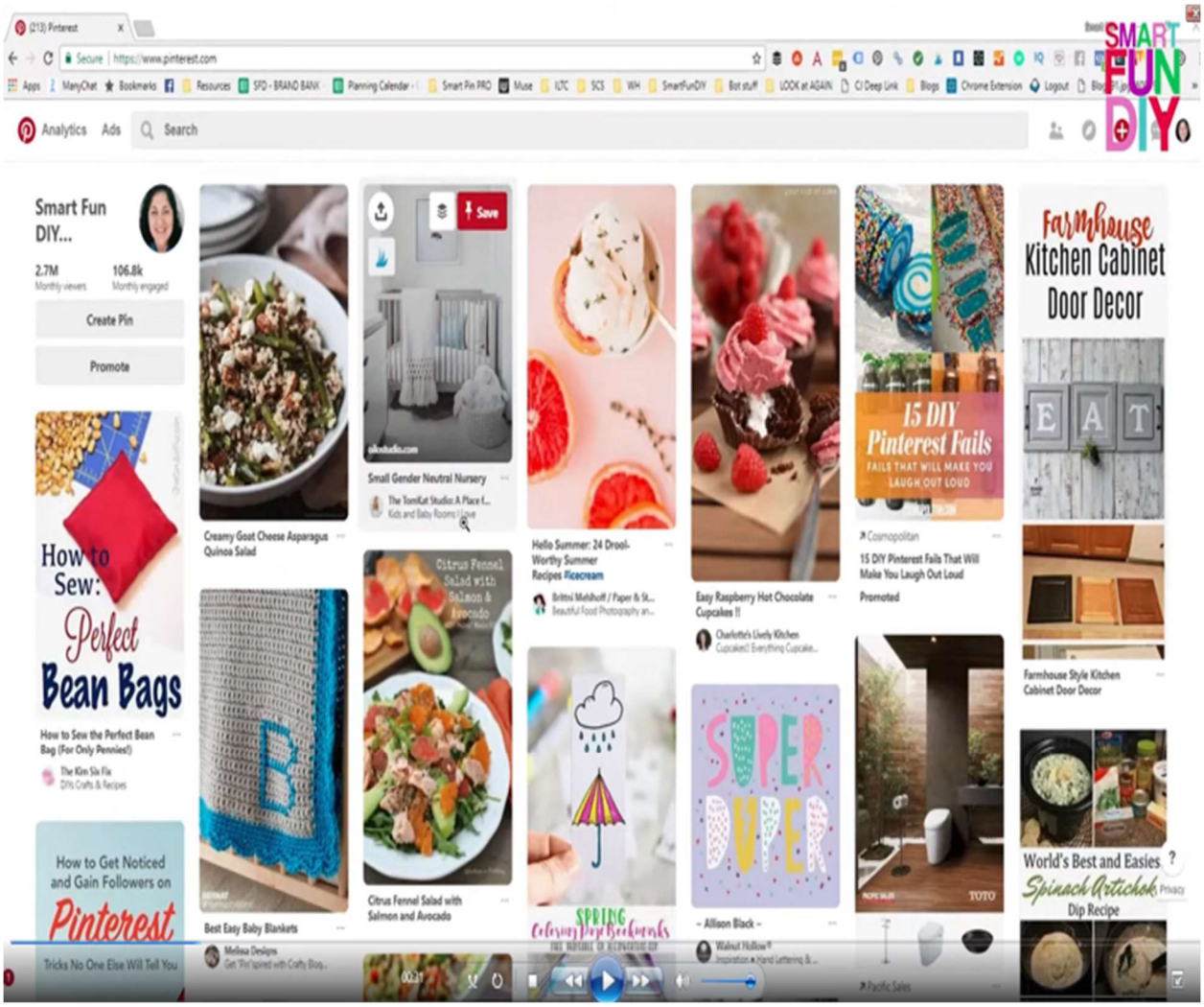
(*E.g.*, https://newsroom.pinterest.com/en/post/new-ways-to-control-the-ideas-you-see-in-your-home-feed (published October 25, 2019) (retrieved June 8, 2023)).



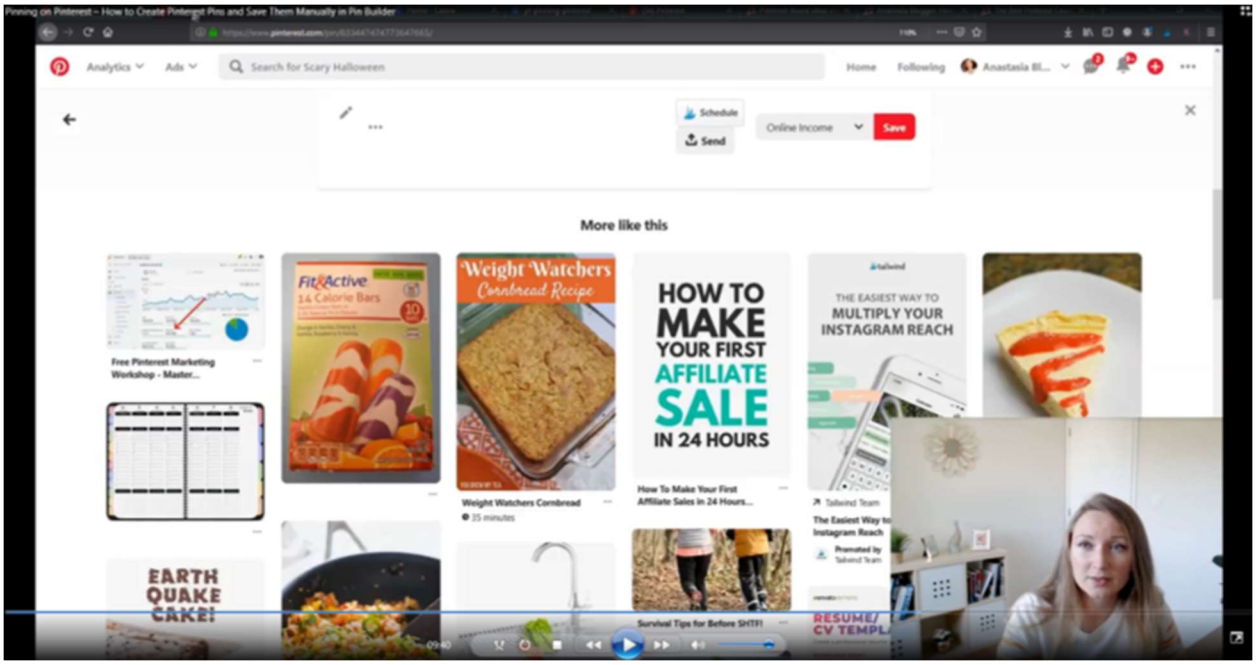
(*E.g.*, https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).



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

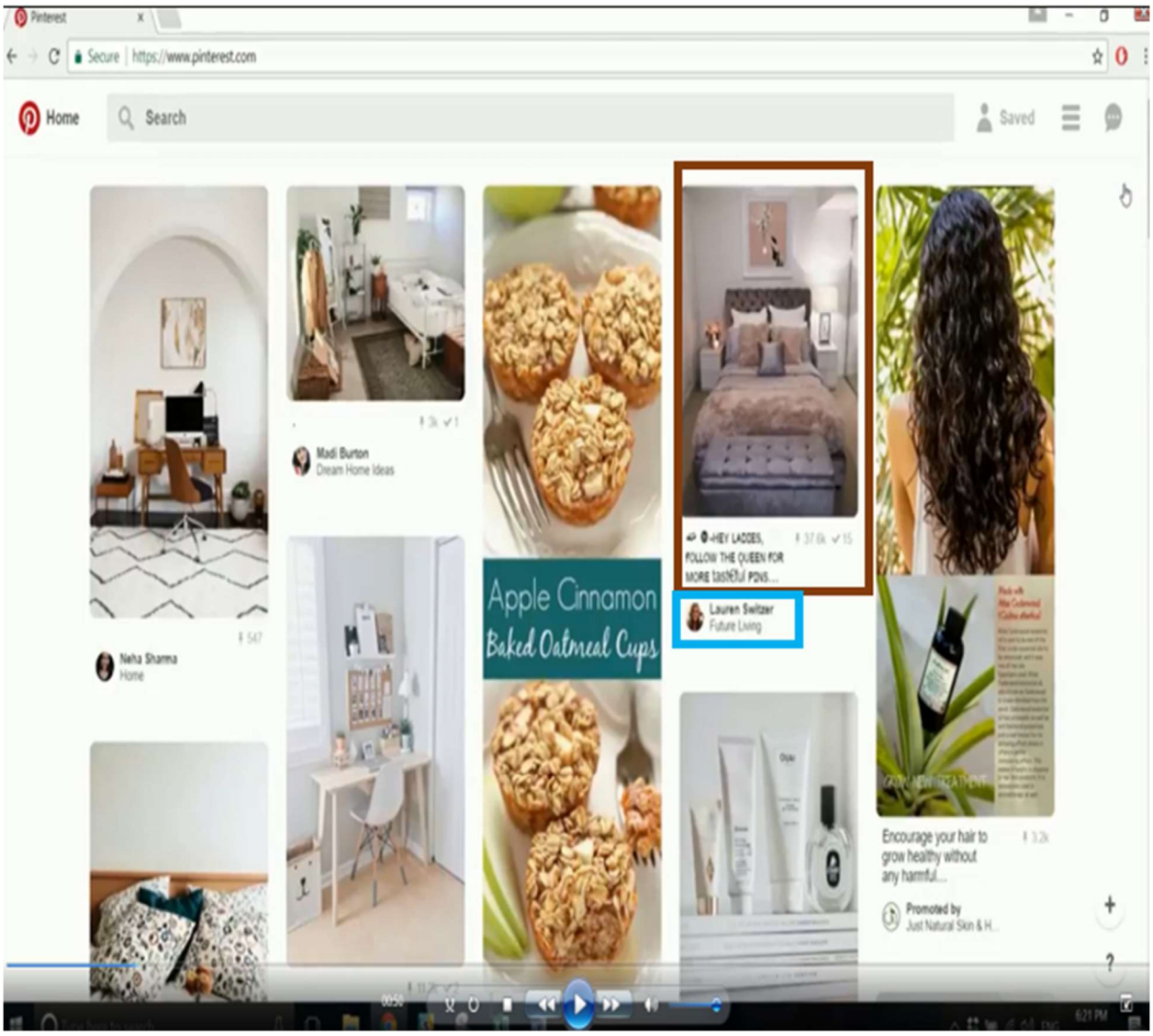


(*E.g.*, https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).

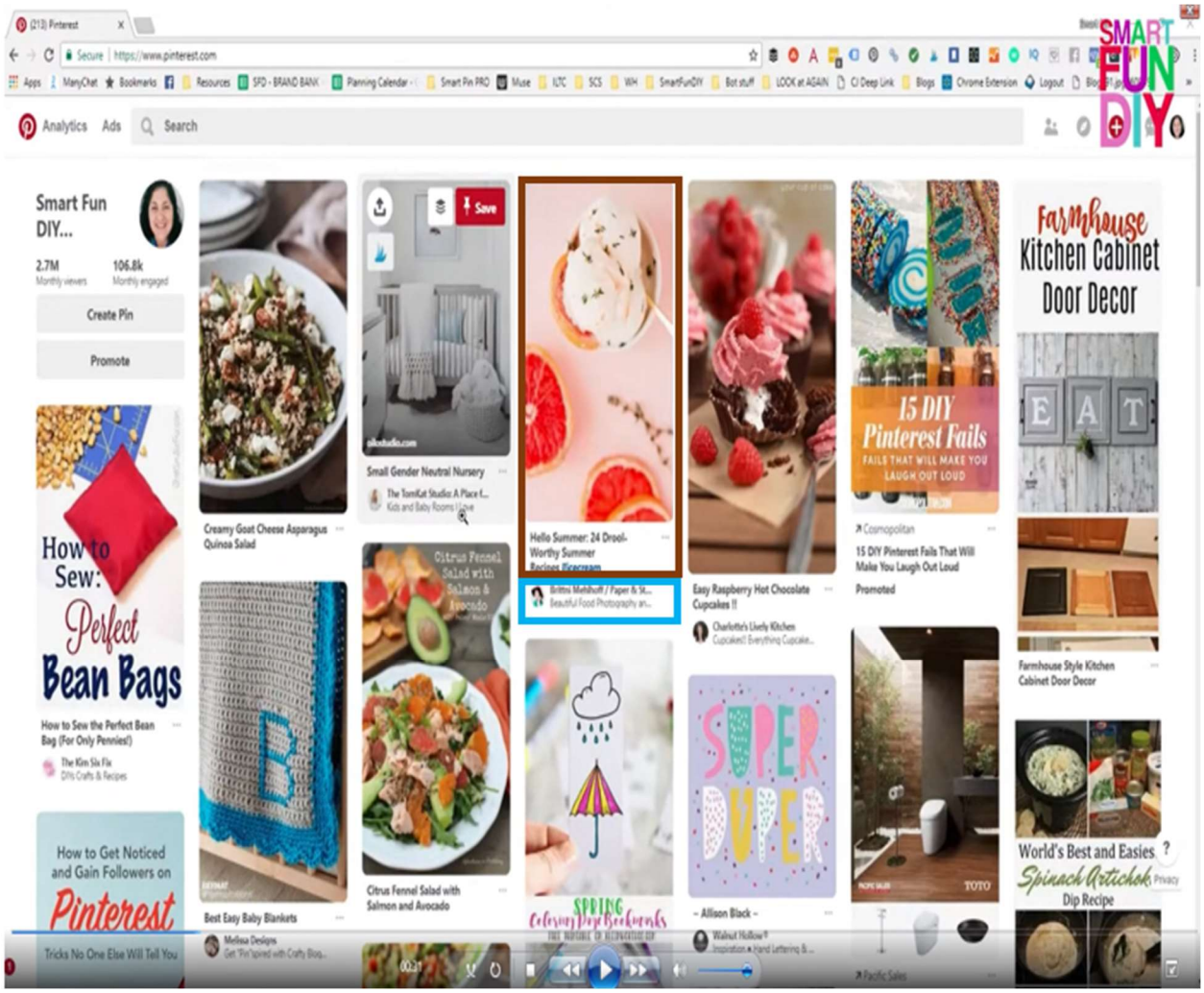


(*E.g.*, https://www.youtube.com/watch?v=EmqaleD5790 (published August 29, 2019)).

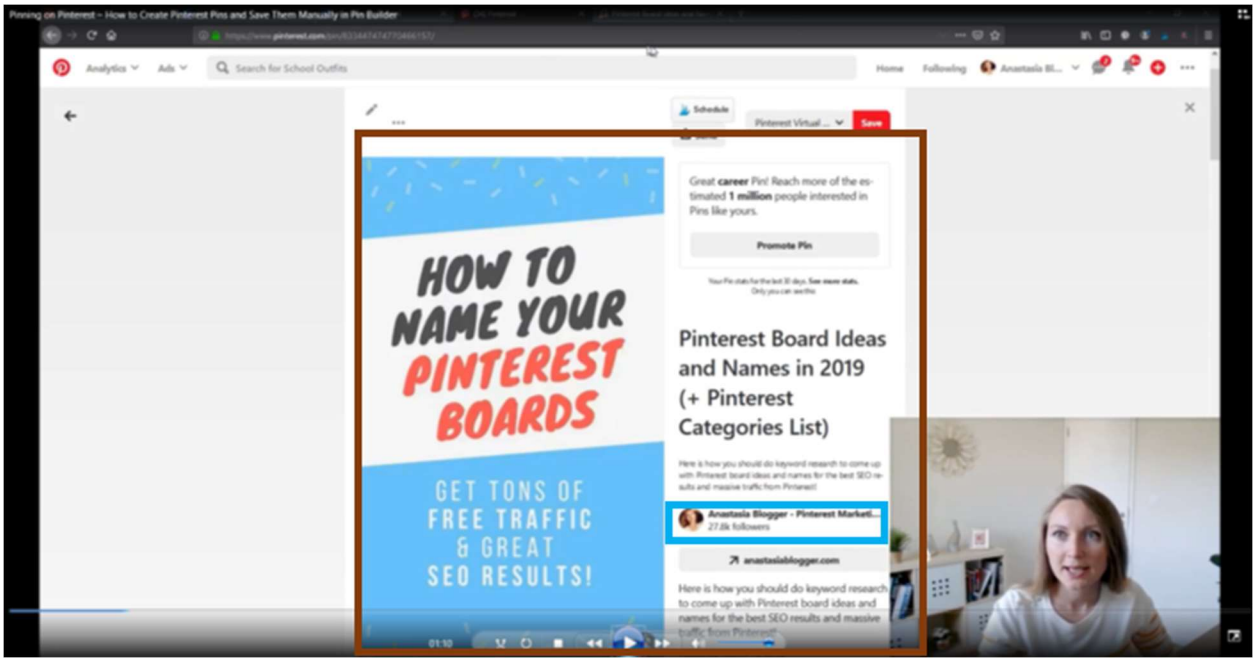
65. Where such electronic content filter is used by the Accused Instrumentality to develop multimedia content (*e.g.,* content associated with text and images) to be electronically available for viewing on user devices (*e.g.,* computers or other devices incorporating browsers), the identification of the submitter is maintained for each electronic media submission within the multimedia content, for example as shown below.



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

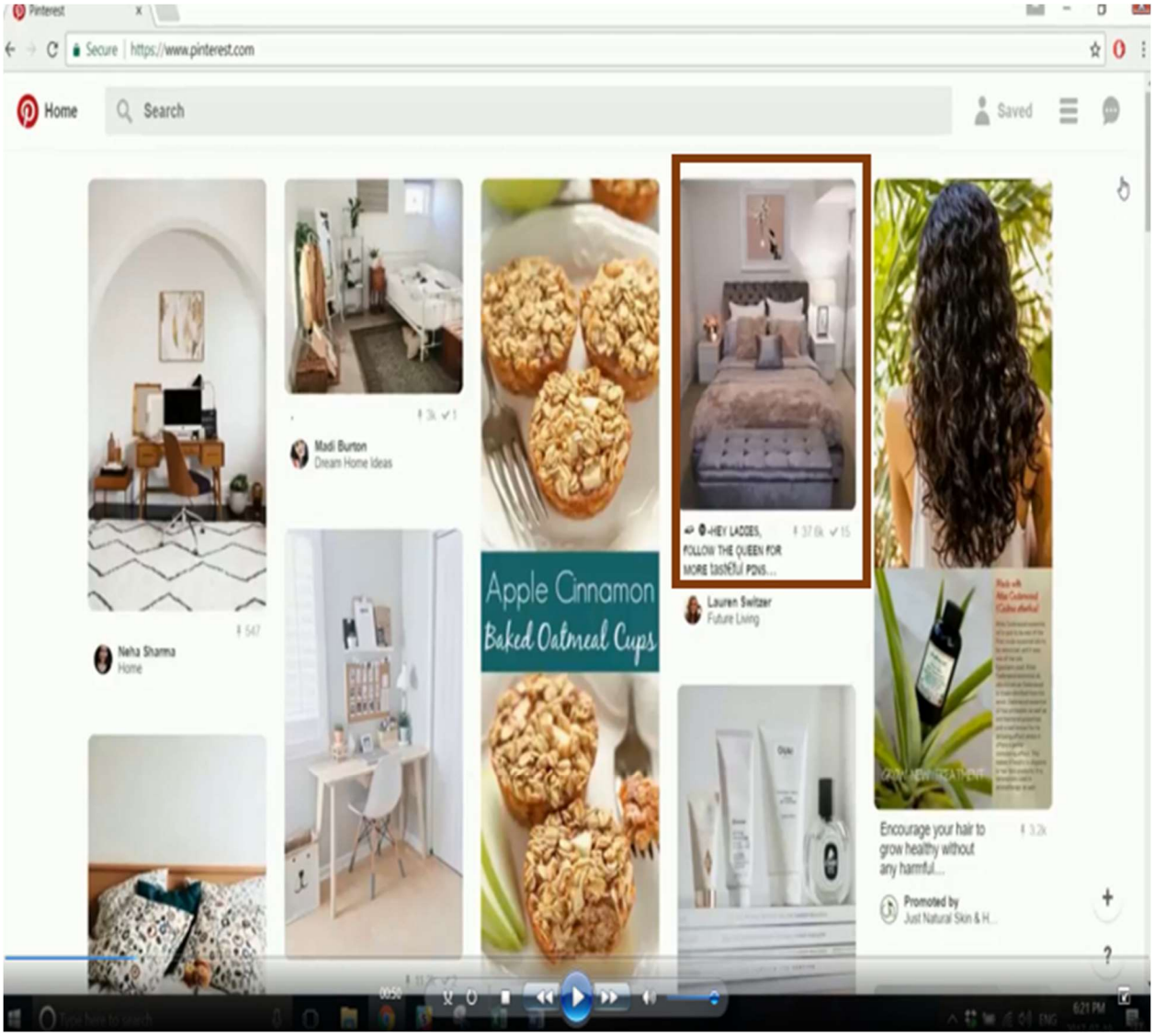


(*E.g.*, https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).

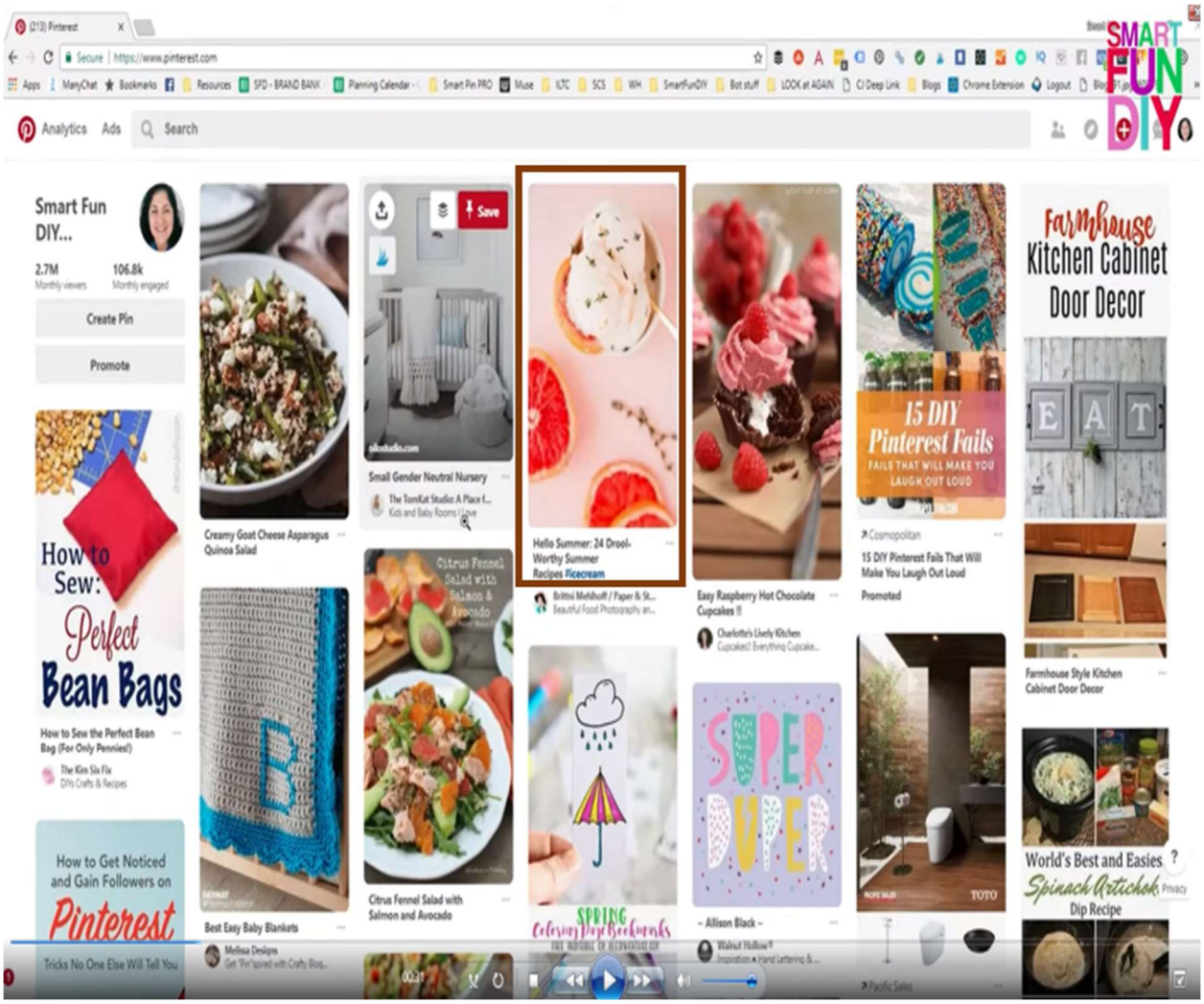


(*E.g.*, https://www.youtube.com/watch?v=EmqaleD5790 (published August 29, 2019)).

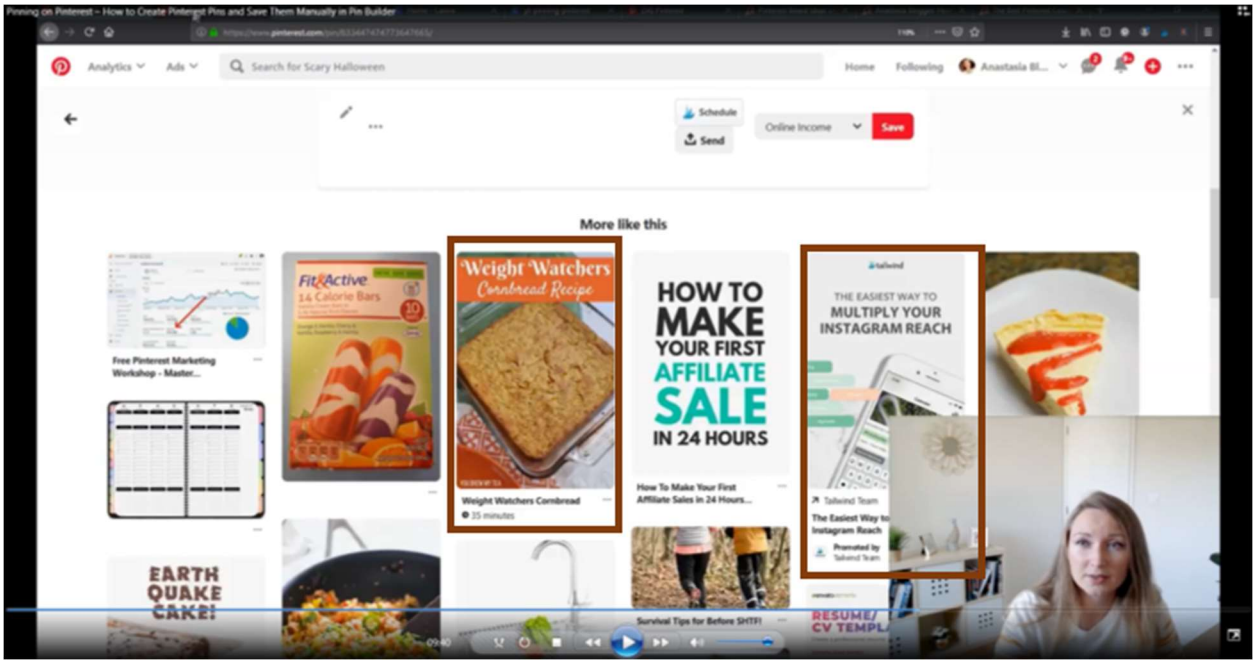
66. The Accused Instrumentality employs an electronic release subsystem operatively coupled to the electronic multimedia creator server subsystem, necessarily having one or more data processing apparatus in order to serve content to Pinterest users, configured to make the multimedia content electronically available for viewing on a plurality of different user devices, enabling plural view counts of any given content. For example, as shown below, multimedia content is provided on a user's device, generally representative of any of a number of users, in response to a user logging in to Pinterest and viewing their Pinterest feed or feeds or other content selected by the Pinterest platform. Such subsystems may be contained within the Pinterest servers, from amongst communicatively connected and cloud-enabled Pinterest servers, a plurality of which are publicly accessible and used to host content to the public, for example as discussed below.



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

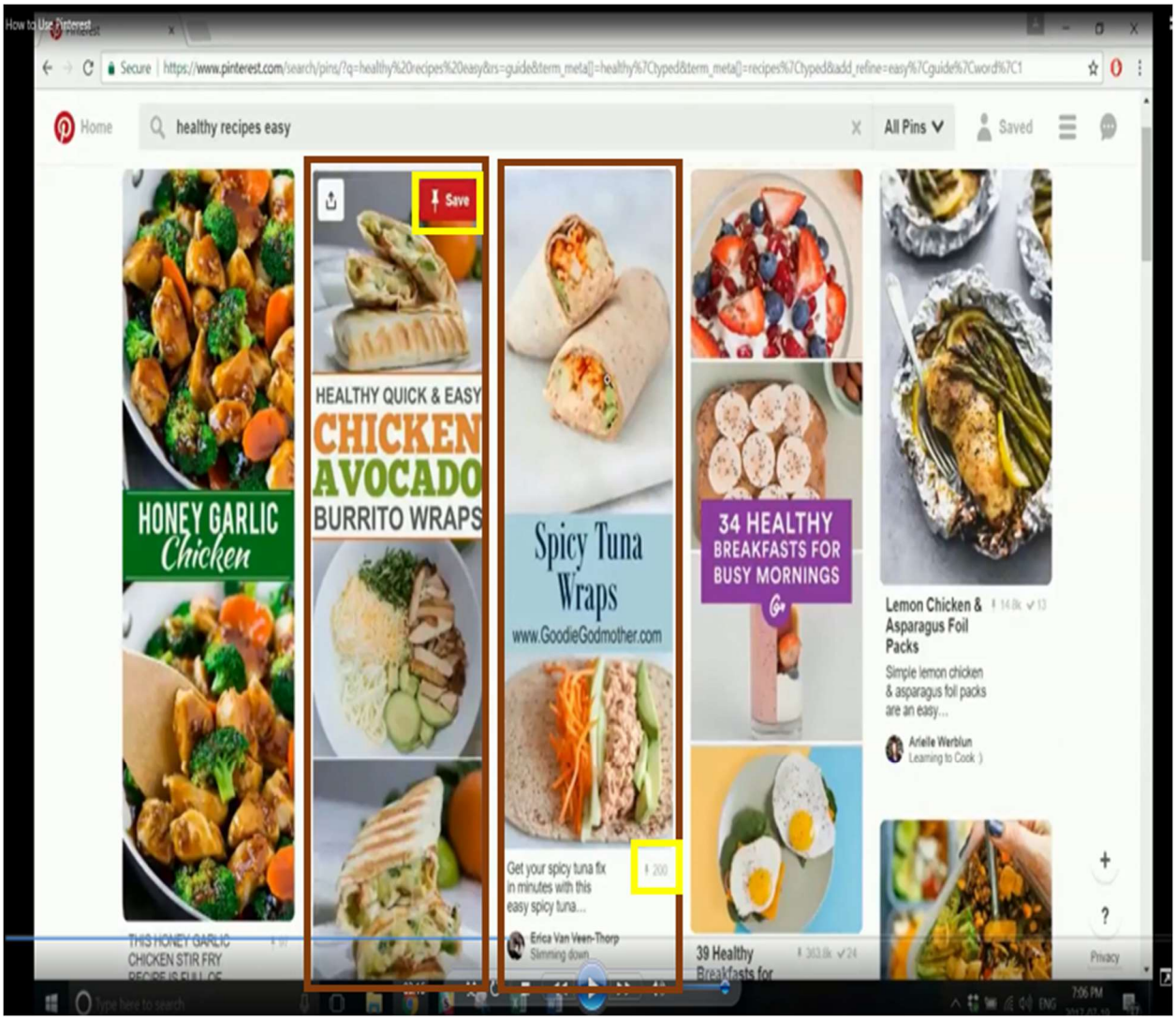


(*E.g.*, https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).

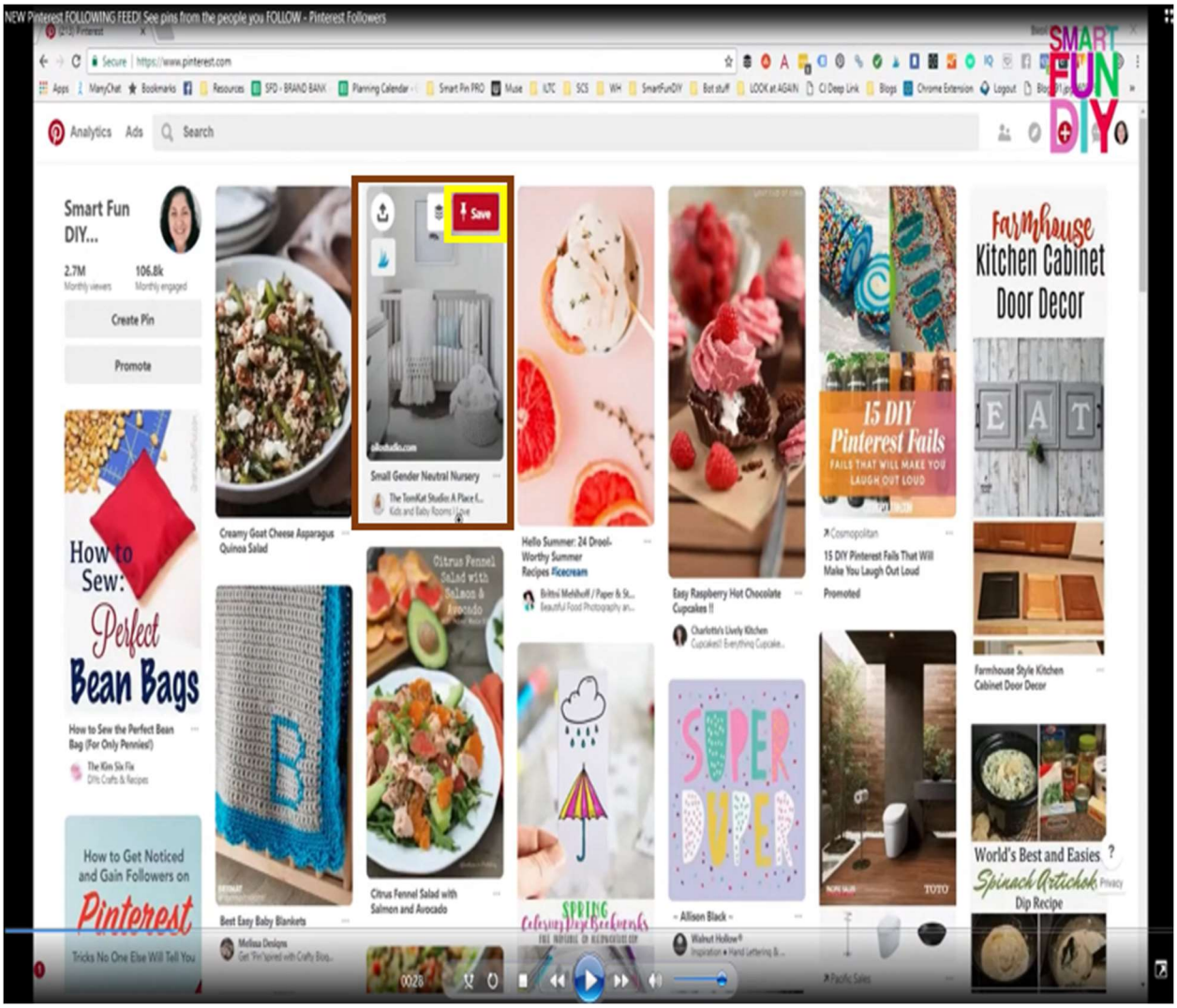


(*E.g.*, https://www.youtube.com/watch?v=EmqaleD5790 (published August 29, 2019)).

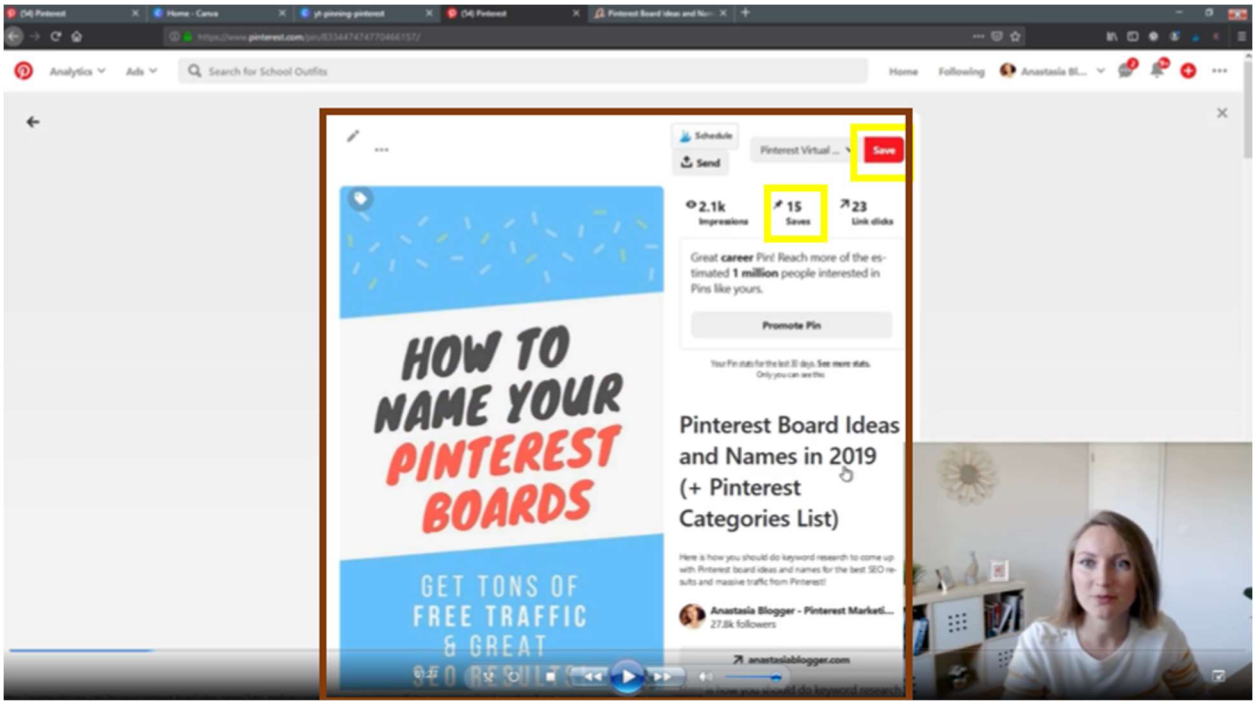
67. The Accused Instrumentality employs an electronic voting subsystem, necessarily having one or more data processing apparatus in order to track a number of votes, configured to enable a user, for example a third user different than the users specifically identified above, to electronically vote for (*e.g.,* by selecting to "pin" or "save" the content) an electronically available multimedia content. As can be seen below, the option to vote for electronically available multimedia content within a respective electronically available multimedia content is made available to users via selecting a "pin" or "save" icon, and a total number of such selections is tracked and associated with the multimedia content.



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

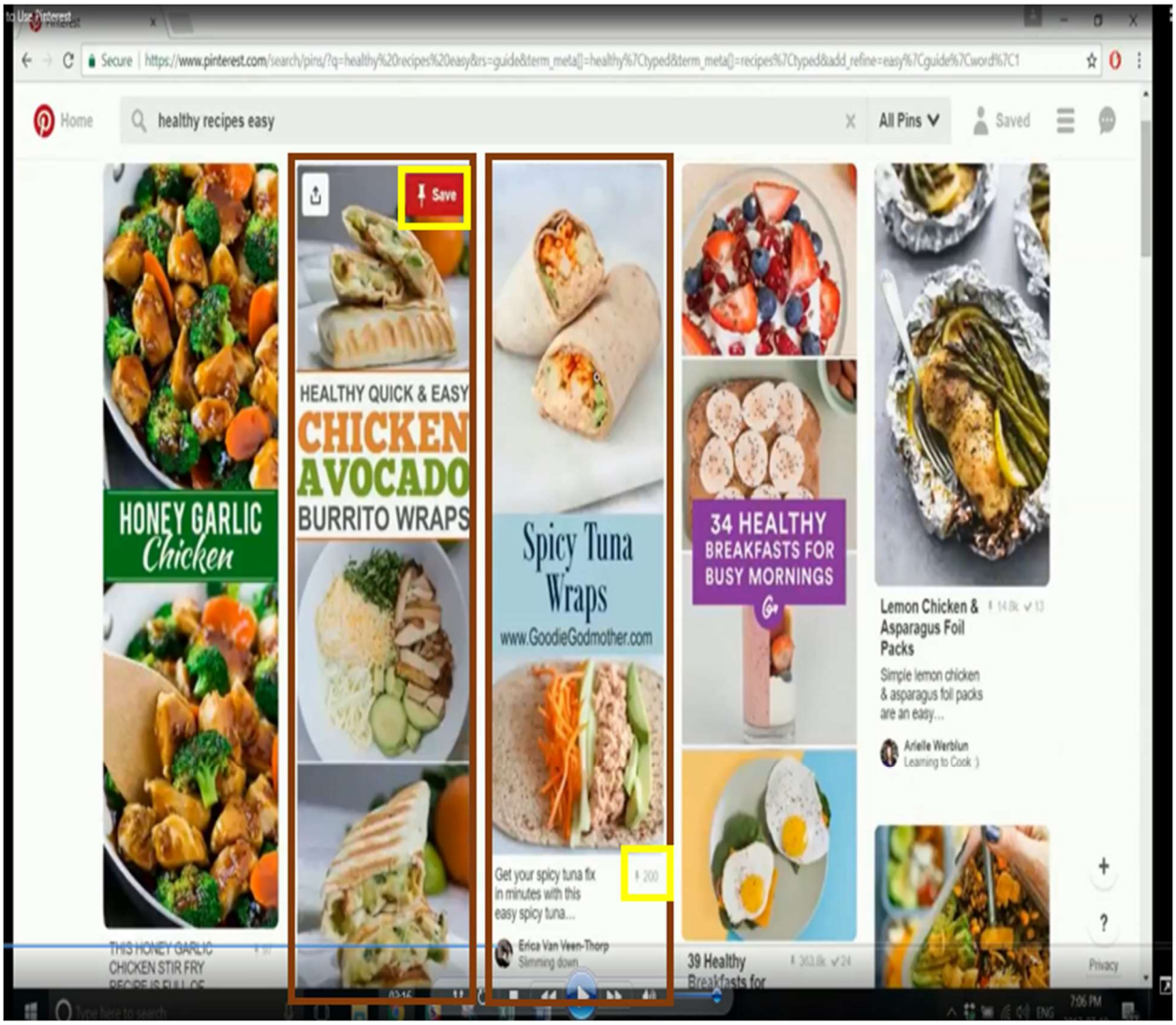


(*E.g.*, https://www.youtube.com/watch?v=f4799wKAins (published April 2, 2018)).

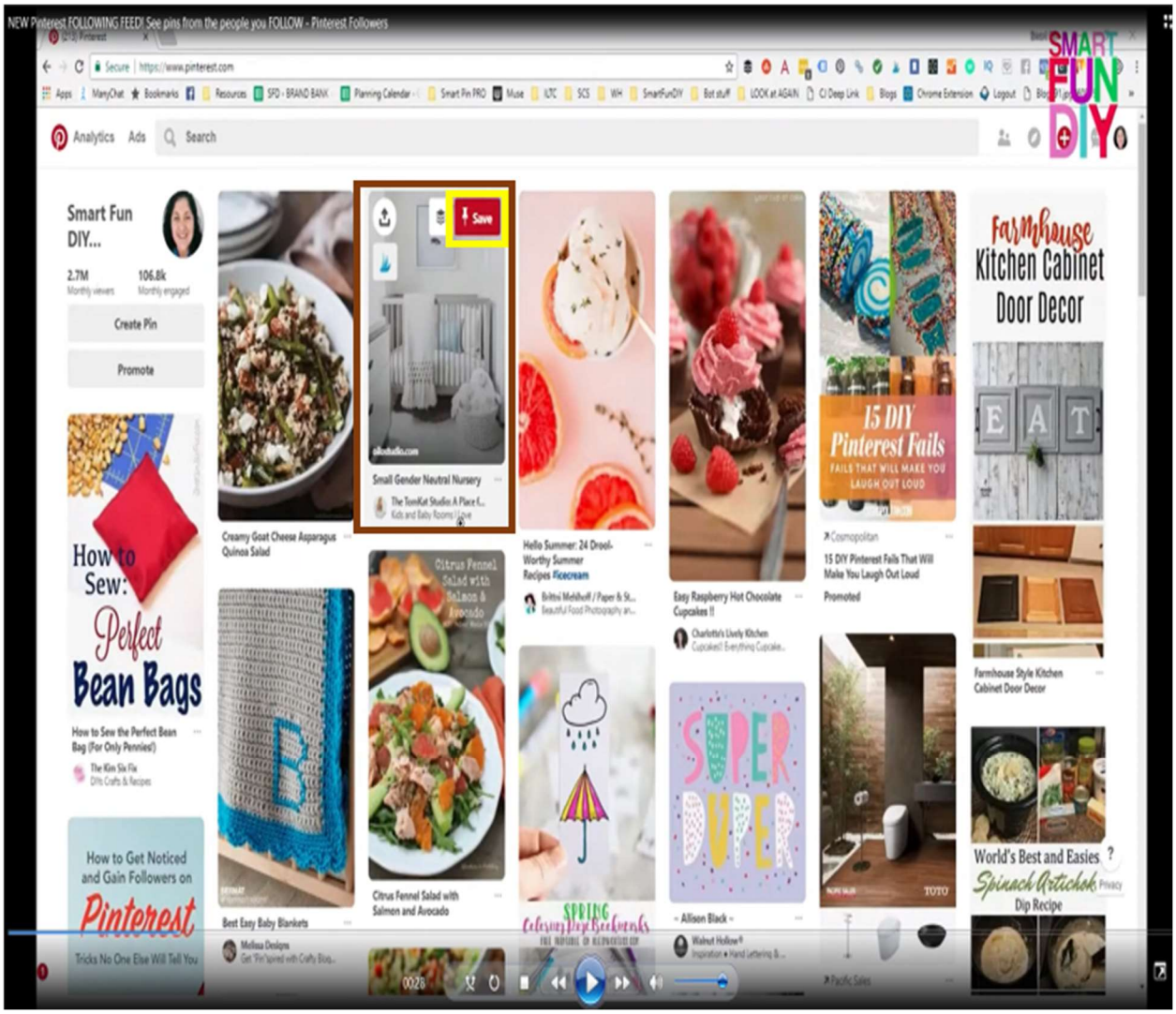


(*E.g.*, https://www.youtube.com/watch?v=EmqaleD5790 (published August 29, 2019)).

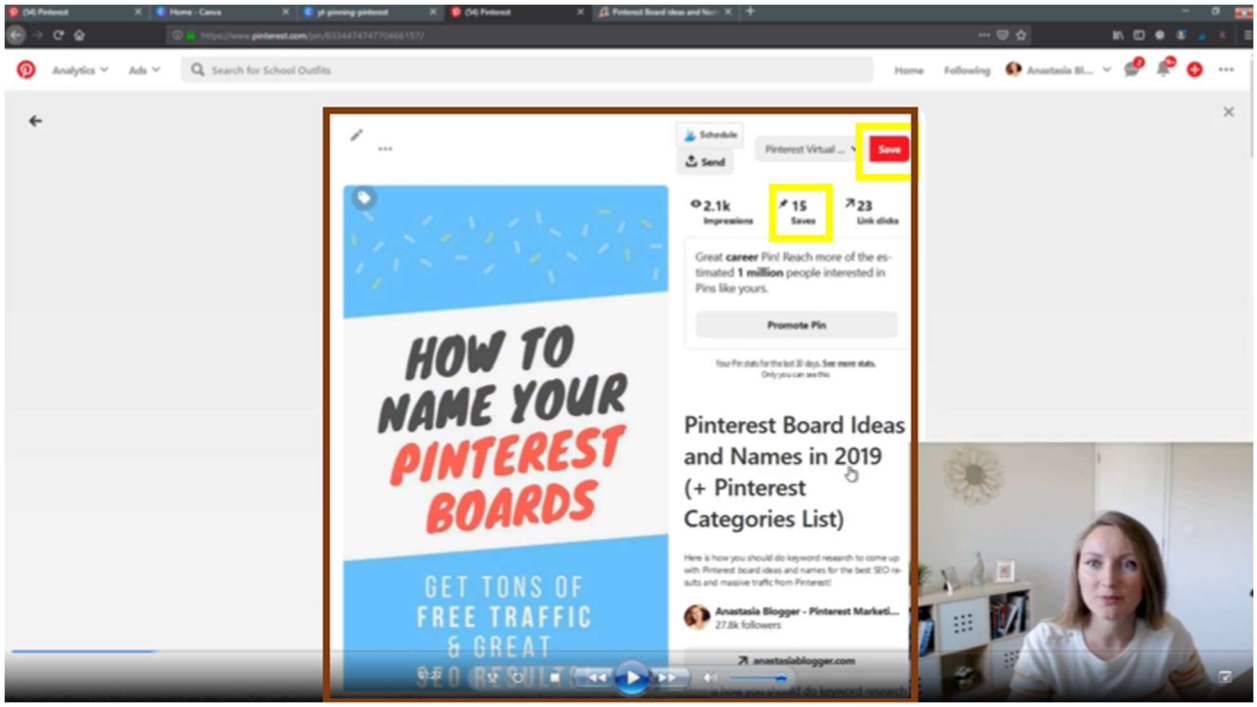
68. As discussed above in connection with claim 17, Pinterest, Inc.'s Pinterest platform and Pinterest feeds employs an electronic voting subsystem, necessarily having one or more data processing apparatus in order to track a number of votes, configured to enable a user, for example a third user different than the users specifically identified above, to electronically vote for (*e.g.,* by selecting to "pin" or "save" the content) an electronically available multimedia content. As can be seen below, the option to vote for electronically available multimedia content within a respective electronically available multimedia content is made available to users via selecting a "pin" or "save" icon, and a total number of such selections is tracked and associated with, corresponding to and achieving voting for, an electronic media submission (*e.g.,* text and/or images) within and associated with the multimedia content. Such function-specific subsystems may be contained within the communicatively coupled and cloud-enabled Pinterest servers, for example as discussed below.



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



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



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

69. Plaintiff has been damaged as a result of Defendant's infringing conduct. Defendant is thus liable to Plaintiff for damages in an amount that adequately compensates Plaintiff for such Defendant's infringement of the '576 Patent, *i.e.*, in an amount that by law cannot be less than would constitute a reasonable royalty for the use of the patented technology, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

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

VI. JURY DEMAND

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

VII. PRAYER FOR RELIEF

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

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

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

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

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

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

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

June 30, 2023

Respectfully Submitted,

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

Attorneys for Plaintiff
Virtual Creative Artists LLC