

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TikTok Inc.
Petitioner

v.

NTECH Properties, Inc.
Patent Owner

Case No. IPR2024-01341
U.S. Patent No. 9,215,261

“Method and Apparatus for Efficient, Entertaining Information Delivery”

DECLARATION OF KEVIN ALMEROOTH, PH.D. IN SUPPORT OF
PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT NO. 9,215,261

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LIST OF EXHIBITS

Exhibit	Description
EX1001	U.S. Patent No. 9,215,261 (“’261 patent”)
EX1002	Declaration of Kevin Almeroth, Ph.D.
EX1003	U.S. Pat. No. 8,555,318 (“Whitehead”)
EX1004	U.S. Pat. Pub. No. 2002/0152117 (“Cristofalo”)
EX1005	U.S. Pat. Pub. No. 2006/0015904 (“Marcus ’904”)
EX1006	U.S. Patent No. 6,177,931
EX1007	Int’l Publ. No. WO 00/40021 (“Montie”)
EX1008	U.S. Pat. No. 6,032,156 (“Marcus ’156”)
EX1009	Provisional Application for U.S. Pat. No. 9,215,261(U.S. Prov. Appl. No. 60/934,456)
EX1010	D. Wilkerson, “ACTV hopes to steal print's thunder” (Dec. 8, 2000)
EX1011	Amended Complaint in <i>NTECH Properties, Inc. v. ByteDance Ltd. et al.</i> , No. 2:24-cv-00130 (E.D. Tex.)
EX1012	B. Hammersley, “Audible revolution” (Feb. 11, 2004)
EX1013	U.S. Pat. No. 6,388,714
EX1014	U.S. Pat. No. 7,467,398
EX1015	Verizon, “Verizon Unlocks Full Potential of Fiber-Based FiOS Internet and Video Services With Advanced 100-Mbps Broadband Home Router” (June 28, 2006)
EX1016	Prosecution History for U.S. Pat. No. 8,145,704
EX1017	Prosecution History for U.S. Pat. No. 8,886,753
EX1018	Prosecution History for U.S. Pat. No. 9,215,261
EX1019	Prosecution History for U.S. Pat. No. 9,923,947
EX1020	List of Recent Expert Witness Engagements of Dr. Kevin Almeroth

IPR of USP 9,215,261
Decl. of Dr. Kevin Almeroth

Exhibit	Description
EX1021	Curriculum Vitae of Dr. Kevin Almeroth
EX1022	Americans' Use of Mobile Technology and Home Broadband, <i>Pew Research Center</i> , January 31, 2024

I, Dr. Kevin Almeroth, declare as follows:

I. Introduction

1. I have been retained by Quinn Emanuel Urquhart & Sullivan, LLP on behalf of the Petitioner TikTok Inc. (“Petitioner”) as an independent expert in this *inter partes* review (this “Proceeding”) before the Patent Trial and Appeal Board of the United States Patent and Trademark Office (the “Board”) to review claims 1-10 (“the challenged claims”) of U.S. Patent No. 9,215,261 (“the ’261 patent”). I have been asked by the Petitioner to assist in evaluating the claims and the disclosure of the ’261 patent.

A. Qualifications

2. EX1021 is a true and correct copy of my current CV, which describes my education, patents and publications, employment and research history, and professional activities and awards.

1. Educational Background

3. I hold three degrees from the Georgia Institute of Technology: (1) a Bachelor of Science degree in Information and Computer Science (with minors in Economics, Technical Communication, and American Literature) earned in June 1992; (2) a Master of Science degree in Computer Science (with specialization in Networking and Systems) earned in June 1994; and (3) a Doctor of Philosophy (Ph.D.) degree in Computer Science (Dissertation Title: Networking and System

Support for the Efficient, Scalable Delivery of Services in Interactive Multimedia System, minor in Telecommunications Public Policy) earned in June 1997. During my education, I have taken a wide variety of courses as demonstrated by my minor. My undergraduate degree also included a number of courses more typical of a degree in electrical engineering including digital logic, signal processing, and telecommunications theory.

2. Career

4. I am currently a Professor Emeritus in the Department of Computer Science at the University of California, Santa Barbara (UCSB). While active at UCSB, I held faculty appointments and was a founding member of the Computer Engineering (CE) Program, Media Arts and Technology (MAT) Program, and the Technology Management Program (TMP). I also served as the Associate Director of the Center for Information Technology and Society (CITS) from 1999 to 2012. I have been a faculty member at UCSB since July 1997.

5. One of the major concentrations of my research has been the delivery of multimedia content and data between computing devices, including various network architectures. In my research, I have studied large-scale content delivery systems, and the use of servers located in a variety of geographic locations to provide scalable delivery to hundreds or thousands of users simultaneously. I have also studied smaller-scale content delivery systems in which content is exchanged

between individual computers and portable devices. My work has emphasized the exchange of content more efficiently across computer networks, including the scalable delivery of content to many users, mobile computing, satellite networking, delivering content to mobile devices, and network support for data delivery in wireless networks.

6. In 1992, the initial focus of my research was on the provision of interactive functions (e.g., VCR-style functions like pause, rewind, and fast-forward) for near video-on-demand systems in cable systems; in particular, how to aggregate requests for movies at a cable head-end and then how to satisfy a multitude of requests using one audio/video stream broadcast to multiple receivers simultaneously. This research has continually evolved and resulted in the development of techniques to scalably deliver on-demand content, including audio, video, web documents, and other types of data, through the Internet and over other types of networks, including over cable systems, broadband telephone lines, and satellite links.

7. An important component of my research has been investigating the challenges of communicating multimedia content, including video, between computers and across networks including the Internet. Although the early Internet was used mostly for text-based, non-real time applications, the interest in sharing multimedia content, such as video, quickly developed. Multimedia-based

applications ranged from downloading content to a device to streaming multimedia content to be instantly used. One of the challenges was that multimedia content is typically larger than text-only content, but there are also opportunities to use different delivery techniques since multimedia content is more resilient to errors. I have worked on a variety of research problems and used a number of systems that were developed to deliver multimedia content to users. One content-delivery method I have researched is the one-to-many communication facility called “multicast,” first deployed as the Multicast Backbone, a virtual overlay network supporting one-to-many communication. Multicast is one technique that can be used on the Internet to provide streaming media support for complex applications like video-on-demand, distance learning, distributed collaboration, distributed games, and large-scale wireless communication. The delivery of media through multicast often involves using Internet infrastructure, devices and protocols, including protocols for routing and TCP/IP.

8. Starting in 1997, I worked on a project to integrate the streaming media capabilities of the Internet together with the interactivity of the web. I developed a project called the Interactive Multimedia Jukebox (IMJ). Users would visit a web page and select content to view. The content would then be scheduled on one of a number of channels, including delivery to students in Georgia Tech dorms delivered

via the campus cable plant. The content of each channel was delivered using multicast communication.

9. In the IMJ, the number of channels varied depending on the capabilities of the server including the available bandwidth of its connection to the Internet. If one of the channels was idle, the requesting user would be able to watch their selection immediately. If all channels were streaming previously selected content, the user's selection would be queued on the channel with the shortest wait time. In the meantime, the user would see what content was currently playing on other channels, and because of the use of multicast, would be able to join one of the existing channels and watch the content at the point it was currently being transmitted.

10. The IMJ service combined the interactivity of the web with the streaming capabilities of the Internet to create a jukebox-like service. It supported true Video-on-Demand when capacity allowed, but scaled to any number of users based on queuing requested programs. As part of the project, we obtained permission from Turner Broadcasting to transmit cartoons and other short-subject content. We also connected the IMJ into the Georgia Tech campus cable television network so that students in their dorms could use the web to request content and then view that content on one of the campus's public access channels.

11. More recently, I have also studied issues concerning how users choose content, especially when considering the price of that content. My research has examined how dynamic content pricing can be used to control system load. By raising prices when systems start to become overloaded (*i.e.*, when all available resources are fully utilized) and reducing prices when system capacity is readily available, users' capacity to pay as well as their willingness can be used as factors in stabilizing the response time of a system. This capability is particularly useful in systems where content is downloaded or streamed on-demand to users.

12. Protecting networks, including their operation and content, has been an underlying theme of my research almost since the beginning of my research career. Starting in 2000, I have been involved in several projects that specifically address security, network protection, and firewalls. After significant background work, a team on which I was a member successfully submitted a \$4.3M grant proposal to the Army Research Office (ARO) at the Department of Defense to propose and develop a high-speed intrusion detection system. Key aspects of the system included associating streams of packets and analyzing them for viruses and other malware. Once the grant was awarded, we spent several years developing and meeting the milestones of the project. A number of my students worked on related projects and published papers on topics ranging from intrusion detection to developing advanced techniques to be incorporated into firewalls. I have also used firewalls, including

their associated malware detection features, in developing techniques for the classroom to ensure that students are not distracted by online content.

13. Recent work ties some of the various threads of my past research together. I have investigated content delivery in online social networks and proposed reputation management systems in large-scale social networks and marketplaces. On the content delivery side, I have looked at issues of caching and cache placement, especially when content being shared and the cache has geographical relevance. We were able to show that effective caching strategies can greatly improve performance and reduce deployment costs. Our work on reputation systems showed that reputations have economic value, and as such, creates a motivation to manipulate reputations. In response, we developed a variety of solutions to protect the integrity of reputations in online social networks. The techniques we developed for content delivery and reputation management were particularly relevant in peer-to-peer communication.

14. My involvement in the research community extends to leadership positions for several academic journals and conferences. I am the co-chair of the Steering Committee for the ACM Network and System Support for Digital Audio and Video (NOSSDAV) workshop and on the Steering Committees for the International Conference on Network Protocols (ICNP), ACM Sigcomm Workshop on Challenged Networks (CHANTS), and IEEE Global Internet (GI) Symposium. I

have served or am serving on the Editorial Boards of IEEE/ACM Transactions on Networking, IEEE Transactions on Mobile Computing, IEEE Network, ACM Computers in Entertainment, AACE Journal of Interactive Learning Research (JILR), and ACM Computer Communications Review. I have co-chaired a number of conferences and workshops including the IEEE International Conference on Network Protocols (ICNP), IEEE Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON), International Conference on Communication Systems and Networks (COMSNETS), IFIP/IEEE International Conference on Management of Multimedia Networks and Services (MMNS), the International Workshop On Wireless Network Measurement (WiNMee), ACM Sigcomm Workshop on Challenged Networks (CHANTS), the Network Group Communication (NGC) workshop, and the Global Internet Symposium, and I have served on the program committees for numerous conferences.

15. Furthermore, in the courses I taught at UCSB, a significant portion of my curriculum covered aspects of the Internet and network communication including the physical and data link layers of the Open System Interconnect (OSI) protocol stack, and standardized protocols for communicating across a variety of physical media such as cable systems, telephone lines, wireless, and high-speed Local Area Networks (LANs). The courses I have taught also cover most major topics in Internet communication, including data communication, multimedia

encoding, and mobile application design. My research and courses have covered a range of physical infrastructures for delivering content over networks, including cable, Integrated Services Digital Network (ISDN), Ethernet, Asynchronous Transfer Mode (ATM), fiber, and Digital Subscriber Line (DSL). For a complete list of courses I have taught, see my curriculum vitae (EX1021).

16. In addition, I co-founded a technology company called Santa Barbara Labs that was working under a sub-contract from the U.S. Air Force to develop very accurate emulation systems for the military's next generation internetwork. Santa Barbara Labs' focus was in developing an emulation platform to test the performance characteristics of the network architecture in the variety of environments in which it was expected to operate, and, in particular, for network services including IPv6, multicast, Quality of Service (QoS), satellite-based communication, and security. Applications for this emulation program included communication of a variety of multimedia-based services, including video conferencing and video-on-demand.

17. In addition to having co-founded a technology company myself, I have worked for, consulted with, and collaborated with companies for nearly 30 years. These companies range from well-established companies to start-ups and include IBM, Hitachi Telecom, Turner Broadcasting System (TBS), Bell South, Digital Fountain, RealNetworks, Intel Research, Cisco Systems, and Lockheed Martin.

18. Additional details about my employment history, fields of expertise, and publications are further included in my CV (EX1021).

3. Other Relevant Qualifications

19. I am a Member of the Association of Computing Machinery (ACM) and a Fellow of the Institute of Electrical and Electronics Engineers (IEEE).

20. As an important component of my research program, I have been involved in the development of academic research into available technology in the market place. One aspect of this work is my involvement in the Internet Engineering Task Force (IETF). The IETF is a large and open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet. I have been involved in various IETF groups including many content delivery-related working groups like the Audio Video Transport (AVT) group, the MBone Deployment (MBONED) group, Source Specific Multicast (SSM) group, the Inter-Domain Multicast Routing (IDMR) group, the Reliable Multicast Transport (RMT) group, the Protocol Independent Multicast (PIM) group, etc. I have also served as a member of the Multicast Directorate (MADDOGS), which oversaw the standardization of all things related to multicast in the IETF. Finally, I was the Chair of the Internet2 Multicast Working Group for seven years.

21. I am an author or co-author of approximately 200 technical papers, published software systems, IETF Internet Drafts and IETF Request for Comments (RFCs). A complete list of my publications is in my CV (EX1021).

22. I have been awarded numerous teaching awards, including Computer Science Outstanding Faculty Member (1997-98, 1998-99, 1999-2000, 2004-06, UCSB Spotlight on Excellence Award (2000-01), and UCSB Academic Senate Distinguished Teaching Award (2006-07).

B. Previous Expert Witness Testimony

23. The list of recent matters in which I have testified can be found in EX1020.

C. Preparation for this Declaration

24. In forming my opinions, I have considered the '261 patent specification, including the Abstract, the figures, and the claim language itself, as would have been understood by a person having ordinary skill in the art. I have also reviewed the file history of the '261 patent, the Exhibits that are listed in the list of Exhibits within the Petition, and any other material cited in this declaration.

25. In forming my opinions, I have relied on my personal knowledge and professional experience, and on the documents and information referenced in this declaration.

26. This declaration explains, based on facts and information available to me to date, the subject matter and opinions related to this Proceeding. As such, I am prepared to provide expert testimony regarding opinions formed resulting from my analysis of the issues considered in this declaration if asked about those issues by the Board or by the private parties' attorneys.

27. Additionally, I may discuss my own work, teachings, and knowledge of the state of the art in the relevant time period. I may rely on handbooks, textbooks, technical literature, and the like to demonstrate the state of the art in the relevant period and the evolution of relevant technologies.

28. Throughout this declaration, I refer to specific pages of the '261 patent and other documents. The citations are intended to be exemplary and are not intended to convey that the citations are the only source of evidence to support the propositions for which they are cited.

29. I am being compensated for my time spent on this matter at a rate of \$850 per hour, and my compensation is in no way contingent upon the outcome of this matter or on the opinions I offer. All of the opinions expressed in this declaration are my own.

II. LEGAL UNDERSTANDINGS

30. In this section, I describe my understanding of certain legal standards that I have relied upon in forming my opinions set forth in this declaration. I have

been informed of these legal standards by Petitioner's attorneys. I am not an attorney and I have not thoroughly researched the law on patent invalidity. I am relying only on instructions from Petitioner's attorneys for these legal standards.

A. Claim Construction

31. I have been instructed by counsel that claim construction is a matter of law for the arbiter of law to decide. I understand that in an *inter partes* review, claims are construed using the same claim construction standard that would be used to construe the claim in a civil action.

32. I understand that a patent may include two types of claims, independent claims and dependent claims. An independent claim stands alone and includes only the limitations it recites. A dependent claim can depend on an independent claim or another dependent claim. I understand that a dependent claim includes all the limitations that it recites in addition to the limitations recited in the claim from which it depends.

B. Anticipation

33. I understand that a patent claim is anticipated when a single piece of prior art describes every element of the claimed invention, either expressly or inherently, arranged in the same way as in the claim. For inherent anticipation to be found, it is required that the missing descriptive material is necessarily present in the prior art. I understand that, for the purpose of an *inter partes* review, prior art that

anticipates a claim can include both patents and printed publications from anywhere in the world.

C. Obviousness

34. I understand that a patent claim is unpatentable and invalid if the subject matter of the claim as a whole would have been obvious to a person of ordinary skill in the art of the claimed subject matter as of the time of the invention at issue. I understand that the following factors must be evaluated to determine whether the claimed subject matter is obvious: (1) the scope and content of the prior art; (2) the difference or differences, if any, between each claim of the patent and the prior art; and (3) the level of ordinary skill in the art at the time the patent was filed. Unlike anticipation, which allows consideration of only one item of prior art, I understand that obviousness may be shown by considering more than one item of prior art. Moreover, I have been informed and I understand that the so-called objective indicia of non-obviousness, also known as “secondary considerations,” like the following are also to be considered when assessing obviousness: (1) commercial success; (2) long-felt but unresolved needs; (3) copying of the invention by others in the field; (4) initial expressions of disbelief by experts in the field; (5) failure of others to solve the problem that the inventor solved; and (6) unexpected results. I also understand that evidence of objective indicia of non-obviousness must be commensurate in scope with the claimed subject matter.

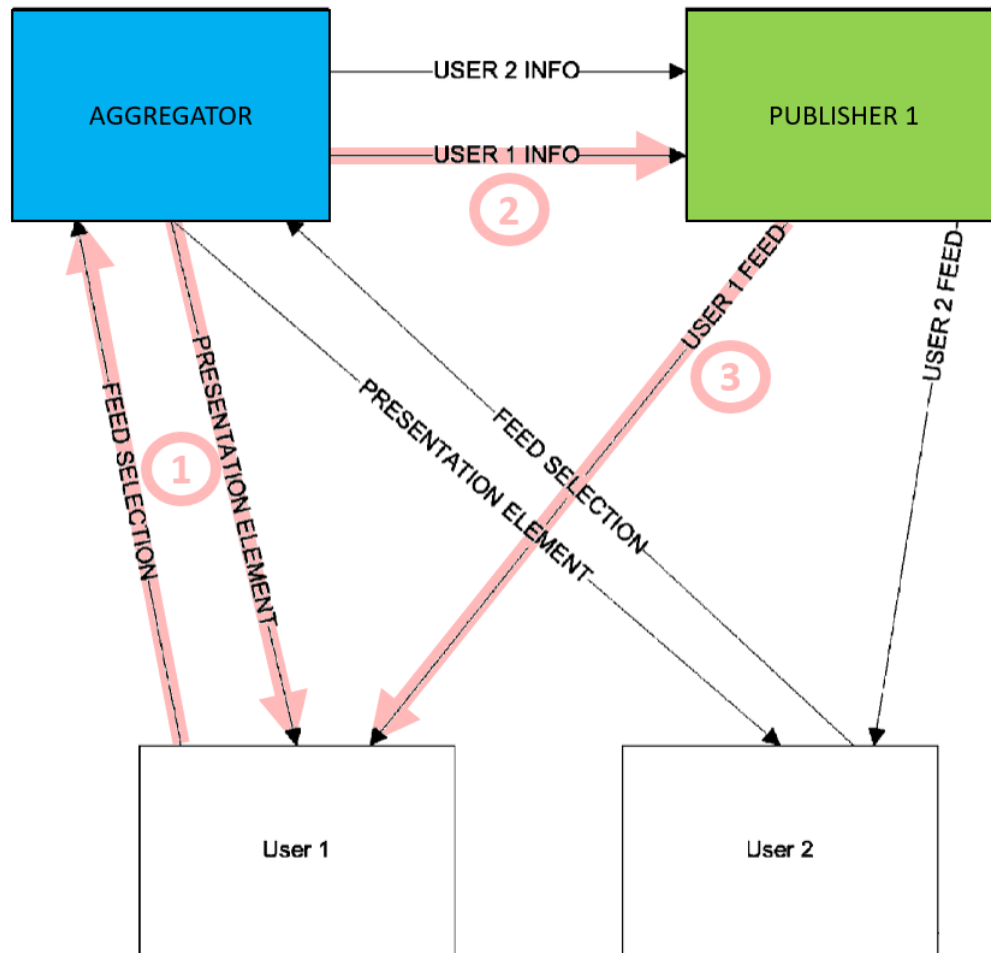
III. The '261 Patent

A. Specification

35. The '261 patent is a pre-AIA patent that claims priority to June 13, 2007 based on the filing of U.S. Provisional Patent Application No. 60/934,456 (“the '456 provisional”). It is titled “Method and system for providing media programming” and lists a sole named inventor, Dwight Marcus. The '261 patent was filed as U.S. Patent Application No. 14/497,728 (“the '728 application”) on September 26, 2014 and issued on December 15, 2015.

36. The '261 patent specification relies on long-existing technologies, such as “the Internet,” “TCP/IP protocol,” and “MPEG-3 format for video.” EX1001 at 4:4-5, 14:15-25. In addition, like the Marcus '904 publication before it, the '261 patent specification relies on the Marcus '156 patent for all selecting, ordering, and assembling of media programming. EX1001 at 1:18-23, 5:40-47, 9:18-28, 9:43-47, 10:12-14.

37. The '261 patent issued with independent claim 1, and dependent claims 2-10. Claims 1-10 are directed to the concept of generating custom media programming using an “*aggregator*” and a “*publisher*.” These components are shown in the '261 patent’s Figure 1:



38. Claims 1-10 recite three basic steps. **Step 1:** The *aggregator* provides a user interface presenting available media feeds and receives a user selection of one of those media feeds. **Step 2:** The *aggregator* then provides the user selection and user information to the *publisher*. **Step 3:** The *publisher* generates custom media programming comprising the selected media feed and advertising or other media elements and provides the custom media programming to the user.

B. Provisional Application (EX1009)

39. PO filed the provisional application to which the '261 patent claims priority (U.S. Prov. Appl. No. 60/934,456) on June 13, 2007. The “Detailed Description” in this provisional application consisted of less than 40 paragraphs and a single figure, which eventually became Figure 1 of the '261 patent.

C. Prosecution History (EX1018)

40. PO filed the non-provisional application for the '261 patent on September 26, 2014. The Examiner allowed the new claims of the '261 patent application in the first action. EX1018 at 71-79.

D. Prosecution Histories of Other Family Members

1. Prosecution History of Grand-Parent '704 Patent (EX1016)

41. PO filed the non-provisional application for the '704 patent on June 13, 2008. The Examiner rejected the pending claims of the '704 patent application twice as anticipated or obvious. The Examiner issued a first non-final office action on February 2, 2010 rejecting all the pending claims in light of U.S. Pub. 2006/0167860 Eliashberg et al (“Eliashberg “). EX1016 at 65-72. On August 4, 2010 the applicant submitted remarks in an amendment that Eliashberg “lacks the concatenation of elements of a publisher initiated feed.” EX1016 at 80-92. On October 4, 2010 the Examiner issued a Final Rejection which included new grounds for rejection of the pending claims as obvious under Eliashberg in light of U.S. Pat. No. 7,617,190 (“Wright”). EX1016 at 98-107. On November 4, 2011 the applicant amended the

claims to, among other changes, specify a temporal sequence of media programming, and argued that Eliashberg and Wright did not disclose “a temporal sequence of media programming.”

19. (CURRENTLY AMENDED) A method for aggregating media programming, comprising:

- presenting to a user a list of media streams feeds;
- receiving an input signal having data indicative of a selection of one of the media streams feeds from the list;
- providing an output signal having data indicative of the selection;
- receiving, responsive to the output signal, at least the selected media stream a first feed; and
- responsive to the data indicative of the selection based on the first feed and user information, and using at least one algorithm for selection and sequencing of media elements, selecting a temporal sequence of media programming comprising the selected media stream and other media elements, and providing media programming a modified feed to the user, the media programming modified feed comprising the other media elements selected and concatenated in accordance with the temporal sequence with the selected media stream first feed based on the user information.

42. The applicant then argued the prior art lacks “a temporal sequence for generating media programming from a media stream and other media elements of a plurality of media streams.” EX1016 at 131. The Applicant argued the prior art was limited to disclosing a “feed in the form or, for example, a list of RSS headlines.” EX1018 at 131. After that, the Examiner allowed the claims. EX1016 at 140-147.

2. Prosecution History of Parent '753 Patent (EX1017)

43. The Examiner rejected the pending claims of the '753 patent application twice as anticipated or obvious. EX1017 at 62-65, 88-93. After the first rejection, applicant made the following arguments:

“Client information” relates to information about a client device and user information relates to information about one or more users. A given user may use different clients and a given client may have different users. According to the specification, client information can include user selections and user information. See, Specification, ¶ [0004]. Client and user information can be independent of each other, such as information that identifies a particular client or user. Client and user information can become dependent, or user information may coincide with client information, at least temporarily, for example when a user is associated with or is using a client.

The Applicant respectfully disagrees with the Examiner. Original claim 1 specified that the media elements, among other things, are “concatenated” according to user information. The ordinary meaning of “concatenate” is this: “to link together, to unite in a successive series or chain, as things depending on each other.” See, Webster’s New Twentieth Century Dictionary (Unabridged), 2d Ed., William Collins + World Publishing Co., Inc. (1977), p. 735 (copy attached). According to the Specification, the invention provides “a concatenated *sequence* of media elements, in which the *order* and selection of media elements is determined by algorithms [and] the algorithms may include as variables the user information.” Specification, at ¶ [0017]. As claimed, the “concatenated” media elements are not just selected, they are ordered in a coherent sequence, in relation to and depending upon each other, and upon user information.

According to applicant, the cited art failed to disclose “‘concatenated’ media elements [that] are not just selected, they are ordered in a coherent sequence, in relation to and dependent upon each other, and upon user information.” EX1017 at 76.

44. After the second rejection, applicant amended then claims and then repeated the argument that the cited art does not disclose “providing to the client

individual customized media programming based on a publisher-initiated feed responsive to the feed selection and including media elements selected ordered, and concatenated with the feed that are responsive at least in part to the user information.” EX1017 at 127-132. In response, the Examiner allowed the claims. EX1017 at 182-189.

3. Prosecution History of Child '947 Patent (EX1019)

45. The Examiner rejected the pending claims of the '947 patent application twice as anticipated or obvious. EX1019 at 86-89, 125-129. Eventually, applicant substantially amended the claims. EX1019 at 141. Applicant made the following argument:

This allows the publisher to customize additional elements in the media programming on a user by user basis. The publisher can receive information about a user's graphic location and provide an element (e.g. a sidebar) based on that location (e.g. an ad for a local restaurant). The system continually updates the element based on updated information. This also allows initial content streams to be progressively personalized and each user can receive a personalized 'page' created on the fly in real time for that user. Garcia-Martin is silent on this point and does not teach or suggest all of the elements of claim 1. Claim 2 depends from claim 1 and is allowable based on the above arguments. Applicant respectfully requests that the rejection be withdrawn.
--

EX1019 at 139.

46. The Examiner allowed the claims. EX1019 at 152-157.

E. Level of Ordinary Skill in the Art

47. I understand that a person of ordinary skill in the art (“POSITA”) is a hypothetical person who is presumed to be aware of all pertinent art, thinks along

conventional wisdom in the art, and is a person of ordinary creativity—not an automaton. In deciding the level of ordinary skill, I understand that the following factors may be considered:

- The levels of education and experience of persons working in the field;
- The types of problems encountered in the field; and
- The sophistication of the technology.

48. I understand that the asserted claims of the asserted patents must be evaluated from the perspective of a POSITA. In my opinion, the relevant art for this patent relates to delivery of video content over a computer network. I understand that the relevant point in time for determining the qualifications of a person of ordinary skill in the state-of-the-art is the time of the alleged invention, which I assume to be the earliest filing date for the patent. Here, I understand that the earliest alleged priority date is June 13, 2007.

49. In my opinion, a POSITA at the time of the alleged invention would have had at least a Bachelor of Science in electrical engineering, computer engineering, or similar fields and at least two years of practical experience in the field of media processing and/or transmission. More education can supplement for less practical experience, and vice versa.

50. This level of skill is approximate, and more experience would compensate for less formal education, and vice versa. I meet these criteria now and

met them at the time of the alleged invention. I have applied this level of skill in my analysis. My opinions would not change if a slightly higher or lower level of ordinary skill applied.

F. Claim Construction

51. I have been instructed by Petitioner to perform my technical analysis of the disclosures of the prior art by applying the plain and ordinary meaning of all claim terms. I have not been asked to opine on the correctness of any claim constructions.

52. I reserve the right to provide additional opinions concerning claim construction or the application of certain claim constructions to the prior art, as appropriate, and to respond to any particular claim construction-related argument advanced by PO and/or its expert.

53. As described in more detail in the remainder of this declaration, the prior art discloses or renders obvious the challenged claims under any reasonable potential claim interpretation.

G. Challenged Claims

54. I understand that claims 1-10 are at issue in Petitioner's petition for *inter partes* review. They are reproduced below for reference.

Claim	Limitation
1[pre]	1. A method of generating customized media programming, comprising the steps of

Claim	Limitation
1[a]	delivering by an aggregator, to a client device associated with a user, a selectable menu of media feeds available from at least one publisher,
1[b]	wherein each said media feed comprises a plurality of media elements selected from audio media elements, visual media elements, and combinations thereof, and each said media element is tagged in at least one library in communication with at least one publisher;
1[c]	receiving by the aggregator from the client device a selection identifying at least one of said media feeds;
1[d]	providing by the aggregator, to said publisher, an identification of each selected media feed;
1[e]	providing by the aggregator, to said publisher, client information comprising information about the user and information about the associated client device; and
1[f]	initiating, by the aggregator, for display at the client device, individual customized media programming comprising media elements selected from one or more libraries in communication with said publisher, wherein the selected media elements (i) correspond to at least one selected media feed and are responsive to said user information, and (ii) are ordered and concatenated at least in part according to each selected media feed and said user information.
2	The method according to claim 1, further comprising the steps of collecting by the aggregator, from the client device, user information comprising information about an identified user, and selecting media elements comprising said individual customized media programming according to parameters and instructions for assembling media programming based on the collected user information.
3	The method according to claim 2, wherein the parameters and instructions are embodied in one or more templates, each template comprises a plurality of rules associated with said tags of said tagged media elements, and each template is associated with a selected library or a selected media feed.

Claim	Limitation
4	The method according to claim 3, wherein the template is processed according to at least one rule for selection and sequencing of tagged media elements according to collected user information.
5	The method according to claim 1, wherein a first media feed responsive to the selection of one of the media feeds is furnished during a first time period and a second media feed comprising the individual customized media programming is furnished during a second time period.
6	The method according to claim 1, wherein the user information comprises a user profile.
7	The method according to claim 1, wherein the user information comprises user preference data.
8	The method according to claim 1, wherein the media programming comprises multiple streams of media elements.
9	The method according to claim 8, wherein at least a portion of the multiple streams are concatenated according to user information.
10	The method according to claim 1, wherein the media elements comprise transitions, and the media elements are dynamically positioned, temporally or spatially, within the context of the media programming.

IV. The Prior Art

55. All of the underlying technologies of the '261 patent claims were well-known to a POSITA. I briefly describe here some of the relevant technologies.

A. State of the Art

56. Since the early days of radio and television broadcasting, media providers have sought to understand their audience and cater to their preferences. By

the 1970s, television programming became further customizable via the advent of local programming insertion. Cable providers would dedicate slots within their national programming for local affiliates to insert their own programming on a market-by-market level.

57. Programming became customizable on an individual subscriber level in the early 1990s with the introduction of electronic program guides (EPGs). With EPGs, a user was able to browse a menu of available television programming and tune to a particular program by selecting its program listing. In addition, EPGs could automatically tune to channels based on user profile data, thereby creating custom media programming. For example, U.S. Pat. No. 6,177,931 (filed in 1998, issued Jan. 23, 2001, § 102(b) art) describes an EPG that monitors user interactions to generate viewer profile information, and then uses that information to automatically tune to a particular advertising channel during a commercial break. EX1006 at 28:11-35:36. As another example, U.S. Pat. No. 8,813,122 (filed in 1999, published July 6, 2000, § 102(b) art) describes generating a “virtual channel” of programming specifically selected based on the user’s profile and then automatically tuning to programming according to a defined schedule. EX1022 at 5-6.

58. The next step in the evolution of custom media programming was brought by advances in computer technology. By the early 1990s, most components of the modern Internet were in place—including web servers that support HTTP over

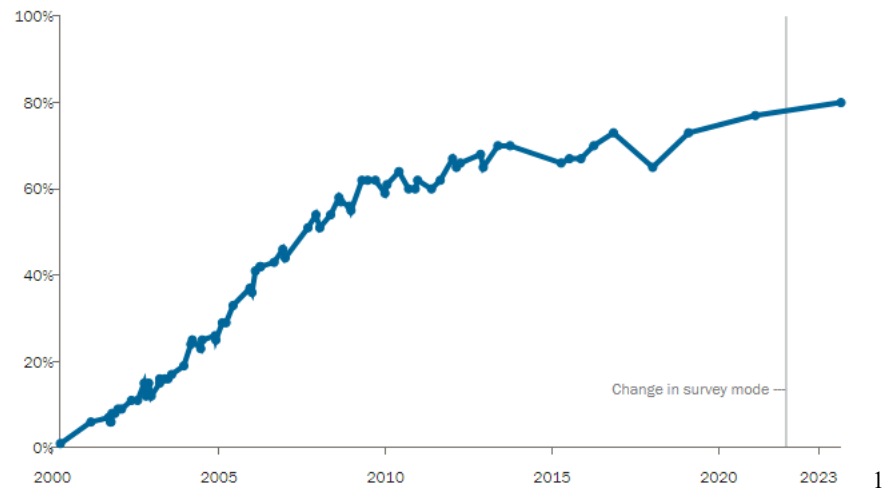
TCP/IP traffic—and codecs for transmitting video over computer networks (such as MPEG) had also been standardized. Importantly, unlike broadcast technology, TCP/IP permits a web server to receive a request from a specific user and respond to that user's request with individualized custom media programming.

59. One limiting factor was that most households in the 1990s did not have sufficient Internet speeds to support video streaming. Standard definition video requires about 0.5 – 1.5 Mbps. In the 1990s, only 56 kbps dial-up was available to most U.S. households with Internet access. This changed with the introduction of broadband Internet connections. In 2000, only 1% of U.S. households had broadband Internet subscriptions. By 2007, that had grown to about 50%.

IPR of USP 9,215,261
Decl. of Dr. Kevin Almeroth

Home broadband use

% of U.S. adults who say they subscribe to home broadband



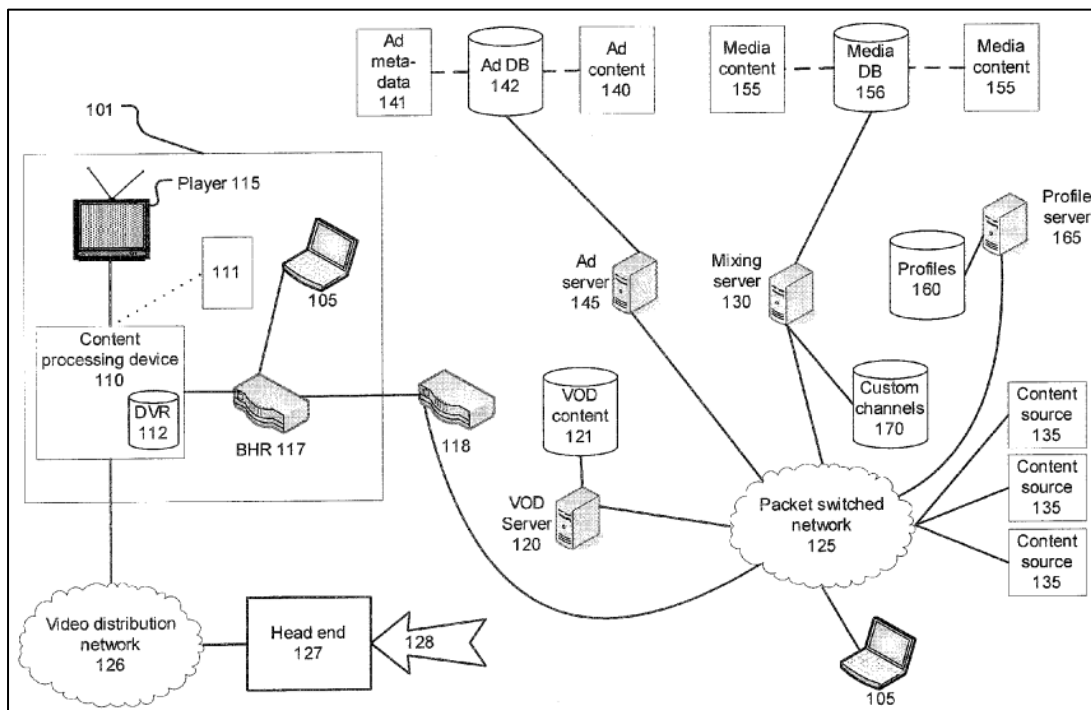
60. This rendered transmitting video programming over the Internet commercially desirable, leading to a rapid rise in Internet-based media companies. For example, YouTube was founded in 2005, Amazon Prime debuted in 2006, and Netflix launched its streaming service in January 2007.

¹ See <https://www.pewresearch.org/internet/fact-sheet/internet-broadband/#who-has-home-broadband> (interactive graph); *see also* EX1022 at 4. Pew Research Center is a nonpartisan think tank based in Washington D.C. Moreover, based on my experience in the industry, I can independently confirm there was a dramatic rise in broadband availability from 2000 to 2007.

B. Whitehead (EX1003)

61. In 2005-2006, Verizon was expanding its fiber-based broadband Internet and video services, allowing its customers to stream videos at speeds of up to 30 Mbps. EX1015. As part of this effort, Verizon also introduced its “FiOS TV service.” EX1015. Verizon filed the application for Whitehead, which related to Verizon’s broadband expansion, on Dec. 6, 2006. Whitehead issued as U.S. Pat. No. 8,555,318 on October 8, 2013 and is prior art under 35 U.S.C. § 102(e).

62. Whitehead describes “creat[ing] a custom media channel based on [a user] profile” and “provid[ing] the custom media channel upon a request from a user, wherein the custom media channel includes more than one item of multimedia content.” EX1003 at Abstract. Whitehead’s system is shown in its Figure 1:

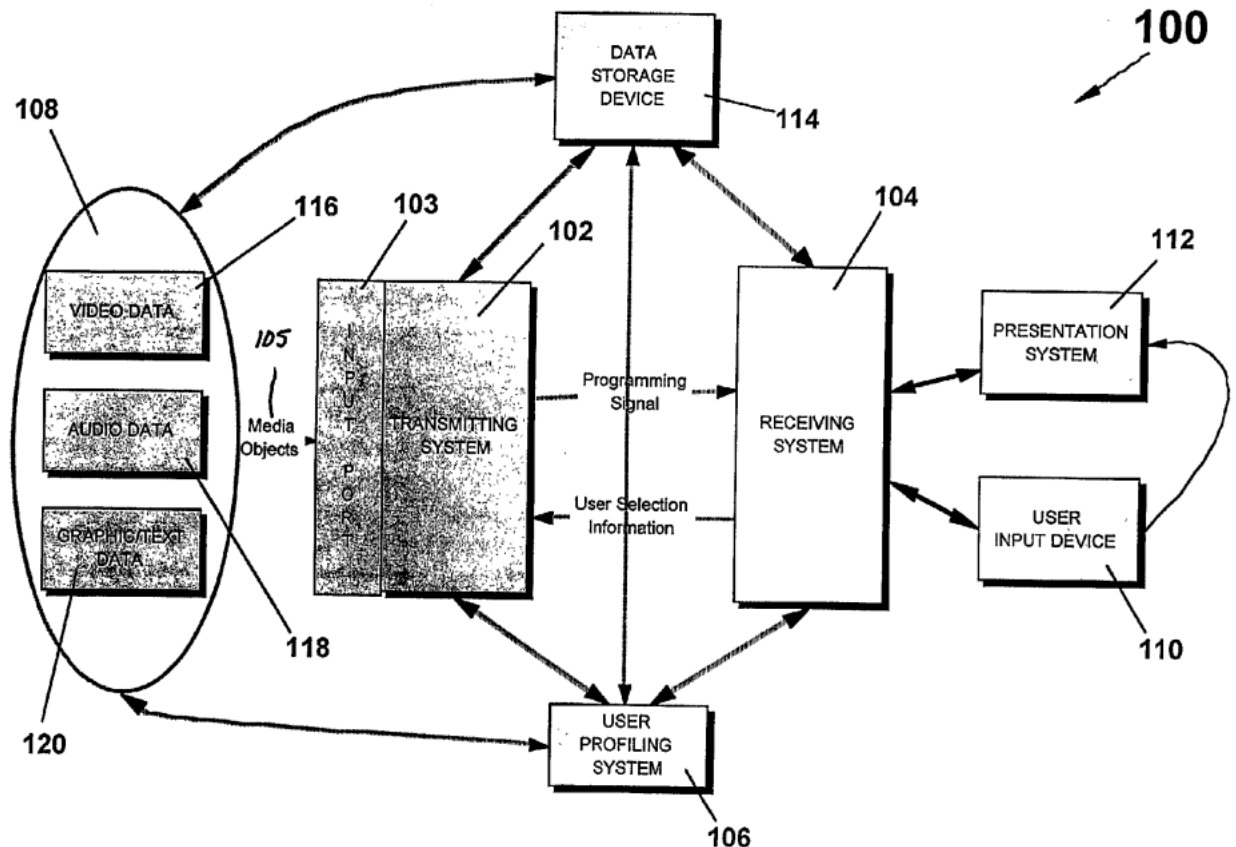


63. A mixing server 130 creates custom media channel 170 based on a profile 160 for that channel and metadata about multimedia content available from different content sources 135. The mixing server 130 also includes advertisements 140 in custom media channel 170. The custom media channel 170 is then transmitted to content processing device 110 for playback on player 115.

C. Cristofalo (EX1004)

64. ACTV developed technology for targeting advertisements to specific users by “trigger[ing] a set-top box to switch to the appropriate commercial.” EX1010. This functionality was deployed in early 2001 in partnership with AT&T. EX1010. ACTV also filed an application on this technology on April 12, 2001, which was published as U.S. Pat. Apl. Pub. No. 2002/0152117 (“Cristofalo”) on October 17, 2002. Cristofalo is prior art under 35 U.S.C. §102(b).

65. Cristofalo describes “[a] system and process for targeting programming (including, but not limited to, advertising) to users by utilizing media objects to provide specific content to a user, or groups of users, based upon profiling information.” EX1004 at Abstract. Cristofalo’s system is shown in its Figure 1:



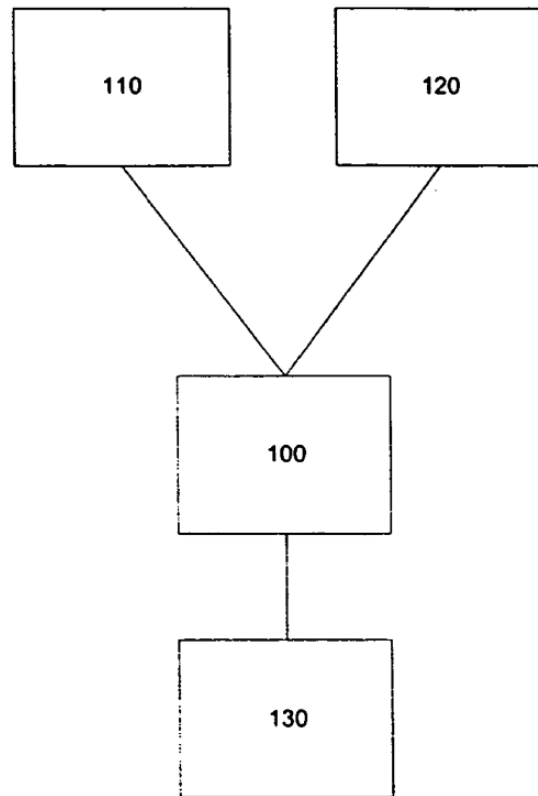
66. Cristofalo teaches that media objects can be targeted to specific users at transmitting system 102, receiving system 104, or a combination of the two. EX1004 ¶ 49. For example, transmitting system 102 may modify a commercial for specific markets or groups of users. EX1004 ¶¶ 35, 47. Or, receiving system 104 may receive multiple, multiplexed media objects and select the appropriate media object for inclusion in the programming. EX1004 ¶ 36.

D. Marcus '904 (EX1005)

67. Marcus '904 was published on January 19, 2006. Marcus '904 is prior art under 35 U.S.C. §102(b). Marcus '904 has the same named inventor and assignee as the challenged '261 patent.

68. Marcus '904 describes a custom program assembled from content obtained from “a first media source 110 and a second media source 120.” EX1005 ¶

31. Marcus '904's system is shown in its Figure 1:



E. Marcus '156 (EX1008)

69. U.S. Pat. No. 6,032,156 (“Marcus '156”) is incorporated by reference in both Marcus '904 and the '261 patent. Marcus '156 was issued on February 29, 2000.

70. Marcus '156 describes delivering a custom media program to a user. EX1008 at Abstract. The system selects “[m]edia elements” in response to a user request for media programming, and those elements are then assembled into a

temporal sequence. EX1008 at Abstract. Marcus '156 relies on “tags” to implement this process, including “content tags” containing “information identifying the content of the clip” and “control tags” defining how clips are assembled. EX1008 at 3:2-13, 5:3-39. These tags are used in conjunction with a database of “viewer information” to select clips for the media programming and create “customized programming.” EX1008 at 10:9-20. This “customized programming” is then delivered to the user over the Internet as a “concatenated stream.” EX1008 at 3:44-46, 11:1-10.

V. Grounds

A. Ground 1: Whitehead

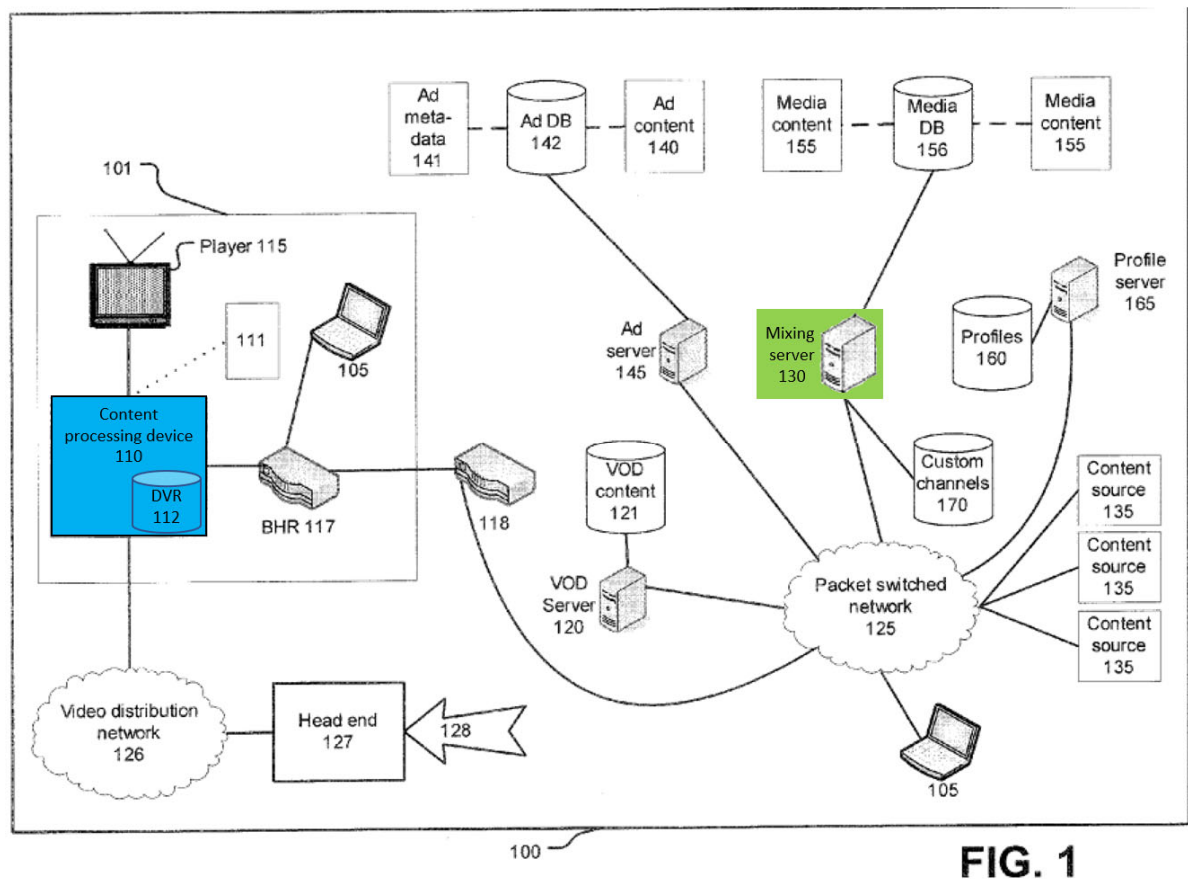
1. Claim 1

(a) *1[pre]: A method of generating customized media programming, comprising the steps of:*

71. In my opinion, Whitehead discloses this preamble. Whitehead discloses system 100 for “receiving a video signal from a network and providing programming such as video to media player 115.” EX1003 at 2:4-16.

(b) 1[a]: *delivering by an aggregator, to a client device associated with a user, a selectable menu of media feeds available from at least one publisher*

72. In my opinion, Whitehead discloses this element. Whitehead discloses **content processing device 110**, which is the claimed “*aggregator*,” and **mixing server 130**, which is the claimed “*publisher*.”²



² References to the '261 patent claim language are bold and italicized. Emphasis is bolded but not italicized. Emphasis is added unless otherwise indicated.

73. I note that the '261 patent specification describes an “*aggregator*” as “provid[ing] a presentation element to user 1 120 and 2 130” for content from different media feeds. EX1001 2:44-47, 3:6-18. The term “presentation element” is a reference to a user interface. I further note that Whitehead also discloses that its **content processing device 110** presents a selectable menu of media feeds available from different sources. For example, Whitehead discloses that its **content processing device 110** “performs operations relating to generating a user interface, e.g., that is displayed in media player 115.” EX1003 at 2:60-3:7; *see also* EX1003 at 15:16-22. Whitehead discloses an exemplary process 500, including the step 510 of “provid[ing] a menu of custom channel options to be displayed to the user,” “is generally performed by a playback application that may be executed within ... **content processing device 110**.” EX1003 at 15:16-22. Whitehead further discloses that “an interactive program guide (IPG) or the like including video on demand options” is also accessible to the **content processing device 110**. *Id.* 4:45-52. Whitehead also states that the exemplary step 510 of providing a menu to be displayed to the user “may indicate a plurality of custom media channels 170 that are available for playing, e.g., according to titles or other descriptions, categories of information, particular sources of media content 155, specified keywords, etc.” *Id.* 18:47-62. A user may then “browse a menu of video-on-demand-options displayed on media player 115.” *Id.* 3:59-4:9, 6:47-7:2. For example, the user may use **content**

processing device 110 to “select a channel ... associated with a custom media channel 170.” *Id.* 15:23-41. The **content processing device 110** may also be used to “navigate an interactive program guide to access an area of the program guide’s menu structure dedicated to custom media channels.” *Id.* Whitehead teaches that a collection of these custom media channels 170 covers multiple different content sources 135, because each of these custom media channels generated based on a profile 160 includes content from one or more different content sources 135. *Id.* 3:14-28, 5:56-6:9, 7:3-18. For example, Whitehead discloses that “[m]edia content 155 is provided by content sources 135” and that “[c]ontent sources 135 may include a wide variety of sources of multimedia content 155.” *Id.* 5:9-23. Whitehead also discloses that the purpose of a profile 160, based on which the custom media channels are generated, is “to provide criteria for selecting media content 155 to be included in a given custom media channel 170 for a user” *Id.* 5:56-6:9. The profile 160 “may include ... the identity of one or more content sources 135 of interest.” *Id.* 7:3-18.

74. I also note that the ’261 patent describes the claimed “***publisher***” as a “source[] of media content.” EX1001 at 6:9-21. The same is true for Whitehead’s **mixing server 130**: “A basic purpose of [Whitehead’s] **mixing server 130** is to assemble and deliver to **content processing device 110** one or more custom media channels.” EX1003 4:10-26. In addition, Whitehead’s **mixing server 130** may be

“combined” with VOD server 120. EX1003 4:10-26. Thus, Whitehead’s **mixing server 130** is a source of media content (custom media channels 170 and content from VOD server 120) for **content processing device 110** and accordingly the claimed “***publisher.***”

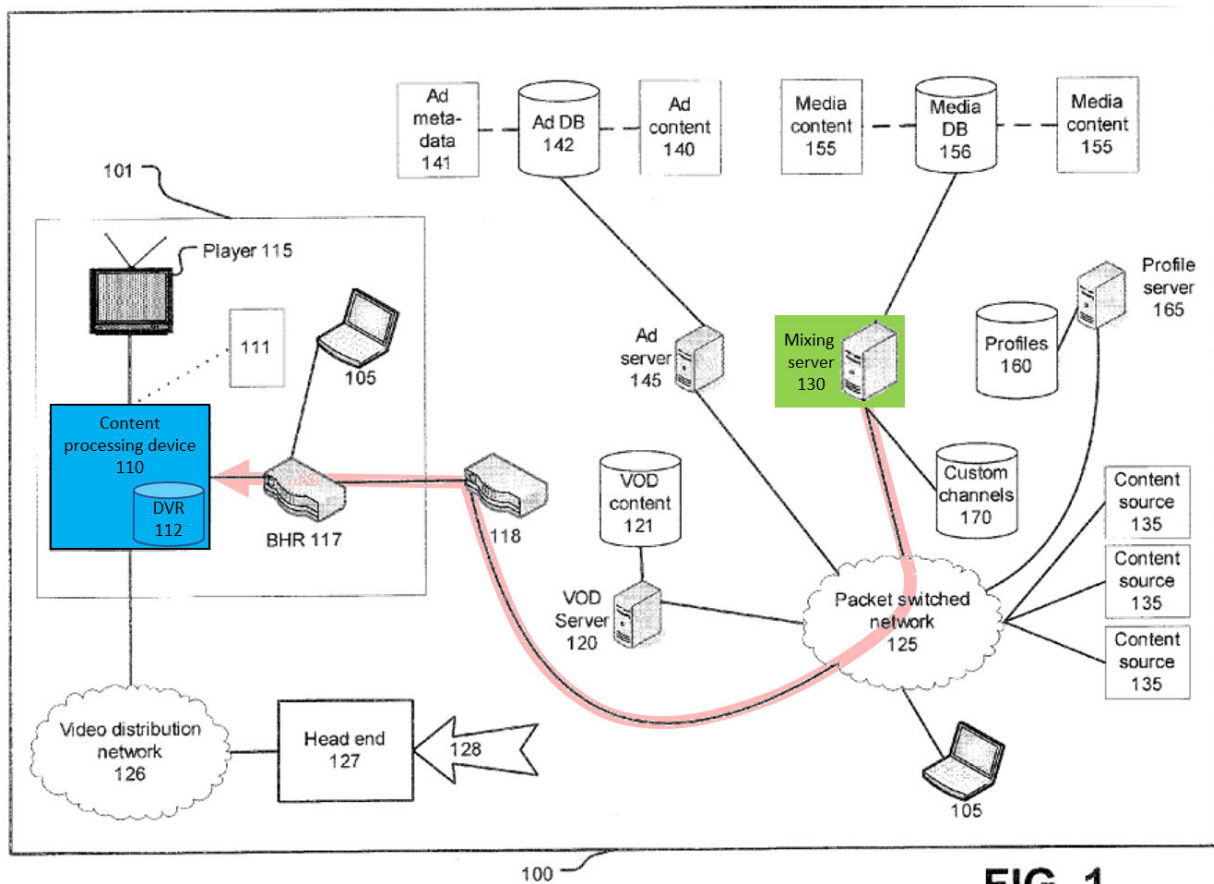
75. I also note that Whitehead also discloses a media player 115 that is either a stand-alone device or software running on computer 105 (“***client device***”) and that a user is interfacing with (“***associated with a user***”). EX1003 2:4-16, 2:31-39, 2:52-3:7, 3:59-4:9, 15:16-22.

76. Finally, I note that Whitehead’s **content processing device 110** delivers to media player 115 (“***client device associated with a user***”) for display a “menu” “indicat[ing] a plurality of custom media channels 170” (“***selectable menu of media feeds***”) that are available from **mixing server 130**. EX1003 2:60-3:7, 3:59-4:9, 4:45-52, 6:20-34, 10:46-67, 11:9-16, 11:40-58, 15:16-16:53, 18:47-62. For example, Whitehead discloses that the **mixing server 130** creates “one or more custom media channels 170 based on one or more custom channel profiles 160” and a menu is “displayed in step 510 ... according to titles or other descriptions, categories of information, particular sources of media content 155, specified keywords, etc,” where the exemplary process 500 “is generally performed by a playback application that may be executed within ... **content processing device 110.**” EX1003 at 11:40-58, 15:16-22.

77. In my opinion, Whitehead discloses or renders obvious this limitation under two mappings: the “*media feeds*” are either (1) custom media channels 170 made available to by **mixing server 130** to **content processing device 110** (**Media Feed Mapping 1**); or (2) media content transmitted from content sources 135 to **mixing server 130** (**Media Feed Mapping 2**).

(i) Media Feed Mapping 1: custom media channels 170 are claimed “*media feeds*”

78. Because Whitehead discloses that each custom **media** channel 170, if selected, can be “**streamed** ... to **content processing device 110**” as “a single multimedia file,” its menu of available custom media channels thus is a “*selectable menu of media feeds*.” EX1003 at 8:42-64. In this mapping, the custom media channels 170 themselves are the claimed “*media feeds*.” This mapping can be shown in Fig. 1 below:



(ii) Media Feed Mapping 2: content sources 135 provide claimed “media feeds”

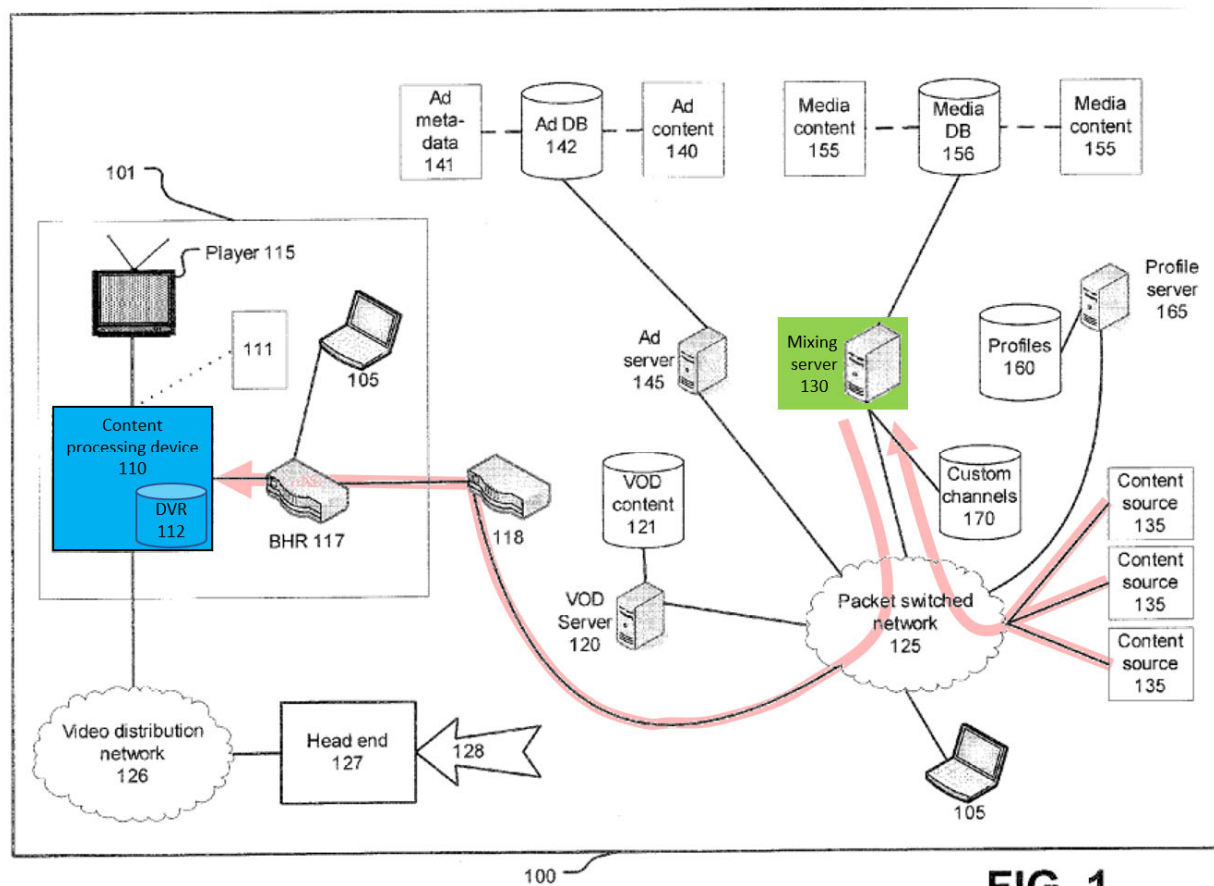


FIG. 1

79. In my opinion, Whitehead’s menu of available custom media channels is a “*selectable menu of media feeds*” because each custom media channel 170 generated by **mixing server 130** corresponds to a “*media feed*” from a different content source 135.

80. Whitehead discloses that **mixing server 130** creates each custom media channel 170 based on a different profile 160, and each profile 160 “identit[ies] ... **one** or more content sources 135 of interest.” EX1003 at 5:56-6:9, 7:3-18. For

example, “the menu displayed in step 510 may indicate a plurality of custom media channels 170 that are available for playing, e.g., according to titles or other descriptions, categories of information, *particular sources of media content 155*, specified keywords, etc.” EX1003 at 18:47-62.

81. A POSITA would therefore have recognized that each of Whitehead’s plurality of custom media channels 170 can correspond to a different content source 135. Specifically, Whitehead discloses that “a particular user may be associated with multiple profiles 160” and “[h]aving multiple profiles 160 would, among other things, allow the user to define multiple custom media channels 170, i.e., one associated with each profile associated with the user.” *Id.* 11:9-16.

82. A POSITA would further have recognized that, in Whitehead’s system, each content source 135 provides a “*media feed*.” For example, Whitehead discloses that “[c]ontent sources 135 may include a wide variety of sources,” including sources that “broadcast” content “on a particular data at a particular time,” *i.e.*, television channels. EX1003 at 5:9-23, 10:46-67. Specifically, Whitehead discloses that its “[m]edia player 115 may be a television receiver” (EX1003 at 2:52-59) and that the content from content sources 135 may include “segment[s] of a popular television show” (EX1003 at 5:24-42). Television channels provide content as continuous streams (“*media feeds*”).

83. Additionally, it is my opinion that, to the extent PO argues that Whitehead's content sources 135 do not provide "*media feeds*," Whitehead nevertheless renders that limitation obvious. Even before the '261 patent's priority date, it was well-known that television channels were a source of media content. In my opinion, a POSITA would have been motivated to use television channels as content sources 135, and in turn for content sources 135 to provide "*media feeds*." For example, because having more sources and variety improves the likelihood of having the best media content in custom media channel 170, it would have been desirable to maximize the number and variety of content sources. Also, because many users would have already been entitled to access television channels via their regular cable subscriptions, and television channels were and are one of the most popular, highest quality, and most abundant sources of media content, users would have expected to have access to such content sources. A POSITA would therefore have been motivated to use television channels as content sources 135 in order to meet customer expectations.

84. In my opinion, there would also have been a reasonable expectation of success of using television channels as content sources 135. I note that Whitehead already discloses that media content 155 "provided by content sources 135" is "stored in a media database 156." EX1003 at 5:9-23. Therefore, **mixing server 130** could have, for subsequent inclusion in a custom media channel 170, stored media

content 155 from television channels in database 156. As an alternative way to generate custom media channel 170, Whitehead's **mixing server 130** could have switched to the appropriate channels in real time as the media content 155 is being broadcast. Before the '261 patent's priority date, there were well-known systems for directly integrating content from television broadcasts into custom programming. For example, Alexander disclosed that real-time advertising customization could be achieved by tuning the television automatically to a particular advertising channel at the time during the telecast of the television program. EX1006 at 32:61-33:8. As another example, Montie disclosed a scheduler module that composed personalized program schedules by selecting from both recorded programs and broadcast streams. EX1007 at 5-6. A POSITA could have enhanced Whitehead's mixing server 130 in a similar fashion, without any hardware changes and with minimal reconfiguration of software.

- (c) *1[b]: wherein each said media feed comprises a plurality of media elements selected from audio media elements, visual media elements, and combinations thereof and each said media element is tagged in at least one library in communication with at least one publisher*

85. In my opinion, Whitehead discloses this element. Whitehead's **mixing server 130** receives multiple media content 155 ("*plurality of media elements*") from each content source 135 ("*media feed*" under **Media Feed Mapping 2**) and then combines advertising content 140 and media content 155 ("*plurality of media*

elements”) to create each custom media channel 170 (“*media feed*” under **Media Feed Mapping 1**). EX1003 4:27-44, 5:9-23, 8:65-9:29, 12:18-37. Whitehead further discloses that its media content 155 and advertising content 140 can be “video,” “audio,” or “multimedia” content (“*audio media elements, visual media elements, and combinations thereof*”). EX1003 4:27-44, 4:53-5:3, 5:9-42, 7:3-18.

86. Whitehead also discloses that the advertising content 140 and media content 155 are associated with advertising metadata 141 in advertising database 142 and content metadata 150 in media database 156 that include “attributes” (“*tagged in at least one library*”), which are in communication with **mixing server 130**, directly or via advertising server 145. EX1003 Fig. 1, 4:27-44, 4:53-5:23, 5:43-6:9, 8:65-9:29, 11:59-12:7, 12:18-13:27, 13:35-46.

(d) *1[c]: receiving by the **aggregator** from the client device a selection identifying at least one of said media feeds*

87. In my opinion, Whitehead discloses this element. Whitehead’s **content processing device 110** receives a user selection of one of these custom media channels 170 (“*receiving by the **aggregator** from the client device a selection identifying at least one of said media feeds*”). For example, I note that Whitehead discloses that “a custom media channel 170 may be created in real-time or near real-time when a user ‘*tunes*’ to the channel 170 or otherwise *selects* the channel 170 for viewing through playback device 115.” EX1003 at 11:40-58. Specifically, “in step 520, the playback application determines whether a request for a custom media

channel 170 has been received,” where the step 520 included in the process 500 “is generally performed by a playback application that may be executed within ... **content processing device 110**.” EX1003 at 15:16-22, 16:45-53. A POSITA would have recognized that the selection here corresponds to both the selection of custom media channel 170 itself (“*media feeds*” under **Media Feed Mapping 1**) and selection of the content source 135 corresponding to that custom media channel 170 (“*media feed*” under **Media Feed Mapping 2**).

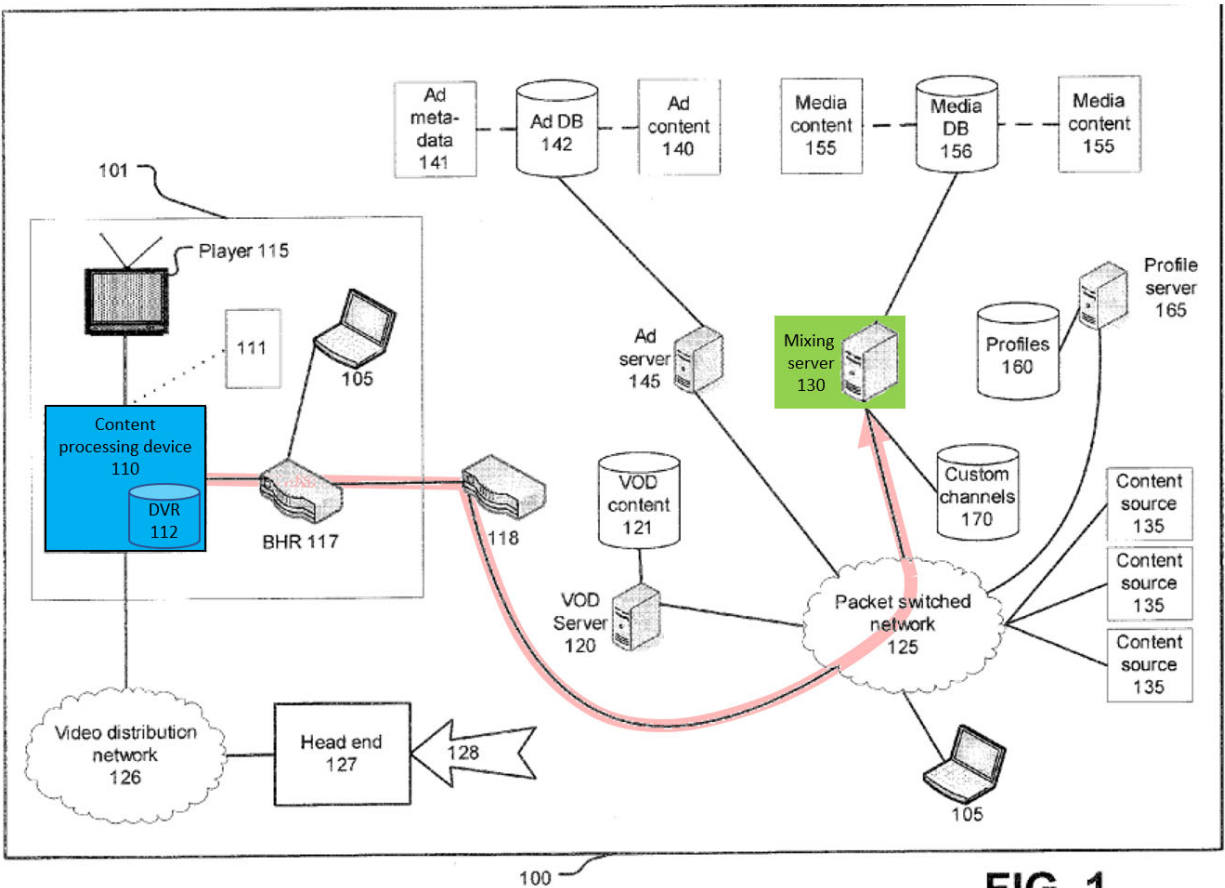
(e) 1[d] *providing by the aggregator, to said publisher, an identification of each selected media feed*

88. In my opinion, Whitehead discloses this element, or, in the alternative, renders it obvious. Whitehead discloses that the **content processing device 110** provides to the **mixing server 130** an identification of the user selection of the media channel 170 (“*feed selection*”).³ Whitehead discloses that “[c]ontent processing device 110 may ... make requests to ... [**mixing server**] **130**, etc. via network 125.” EX1003 3:40-51; *see also* EX1003 9:30-58. This request “trigger[s]” **mixing server 130** “to create one or more custom media channels 170 based on one or more custom

³ This selection corresponds to selection of both the custom media channel 170 itself (“*media feed*” under **Media Feed Mapping 1**) and the content source 135 corresponding to that custom media channel 170 (“*media feed*” under **Media Feed Mapping 2**).

channel profiles 160” in “real-time or near real-time.” EX1003 11:40-12:17. Where the user has multiple custom media channels 170 to choose from (EX1003 11:9-16), this request necessarily identifies the selected custom media channel 170 (“*identification of each selected media feed*”). Otherwise, the **mixing server 130** would not know which custom media channel was selected by the user and thus should be created.

89. In my opinion, to the extent that Whitehead does not disclose that its custom channel request from **content processing device 110** to **mixing server 130** includes data indicative of the selected custom media channel 170 (“*identification of each selected media feed*”) in its request to **mixing server 130**, Whitehead renders this obvious. **Mixing server 130** must know which custom media channel 170 the user selected to create that channel. EX1003 3:40-51, 11:40-58. An obvious implementation is for the **content processing device 110** to include an identifier or other data corresponding to the selected custom media channel 170 (“*identification of each selected media feed*”) in its request. Simply including this identifier in the request (rather than conveying it in some other manner) allows **mixing server 130** to locate the corresponding profile 160 faster and thereby facilitates creating the selected custom media channel 170 in real time or near-real-time. EX1003 11:40-58.



90. Whitehead discloses that “[c]ontent processing device 110 may ... make requests to ... [mixing server] 130, etc. via network 125,” a request that could be sent “for a custom media channel 170.” EX1003 at 3:40-51, 9:30-58. This request “trigger[s]” **mixing server 130** “to create one or more custom media channels 170 based on one or more custom channel profiles 160” in “real-time or near real-time.” EX1003 at 11:40-58. Receipt of this request “may then cause **mixing server 130** to invoke a process for creating or modifying one or more custom media channels 170 based on a profile 160 provided in the message.” In my opinion, this request necessarily identifies the selected custom media channel 170 (“*identification of*

each selected media feed”) where the user has multiple custom media channels 170 to choose from (EX1003 at 11:9-16). This is because, otherwise, the **mixing server 130** would not be able to identify which custom media channel was selected by the user and thus should be created. Accordingly, content processing device 110 necessarily provides data indicative of that custom media channel as part of its request triggering creation of custom media channel 170.

91. Additionally, it is my opinion that, to the extent PO argues Whitehead does not disclose that its custom channel request from **content processing device 110** to **mixing server 130** includes data indicative of the selected custom media channel 170 (“*identification of each selected media feed*”) in its request to **mixing server 130**, Whitehead nevertheless renders the claim limitation obvious. Because Whitehead discloses that **mixing server 130** must know which custom media channel 170 the user selected to create that channel, the **mixing server 130** must know which of the available custom media channels 170 the user selected to create that channel. EX1003 at 3:40-51, 11:40-58. An obvious implementation is for the **content processing device 110** to include in its request an identifier or other data corresponding to the selected custom media channel 170 (“*identification of each selected media feed*”). A POSITA would have been motivated to include the identifier in the request because, compared to conveying it in some other manner, including the identifier allows **mixing server 130** to locate the corresponding profile

160 faster and thus allows it to create the selected custom media channel 170 in real time or near-real-time. EX1003 at 11:40-58.

(f) *1[e] providing by the aggregator, to said publisher, client information comprising information about the user and information about the associated client device*

92. In my opinion, Whitehead discloses this element, or in the alternative, renders it obvious. Whitehead discloses that **content processing device 110** can be “used to create, modify, and/or delete profiles 160,” including provision of “*client information*” in those profiles, such as a “username,” “information concerning topics of interest to the user,” (“*information about the user*”) and “[o]ther information relevant to retrieval and playback of the channel 170” to profile server 165. EX1003 at 5:56-6:9, 6:35-46, 7:3-18, 10:6-32, 15:16-22, 15:65-16:21. For example, in step 570, the playback application which may be executed within **content processing device 110** “causes the appropriate updates to be made to profile 160 and profile server 165.” *Id.* 19:16-38. Profile server 165 then transmits a message containing that profile 160 (“*client information*”) to the **mixing server 130**. EX1003 at 11:40-12:17. Thus, it is my opinion that Whitehead discloses a **content processing device 110**, in connection with creating or modifying a profile 160, providing “*client information*.” It is also my opinion that Whitehead discloses that, when the user selects the corresponding custom media channel 170, the **mixing server 130** receives that same “*client information*.”

93. Whitehead also discloses that profile 160 (“*client information*”) includes “policy control information related to the retrieval and playback of channel 170,” which specifies (for example) whether playback on a client device supports “Realtime Streaming Protocol” (“*information about the associated client device*”). EX1003 5:56-6:9. Whitehead’s profile server 165 then transmits that profile (“*client information*”) to **mixing server 130**. EX1003 11:40-12:17. Thus, Whitehead’s **content processing device 110** transmits “*client information*” in connection with creating or modifying a profile 160, and Whitehead’s **mixing server 130** receives that same “*client information*” when the user selects the corresponding custom media channel 170.

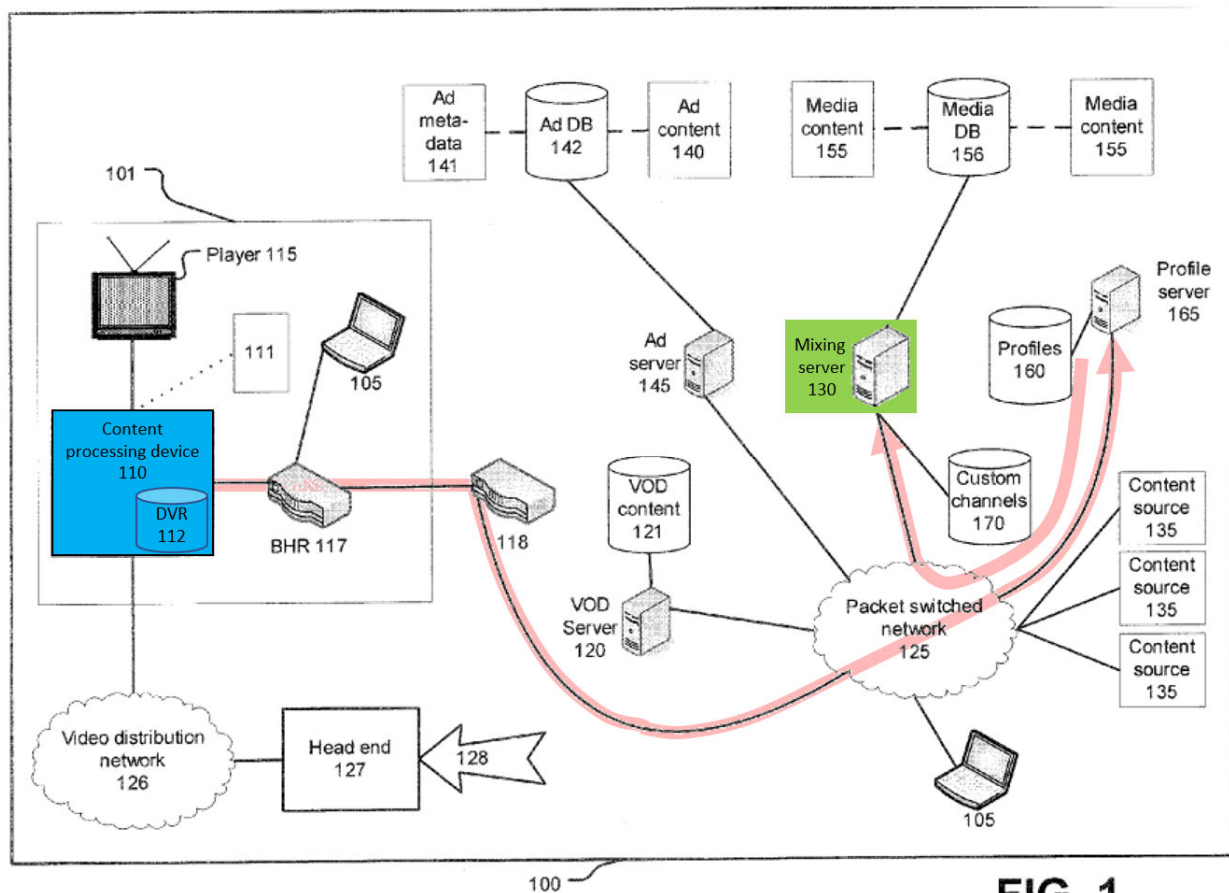


FIG. 1

94. In my opinion, to the extent PO argues that this limitation requires the *publisher* to receive the client information directly from the *aggregator*, it would have been obvious to implement profile server 165 as part of *mixing server 130*, and *mixing server 130* would maintain in profile 160 (“*client information*”) collected from *content processing device 110*. Whitehead already recognizes that various functionalities in Figure 1 can be combined or shifted between system components. EX1003 2:52-59, 4:10-26, 6:35-46, 15:16-22, 19:44-63. Maintaining profiles 160 on *mixing server 130* would simplify processing and communications, since it would eliminate the need for a separate profile server 165 or transmitting

complete profile 160 over the network every time the user requests a custom media channel 170 be generated.

95. In my opinion, to the extent PO argues that Whitehead does not disclose that its profile 160 includes “*information about the associated client device*,” Whitehead renders this limitation obvious. Whitehead discloses that profile 160 includes “policy control information related to the retrieval and playback of channel 170,” which specifies (for example) whether playback on a client device supports “Realtime Streaming Protocol” (“*information about the associated client device*”). EX1003 5:56-6:9. A POSITA would recognize that “retrieval and playback of channel 170” is often dictated by the capabilities of the client device (“*information about the associated client device*”) including whether it has software to process certain media formats, allows interactive, and the maximum supported video resolution and frame rate. Including such information in profile 160 would allow **mixing server 130** to better cater the custom media channel 170 to the user’s needs while improving efficiency by not exceeding those needs. For example, knowing what formats are supported by the client device would allow **mixing server 130** to ensure it does not transmit custom media channel 170 in an unsupported format. As another example, knowing the client device’s maximum supported video resolution and frame rate would allow **mixing server 130** to transmit custom media channel 170 with the best resolution and frame rate supported by the client device for optimal

viewing experience without needing to send multiple, different formats that unnecessarily consume network bandwidth. Plus, a POSITA would understand that there is a reasonable expectation of success in including such device information in profile 160 and customizing custom media channel 170 based thereon, since **mixing server 130** already supports different transmission formats and its purpose is specifically to customize media channel 170. EX1003 4:53-5:3, 5:43-55, 11:40-58.

96. In my opinion, to the extent PO argues that this limitation requires the **publisher** to receive the client information directly from the **aggregator** or that the **publisher** itself must track this client information, it would have been obvious to implement profile server 165 as part of **mixing server 130**, and **mixing server 130** would maintain profile 160 (“*client information*”) collected from **content processing device 110**. Whitehead already recognizes that various functionalities in Figure 1 can be combined or shifted between system components. EX1003 2:52-59, 4:10-26, 6:35-46, 15:16-22, 19:44-63. Maintaining profiles 160 on **mixing server 130** would simplify processing and communications, since it would eliminate the need for a separate profile server 165 or transmitting complete profile 160 over the network every time the user requests a custom media channel 170 be generated.

- (g) *1[f]: initiating, by the aggregator, for display at the client device, individual customized media programming comprising media elements selected from one or more libraries in communication with said publisher, wherein the selected media elements (i) correspond to at least one selected media feed and are responsive to said user information, and (ii) are ordered and concatenated at least in part according to each selected media feed and said user information.*

97. In my opinion Whitehead discloses this element. Whitehead's **content processing device 110's** transmission of a request for a custom media channel 170 for playback via media player 115 ("*client device*") initiates creation of the custom media channel 170 ("*individual customized media programming*") by **mixing server 130**. EX1003 2:7-16, 3:40-51, 8:42-64, 9:30-58, 11:9-16, 11:38-58, 13:35-46, 14:23-55, 15:16-41, 15:52-64, 16:45-53.

98. Whitehead's **mixing server 130** responds by generating the custom media channel 170 ("*individual customized media programming*") comprising advertising content 140 from advertising database 142 and media content 155 from media database 156 ("*media elements selected from one or more libraries*"). EX1003 Fig. 1, 4:27-44, 4:53-5:23, 5:43-6:9, 8:65-9:29, 11:59-12:7, 12:18-13:27, 13:35-46. For example, Whitehead discloses that the custom media channel 170 comprises "video clips" which are *media elements* selected from an "aggregated collection of media content 155 and/or advertising content 140." EX1003 4:27-44. Whitehead discloses that the *media elements* may be stored in *one or more libraries*

with associated “media meta data 150” and “queried. . . [to] determined whether an item of media content 155. . . is content 155 in which a user is interested.” EX1003 5:62-57.

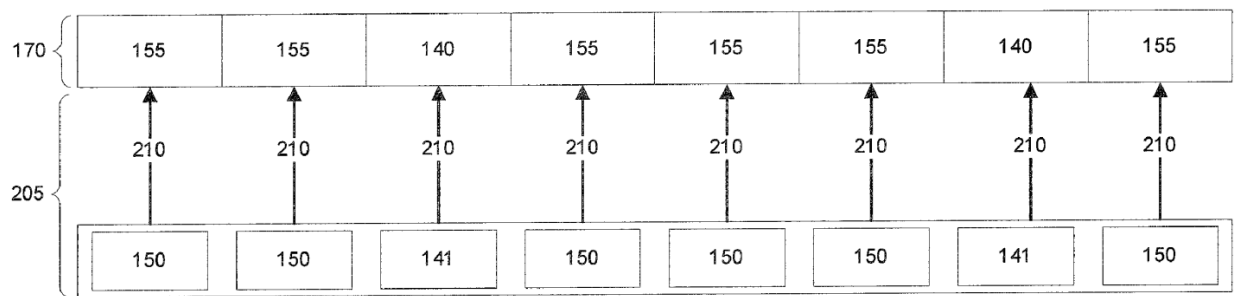
99. Moreover, Whitehead’s **mixing server 130** includes in custom media channel 170 (“*individual customized media programming*”) media content 155 (“*selected media elements*”), which is from custom media channel 170 (“*at least one of the media feeds*” under **Media Feed Mapping 1**) and from content source 135 corresponding to that custom media channel 170 (“*at least one of the media feeds*” under **Media Feed Mapping 2**), selected based on profile 160 (“**said user information**”). EX1003 8:28-41, 12:18-37, 13:7-14.

100. Further, Whitehead’s **mixing server 130** then “*concatenate[es]*” the media content 155 (“*selected media elements*”) and advertising content 140 that comprise custom media channel 170 according to the order specified by playlist 205 based profile 160 (“*user information*”). EX1003 4:10-26, 5:56-6:9, 6:47-7:2, 8:28-41, 8:42-64, 13:35-46.⁴ In addition, profile 160 (“*user information*”) includes “a

⁴ During prosecution of the related ’753 parent patent, applicant argued that “concatenate” requires clips “to link together, to unite in successive series or chain, as things depending on each other.” EX1017 at 76. In my opinion, Whitehead meets even that definition because, it discloses streaming custom media channel

specification of a playback mode” (e.g., “continuous” vs. interactive) which in turn dictates whether, for example, to generate custom media channel 170 by “**concatenating** various items of advertising content 140 and/or media content 155.”

EX1003 5:56-6:9, 6:47-7:2, 8:42-64. Exemplary “*media programming*” with advertising content 140 and/or media content 155 “*ordered and concatenated*” is shown in Whitehead’s Figure 2:



2. Claim 2:

2[a]: *The method according to claim 1, further comprising the steps of collecting by the aggregator, from the client device, user information comprising information about an identified user*

101. In my opinion, Whitehead discloses, or in the alternative renders obvious, this claim element. Whitehead’s **content processing device 110** receives

170 as a single file (EX1003 8:42-64) which means the individual media content 155 and advertising content 140 are “link[ed] together” and “unite[d]” in a single video sequence and “depend[] on each other” because a media element only begins playing after the prior media element has finished playing.

from media player 115 (“*client device*”) user feedback and viewing history (“*user information comprising information about an identified user*”) and from computer 105 running media player 110 (“*client device*”) other information about the user maintained as part of profile 160 (“*user information comprising information about an identified user*”). EX1003 2:17-30, 7:3-18, 13:47-61, 18:63-19:15. Whitehead discloses that **content processing device 110** can be “used to create, modify, and/or delete profiles 160,” including provision of “*user information*” in those profiles, such as a “username,” “information concerning topics of interest to the user,” (“*information about an identified user*”) and “[o]ther information relevant to retrieval and playback of the channel 170” to profile server 165. EX1003 at 5:56-6:9, 6:35-46, 7:3-18, 10:6-32, 15:16-22, 15:65-16:21. For example, in step 570, the playback application which may be executed within **content processing device 110** “causes the appropriate updates to be made to profile 160 and profile server 165.” *Id.* 19:16-38.

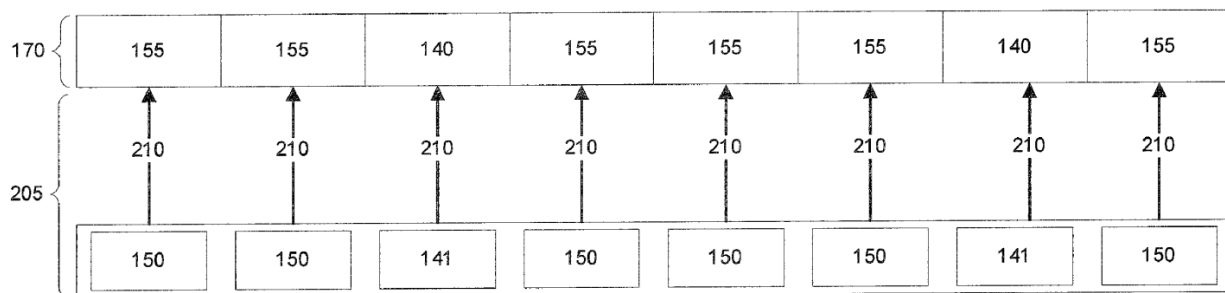
102. In my opinion, to the extent PO argues that this limitation requires the **aggregator** itself must track this client information, it would have been obvious to implement profile server 165 as part of **content processing device 110**, and **content processing device 110** would maintain profile 160 (“*user information comprising information about an identified user*”) collected from media player 115 and/or computer 105 (“*client device*”). Whitehead already recognizes that various

functionalities in Figure 1 can be combined or shifted between system components.

EX1003 2:52-59, 4:10-26, 6:35-46, 15:16-22, 19:44-63. In my opinion, maintaining profiles 160 on **content processing device 110** would simplify processing and communications, since it would eliminate the need for a separate profile server 165 or looking up specific sets of profiles a user of **content processing device 110** is permitted to update.

2[b]: selecting media elements comprising said individual customized media programming according to parameters and instructions for assembling media programming based on the collected user information.

103. In my opinion, Whitehead discloses this claim limitation. Whitehead's **mixing server 130** assembles custom media channel 170 ("*media programming*") comprising media content 155 and advertising content 140 based on profile 160 ("*collected user information*"). Section V.A.1.g. An exemplary "*assembl[ed] media programming*" is shown in Whitehead's Figure 2:



104. Moreover, this assembly is performed based on numerous "*parameters and instructions.*" The selection process 400 responsible for this assembly is software consisting of "*instructions.*" EX1003 7:44-8:14, 11:38-39. The process is

triggered by the receipt of “an **instruction**” to create custom media channel 170.

EX1003 11:40-58. **Mixing server 130** generates the custom media channel 170 based on profile 160 containing various “**parameters**,” and **mixing server 130** formulates additional “**parameters**” to select media content 155 and advertising content 140. EX1003 5:4-8, 12:18-37, 12:64-13:6. **Mixing server 130** also relies on advertising metadata 141 and media content metadata 150 (“*parameters*”) as part of that assembly process. EX1003 4:27-44, 4:53-5:3, 5:9-23, 5:43-6:9, 7:3-18, 8:65-9:29, 12:18-13:27. Finally, Whitehead’s **mixing server 130** assembles the final custom media channel 170 according to a playlist 205 (“*parameters and instructions*”) that “determines an order” for the “items of advertising content 140 and media content 155” (“*media elements*”). EX1003 2:7-16, 8:28-9:29, 13:35-46, 14:20-55, FIG. 2; Section V.A.1.g.

3. **Claim 3: The method according to claim 2, wherein the parameters and instructions are embodied in one or more templates, each template comprises a plurality of rules associated with said tags of said tagged media elements, and each template is associated with a selected library or a selected media feed.**

105. In my opinion, the '261 patent does not define template, nor is the plain meaning of “template” limited to any specific data structure. A “template” may broadly refer to any structure for defining and organizing data. Indeed, PO in its complaint accused TikTok’s video recommendation algorithms as a whole of being a claimed “template.” Ex. 1018 ¶ 171. In my opinion, under that interpretation, the

“parameters and instructions” identified in Section V.A.2 comprise a *“one or more templates”* because they specify the content and structure of the resultant custom media channel. But even under a narrower interpretation that requires the *“template”* to have a specific format, such as providing the final set of *“plurality of rules”* that will then be used to populate the custom media channel 170 (*“selected media feed”*), it is my opinion that Whitehead’s playlist 205 qualifies as such a *“template”* because it consists of an ordered list of reference pointers that are then used to populate the media content 155 and advertising content 140 included in the custom media channel 170. EX1003 2:7-16, 8:28-9:29, 13:35-46, 14:20-55, FIG. 2.

106. In addition, each of these *“templates”* includes *“a plurality of rules associated with said tags of said tagged media elements.”* Process 400 is defined by software instructions used to assemble custom media channel 170 from advertising metadata 141 and media content metadata 150, including “attributes” found therein (*“a plurality of rules associated with said tags of said tagged media elements”*). EX1003 7:44-8:14, 11:38-39. Advertising metadata 141 and media content metadata 150 (*“tags of said tagged media elements”*) dictate what advertising content 140 and media content 155 are included in custom media channel 170 and thus are themselves *“rules”* for controlling that assembly process. EX1003 4:27-44, 4:53-5:3, 5:9-23, 5:43-6:9, 7:3-18, 8:65-9:29, 12:18-13:27. And Whitehead’s **mixing server 130** assembles the final custom media channel 170 according to a playlist

205 (“*rules*”) that “determines an order” for the “items of advertising content 140 and media content 155” by including advertising metadata 141 and media content metadata 150 and “attributes” found therein (“*tags of said tagged media elements*”). EX1003 2:7-16, 8:28-9:29, 13:35-46, 14:20-55, FIG. 2; Section V.A.1.g.

107. Finally, process 400, advertising metadata 141, media content metadata 150, and playlist 205 (“*templates*”) are associated with advertising database 142 and media database 156 (“*a selected library*”) from which the advertising and media content metadata included in playlist 205 by process 400 is retrieved and the custom media channel 170 corresponding to content source 135 that is created using the advertising and media content metadata included in playlist 205 via process 400 (“*selected media feed*”). EX1003 2:7-16, 4:27-44, 4:53-5:3, 5:9-23, 5:43-6:9, 7:3-18, 8:28-9:29, 12:18-13:27, 13:35-46, 14:20-55, FIG. 2.

4. Claim 4: The method according to claim 3, wherein the template is processed according to at least one rule for selection and sequencing of tagged media elements according to collected user information.

108. In my opinion, Whitehead discloses this claim. Whitehead’s playlist 205, advertising metadata 141, media content metadata 140, and playlist 205 (“*template*”) are all processed based on and in connection with profile 160 (“*collected user information*”) and process 400, advertising metadata 141, media content metadata 150, and playlist 205 (“*at least one rule for selection and sequencing of tagged media elements*”). See Section V.A.1.f-g, V.A.2-3.

5. **Claim 5: The method according to claim 1, wherein a first feed responsive to the selection of one of the feeds is furnished during a first time period and a second feed comprising the individual customized media programming is furnished during a second time period.**

109. In my opinion, Whitehead discloses this claim. Whitehead discloses dynamically generating custom media channel 170 in “near real-time.” EX1003 11:40-58. But a POSITA would have recognized that “near real-time” is different from “real time” and thus, there is a short interval after the user selects the custom media channel 170 and before that custom media channel 170 is generated (“*during a first time period*”). Thus, it is my opinion that Whitehead discloses that the system begins playing the custom programming (“*individual customized media programming*”) after the system completes this processing (“*during a second time period*”).

110. It is also my opinion that it would have been obvious to instead provide “*a first feed*” during this “*first time period*,” before dynamic programming becomes available. As an example, a POSITA would have been motivated to alter Whitehead’s system to play a predetermined advertisement during this time, especially considering that Whitehead already discloses that advertisement need not be based on user information. EX1003 12:38-55. Showing a predetermined advertisement to the user instead of forcing the user to wait while the custom media channel 170 is being created would have generated additional advertising revenue

and lowered the likelihood of the user losing interest while waiting for custom media channel 170. A POSITA would have had a reasonable expectation of success in enhancing Whitehead's system in this manner because Whitehead already discloses providing such predetermined advertisements.

6. Claim 6: The method according to claim 1, wherein the user information comprises a user profile.

111. In my opinion, Whitehead discloses this claim. Whitehead expressly referred to profile 160 ("*user information*") as a "*user profile*." EX1003 19:16-38. Specifically, Whitehead discloses that profile 160 is associated with a specific user that logs into that profile and further contains profile information about the same user. EX1003 5:56-6:9, 7:3-18, 10:6-32, 15:23-41.

7. Claim 7: The method according to claim 1, wherein the user information comprises user preference data.

112. In my opinion, Whitehead discloses this claim. Whitehead discloses that its profile 160 ("*user information*") includes information on the user's interests, such as content, content categories, and sources of content preferred by the user ("*user preference data*"). EX1003 5:56-6:9, 7:3-18, 10:46-67, 12:18-37, 13:35-46, 18:63-19:15, 19:16-38.

8. Claim 8: The method according to claim 1, wherein the media programming comprises multiple streams of media elements.

113. In my opinion, Whitehead discloses or renders obvious this claim both under **Media Feed Mapping 1**, where "*feed*" is the selected custom media channel

170 and under **Media Feed Mapping 2**, where “*feed*” is a particular content source 135 corresponding to a selected custom media channel 170.

(i) Media Feed Mapping 1

114. Under Media Stream Mapping 1, it is my opinion that Whitehead discloses or renders obvious that **mixing server 130** creates a custom media channel (“*media programming*”) by concatenating elements from multiple different content sources 135 (“*stream of media elements*”). EX1003 at 5:9-23 (“Media content 155 is provided by content sources 135. ... Content sources 135 may include a wide variety of sources for multimedia content 155.”). Whitehead states that “a profile 160 may include fields corresponding to fields stored in metadata 150, e.g., the identity of one *or more* content sources 135 of interest to a user” EX1003 at 7:3-18; 14:23-55 (“[P]ointers 210 in playlist 205 could be used to indicate a wide variety of content sources 135”); *see* Section V.A.1.b.

(ii) Media Feed Mapping 2

115. Under Media Stream Mapping 2, it is my opinion that Whitehead renders obvious that **mixing server 130** provides a custom media channel (“*media programming*”) which concatenates elements from the corresponding content source 135 (a first “*stream of media elements*”) and advertising content 140 (a second “*stream of media elements*”). For example, Whitehead’s media channel 170 “may be instantiated as a single multimedia file, e.g., an MPEG file, created by

aggregating or *concatenating* the various items of advertising content 140 and/or *media content 155*.” EX1003 at 8:42-64 (emphasis added). As addressed above, Whitehead discloses or renders obvious that content source 135 could be a broadcast television channel (“*stream of media elements*,” see Section V.A.1.b). For those same reasons, Whitehead also renders obvious that advertising content 140 could also be from a broadcast television channel (“*stream of media elements*”). A POSITA would have been motivated to alter Whitehead’s system in order to provide advertising content 140 from a broadcast channel because if media content 155 is from a broadcast television channel, receiving advertising content 140 also from a broadcast television channel would have simplified the system and reduced processing burdens.

9. Claim 9: The method according to claim 8, wherein portions of the multiple streams are concatenated according to user information.

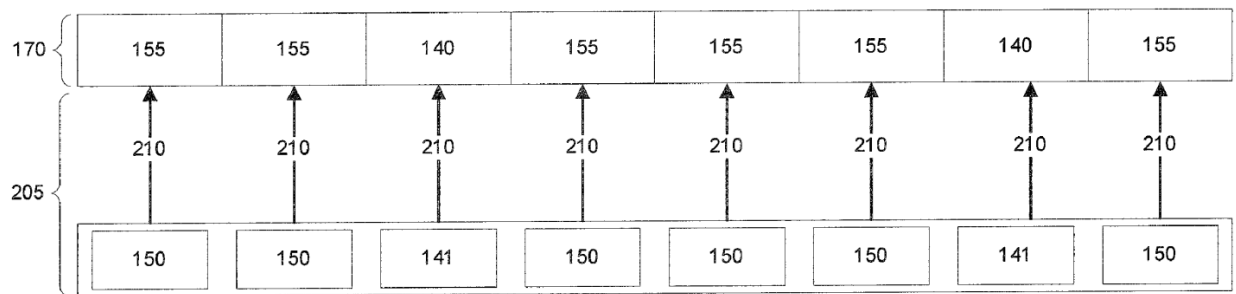
116. In my opinion, Whitehead discloses this claim. As addressed above, Whitehead discloses concatenating media content 155 and advertising content 140 based on profile 160 (“*user information*”). See Section V.A.1.f. Additionally, also as addressed above, Whitehead discloses or renders obvious that the media content 155 and advertising content 140 are received from (and thus are “*portions of*”) “*multiple streams*.” Section V.A.8.

10. Claim 10: The method according to claim 1, wherein the media elements comprise transitions, and the media elements are dynamically positioned, temporally or spatially, within the context of the media programming.

117. In my opinion, Whitehead discloses this claim. Whitehead discloses that **mixing server 130** generates a playlist 205 with a particular “order of media content 155” within the resultant custom media channel 170 (“*media elements ... positioned, temporally . . . within the context of the media programming*”)⁵. EX1003 at 13:35-46 (“Information from profile 160 may be used to generate the playlist 205. For example, profile 160 may include an indication that media content 155 relating to a first category of media content, e.g., sports, is of more interest to a user than media content 155 relating to a second category, e.g., weather. Thus, the order of media content 155 reflected in playlist 205 may be at least partly determined by profile 160.”), *see also* EX1003 at 4:27-44 (“To create and/or store custom media channels 170, mixing server 130 also accesses media metadata 150 and custom channel profiles 160.”); EX1003 at 4:10-26 (“A basic purpose of the mixing server 130 is to assemble and deliver to content processing device 110 one or more custom

⁵ I note that, because the programming in playlist 205 is assembled into a single file, streamed to the content processing device 110, and displayed to the user in that order, the order of programming in playlist 205 is “temporal.” EX1003 8:42-64, 16:66-17:17, 20:8-21:11.

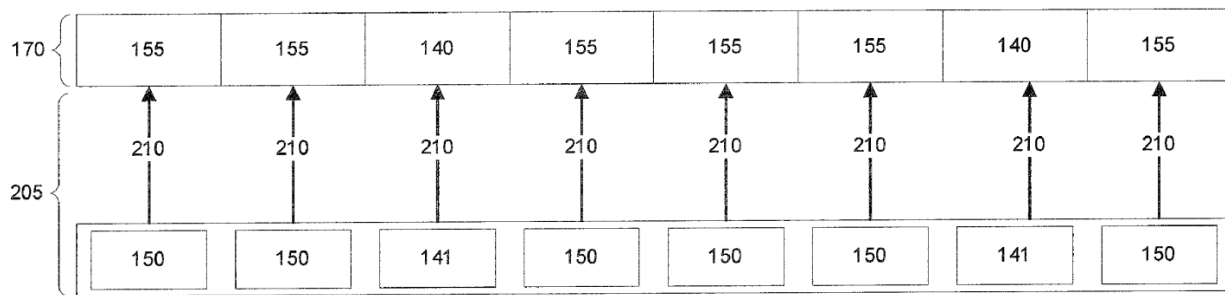
media channels 170.”); EX1003 at 8:28-41 (“[A]s seen in FIG. 2, a custom media channel 170 includes advertising content 140 and media content 155, generally assembled and provided to content processing device 110 according to playlist 205.”); EX1003 at 13:35-46 (“Information from profile 160 may be used to generate the playlist 205. For example, profile 160 may include an indication that media content 155 relating to a first category of media content, e.g., sports, is of more interest to a user than media content 155 relating to a second category, e.g., weather. Thus, the order of media content 155 reflected in playlist 205 may be at least partly determined by profile 160.”). This is shown, for example, in Whitehead’s Figure 2:



118. Whitehead also discloses that the entire custom media channel 170 is generated in real time or near-real time (“*dynamically*”) and the advertising content 140 is further inserted after the rest of the sequence is generated (“*dynamically*”). Thus, advertising content 140 (“*media elements*”) is “*dynamically positioned*” within the custom media channel 170.

119. Furthermore, it is also my opinion that Whitehead discloses advertising content 140 (“*media elements*”) which qualifies as “*transitions*” at least under PO’s

interpretation of that term. I note that, PO alleged in its complaint that “transition clips” include “advertisements.” EX1011 ¶ 46, 143. Because Whitehead’s advertising content 140 was placed and transition between different items of media content 155, under this interpretation, advertising content 140 (“*media elements*”) are “*transitions*.” See EX1003 at FIG. 2.



B. Ground 2: Whitehead and Marcus '904

120. It is my opinion that all limitations of the challenged claims not expressly addressed in Ground 2 are disclosed or rendered obvious by Whitehead for the reasons in Ground 1.

1. Motivation to Combine & Reasonable Expectation of Success

121. In my opinion, a POSITA would have been motivated to enhance Whitehead’s mixing server 130 to incorporate Marcus ’904’s algorithm that runs on Marcus ’904’s receiver for receiving, selecting, ordering, and assembling different media streams including both content and advertising.

122. *Incorporating Marcus ’904’s content and advertising sources would provide more choices to the users:* Offering a broader range of content sources for

custom media programming would have been desirable because would have increased the chances that the system identifies the content that is most appropriate for a specific user. In general, people prefer to have more options for video programming. Additionally, more advertising options would have allowed for more precise targeting and the potential for greater revenue generation. If people view advertising for products that they are already interested in, the chance for a conversion from an advertising view to a purchase is higher. Indeed, there has been a historic market trend towards more content sources: a few broadcast television channels have turned to hundreds of cable channels, and those have since been supplemented by additional content sources accessible over the Internet. Marcus '905 discloses one solution for incorporating content and advertisement from media streams. To the extent PO argues Whitehead does not disclose including media content or advertising content from such sources, enhancing Whitehead's system to incorporate the content and advertising sources described in Marcus '904 would have therefore enhanced Whitehead's ability to target content and advertising effectively for individual users.

123. ***Incorporating Marcus '904's content and advertising sources would unlock new revenue sources for Whitehead:*** By integrating the content and advertising sources, such as those disclosed in Marcus '904, Whitehead's system could have accessed new avenues for revenue generation. Marcus '904 states that it

facilitates generating income by delivering content from niche content and advertising sources. EX1005 ¶¶ 5-13. In my opinion, a POSITA would have been motivated to leverage Marcus '904's content and advertising sources to open up additional revenue streams for Whitehead's system. As one example, customers could pay more for premium or niche content.

124. *Incorporating aspects of Marcus '904's content selection and concatenation algorithm improves Whitehead's efficiency:* Incorporating Marcus '904's content selection and concatenation algorithm could have improved Whitehead's system efficiency. Marcus '904 discloses how to create custom media programming by inserting targeted content or advertising into a "primary" stream. EX1005 ¶¶ 48, 82-87, 148, 237, 251, 594. By utilizing or defaulting to Marcus '904's "primary" stream rather than selecting each piece of media content individually, Whitehead's system would have needed to make fewer selections for its custom media channels and requires less resources. In turn, this would have allowed Whitehead's system to run on less expensive hardware, and would have allowed it to consume less electricity.

125. *Whitehead and Marcus '904 are directed towards similar field of art:* Both Whitehead and Marcus '904 are related to generating custom media programming based on a user profile. EX1003 at Abstract; EX1005 ¶¶ 82-87. A

POSITA starting with Whitehead would have naturally turned to the teachings of the Marcus '904 in order to improve Whitehead's system.

126. *Implementing software modification requires no architecture re-designing*: Whitehead already discloses different content sources, including broadcast sources, and discloses focusing a custom media channel on a specific content source. As addressed above in Section V.A.1.c, Whitehead discloses various content sources, including broadcast television content sources, and further discloses that a particular user profile can identify a specific content source. Thus, incorporating Marcus '904's teachings would not have required redesigning Whitehead's architecture, and instead would have involved adding functionality improvements to Whitehead's system.

127. *Implementing software modification would be predictable*: The proposed modifications could all have been done entirely in software, with no need for hardware alterations. Whitehead even notes that such software changes are feasible. EX1003 at 19:64-20:6, 22:26-40.

2. **Claim 1[a]: delivering by an aggregator, to a client device associated with a user, a selectable menu of media feeds available from at least one publisher**

128. In my opinion, Whitehead in combination with Marcus '904 discloses claim 1[a], or at least renders it obvious. All independent claims require “*a selectable*

menu of media feeds.” As addressed in Ground 1, **Media Feed Mapping 2**⁶ maps the claimed “*menu of media feeds*” onto Whitehead’s content sources 135. In my opinion, Marcus ’904 further renders obvious that Whitehead’s content providers 135 are “*media feeds*.” Marcus ’904 expressly discloses a “receiver” that receives “a plurality of tagged media streams” and “assembles” those “media streams” into “programming.” EX1005 ¶¶ 34, 37-42, 48.

⁶ For **Media Feed Mapping 1**, there should be no dispute that Whitehead’s custom media channels are “media feeds.” Whitehead expressly teaches “stream[ing]” these channels, which as POSITA would understand is a media feed. EX1003 8:42-64.

3. **Claim 1[f]:** *initiating, by the aggregator, for display at the client device, individual customized media programming comprising media elements selected from one or more libraries in communication with said publisher, wherein the selected media elements (i) correspond to at least one selected media feed and are responsive to said user information, and (ii) are ordered and concatenated at least in part according to each selected media feed and said user information.*
4. **Claim 2[b]:** *selecting media elements comprising said individual customized media programming according to parameters and instructions for assembling media programming based on the collected user information.*
5. **Claim 4:** *The method according to claim 3, wherein the template is processed according to collected user information and at least one algorithm for selection and sequencing of media elements, assembling the media elements, and providing a feed to the user.*

129. For limitations 1[f] and 2[b] and claim 4, as addressed in Ground 3, in my opinion Marcus '904 discloses all aspects of the challenged claim pertaining to an algorithm for selecting, sequencing of media elements, assembling the media elements based on “*user information.*” See Section V.C.2.f, V.C.5. It is my opinion that to the extent any of those elements are missing from Whitehead, Whitehead in combination with Marcus '904 discloses these claim limitations, or at least renders them obvious.

6. **Claim 3:** *The method according to claim 2, wherein the parameters and instructions comprise a template.*

130. In my opinion, Whitehead in combination with Marcus '904 discloses claim 3, or at least renders it obvious. Whitehead discloses generating custom media

channel 17 using “*parameters and templates*” (Section V.A.2) but does not use the word “*template*.” Marcus ’904 includes additional discussion of “*templates*” generated by “experts in programming and popular producers and artists” that can further control “Program Aesthetics.” EX1005 ¶¶ 324-327. A POSITA would be motivated to integrate Marcus ’904’s “templates” into Whitehead’s custom media channel 170 generation process to further improve the overall appeal of the custom media channel 170 based on input from human experts rather than relying solely on computer processing, which may be less adept at taking into account concepts such as “Aesthetics.”

7. Claim 8: *The method according to claim 1, wherein the media programming comprises multiple streams of media elements.*

131. As addressed in Ground 1, it is my opinion that Whitehead renders obvious that advertising content 140 may be obtained a first “*stream[]*.” Section V.A.9. In my opinion, Whitehead in combination with Marcus ’904 discloses claim 8, or at least renders it obvious. Marcus ’904 that such advertising content 140 (“*media elements*”) can be received in the form of a “*media stream*.” EX1005 ¶¶ 48, 252, 275.

8. **Claim 10:** *The method according to claim 1, wherein the media elements comprise transitions, and the media elements are dynamically positioned, temporally or spatially, within the context of the media programming.*

132. In my opinion, Marcus '904 expressly discloses “*media elements*” that include “*transitions*,” either as free-standing “[s]hort transitional elements” or by modifying parts of other “media elements” to include, e.g., “slow dissolves.” EX1005 ¶¶ 86, 191, 287, 309, 646, 649, 663; *see also* EX1008 at 2:29-31, 4:28-29; 4:34-38, 8:33-35, 8:51-56, 14:13-17; 14:43-45.

C. **Ground 3: Cristofalo and Marcus '904**

1. **Motivation to Combine & Reasonable Expectation of Success**

133. In my opinion, for all claims, a POSITA would have enhanced Cristofalo's transmitting system 102 or, Cristofalo's receiving system 104 to incorporate Marcus '904's algorithm that runs on Marcus '904's receiver for receiving, selecting, ordering, and assembling different media streams including both content and advertising.

134. *Cristofalo's transmitting system 102 benefits from gaining ability to target content to specific users based on the teachings in Marcus '904:* In my opinion, for all claims, Cristofalo's transmitting system 102 would benefit from targeting content to specific users by incorporating the teachings of Marcus '904. Cristofalo explains that rather than creating a unique media object for each user profile, the transmitting system 102 “preferably pushes media objects to specific

users based upon user identifiers.” EX1004 ¶ 48. However, Cristofalo also acknowledges that “as bi-directional data link throughput capacity increases, various other routing techniques may be utilized to push media object based targeted advertising and programming to users.” EX1004 ¶ 48. Further, Cristofalo expressly discloses that its system is designed for use in a unicast environment, “where the content/media objects are transmitted to a single user.” EX1004 ¶¶ 9, 19. As addressed in Section IV.A, given that transmission capacity has increased since Cristofalo’s filing in 2001, it is unsurprising that Marcus ’904 offers additional insights into targeting media programming to specific users, thereby improving the customization capabilities of Cristofalo’s transmitting system 102 to target individual users rather than groups of users, while retaining the ability of Cristofalo’s receiving system 104 to insert media objects as overlays. See EX1004 ¶ 41.

135. ***Cristofalo’s receiving system 104 benefits from additional flexibility by incorporating the teachings in Marcus ’904:*** In my opinion, for all claims, Cristofalo’s receiving system 104 can achieve additional flexibility by incorporating Marcus ’904’s teachings. Cristofalo’s receiving system 104 selects specific media objects based on user profile information for playback or overlay. See EX1004 ¶¶ 36, 41. However, Cristofalo’s receiving system 104 is limited to inserting media objects into predetermined slots without customizing the sequence of media elements in the programming. A POSITA would recognize that further customizing

the user experiencing by enabling the system to target not just what media objects are displayed, but also when they are displayed, is more likely to ensure an advertisement reaches a user at the right time to convert into a sale (thereby making the system's advertisement capabilities more desirable to advertisers, allowing the system operator to charge more). One reference that discloses such capabilities is Marcus '904. By adapting Cristofalo's receiving system 104 to incorporate Marcus '904's algorithm for selection, ordering, and assembly, the system would have gained the ability to tailor the sequence of media elements, leading to a more customized and dynamic user experience.

136. Cristofalo's targeting system benefits from additional implementation details by incorporating Marcus '904's content selection, ordering, and assembly algorithm: In my opinion, for all claims, incorporating Marcus '904's algorithm for content selection, ordering, and assembly would have resulted in valuable implementation-based improvements to Cristofalo's targeting system. Cristofalo discloses that targeted content may be selected at either the transmitting system 102, receiving system 104, or a combination of the two. EX1004 ¶¶ 35-36, 44, 49. While Cristofalo describes the general process of creating custom programming, it does not provide specific details on how media objects are selected or how the final media programming is produced and formatted for display. The additional details provided by Marcus '904, and Marcus '156 which is referenced within, would have supplied

these specifics, enabling a more comprehensive implementation within Cristofalo's transmitting system 102 or receiving system 104.

137. ***Cristofalo benefits from additional revenue sources by incorporating Marcus '904's content and advertising:*** In my opinion, for all claims, incorporating Marcus '904's content and advertising sources would have unlocked new revenue sources for Cristofalo. Marcus '904 discloses the potential for generating income through the transmission of content from niche content and advertising sources. EX1005 ¶¶ 5-13. A POSITA would have seen the value in using and would have been motivated to employ Marcus '904's content and advertising sources to enhance Cristofalo's system, thereby unlocking additional streams of revenue. For example, users could pay more for premium or niche content.

138. ***Cristofalo and Marcus '904 are directed towards similar field of art:*** Cristofalo and Marcus '904 share a common focus on the creation of custom media programming. EX1004 at Abstract; EX1005 ¶¶ 82-87. This shared objective highlights the compatibility of incorporating Marcus '904's methods into Cristofalo's systems.

139. ***Implementing software modification requires no architecture re-designing:*** In my opinion, Cristofalo's systems are already equipped with the foundational structure needed to implement Marcus '904's selection, ordering, and assembly algorithm. Both the transmitting system 102 and receiving system 104 in

Cristofalo's design are capable of accessing user profile data and customizing media programming accordingly. EX1004 ¶¶ 35-36, 44, 49. Thus, integrating Marcus '904's teachings would have enhanced Cristofalo's existing system without requiring a complete architectural overhaul.

140. *Software modification would be predictable*: The proposed modifications are entirely achievable through software updates, with no need for hardware alterations. Cristofalo acknowledges the practicality of implementing such software modifications (EX1004 ¶ 57), making the integration of Marcus '904's approaches both feasible and predictable.

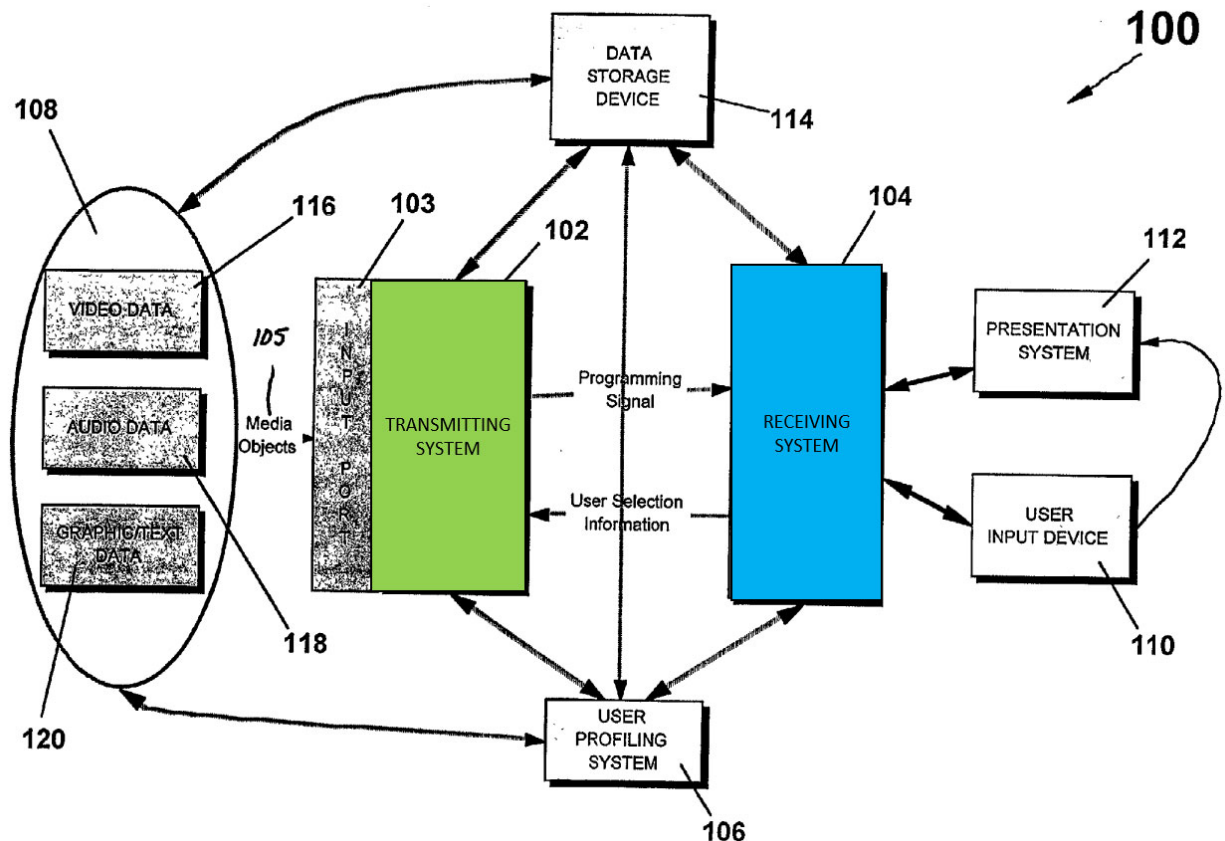
2. Claim 1

(a) 1[pre]: *A method of generating customized media programming, comprising the steps of:*

141. In my opinion, Cristofalo discloses this element. Cristofalo discloses “a system and process for targeting programming (including, but not limited to, advertising) to users.” EX1004 at Abstract, ¶ 46.

(b) 1[a]: *delivering by an aggregator, to a client device associated with a user, a selectable menu of media feeds available from at least one publisher*

142. In my opinion, Cristofalo discloses this element. Cristofalo discloses **receiving system 104**, which is an “**aggregator**,” and **transmitting system 102**, which is the claimed “***publisher***.”



143. The '261 patent specification describes an “*aggregator*” as “provid[ing] a presentation element to user 1 120 and 2 130” for different media feeds. EX1001 2:50-53, 3:12-14. Cristofalo similarly discloses that its *receiving system 104* allows a user to “select[] the described programming ... to be received and presented” from among “numerous programming options.” EX1004 ¶ 46. Cristofalo further discloses that those “programming options” can be from different “media object creators 108, broadcasters, local affiliates, and others,” such as “a cable signal ... contain[ing] numerous programming signals (i.e., ABC, CBS, FOX, etc.).” EX1004 ¶¶ 29, 37, 52.

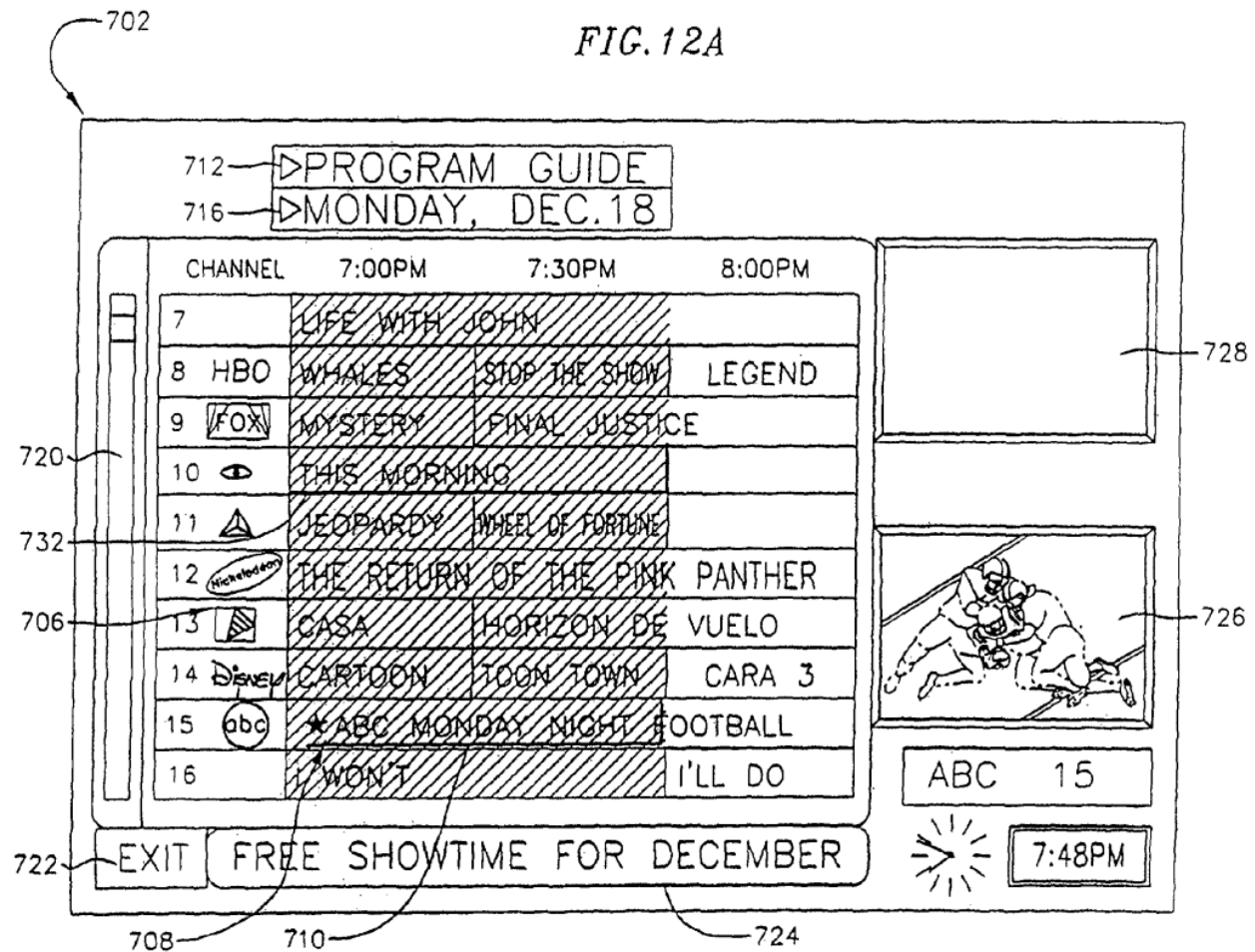
144. The '261 patent describes the claimed “*publisher*” as a “source[] of media content.” EX1001 at 6:9-21. The same is true for Cristofalo’s **transmitting system 102**: it is the source of programming (e.g., media objects) for the **receiving system 104** and ultimately for the user. EX1004 ¶¶ 9, 19, 22, 34, 38, 47-48, 54; *see also* EX1004 at Fig. 1 (**transmitting system 102** sending “Programming Signal” to **receiving system 104**).

145. Cristofalo further discloses a presentation system 112 and user input device 110 (“*client device*”) and that a user is interfacing with (“*associated with a user*”). EX1004 ¶¶ 20, 24, 25, 32.

146. In my opinion, a POSITA would understand that for Cristofalo’s user to be able to “select[] the desired programming” from “numerous programming options” (EX1004 ¶ 46), Cristofalo’s **receiving system 104** necessarily delivers the user with the programming options (e.g., different broadcast channels) (“*deliver[s] ... a selectable menu of media feeds available from at least one publisher*”) via presentation system 112 and user input device 110 (“*client*”). *See also* EX1004 ¶¶ 20, 25, 29, 32, 49.

147. Moreover, it is my opinion that it would have been obvious to implement Cristofalo’s **receiving system 104** as a program guide for presenting programming options from different channels (“*deliver[ing] ... a selectable menu of media feeds available from at least one publisher*”). Since at least the 1990s, a

program guide was a well-known UI for interacting with television sources well before the '261 patent's priority date. *See* EX1013 (filed April 11, 1997, issued May 14, 2002, § 102(b) art) at Fig. 12A:



148. Programming guides were widely used by the general public and well known for their ease of use. A POSITA implementing Cristofalo would be motivated to present users with a UI they were already familiar with and would thus find it obvious to use a program guide. Using such a well-known system would leverage users' preexisting knowledge of how to interact with the system and reduce the

learning curve for new users. Using such a well-known system would also ensure there is a reasonable expectation the implementation would be successful.

- (c) **1[b]: wherein each said media feed comprises a plurality of media elements selected from audio media elements, visual media elements, and combinations thereof, and each said media element is tagged in at least one library in communication with at least one publisher**

149. In my opinion, Cristofalo discloses this element. Cristofalo's media programming is generated and provided to the user "in the form of media objects," where the media objects ("**media elements**") are "provided in any medium desired including, for example, **audio, video, graphical, and textual**," as well as "**audio-visual content**." EX1004 ¶¶ 2, 16-17.

150. Cristofalo's media objects 105 ("**media elements**") are stored on data storage device 114 ("**in at least one library**") which is in communication with the **transmitting system 102**. EX1004 ¶¶ 9, 19, 22, 26, 34, 38, 47-48, 54, Fig. 1. Marcus '904 further renders obvious "**media elements**" may be "**tagged**" and stored in a database ("**in at least one library**") to facilitate identification and selection of media elements in custom media programming. EX1005 ¶¶ 32-42. A POSITA would understand that storing metadata ("**tag[s]**") associated with media objects ("**media element**") was a well-known way to improve identification and selection by enabling query and selection of a media object based on metadata rather than on the entire file.

- (d) 1[c]: *receiving by the aggregator from the client device a selection identifying at least one of said media feeds*

151. In my opinion Cristofalo discloses this element. Cristofalo discloses that its **receiving system 104** allows a user to “select[] the described programming ... to be received and presented” from among “numerous programming options” (“*a selection identifying at least one of said media feeds*”). EX1004 ¶¶ 46, 49. This selection is received from presentation system 112 and user input device 110 (“*client device*”). EX1004 ¶¶ 20, 24, 25, 32.

- (e) 1[d]: *providing by the aggregator, to said publisher, an identification of each selected media feed*

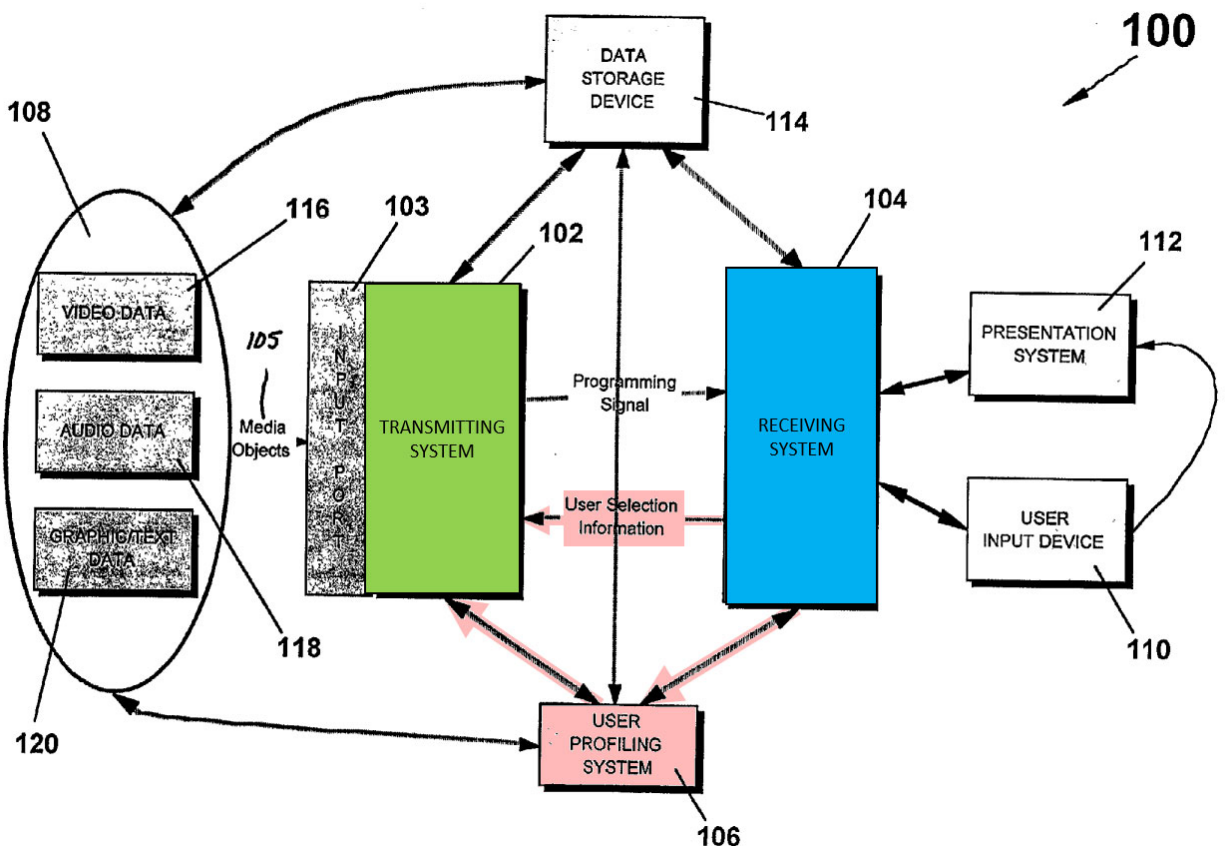
- (f) 1[e]: *providing by the aggregator, to said publisher, client information comprising information about the user and information about the associated client device*

152. For limitation 1[d], in my opinion Cristofalo discloses this element. Cristofalo discloses that “the user’s choice of programming” (“*selection identifying at least one of said media feeds*”) is provided by Cristofalo’s **receiving system 104** to Cristofalo’s **transmitting system 102** from the **receiving system 104**. EX1004 ¶ 46; *see also* EX1004 at Fig. 1 (**receiving system 104** sending “User Selection Information” to **transmitting system 102**).

153. For limitation 1[e], Cristofalo discloses that its **receiving system 104** provides information on programs selected by the user and content to receive (“*client information*”) to Cristofalo’s **transmitting system 102**. Specifically, Cristofalo’s **receiving system 104** provides the user profile information (“*client information*”)

to user profiling system 106, including programs selected by the user and content received, which in turn is co-located with **transmitting system 102**. EX1004 ¶¶ 37, 39. Ultimately, the user profile information (“*client information*”) is received and analyzed by the **transmitting system 102**. EX1004 ¶¶ 28, 37-39, 47, 53; *see also* Section V.C.2.f (Marcus ’904 also disclosing analyzing user profile information).

154. Cristofalo’s provision of “user selection information” (“*an identification of each selected media feed*”) and user profile information (“*client information*”) from **receiving system 104** to **transmitting system 102** is shown in Cristofalo’s Figure 1:



155. Further, it is my opinion that Cristofalo discloses that user profiling information contains “*information about the associated client device.*” Cristofalo discloses that its **transmitting system 102** transmits media objects that “may be formatted according to various schemes, including , MPEG 1, MPEG-2, MPEG-4, MPEG-7, JPEG, motion JPEG, GIF, QuickTime, ActiveMovie, digital video interactive (DVI), Indeo, and IP wrapped MPEG-4 for streaming.” EX1004 ¶ 8. Cristofalo also discloses that these media objects may be ultimately presented on various different presentation systems 112, including “television receivers, home theater systems, audio systems, computer workstations, lap top computers, personal data assistants, set top boxes, in home communications systems, wireless communication systems (for example, pagers and wireless telephones), web tablets, virtual reality systems, web phones, printers, heads up display, gaming consoles, tactile or sensory perceptible signal generators (for example, a vibration or motion), and various other devices or combinations of devices.” EX1004 ¶ 24. A POSITA would recognize that there is a need to ensure the format of media object transmitted by **transmitting system 102** matches the capabilities of presentation systems 112, e.g., to ensure **transmitting system 102** does not encode media objects using a format not supported by or sub-optimal for presentation system 112 (e.g., transmitting low quality MPEG-1 video to a home theater system capable of playing high definition videos).

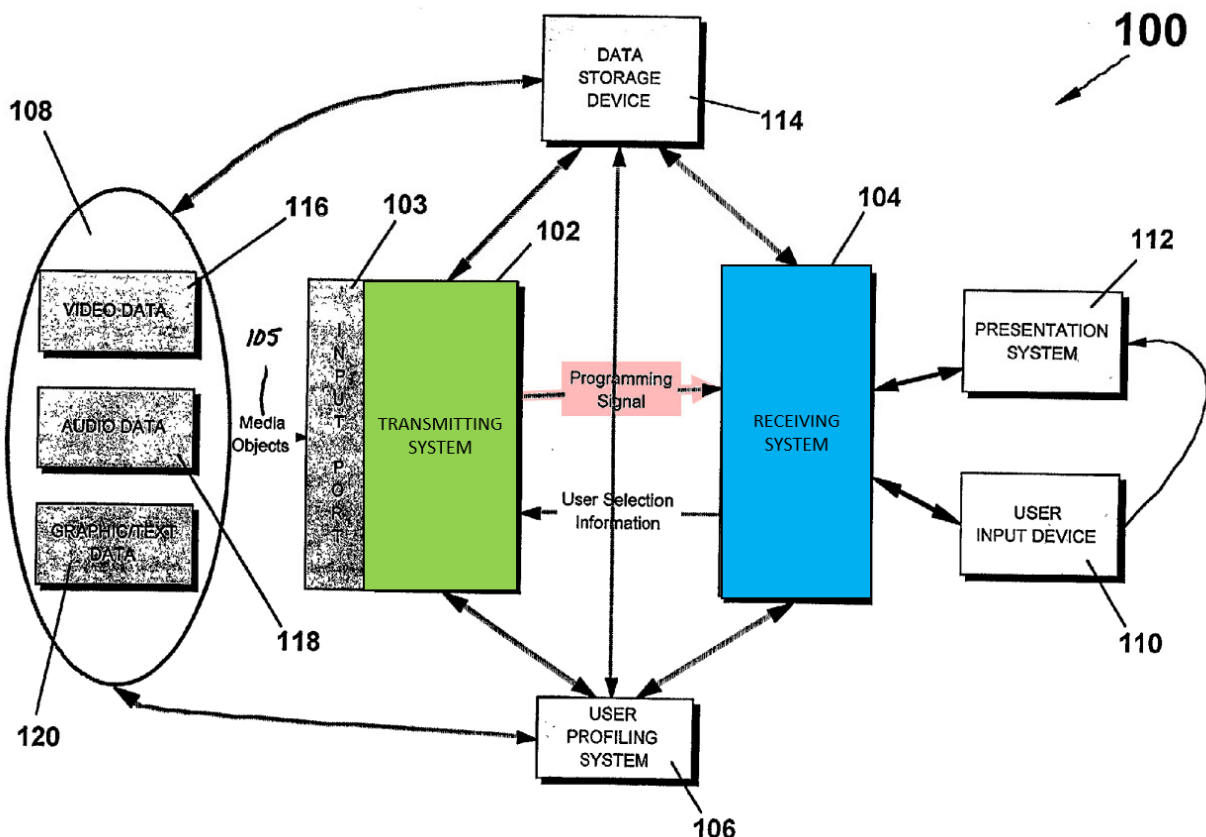
156. A POSITA would have understood that an obvious solution is to have **receiving system 104** provide to **transmitting system 102** (e.g., via existing user profiling system 106) information regarding the capabilities of presentation system 112, since **receiving system 104** is in direct communication with presentation system 112 (*“information about the associated client device”*), whereas **transmitting system 102** is not. EX1004 at Fig. 1. Including such information in Cristofalo’s profile information would allow **transmitting system 102** to better cater the media programming to the user’s needs while improving efficiency by not exceeding those needs. For example, knowing what formats are supported by the client device would allow **transmitting system 102** to ensure it does not transmit media programming in an unsupported format. As another example, knowing the client device’s maximum supported video resolution and frame rate would allow **transmitting system 102** to transmit media programming with the best resolution and frame rate supported by the client device for optimal viewing experience without needing to send multiple, different formats that unnecessarily consume network bandwidth. Plus, a POSITA would understand that there is a reasonable expectation of success in including such device information in Cristofalo’s profile information and customizing media programming based thereon, since **transmitting system 102** already supports different transmission formats and its purpose is specifically to customize media channel 170. EX1004 ¶¶ 8, 9, 19, 22, 34, 38, 47-48, 54.

157. In my opinion, to the extent PO argues that this limitation requires the *publisher* to receive the client information directly from the *aggregator* or that the *publisher* itself may track this client information, it would have been obvious to implement user profiling system 106 as part of *transmitting system 102*, and *transmitting system 102* would maintain the user profile information (“*client information*”) collected from *receiving system 104*. Cristofalo already recognizes that user profiling system 106 “is preferably co-located with the *transmitting system 102*.” EX1004 ¶ 37. Further integrating profiling system 106 into *transmitting system 102* would simplify processing and communications, since it would eliminate the need for a separate user profiling system 106 or transmitting user profile information over the network every time the user requests programming.

- (g) 1[f] *initiating, by the aggregator, for display at the client device, individual customized media programming comprising media elements selected from one or more libraries in communication with said publisher, wherein the selected media elements (i) correspond to at least one selected media feed and are responsive to said user information, and 1[i] (ii) are ordered and concatenated at least in part according to each selected media feed and said user information.*

158. In my opinion, Cristofalo discloses this element. In response to *receiving system 104* transmitting user selection information (“*initiating, by the aggregator*”) the *transmitting system 102* generates media programming consisting of media objects based on the user’s choice and user profile information

(“*individual customized media programming comprising media elements*”) and provides that media programming to the user (“*for display at the client device*”). EX1004 ¶¶ 9, 19, 22, 34, 38, 47-48, 54; *see also* EX1004 at FIG. 1 (“programming signal”).



159. Cristofalo discloses that the **transmitting system 102** generates media programming (“*individual customized media programming comprising media elements*”) based on the desired program selected by the user (“*correspond to at*

least one selected media feed”) and user profile information (*“responsive to said user information”*). EX1004 ¶¶ 9, 19, 22, 32, 17, 34, 38, 47-48, 54.

160. In my opinion, Marcus ’904 also discloses this element. Marcus ’904 addresses the lack of detail in Cristofalo regarding targeting by **transmitting system 102** by describing a receiver 100 that “collects media” from different “media source[s]” and “assembles a program from the collected media.” EX1005 ¶ 30. Specifically, Marcus ’904’s receiver “selects media elements from the media streams for inclusion in the programming based upon the user data,” “arranges the selected data elements into an order based upon the user data,” and concatenates the result, all based on user data (*“ordered and concatenated at least in part according to each selected media feed and said user information”*). EX1005 ¶ 40, 48, 87, 148-49, 237, 307. The media elements include both a “primary” stream desired by the user (*“selected media feed”*) and additional media elements, such as advertising or other programming. EX1005 ¶ 37-42, 48, 148, 252, 275, 307.

161. Marcus ’904 further incorporates by reference Marcus ’156, which provides additional details regarding the selection, ordering, and concatenating of media elements into media programming for a particular user. EX1005 ¶ 30; EX1008 at 8:1-9:21 (describing “Editor Program” that “selects and orders” clips), 9:22-10:8 (describing “Assembly Program”). The ’261 patent relies on incorporating by reference that same Marcus ’156 prior art reference for the exact same disclosure.

EX1001 at 1:24-29, 5:45-52, 9:23-33, 9:48-52, 10:17-19. Thus, Marcus '904, at least via its incorporation of Marcus '156, discloses the very same “*ordered and concatenated at least in part according to . . . user information*” described and claimed in the '261 patent. As noted above, it would have been obvious to a POSITA to incorporate Marcus '904's teaching of selecting, ordering, and concatenating media elements into Cristofalo's **transmitting system 102**, because both serve the same purpose of generating individualized media programming comprised of several media elements, and that Marcus '904's detailed disclosure provides an implementation with a high likelihood of success.

3. Claim 2:

- (a) 2[a]: *The method according to claim 1, further comprising the steps of collecting by the aggregator, from the client device, user information comprising information about an identified user, and*

162. In my opinion, Cristofalo discloses this element. Cristofalo discloses that its **receiving system 104** collects information regarding user interactions with presentation system 112 and user input device 110 (“*client device associated with a user*”) including the user's selected programs and user information stored on the user profiling system. (“*information about the user*”). EX1004 ¶¶ 25, 32, 34, 37, 39, 49, 52, Fig. 1; *see also* Section V.C.2.f.

- (b) **2[b]: *selecting media elements comprising said individual customized media programming according to parameters and instructions for assembling media programming based on the collected user information.***

163. In my opinion, Marcus '904 discloses this element. Marcus '904 (which incorporates by reference Marcus '156) discloses that the selection and assembly of media elements for a particular user ("*selecting media elements comprising said individual customized media programming*" and "*assembling media programming based on the collected user information*") is done via templates that include "*parameters*" and "*instructions.*" EX1005 ¶¶ 30, 37-42, 48, 139, 148-149, 151, 666, 676-683, 690; *see also* Section V.C.2.g.

164. Moreover, Marcus '904 further incorporates by reference Marcus '156, which provides additional details regarding the selection, ordering, and assembly of media elements into media programming for a particular user. EX1005 ¶ 30; EX1008 at 8:1-9:21 (describing "Editor Program" that "selects and orders" clips), 9:22-10:8 (describing "Assembly Program"). The '261 patent relies on incorporating by reference that same Marcus '156 prior art reference for the exact same disclosure. EX1001 at 1:24-29, 5:45-52, 9:23-33, 9:48-52, 10:17-19. Thus, Marcus '904, at least via its incorporation of Marcus '156, discloses the very same "*parameters and instructions for assembling media programming*" described and claimed in the '753 patent.

4. **Claim 3:** *The method according to claim 2, wherein the parameters and instructions are embodied in one or more templates, each template comprises a plurality of rules associated with said tags of said tagged media elements, and each template is associated with a selected library or a selected media feed.*

165. In my opinion, Marcus '904 discloses this claim. Marcus '904 includes extensive disclosure of using a “*template*” to generate the media programming. EX1005 ¶¶ 39-40, 139, 151, 666, 676-683, 690; EX1008 at 3:66-4:21, 8:2-9:21.

166. Further, it is my opinion that Marcus '904 discloses that its “templates” dictate how media elements are processed based on tags and thus include “*a plurality of rules associated with said tags of said tagged media elements.*” For example, Marcus '904 discloses that its “tags” (“*said tags of said tagged media elements*”) are “associated with the media elements and a template” (“*a plurality of rules*”) EX1005 ¶ 39-40. Marcus '904's “templates” are also associated with “*a selected library or a selected media feed*” at least because they are used to assemble the desired programming and advertising or other programming elements into Marcus '904's custom media programming. EX1005 ¶ 37-40, 48.

5. **Claim 4:** *The method according to claim 3, wherein the template is processed according to at least one rule for selection and sequencing of tagged media elements according to collected user information.*

167. In my opinion, Marcus '904 discloses this claim. Marcus '904 discloses that its “templates” are used by Marcus '904's receiver software to select, order, and

assemble media programming for a particular user (“*at least one rule for selection and sequencing of tagged media elements according to collected user information*”). EX1005 ¶¶ 30, 37-42, 48, 139, 148-149, 151, 666, 676-683, 690; *see also* Section V.C.2.g, V.C.3-4.

168. Marcus ’904 further incorporates by reference Marcus ’156, which provides additional details regarding the selection, ordering, and assembly of media elements into media programming for a particular user. EX1005 ¶ 30; EX1008 at 8:1-9:21 (describing “Editor Program” that “selects and orders” clips), 9:22-10:8 (describing “Assembly Program”). The ’261 patent relies on incorporating by reference that same Marcus ’156 prior art reference for the exact same disclosure. EX1001 at 1:24-29, 5:45-52, 9:23-33, 9:48-52, 10:17-19. Thus, Marcus ’904, at least via its incorporation of Marcus ’156, discloses the very same “*at least one rule for selection and sequencing of tagged media elements according to collected user information*” described and claimed in the ’261 patent.

6. **Claim 5: *The method according to claim 1, wherein a first feed responsive to the selection of one of the feeds is furnished during a first time period and a second feed comprising the individual customized media programming is furnished during a second time period.***

169. In my opinion, the combination of Cristofalo and Marcus ’904 discloses, or in the alternative, renders obvious, this claim. In the proposed combination of Cristofalo and Marcus ’904, the generated media programming

consists of a desired program selected by the user from available media programming (“*first feed*”) and other data elements inserted in response to the user profile information (“*individual customized media programming*”). See Section V.C.2.f. In this combination, the desired program plays initially (“*during a first time period*”), and the other media elements only play once they are reached (“*a second time period*”). A POSITA would understand that the media programming and other data elements would stream during different time periods. It was well known in the field to stream a first feed, such as a TV feed, radio channel, or a video streamed to an online streaming platform such as YouTube, broken up by advertisements.

7. **Claim 6: *The method according to claim 1, wherein the user information comprises a user profile.***

170. In my opinion, both Cristofalo and Marcus ’904 disclose this claim. The “*user information*” in both Cristofalo and Marcus ’904 comprises a “*user profile*”—indeed, both references use those exact words. EX1004 ¶ 39 (“The user profiling system 106 may be a stand-alone system, an Internet based system, or any other system **capable of generating user profiles** based upon user viewing habits (or listening habits-in the case of an audio program) and/or purchasing behavior.”); EX1005 ¶¶ 137, 304, 325 (discussing “**user profiles**”); see also Section V.C.1.e.

8. Claim 7: *The method according to claim 1, wherein the user information comprises user preference data.*

171. In my opinion, Marcus '904 discloses this limitation. Marcus '904 discloses that “*user profile information*” includes user “preferences” (“*preference data*”). EX1005 ¶¶ 97, 140, 157, 169, 335, 602, 669, 680; EX1008 at 10:9-20 (describing “Viewer Database” with “a file of preference information for the viewer”).

9. Claim 8: *The method according to claim 1, wherein the media programming comprises multiple streams of media elements.*

172. In my opinion, the combination of Cristofalo and Marcus '904 discloses this claim. In the proposed obviousness combination, the programming provided to the user consists of (1) a desired media stream, such as a particular channel (a first “*stream of media elements*”) and (2) advertising or other programming from other streams (a second “*stream of media elements*”) which collectively are “*multiple streams of media elements.*” EX1005 ¶¶ 30, 34, 39-40, 48-49, 252, 275.; *see also* Section V.C.2.b.

10. Claim 9: *The method according to claim 8, wherein portions of the multiple streams are concatenated according to user information.*

173. In my opinion, the Marcus '904 discloses this limitation. Marcus '904 discloses receiver 100 that receives “a plurality of tagged media streams” and “assembles the tagged media into programming.” EX1005 ¶¶ 30, 34, 39-40, 48-49.

Marcus '904 further discloses that this is done by “contatenat[ing]” the received assets. EX1005 ¶¶ 87, 237, 287; EX1008 at 14:13-17.

11. Claim 10: *The method according to claim 1, wherein the media elements comprise transitions, and the media elements are dynamically positioned, temporally or spatially, within the context of the media programming.*

174. In my opinion, the combination Marcus '904 discloses this claim. Marcus '904 discloses that advertisements and content (“*media elements*”) are included in the media programming in response to a user request (“*dynamically*”) and in a specific temporal order (“*positioned, temporally or spatially, within the context of the media programming*”). EX1005 ¶¶ 30, 34, 37-42, 48, 148-49, 252, 275.

175. Moreover, Marcus '904 further incorporates by reference Marcus '156, which provides additional details regarding the positioning of media elements into media programming for a particular user. EX1005 ¶ 30; EX1008 at 8:1-9:21 (describing “Editor Program” that “selects and orders” clips), 13:1-40 (creating templates for this ordering “dynamically”). The '753 patent relies on incorporating by reference that same Marcus '156 prior art reference for the exact same disclosure. EX1001 at 1:24-29, 5:45-52, 9:23-33, 9:48-52, 10:17-19. Thus, Marcus '904, at least via its incorporation of Marcus '156, discloses the very same “*media elements are dynamically positioned, temporally or spatially, within the context of the media programming*” described and claimed in the '753 patent.

176. In addition, Marcus '904 (and Marcus '156 incorporated therein) also disclose that these media elements can include “*transitions*,” either as free-standing “[s]hort transitional elements” or by modifying parts of other “media elements” to include, e.g., “slow dissolves.” EX1005 ¶¶ 86, 191, 287, 309, 646, 649, 663; *see also* EX1008 at 2:29-31, 4:28-29; 4:34-38, 8:33-35, 8:51-56, 14:13-17; 14:43-45.

VI. No Secondary Considerations of Non-Obviousness

177. I understand that so-called “secondary considerations” are legally relevant to an obviousness analysis. It is my opinion that the secondary considerations I considered here further weigh in favor of obviousness. In any event, secondary considerations cannot overcome the strong showing of obviousness. First, as addressed above in Section IV, market trends incentivized development work into generating custom media programming for specific users and resulted in simultaneous development by multiple entities. Second, PO alleges in its complaint that its product, “StimTV” was launched in 2005 and won an award in 2007 but without alleging that such product practiced the '261 patent. EX1011 ¶ 12. Given that StimTV was allegedly released more than a year before the '261 patent's effective filing date, PO seemingly never deemed the '261 patent sufficiently valuable or innovative to practice the claims. And even if PO did release any product practicing the '261 patent, I understand that PO ceased operations at some point in time, evidencing a lack of success for any product practicing the '261 patent.

VII. Conclusion

178. In signing this declaration, I recognize that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I also recognize that I may be subject to cross-examination in the case and that cross-examination will take place within the United States. If cross-examination is required of me, I will appear for cross-examination within the United States during the time allotted for cross-examination.

* * *

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on the information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Respectfully submitted,

Date: August 23, 2024



Kevin C. Almeroth, Ph.D.