

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HULU, LLC,

Petitioner,

v.

PIRANHA MEDIA DISTRIBUTION, LLC,

Patent Owner.

Case No. IPR2024-01252

U.S. Patent No. 11,463,768

PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 11,463,768

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EXHIBIT LIST

Exhibit No.	Description
1001	U.S. Patent No. 11,463,768 to Donian <i>et al.</i> (the '768 patent)
1002	Prosecution History for the '768 patent
1003	Declaration of Henry Houh, Ph.D.
1004	U.S. Patent No. 7,877,766 ("Wu")
1005	U.S. Patent Application Publication No. 2003/0200128 ("Doherty")
1006	Prosecution History for U.S. Patent No. 10,986,403 (the '403 patent)
1007	U.S. Pat. App. Pub. 2002/0161739 (Oh)
1008	U.S. Pat. App. Pub. 2001/0042249 (Knepper)
1009	U.S. Pat. App. Pub. 2003/0154128 (Liga)
1010	U.S. Pat. App. Pub. 2003/0149621 (Shteyn)
1011	<i>Piranha Media Distribution, LLC v. Hulu, LLC</i> , CDCA-2-24-cv-00498, Dkt. No. 28 (Piranha's Opposition to Hulu's Motion to Dismiss)
1012	U.S. Pat. App. Pub. 2002/0002674 (Grimes)
1013	U.S. Pat. App. Pub. 2003/0079133 (Breiter)
1014	U.S. Pat. App. Pub. 2001/0047338 (Jones)
1015	U.S. Patent No. 6,161,142 (Wolfe)
1016	U.S. Pat. App. Pub. 2002/0120515 (Morimoto)
1017	U.S. Pat. App. Pub. 2001/0049820 (Barton)
1018	U.S. Pat. App. Pub. 2003/0044162 (Angel)
1019	U.S. Patent No. 7,006,760 (Takagi)
1020	U.S. Patent No. 7,302,160 (Wells)
1021	U.S. 2002/0083439 (Eldering-I)
1022	<i>Piranha Media Distribution, LLC v. Hulu, LLC</i> , CDCA-2-24-cv-00498, Piranha's Infringement Contentions for the '768 Patent

The sponsorship revenue model has long been applied to the provision of media content, where advertisements are inserted in audio/video media such as television programs. The '768 patent does not purport to invent the practice of inserting advertisements but claims to be directed to adaptively selecting and re-sequencing advertisements in response to user playback controls. This concept was known before the '768 patent's priority date.

I. BACKGROUND

By the late 1990s, advertisements were integrated with audio/video media based on content structures, such as being organized into playlists and avails (available slots for ads) in media content. Ex-1003, ¶¶3-4.

The advent of video recording devices such as Personal Video Recorders (PVRs) revolutionized the media content viewing experience in the late 1990s. These devices offered increased flexibility for advertisement insertion, enabling providers to tailor ads to individual users and dynamically control their timing. Advertisers developed various approaches to schedule ads to optimize impact and engagement, such as by matching advertisements with user identity, type of media content, and time of viewing and dynamically adapting advertisement selection to changing conditions. *See, e.g.*, Ex-1007, ¶33; Ex-1008, ¶41, 61; Ex-1009, ¶6; Ex-1021, ¶16, ¶30; Ex-1003, ¶5.

Video recording technologies also enabled viewers to skip commercials, altering the traditional advertising model. In response, providers implemented various measures to counteract ad-skipping. Commonly used techniques included disabling user control such as skipping and fast forwarding during commercial breaks. Ex-1009, ¶10. The techniques also included strategies to provide alternatives in response to user actions skipping advertisements. For example, while a user might be allowed to skip an advertisement, a replacement would be displayed to the user at an alternative time. Types of replacements included the same advertisement, a different advertisement, or an advertisement in another format or state (e.g., overlay or pop-ups, shorter versions). By 2002, various techniques had been developed to select and schedule replacement advertisements. *See, e.g.*, Ex-1010, ¶¶10-11; Ex-1003, ¶6.

II. THE '768 PATENT

A. Overview

The '768 patent “relates generally to the distribution of audio, video, and print media content via digital replication and delivery channels.” Ex-1001, 1:27-29. The '768 patent discusses inserting and displaying advertisements within media content. Ex-1001, 7:45-55; Ex-1003, ¶7.

The '768 patent admits that displaying advertising content within media content was known in the art. Ex-1001, 7:4-18; Ex-1003, ¶8. The purportedly

inventive concept of the '768 patent is to adaptively select and re-sequence ads in response to user playback controls. *See* Ex-1001, 7:45-55, 15:4-18, 28:62-29:7. By doing so, the '768 patent claims to ensure ads playing without user interruption and allow users to access free media content in exchange of exposure to ads. *See, e.g.,* Ex-1001, 6:63-7:3, 8:46-58, 14:37-59, 15:4-18; Ex-1003, ¶9. However, the idea of selecting and re-sequencing ads for display and the business model of providing free access to media content were known well before the '768 patent. *Supra* §I; Ex-1001, 8:32-45, 42:51-67; Ex-1003, ¶10.

B. Prosecution History

The '768 patent was allowed after two Office Actions. Ex-1002, 000345. In the first Office Action, the Examiner rejected the claims as being anticipated over U.S. Patent Application Publication No. 2007/0204310. Ex-1002, 000125-130. In response, the Applicant argued that the cited reference is not prior art. Ex-1002, 000153-154. In the second Office Action, the Examiner rejected the claims under non-statutory double patenting and did not raise any prior-art rejection. Ex-1002, 000297-301; Ex-1003, ¶11.

In the last Office Action with prior-art rejections for the parent of the '768 patent, U.S. Patent No. 10,986,403 (the '403 patent), the examiner rejected pending independent claims as obvious over U.S. Pat. App. Pub. No. 2001/0042249 (Knepper) in view of U.S. Patent No. 7,761,327 (Hannah) and U.S.

Pat. App. Pub. No. 2002/0191950 (Wang). Ex-1006, 000632. Upon appeal by the Applicant (Ex-1006, 000727-767), the PTAB stated that it did not see where Knepper teaches that “when a user does not follow the pre-set order of the playlist, by skipping media files in the sequence, the order of the play list changes [and] the position of the ad file also changes within the playlist” and “adaptively modifying or re-sequencing the presentation position in response to user input[.]” Ex-1006, 000895-96; Ex-1003, ¶12. As explained below, Ground 1 provides the teachings that the PTAB found to be lacking in Knepper.

C. Priority Date

The '768 patent was filed April 19, 2021, and claims priority to the '403 patent, filed on June 26, 2003, and U.S. Provisional Patent Application Nos. 60/393,193 and 60/392,232, both filed on June 27, 2002. This Petition analyzes obviousness as of June 27, 2002, and all relied-upon art predates this date. Ex-1003, ¶13.

III. LEVEL OF ORDINARY SKILL IN THE ART

The field of the '768 patent is media display. *See, e.g.*, Ex-1001, Abstract, 1:27-29; Ex-1003, ¶15. A POSITA at the time of the alleged invention of the '768 patent would have been a person with a bachelor's degree in electrical engineering, computer science, or a similar field with at least two years of experience in media display or a person with a master's degree in electrical engineering, computer

science, or a similar field with a specialization in media display. Additional experience can substitute for the level of education, and vice-versa. Ex-1003, ¶¶16-18.

IV. CLAIM CONSTRUCTION

A. “intersplicer”

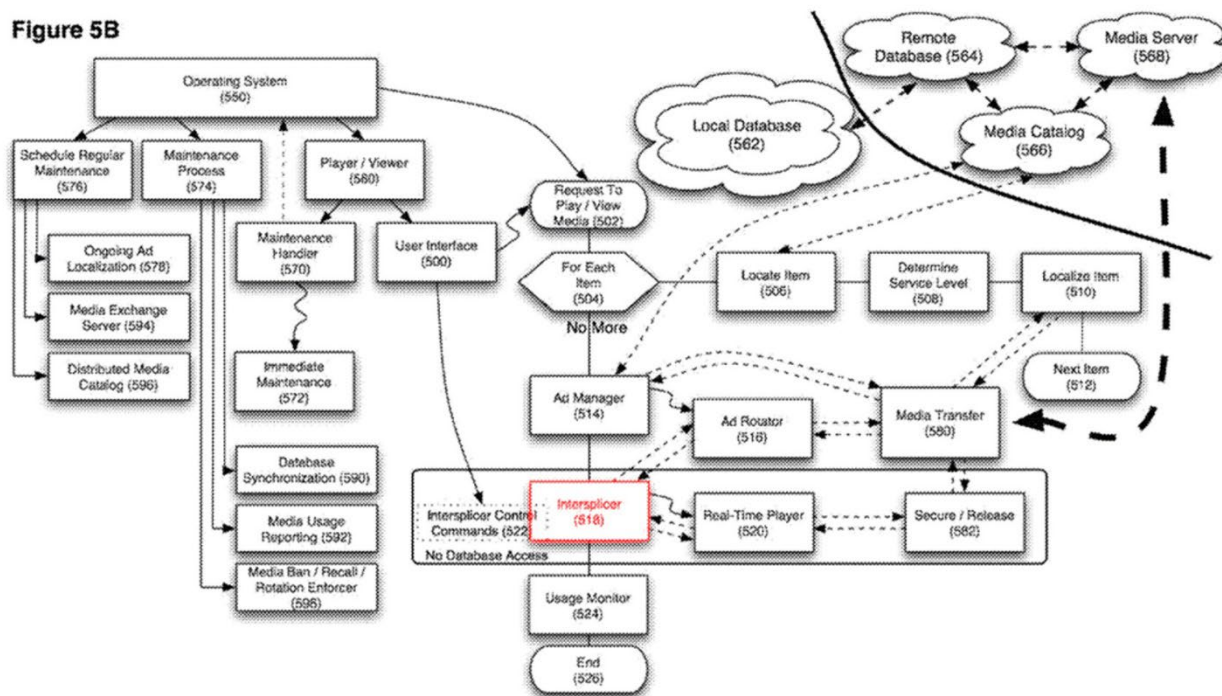
A POSITA would have understood “intersplicer” to mean “software that selects advertising content and controls insertion and conveyance of advertising content in media content.” Ex-1003, ¶21. Claims of the ’768 patent recite multiple ways that the intersplicer controls the insertion and conveyance of advertising content in media content, including, for example, “chang[ing] a predetermined advertisement insertion point in the digital media content to an adapted advertisement insertion point.” Ex-1001, cl. 1; *see also id.*, cls. 3, 6. The claims further specify the intersplicer’s functionality to select advertising content by requiring it to “request, from the advertisement rotator, digital advertising content to be played at the adapted advertisement insertion point.” *Id.*, cl. 1; Ex-1003, ¶22. This interpretation is confirmed by the specification of the ’768 patent, which states that the intersplicer “select[s] ... the ads to be shown” and controls the insertion and conveyance of ads by, for example, “automatically edits the selected advertisements into the presentation stream.” Ex-1001, 7:45-55; *see also, e.g.*, Abstract, 15:4-18; Ex-1003, ¶23.

In the district court litigation, Patent Owner proposed to construe “intersplicer” as “digital rights management software that enforces the conveyance of advertisements inserted into a digital media stream for presentation during the course of media playback to allow for free, unlimited viewing of requested digital media through a general licensing process that is transparent to the user.” Ex-1011, 000006, 000012. This construction is incorrect because it imports unsupported limitations. Ex-1003, ¶24.

First, the claims do not recite that the intersplicer is “digital rights management software” or that the intersplicer “allow[s] for free, unlimited viewing of requested digital media through a general licensing process that is transparent to the user.” *Id.*; Ex-1001, 44:17-48:20; Ex-1003, ¶24.

Second, the specification states that the player/viewer software has digital rights management functionalities and has the ability to provide means for unlimited free viewing. *E.g.*, Ex-1001, 6:53-62, 14:37-49. However, the intersplicer is just one of many components of the player/viewer software. Ex-1001, 22:24-38, 23:46-57, Fig. 5A, 24:31-36, Fig. 5B (showing “logical components of the player/viewer” including the intersplicer 518 among various others):

Figure 5B



The specification states that another module (i.e., the real-time player module) provides digital rights management functionalities. Ex-1001, 14:61-15:3 (“a digital rights management enabled real-time player module”). Ex-1003, ¶25. It is improper to attribute the specification’s description of the player/viewer software to the intersplior. Furthermore, the specification is not limited to providing free, unlimited viewing of requested digital media through a general licensing process because it discloses a purchased service level with advertisements among others. *E.g.*, Ex-1001, 27:11-26 (“[E]ach title may be ... included (with or without ads) as part of a specific subscription package, specifically purchased for uninterrupted use on a short-term basis (fixed time period or total number of uses)[.]”); Ex-1003, ¶26.

Patent Owner’s proposed construction is also inconsistent with its Infringement Contentions for the ’768 patent. The Infringement Contentions allege that the intersplicer is “for controlling one or more insertion points of the digital advertising content into the digital media content” (Ex-1022, 000021, 25), and do not assert that the accused software is “digital rights management software,” “enforces the conveyance of advertisements inserted into a digital media stream,” or “allow[s] for free, unlimited viewing of requested digital media through a general licensing process that is transparent to the user.” Ex-1022, 000021-30; Ex-1003, ¶27.

V. IDENTIFICATION OF CHALLENGE

Petitioner requests *inter partes* review and cancelation of the challenged claims on the following ground:

Ground	Claims	Statutory Basis	Prior Art ¹
1	1-3, 5-12, 14-21, 23-25, 27-29, 31-33	§ 103	Wu in view of Doherty

The Ground renders the challenged claims obvious because any differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to

¹ Pre-AIA 35 U.S.C. §102 applies. MPEP §2159.02.

a POSITA to which the subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

A. Ground 1

1. Wu (Ex-1004)

Wu was filed May 4, 2000 and later issued as a patent. Wu is prior art under at least pre-AIA §102(e) because it was filed before June 27, 2002. Ex-1003, ¶32.

Wu “relates to the field of digital media streams” (Ex-1004, 1:6-9) and teaches providing non-skippable advertisements. Ex-1004, Abstract, 2:46-2:59; Ex-1003, ¶33.

Wu teaches a digital recording/play back system that allows users to fast forward through or skip over advertisements during playback. Ex-1004, 5:40-55, 7:6-22. When a user fast forwards through or skips over an advertisement, Wu prevents the user from entirely skipping the advertisement by displaying a sub-advertisement that is selected based on multiple factors in response. *E.g.*, Ex-1004, 2:36-45, 5:40-55, 7:63-8:12, 8:36-45. This sub-advertisement may be displayed as a full-screen display while the media stream is stopped or paused. Ex-1004, 8:36-9:28, 3:24-35, 5:40-55, Figs. 5A-5E; Ex-1003, ¶34.

Wu is in the same field of endeavor as the ’768 patent because it is directed to displaying video streams. *See supra* §III; *e.g.*, Ex-1004, 1:6-9; Ex-1003, ¶35.

2. Doherty (Ex-1005)

Doherty was filed March 10, 2000 and published October 23, 2003. Doherty is prior art under at least pre-AIA §102(e) because it was filed before June 27, 2002. Ex-1003, ¶37.

Doherty “relates to a method and apparatus for displaying items of information on a display apparatus[,]” including advertisements. Ex-1005, ¶1, ¶25, ¶27; Ex-1003, ¶38. Doherty teaches a scheduler that selects advertisements and other items of information for a user and creates a schedule that includes references to the ads. Ex-1005, ¶31, ¶38, Fig. 2. In response to a user input, the scheduler clears the schedule and re-schedules the advertisements and other items of information based on their associated priorities. Ex-1005, Abstract, ¶¶7-12, ¶30, ¶40, ¶48, ¶52, ¶57, Figs. 6, 10; Ex-1003, ¶¶39-40.

Doherty is in the same field of endeavor as the ’768 patent because it is directed to media display. *See supra* §III; *e.g.*, Ex-1005, Abstract, ¶1, ¶¶7-12, ¶27; Ex-1001, 1:27-29, Abstract; Ex-1003, ¶41. Doherty is reasonably pertinent to the problem with which the ’768 patent is concerned because both Doherty and the ’768 patent purport to address problems of effectively exposing audience to advertising content. *See, e.g.*, Ex-1005, ¶¶2-4; Ex-1001, 1:33-2:16, 6:33-7:26; Ex-1003, ¶41.

3. Independent Claim 1

[1a] A digital media system comprising:

Wu teaches the preamble. Ex-1003, ¶¶42-44.

Wu teaches **a digital media system** (e.g., electronic digital recording/play back system) that provides digital media content (e.g., media stream) to users. *E.g.*, Ex-1004, 4:39-53 (“FIG. 1 is a block diagram of one embodiment of an exemplary *electronic digital recording/play back system* 100 used in accordance with the present invention.”),² 2:18-59, Fig. 1:

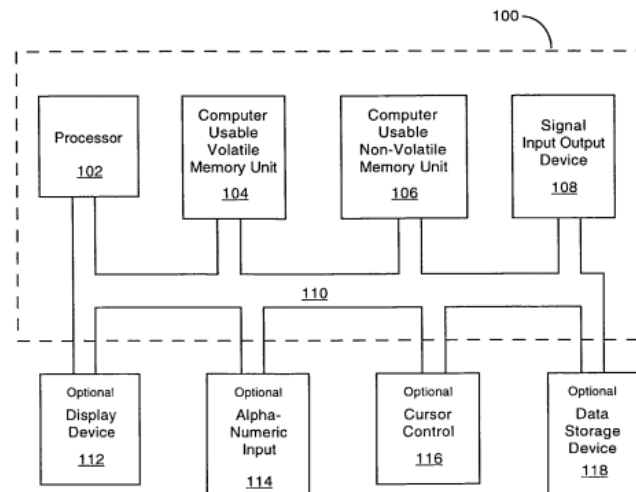


Fig. 1

See also Ex-1004, 5:56-6:11, Fig. 2; Ex-1003, ¶43.

² All annotations/emphasis added unless otherwise noted.

The combination of Wu and Doherty teaches a digital media system that comprises the components and operations explained below for limitations [1b]-[1h]. *Infra* §§V.A.3[1b]-[1h]; Ex-1003, ¶44.

[1b] a user interface for receiving user input for controlling a course of presentation of digital media content;

Wu teaches a digital media system (e.g., electronic digital recording/play back system) that includes a user interface implemented through input and output devices such as a cursor control or cursor directing device, an alphanumeric input device, and a display device. Ex-1004, 5:19-34 (“[T]he electronic digital recording/play back device 100 of FIG. 1 can include an optional cursor control or cursor directing device 116 coupled to the bus 110 for communicating user input information and command selections to the central processor(s) 102. The cursor directing device 116 can be implemented using a number of devices such as a mouse, a track ball, a track pad, an optical tracking device, a touch screen, etc.”), 5:6-18 (“Optionally, electronic digital recording/play back system 100 can include a display device 112 which is coupled to bus 110 for displaying video and/or graphics.”). These components together provide a user interface by displaying media content and advertisements to a user, receiving input from the user, and controlling the display based on the user input (e.g., via a cursor). *Id.*; Ex-1003, ¶45.

Wu's user interface is **for receiving user input for controlling a course of presentation of digital media content** because Wu teaches user input causing the electronic digital recording/play back system to perform operations such as skipping over or fast forwarding through digital media content. Ex-1004, 1:42-63 (“Additionally, during play back of a previously recorded television show, the electronic digital recording/play back device also enables its user to fast forward or skip through all or some of the recorded television show.”). These functionalities allow the user to fast forward through or skip over advertisements. *See, e.g.*, Ex-1004, 2:24-35, 5:40-55, 7:6-22; Ex-1003, ¶46. Skipping over or fast forwarding through digital media content controls its course of presentation by, for example, bypassing portions of the digital media content, changing its play position, or changing its playback speed. Ex-1004, 5:19-34; Ex-1003, ¶47. Thus, Wu teaches limitation [1b]. Ex-1003, ¶¶45-48.

[1c] an advertisement rotator for managing one or more requests for advertising content to be presented during the course of presentation of the digital media content either visually or audibly; and
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The combination of Wu and Doherty teaches **an advertisement rotator for managing one or more requests for advertising content**. As further explained below, Wu teaches that its digital media system (e.g., electronic digital recording/play back system) inserts and displays an advertisement (e.g., sub-advertisement) in response to a user input changing a play position of a media

stream. *E.g.*, Ex-1004, 2:24-35, 5:40-55, 8:36-45; *infra* §V.A.3[1e]. The advertisement to display is selected based on multiple factors such as priority, time, and source. Ex-1004, 7:63-8:12; *infra* §V.A.3[1f]; Ex-1003, ¶49.

Wu teaches retrieving advertisements from local storage for display. *E.g.*, Ex-1004, 7:63-8:12 (“[S]ub-advertisement 206 may be stored by a memory device[.]”). Furthermore, the advertisements in the local storage are updated from time to time. *Id.*; Ex-1003, ¶50.

Wu teaches implementing functionalities of its system using software. Ex-1004, 4:39-53. A POSITA would have understood from the above teachings that Wu contemplates a software component that retrieves selected advertisements from the local storage in response to requests from another software component that selects advertisements and controls the insertion and display of advertisements in media content. Thus Wu teaches an advertisement rotator for managing one or more requests for advertising content. Ex-1003, ¶51.

To the extent Wu does not single out a particular software component with functionalities corresponding to an “advertisement rotator,” Doherty teaches an advertisement rotator (e.g., output compiler) for managing one or more requests for advertising content. Ex-1005, ¶27 (“The apparatus 1 comprises ... output compiler 110.”), Fig. 1:

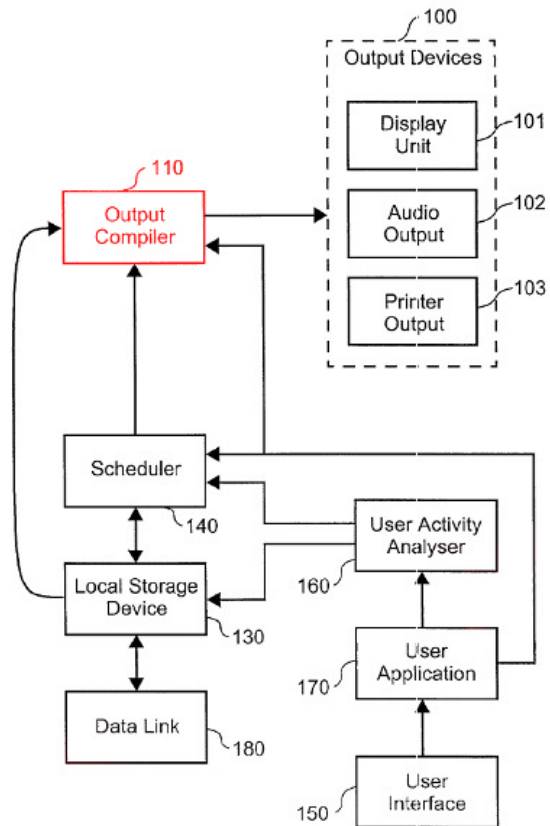


Fig. 1

Ex-1003, ¶52.

The output compiler receives references to advertisements from a scheduler³ and, in response, obtains advertisements from a local storage. Ex-1005, ¶28:

The output compiler 110 obtains a reference to an advertisement from a schedule supplied by the scheduler 140 and uses the reference to obtain the advertisement data from the local storage device 130, which contains the database of advertisements.

³ The scheduler is further discussed below with respect to limitations [1d]-[1h]. *Infra* §§V.A.3[1d]-[1h].

Here, the output compiler selects, from the advertisements stored in local storage, advertisements that match the references for retrieval. The output compiler further renders advertisements and outputs them for display. Ex-1005, ¶¶54-55 (“Once there is an advertisement to be compiled, step 830 retrieves the data from the local storage device 130 and step 840 decodes and renders the data where necessary. After decoding and rendering the data, step 850 then sends the data to the output devices 100 ready for output.”), Fig. 8:

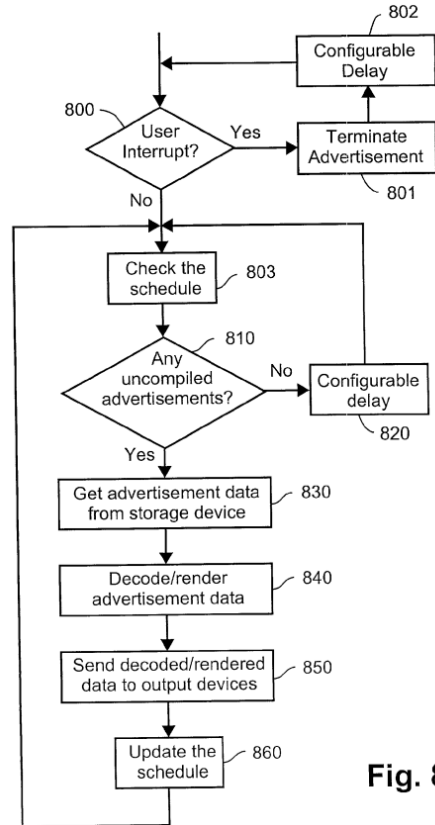


Fig. 8

Ex-1003, ¶53.

The reference to advertisement is placed in the schedule by a scheduler to request the output compiler to retrieve and output the advertisement. Ex-1005,

¶¶37-38 (“A reference to the advertisement is placed in the schedule 120 by step 260 of the process.”), Fig. 2:

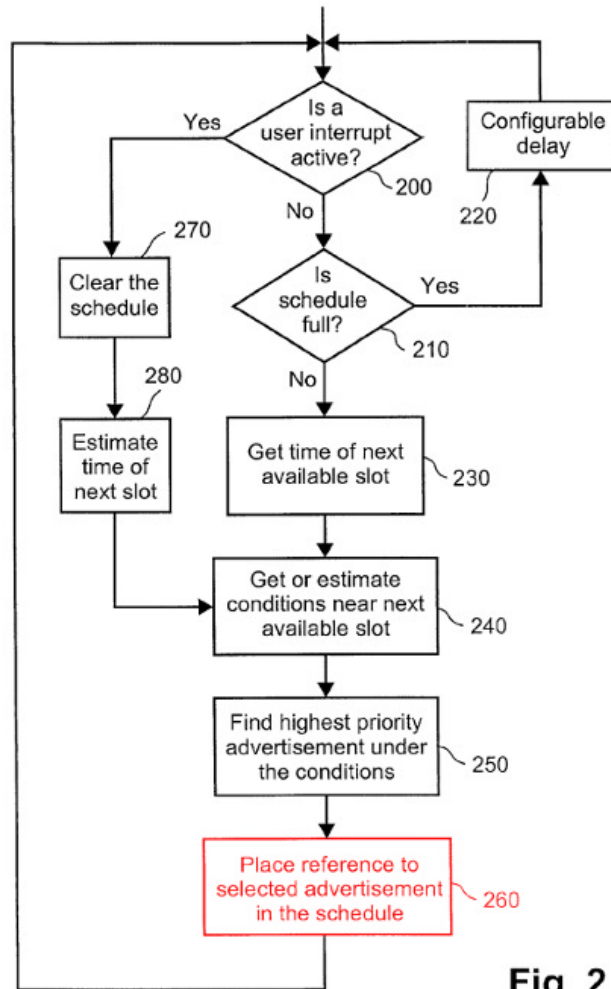


Fig. 2

Ex-1003, ¶54.

The reference to advertisement in Doherty is a request for advertising content because it is sent from the scheduler to the output compiler, requesting advertising content to be retrieved and output. Ex-1005, ¶¶37-38, Fig. 2. Doherty teaches that the output compiler constitutes an advertisement rotator for managing one or more requests for advertising content by selecting advertisements

referenced in schedules from the scheduler and retrieving and outputting the advertisements. Ex-1005, ¶28, ¶¶54-55, ¶57, Figs. 8, 10. Doherty's output compiler teaches an advertisement rotator because it performs the claimed operations of the advertisement rotator, as explained above. Ex-1005, ¶¶27-28, ¶30, ¶35, ¶¶54-57; Ex-1003, ¶55.

Wu and Doherty's teachings satisfy "advertisement rotator" as the term is used in the '768 patent. The '768 patent uses "advertisement rotator" to refer to software that provides advertisements in response to requests for advertisements. *See, e.g.*, '768 patent, 28:37-29:31, 32:52-33:40, Fig. 5B. As explained above, Wu and Doherty teach software that provides advertisements in response to requests. Ex-1003, ¶56.

A POSITA would have found it obvious to apply Doherty's teachings regarding its output compiler with Wu's digital media system to implement the functionality of selecting and retrieving advertisements in response to requests. As explained above, Wu contemplates a software component that retrieves selected advertisements from the local storage in response to requests from another software component that schedules advertisements for display. Doherty's output compiler is exactly such a software component, which manages requests for advertising content from Doherty's scheduler. Thus, a POSITA would have found Doherty's teachings about its output compiler to be readily applicable to Wu.

Doing so would have been nothing more than applying a known technique (e.g., functionalities of Doherty's output compiler) to a known device (e.g., Wu's electronic digital recording/play back system) to yield predictable results. Since retrieving selected media content (e.g., advertisements) from local storage for display was a routine and conventional computer operation (*supra* §III) and Wu contemplates the functionality of Doherty's output compiler, a POSITA would have had a reasonable expectation of success in combining Wu and Doherty. Ex-1003, ¶57.

The combination further teaches that the advertising content is **presented during the course of presentation of the digital media content either visually or audibly**. Wu teaches presenting its sub-advertisement simultaneously with the digital media content "as an overlay" or in between two portions of the digital media content when the media stream is "stopped or paused." *E.g.*, Ex-1004, 8:20-45, 8:58-9:28, Figs. 3, 5A-5E. In both cases, the advertisement content is presented during the course of presentation of the digital media content. Ex-1003, ¶58.

Doherty teaches creating schedules that include advertisements and other items of information, which are media content. *E.g.*, Ex-1005, ¶25, ¶29, ¶¶37-39, ¶57. Furthermore, Doherty teaches presenting digital media content (e.g., items of information) and that the output compiler retrieves and outputs advertisements when there is no interrupt and items of information are being presented. *E.g.*, Ex-

1005, ¶37, ¶¶54-55, ¶57, Figs. 8, 10. Therefore, Doherty teaches an advertisement rotator for managing requests for advertising content to be presented during the course of presentation of the digital media content. Ex-1003, ¶59.

Both Wu and Doherty teach presenting advertisements and other items of information visually or audibly. *E.g.*, Ex-1004, 6:31-49, 7:44-62; Ex-1005, ¶27; Ex-1003, ¶60.

The combination therefore teaches limitation [1c]. Ex-1003, ¶¶49-61.

[1d] an intersplicer in communication with the advertisement rotator, the intersplicer configured to:
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The combination of Wu and Doherty teaches **an intersplicer in communication with the advertisement rotator**. As further explained with respect to limitation [1e], Wu teaches that its digital media system (e.g., electronic digital recording/play back system) displays an advertisement (e.g., sub-advertisement) in response to a user input changing a play position of a media stream. *E.g.*, Ex-1004, 2:24-35, 5:40-55, 8:36-45; *infra* §V.A.3[1e]. As explained with respect to limitation [1c], Wu teaches implementing functionalities of its system using software and contemplates a software component that selects advertisements and controls their insertion and conveyance (e.g., display) in media content, which requests another software component to retrieve advertisements from local storage. Ex-1004, 4:39-53, 7:63-8:12; *supra* §V.A.3[1c]. In light of

these disclosures, Wu teaches an intersplicer in communication with the advertisement rotator. *Supra* §IV.A; Ex-1003, ¶62.

To the extent Wu does not single out a particular software component with functionalities corresponding to an “intersplicer,” Doherty teaches an intersplicer (e.g., scheduler) in communication with the advertisement rotator (e.g., output compiler). Ex-1005, ¶27 (“The apparatus 1 comprises ... a Scheduler 140[.]”), ¶28 (“The *output compiler 110* obtains a reference to an advertisement from a schedule supplied by the *scheduler 140[.]*”), Fig. 1:

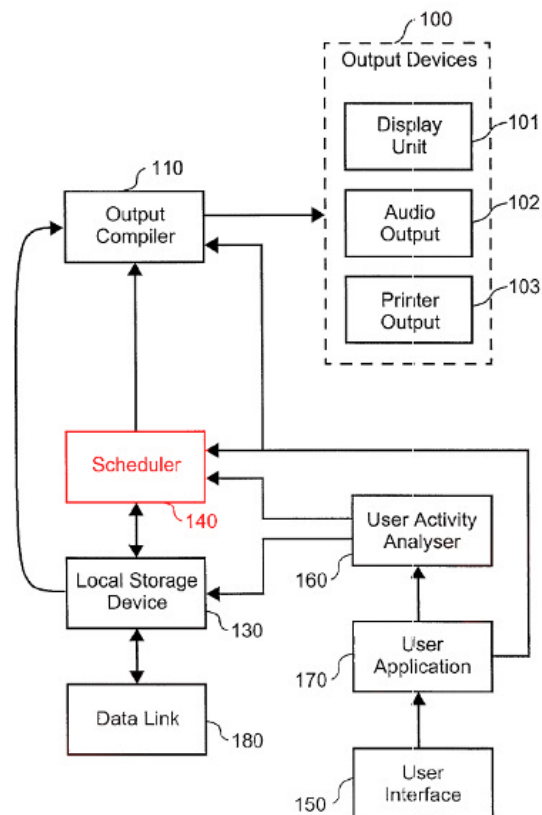


Fig. 1

Ex-1003, ¶63.

Doherty's scheduler "records a log of advertisements and other items of information to be scheduled and displayed by the output devices []." Ex-1005, ¶29. The scheduler selects advertisements and other items of information for a user and creates a schedule that includes references to the advertisements and other items of information. Ex-1005, ¶38 ("The conditions are then obtained or estimated in step 240 so that the most suitable advertisement or other item of information can be selected in step 250. ... A reference to the advertisement is placed in the schedule 120 by step 260 of the process."), ¶31, Fig. 2:

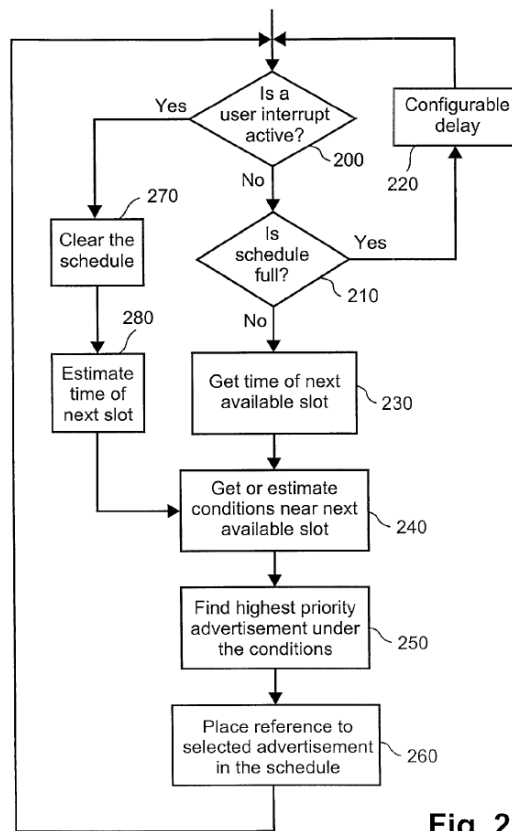


Fig. 2

Ex-1003, ¶64.

In response to a user input, the scheduler clears the schedule and re-schedules the advertisements and other items of information. Ex-1005, ¶30 (“The user interacts with the apparatus 1 through the user interface 150. ... The user interrupt is supplied to the scheduler 140, in response to which the schedule is cleared and rescheduling is undertaken.”), ¶57, Fig. 10; Ex-1003, ¶65.

The scheduler is in communication with the output compiler by supplying the schedule to the output compiler and causing the output compiler to obtain and render the scheduled content. Ex-1005, ¶¶28-29; *supra* §V.A.3[1c]; Ex-1003, ¶66.

Doherty’s scheduler teaches an intersplicer because it selects advertising content and controls insertion and conveyance of advertising content in media content (e.g., other items of information) and is configured to perform the operations recited in limitations [1e]-[1h], as explained below. *Supra* §IV.A; *infra* §§V.A.3[1e]-[1h]. As explained above, Doherty’s scheduler selects, schedules, and reschedules advertisements. By scheduling and rescheduling advertisements, the scheduler controls how advertisements are inserted in a sequence of items of information and conveyed to the user. Ex-1005, ¶57 (“While the scheduling process 140 schedules advertisement (n+2), the output compiler 110 compiles advertisement (n+1) and the output devices 100 play advertisement (n-1) followed by advertisement n. ... During the period of user interaction the scheduling process

140 continuously re-schedules the advertisements expecting the user to finish at any time.”), Fig. 10:

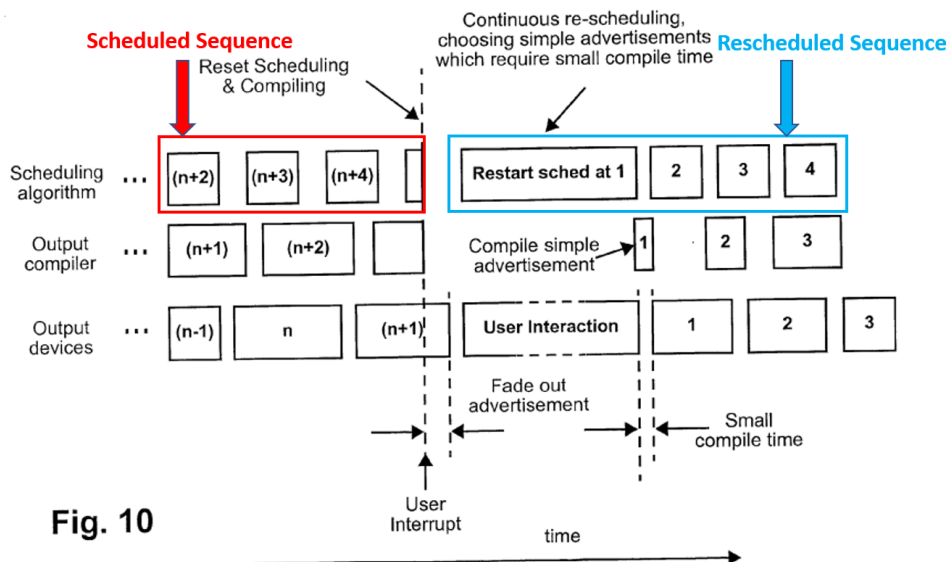


Fig. 10

Ex-1003, ¶67.

It would have been obvious to apply Doherty’s teachings regarding its scheduler with Wu’s digital media system to implement the functionality of selecting, scheduling, and rescheduling advertisements. As explained above, Wu contemplates a software component that selects advertisements and controls their insertion and conveyance. Doherty’s scheduler is exactly such a software component, which selects advertisements and controls when each advertisement is inserted for display. A POSITA would have found Doherty’s teachings about its scheduler a suitable approach for implementing Wu’s advertisement selection and scheduling functionalities. This is at least because Wu and Doherty are both directed to displaying advertisements among other media content and it was

common to divide media content (e.g., television programs) into sections, each including an item of information. Applying Doherty's teachings to Wu would have been simply applying a known technique (e.g., functionalities of Doherty's scheduler) to a known device (e.g., Wu's electronic digital recording/play back system) to yield predictable results. A POSITA would have had a reasonable expectation of success in applying Doherty's teachings to Wu because software solutions for selecting and scheduling media were well known. Furthermore, a POSITA would have been motivated to apply Doherty's teachings about the scheduler to Wu because the scheduler's priority-based mechanism for scheduling advertisements provides multiple benefits, including facilitating scheduling suitable advertisements for the user at the right time, enabling synthesizing multiple factors in selecting and scheduling advertisements, and improving user experience by allowing delayed display of advertisement and ensuring that advertisements are viewed by the user. *Infra* §V.A.3[1e]; Ex-1003, ¶68.

The combination of Wu and Doherty teaches an intersplicer configured to perform the operations recited in limitations [1e]-[1h], as explained below. *Infra* §§V.A.3[1e]-[1h]; Ex-1003, ¶69.

The combination teaches "intersplicer" even under Patent Owner's proposed construction. *Supra* §IV.A; Ex-1011, 000006, 000012. First, the combination teaches managing insertion of advertisements to the media stream. *E.g.*, Ex-1005,

¶29, ¶¶37-39, ¶57; *infra* §V.A.3[1e] (explaining obviousness of using Doherty's scheduler teachings to control insertion of sub-advertisement in Wu). This teaches an intersplicer that **enforces the conveyance of advertisements** by scheduling their insertion into a digital media stream. Ex-1003, ¶70.

Second, Wu teaches enforcing the conveyance of advertisements by disabling the user's ability to turn off, fast forward through, or skip over them. Ex-1004, 8:46-57 ("With reference still to step 312, it is understood that sub-advertisement 206 of the present embodiment cannot be turned off, fast forwarded through, or skipped over by the user of electronic digital recording/play back device 100."), 2:18-23, 2:36-45. The combination thus teaches **enforcing the conveyance of advertisements**. Ex-1003, ¶71.

Third, the combination of Wu and Doherty teaches managing a user's access to digital media content. Wu limits the user's access to digital media content, for example, by pausing the digital media content when an advertisement is displayed and preventing the user to skip the advertisement. Ex-1004, 8:36-45 ("For example, the output of the recorded media stream 204 to display device 112 may be stopped or paused while the present embodiment outputs sub-advertisement stream 206 as a full screen display to display device 112."), 8:46-57. Therefore, the combination of Wu and Doherty teaches **digital rights management software**. Ex-1003, ¶72.

Furthermore, digital rights management software, with functionalities such as encrypting and decrypting media content, was widely used for distribution of digital media content in the 2002 timeframe. *See* Ex-1012; Ex-1013; Ex-1003, ¶73. Wu teaches providing copyrighted content (e.g., television programming) to a user and allowing the capabilities of recording and playing back such content. *E.g.*, Ex-1004, 5:40-55. A POSITA would have understood digital rights management functionalities were often implemented on systems with capabilities to record and play back copyrighted content to manage access, copying, or sharing of the content and that it would have been obvious to apply such functionalities to the system taught by the combination of Wu and Doherty. Ex-1003, ¶73.

Finally, in the 2002 timeframe, digital media content was commonly made available to the public on the Internet for free, unlimited use with the help of advertisement revenue. *See, e.g.*, Ex-1014, ¶¶13-14; Ex-1015, 1:57-65; Ex-1016, ¶11. This is confirmed by the '768 patent's "Description of Background Art" section, which acknowledges that the advertising sponsorship business model was known. *See* Ex-1001, 1:66-2:16; Ex-1003, ¶74. Because the scheduling software taught by Ground 1 enables inserting advertisements in media streams (*infra* §V.A.3[1e]), the combination allows the copyright owner to be rewarded by advertisement revenue. Furthermore, Wu teaches allowing users to freely access any portion of media content and maintain control over the play position. *E.g.*, Ex-

1004, 1:42-63 (“Additionally, during play back of a previously recorded television show, the electronic digital recording/play back device also enables its user to fast forward or skip through all or some of the recorded television show.”); *supra* §V.A.3[1b]. Wu does not limit the user’s ability to use well-known and conventional control functionalities. Therefore, the scheduling software of the combination allows **for free, unlimited viewing of requested digital media through a general licensing process that is transparent to the user** as long as it is used by a content provider that does not charge a fee or hide the licensing terms from users. Ex-1003, ¶75.

[1e] change a predetermined advertisement insertion point in the digital media content to an adapted advertisement insertion point in the digital media content, in response to receiving a user input to update a current play position in the digital media content to a new play position in the digital media content,
--

Wu teaches **receiving a user input** (e.g., skipping, fast forwarding) for skipping over or fast forwarding through digital media content. Ex-1004, 1:42-63; *supra* §V.A.3[1b]. A skipping or fast forwarding input from the user may bypass advertising content as well as media content. *E.g.*, Ex-1004, 5:40-55, 7:6-22, 2:24-35; Ex-1010, ¶19 (“For example, a remote control associated with the electronic device comprises a ‘skip’ button that triggers a command for bypassing a fixed portion of content, e.g. 30 seconds skipping or 60 seconds skipping.”); *supra* §V.A.3[1b]; Ex-1003, ¶76.

The user input for skipping or fast forwarding **updates a current play position in the digital media content** (e.g., a position preceding the skipped over portion) **to a new play position in the digital media content** (e.g., a position subsequent to the skipped over portion). *See, e.g.*, Ex-1010, ¶21; Ex-1017, ¶34, ¶36, Fig. 5; Ex-1018, ¶¶10-15, Fig. 1. This is the case when the user input causes at least part of an advertisement to be skipped. *See, e.g.*, Ex-1010, ¶21; Ex-1017, ¶34, ¶36, Fig. 5. For example, a user may skip from a current play position in the digital media content before an advertisement to a new play position in the digital media content after an advertisement. Similarly, the play position is updated when a user skips over part of an advertisement. Ex-1003, ¶77.

Fast forwarding increases the playback speed of digital media content for a period of time, during which media content may or may not be viewable. *See, e.g.*, Ex-1010, ¶19 (“Portions of digital content may also be bypassed by increasing the play out speed.”). Normal playback resumes after the fast forwarding operation. *See, e.g.*, Ex-1004, 2:24-35, 5:40-55, 6:50-58. Fast forwarding (including through an entirety or part of an advertisement) updates a current play position where the fast forwarding starts to a new play position where the fast forwarding ends. Ex-1003, ¶78.

Doherty teaches, in response to receiving a user input, generating an interrupt causing rescheduling of the items of information to be displayed. Ex-

1005, ¶¶8-12, ¶25, ¶30, ¶¶56-57, Figs. 8-10. Doherty does not limit the user input to particular types of interactions. *E.g.*, Ex-1005, ¶¶30-32, ¶36. Because Doherty teaches displaying video content (*e.g.*, Ex-1005, ¶27), a POSITA would have found it obvious for Doherty to provide users commonplace functionalities for input-based control of the video playback such as skipping and fast forwarding, as taught by Wu. Therefore, the combination of Wu and Doherty teaches receiving a user input (*e.g.*, user command/interaction for fast forwarding through or skipping over advertisements) to update a current play position in the digital media content to a new play position in the digital media content. Ex-1003, ¶79.

The combination further teaches **changing a predetermined advertisement insertion point in the digital media content to an adapted advertisement insertion point in the digital media content** in response to receiving the user input. Ex-1003, ¶80.

First, Wu teaches that advertisements are inserted at predetermined points in digital media content. Ex-1004, 6:31-49 (“For example, media stream 204 of the present embodiment may be embedded with flags, each one identifying an advertisement.”), 7:23-37 (“As such, the specific time intervals of the advertisements (*e.g.*, 402 and 404) are stored within time table 400 ...”), Fig. 4A:

Time Table
400

Advertisement Time Intervals	
Ad 402	1200-1260 sec.
Ad 404	2340-2400 sec.
.	.
.	.
.	.

Fig. 4A

Ex-1003, ¶81.

In response to a user input skipping over or fast forwarding through an advertisement, Wu displays a “sub-advertisement.” Ex-1004, 2:24-35, 5:40-55, Fig. 2. Wu teaches inserting the sub-advertisement by pausing the digital media stream and displaying the sub-advertisement. Ex-1004, 8:36-45 (“For example, the output of the recorded media stream 204 to display device 112 may be stopped or paused while the present embodiment outputs sub-advertisement stream 206 as a full screen display to display device 112. Once the output of sub-advertisement stream 206 to display device 112 is completed, the output of the recorded media stream 204 to display device 112 would continue.”); Ex-1003, ¶82.

Wu does not limit when the sub-advertisement is displayed, only providing that the sub-advertisement is displayed “once the user resumes watching the recorded television show in normal playback mode” (Ex-1004, 2:24-35, 8:36-45).

As a POSITA would have realized, obvious options include (1) displaying the sub-advertisement immediately when normal playback resumes after the skipping or fast forwarding operation or (2) displaying the sub-advertisement after normal playback has been resumed for a period of time, both of which were readily known to a POSITA. Ex-1010, ¶27 (“[T]he alternative advertisement may be rendered to the user later in time after play out of content is resumed.”), ¶10, ¶32; Ex-1003, ¶83.

Second, Doherty complements Wu by teaching changing a predetermined advertisement insertion point in the digital media content to **an adapted**

advertisement insertion point in the digital media content after a user input.

Before a user interrupt, Doherty’s information display apparatus displays items of information according to an existing schedule. Ex-1005, ¶29 (“The scheduler 140 outputs a schedule ... The scheduler 140 records a log of advertisements and other items of information to be scheduled and displayed by the output devices 100.”), ¶57, Fig. 10:

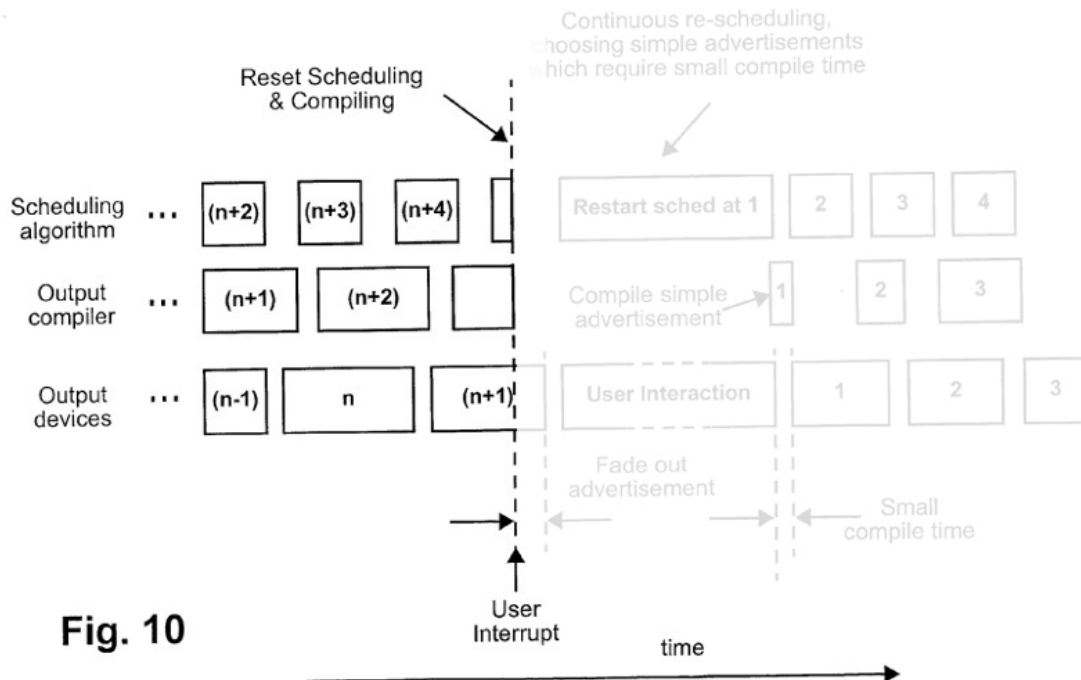


Fig. 10

See also ¶25, ¶¶37-38, Fig. 2. Doherty schedules advertisements with other items of information that include digital media content, where each advertisement is inserted in between other items of information. Thus, Doherty's existing schedule includes predetermined advertisement insertion points in digital media content. Ex-1003, ¶84.

When there is a user input (as explained in *supra* §V.A.3[1b]), Doherty's scheduler clears the existing schedule and reschedules advertisements and other items of information in response to the user input. Ex-1005, ¶30 ("Once the user commences interacting with the user interface 150, a user interrupt is generated by the user application module 170. The user interrupt is supplied to the scheduler 140, in response to which the schedule is cleared and rescheduling is undertaken."), ¶39, ¶57, Fig. 10:

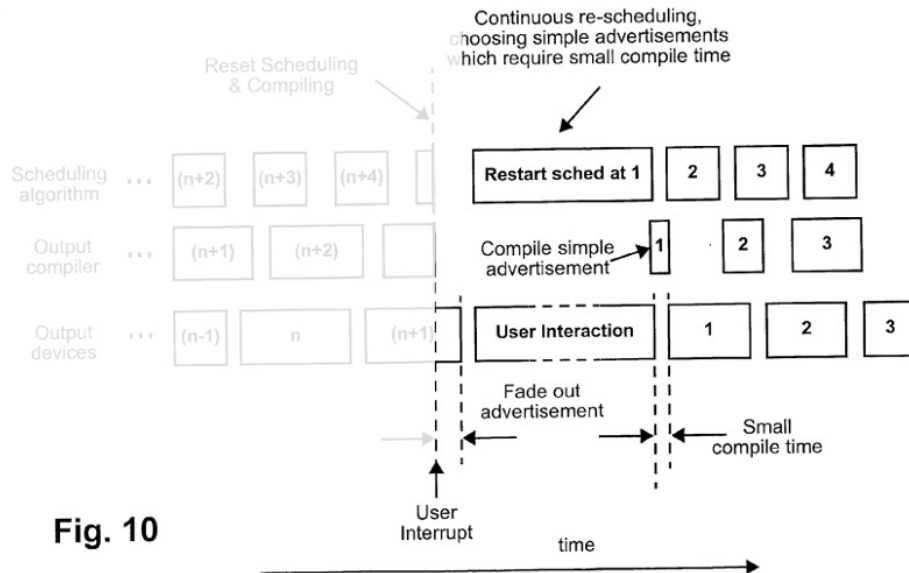


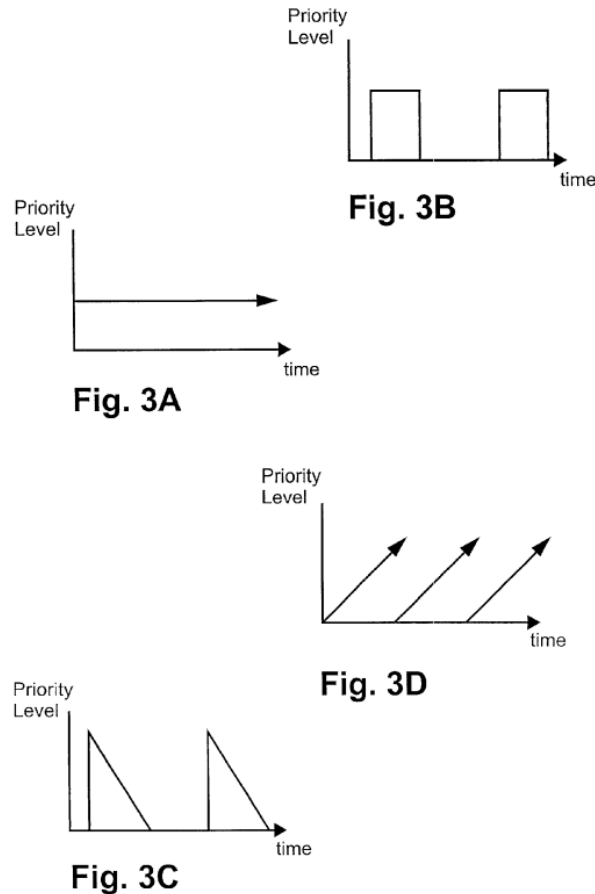
Fig. 10

The rescheduling is performed based on updated priorities of the items of information, as is discussed in further detail below. Ex-1003, ¶85.

Doherty's rescheduling changes the advertisement insertion points. For example, an advertisement may be moved from the second place among upcoming items of information in the schedule to the third place. This changes the insertion point of this advertisement. As another example, an existing schedule having an upcoming news item followed by a first advertisement may be replaced with an updated schedule having two upcoming news items followed by a second advertisement, which may or may not be the same as the first advertisement. This changes the insertion point of advertisements as a category. Ex-1003, ¶86.

The scheduler reschedules the items of information based on an estimation of the next available advertising time slot and repeats the rescheduling if the estimated time changes. Ex-1005, ¶25, ¶39, ¶57, Figs. 2, 10; Ex-1003, ¶87.

Doherty further teaches that the priority profiles of different items of information change over time. Ex-1005, ¶¶49-50 (“The ramp profile increases it’s [sic] priority level with time and continues to do so until the advertisement is played, hence guaranteeing the advertisement is played.”), Figs. 3A-3D:



As further explained below, for any available time slot, the item of information with the highest priority is scheduled. Ex-1005, ¶40, ¶48, ¶52, Fig. 6; Ex-1003, ¶88.

Because priority levels of different items of information vary based on time, the time at which an advertisement is scheduled changes based on the next

available advertising time slot, which in turn depends on how long the user interacts with the user interface. In this way, Doherty's scheduler adaptively reschedules advertisements and other items of information. Thus, Doherty teaches changing a predetermined advertisement insertion point in the digital media content (e.g., the point where an advertisement is inserted in an existing schedule) to an adapted advertisement insertion point in the digital media content (e.g., the point where an advertisement is inserted in an updated schedule after rescheduling). Ex-1003, ¶89.

The combination of Wu and Doherty teaches scheduling the same advertisement (or a different advertisement) for the adapted advertisement insertion point. For example, Wu teaches that its sub-advertisement "may or may not correspond to the skipped advertisement." Ex-1004, 7:44-62, 7:63-8:12. A POSITA would have found it obvious for the sub-advertisement to be the same as the skipped advertisement, a modified version of the skipped advertisement, or a different advertisement. Doherty's scheduler selects advertisements based on time-dependent priority levels. Ex-1005, ¶40, ¶48, ¶¶49-50, ¶52, Figs. 3A-3D, 6. Because an advertisement in an existing schedule may or may not have the highest priority for the purpose of creating a new schedule, Doherty contemplates scheduling the same advertisement or a different advertisement to the adapted advertisement insertion point. Ex-1003, ¶90.

A POSITA would have found it obvious and been motivated to apply Doherty's teachings to Wu, such that an advertisement is scheduled to be inserted in the media stream at a time determined based on priority factors. Doing so would have been simply using a known technique (e.g., Doherty's dynamic scheduling of advertisements) to improve similar devices (e.g., Wu's digital media system) in the same way that the scheduling technique is applied in Doherty. Wu and Doherty's systems are both directed to digital media contents (e.g., Wu's media stream, Doherty's items of information) and inserting advertisements in media content. Ex-1004, Abstract, 1:7-9, 2:36-3:4, 5:40-55, 6:50-7:37, Figs. 2-3, 4B; Ex-1005, Abstract, ¶1, ¶¶26-29, ¶¶31-34, Fig. 1. By not limiting the time for inserting a sub-advertisement, Wu invites a technique for choosing a suitable time for displaying the advertisements, such as that taught by Doherty. Ex-1003, ¶91.

Doherty teaches scheduling advertisements and other items of information based on their priority profiles, which are functions of time. Ex-1005, Abstract, ¶¶7-12, ¶40, ¶¶48-50, ¶52, Figs. 3A-3D, 6. At any point in time, the item with the highest priority is scheduled to be played. Ex-1005, ¶52 ("There are shown seven priority profiles A, B, C, D, E, F, and G as a function of time. The scheduling process at the next available time slot determines the maximum priority amongst all the seven priority profiles."), Fig. 6:

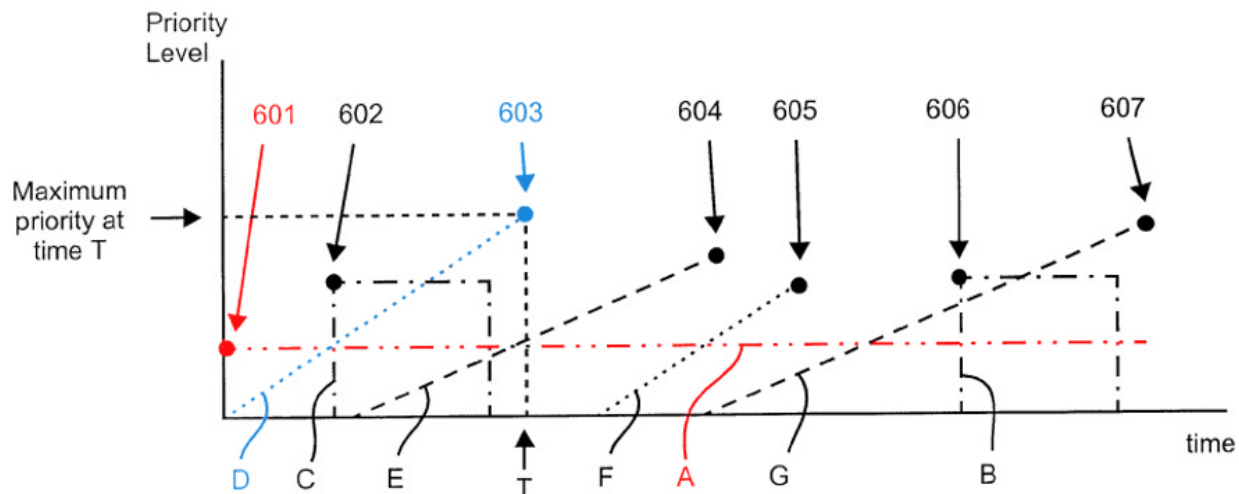


Fig. 6

Ex-1003, ¶92.

A POSITA would have realized that there are multiple ways to apply Doherty's priority-based scheduling to Wu, such as by giving Wu's digital media content (e.g., television programming) a flat priority profile with a constant priority level and an advertisement a ramp profile with a priority level that increases over time until the advertisement is played. This arrangement would have given a user an advertisement-free period before the priority level of the advertisement exceeds that of the digital media content, at which point the advertisement is guaranteed to be played. Ex-1003, ¶93.

A POSITA would have been motivated to apply Doherty's teachings to Wu for multiple reasons. First, Doherty's rescheduling of advertisements based on priorities facilitates scheduling suitable advertisements for the user at the right

time. *E.g.*, Ex-1005, ¶40 (“Determining the most suitable advertisement involves the process of calculating the priority of each advertisement under the current conditions.”), ¶38, ¶31. Applying Doherty’s technique to Wu not only advances Wu’s goal of exposing the user to advertisement, but also improves the impression that the advertisement leaves the user by displaying suitable advertisement at the right time. Ex-1003, ¶94.

Second, Wu teaches advertisement selection based on multiple factors and basing the selection on a priority of the advertisement. Ex-1004, 7:63-8:12 (“[I]t is further appreciated that the present embodiment may use a wide variety of parameters (e.g., priority of advertisement, time of advertisement, source of advertisement, etc.) to determine which sub-advertisement 206 to prepare for output.”). Doherty teaches using a priority-based mechanism to synthesize multiple factors (e.g., conditions, parameters). Ex-1005, ¶¶40-47. A POSITA would have understood that a priority-based mechanism provides an elegant way to synthesize multiple factors and was commonly used in the art. Ex-1003, ¶95.

Third, a user input to skip over or fast forward through an advertisement may indicate that the user prefers not to view an advertisement at the moment. Doherty’s technique allows the sub-advertisement to be presented after a delay. For example, Doherty’s ramp profile allows the advertisement to be presented after a period of increasing priority. Ex-1005, ¶50, Fig. 3D:

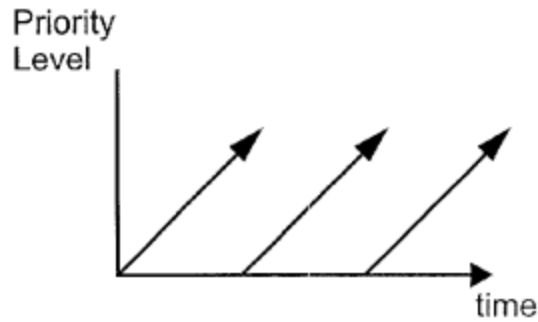


Fig. 3D

See also Ex-1005, ¶49, Fig. 3B:

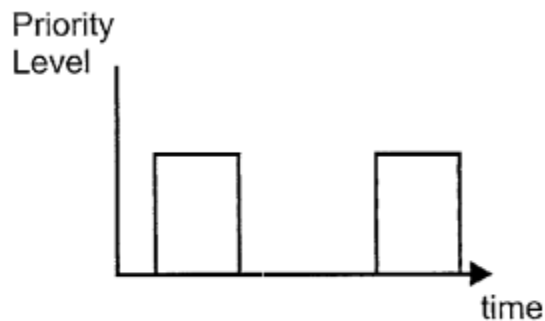


Fig. 3B

Including the delay would have improved user experience by balancing the user's desire to skip advertisements with the need of content provider for advertisement exposure. The advertisement experience is made less intrusive by giving the user some ability to delay the advertisement. *See, e.g.*, Ex-1010, ¶8, ¶10; Ex-1003, ¶96.

The combination of Wu and Doherty involves applying a known technique (e.g., Doherty's priority-based content scheduling) to a known device (e.g., Wu's digital media system) ready for improvement to yield predictable results. A POSITA would have had a reasonable expectation of success because the

determination of priority based on multiple factors and the priority-based ordering of different pieces of content are based on basic and commonly implemented mathematical operations. *Supra* §III. Because Doherty's technique is applied to Wu in the manner taught by Doherty and to further Wu's goal of displaying an advertisement when the user tries to skip an original advertisement, the combination does not change the principle of operation of either reference. Ex-1003, ¶97.

Thus, the combination teaches limitation [1e]. Ex-1003, ¶¶76-98.

[1f] the adapted advertisement insertion point determined by an adaptive preference rule based on an advertisement requirement that applies to the digital media system;
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Doherty further teaches that **the adapted advertisement insertion point determined by an adaptive preference rule** (e.g., rules for determining the priority of items of information for each time slot) **based on an advertisement requirement** (e.g., a requirement to select and schedule an advertisement based on its priority profile) **that applies to the digital media system**. Ex-1003, ¶99.

Doherty teaches scheduling and rescheduling advertisements and other items of information based on their associated priorities. Ex-1005, Abstract, ¶¶7-12. In this manner, items of information suitable to be displayed at different points in time are placed in the schedule. Ex-1005, ¶25; Ex-1003, ¶100.

Each item of information has a priority profile and is scheduled at a certain available time when the item's priority is the highest at that available time. Ex-1005, ¶48 (“An advertisement will be played if its priority level is the maximum of all advertisements in the database at that particular time, as shown and described with reference to FIG. 6.”), ¶40. Figure 6 illustrates an example scenario. Ex-1005, ¶52:

FIG. 6 shows an example of the scheduling of items of information and their associated priorities. There are shown seven priority profiles A, B, C, D, E, F, and G as a function of time. The scheduling process at the next available time slot determines the maximum priority amongst all the seven priority profiles. Initially, the maximum priority is that of profile A. Consequently, the advertisement associated with profile A is scheduled to play at 601. The scheduling process will then schedule the next advertisement for the next available time, which is available after the completion of the advertisement A. In this particular example, the scheduling process determines for the next available time (602) that the maximum priority is that of profile C. Consequently, the advertisement associated with profile C is scheduled to play at 602. Similarly, the scheduling process schedules the advertisements associated with D, E, F, B, and G to play at times 603, 604, 605, 606 and 607 respectively.

Fig. 6:

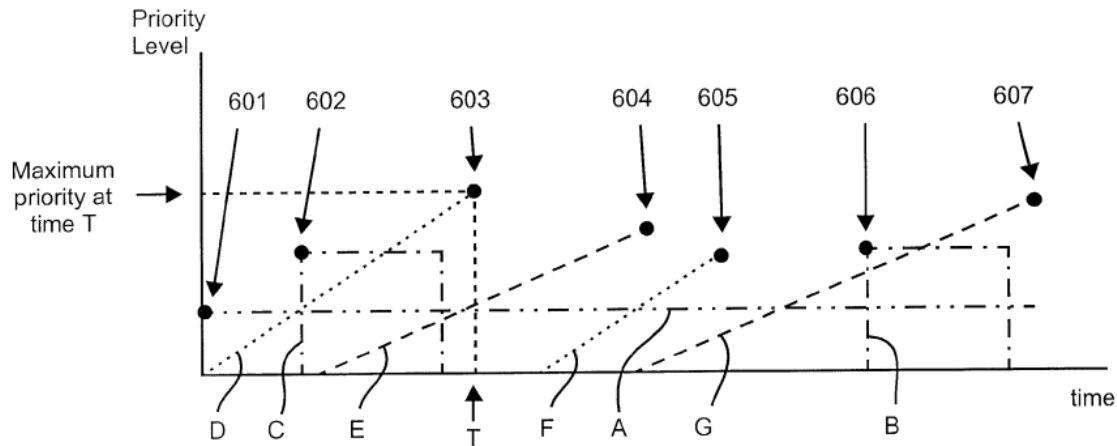


Fig. 6

Ex-1003, ¶101.

The priority of each item of information is determined based on rules concerning multiple conditions corresponding to a certain available time slot. Ex-1005, ¶25 (“These items of information may be [scheduled] based on conditions such as location, user interaction in addition to other definable events.”), ¶38. Doherty teaches determining the priority based on rules for different conditions that are aggregated. Ex-1005, ¶53 (“To determine the overall priority for an advertisement under multiple conditions, each priority category could be weighted and then all of the weighted priority levels summed as shown in FIG. 7.”), Fig. 7; Ex-1003, ¶102.

The rules for determining the priority of items of information are represented by functions of the conditions:

As the conditions will effect the importance of playing an advertisement, the priority profile could be a function of parameters at that particular time such as:

location or distance from a given location

user profile

frequency that the advertisement is played

time since it has last been played

number of times it has been played

advertising premium the advertiser is willing to pay

any other events which can be used in a priority profile function.

Ex-1005, ¶¶40-47; Ex-1003, ¶¶103-104.

Doherty's teachings regarding selecting and scheduling advertisements using time-dependent priorities determined based on multiple conditions fall within the scope of the plain and ordinary meaning of "an adaptive preference rule" and "an advertisement requirement" as these terms are used in the '768 patent. Ex-1003, ¶105.

First, the '768 patent uses the term "advertisement requirement" broadly, stating that it is "an arbitrary function" and describing that it is related to parameters used for advertisement selection or scheduling. Ex-1001, 30:16-30, 27:50-59, 32:16-30. Ex-1003, ¶106. Doherty teaches that "[t]he priority profile quantitatively describes the importance of playing an advertisement under the conditions." Ex-1005, ¶40. An advertisement is required to be selected and scheduled when its priority level or importance is the maximum among all for a time slot. Ex-1005, ¶48 ("An advertisement will be played if its priority level is the maximum of all advertisements in the database at that particular time[.]"). Doherty

teaches that “the priority profile could be a function of parameters at that particular time” and provides a list of example parameters. Ex-1005, ¶¶40-47. Therefore, “advertisement requirement” is satisfied by a requirement to select and schedule an advertisement based on its priority profile.⁴ Ex-1003, ¶107.

Second, the ’768 patent indicates that “adaptive preference rules” “include ad preference tables [] and ad preference parameters” (Ex-1001, 33:6-13) and are “rules by which the intersplicer can perform adaptive ad selection and sequencing extemporaneously” (Ex-1001, 33:26-34:40). Doherty’s rules for determining the priority of items of information for each time slot are rules by which the intersplicer (e.g., scheduler) can perform adaptive ad selection and sequencing extemporaneously. Ex-1005, ¶25, ¶¶29-31, ¶¶37-40, ¶52, ¶57; *supra* §V.A.3[1e]. These rules include consideration of parameters that affect whether an advertisement is preferred to be played at a certain time slot. Ex-1005, ¶¶40-52, Figs. 3-6. The ’768 patent’s description of adaptive preference rules is consistent with Doherty’s rules for determining the priority of items of information. Ex-1003, ¶108.

Wu teaches selecting an advertisement to display using multiple factors and basing the selection on the priority of the advertisement. Ex-1004, 7:63-8:12. Since

⁴ This is further confirmed by Patent Owner’s Infringement Contentions that allege the advertisement requirement is satisfied by “Ad Decision Parameters,” which are parameters used for selecting ads. Ex-1022, 000079-83.

Wu does not limit the parameters that can be considered in determining the sub-advertisement to present, a POSITA would have found it obvious to include the conditions disclosed by Doherty since the conditions are relevant to whether it is suitable or important to present an advertisement at a certain time. A POSITA would have found it obvious and been motivated to apply Doherty's teachings to Wu, such that Wu's advertisement is selected and scheduled to be inserted in the digital media stream using priority profiles that are determined based on multiple conditions or parameters. As explained above, Doherty's priority-based advertisement scheduling mechanism provides an elegant way to synthesize multiple factors and was a commonplace approach for selecting and scheduling content items. The combination therefore teaches limitation [1f]. Ex-1003, ¶¶99-109.

[1g] modify the adapted insertion point of digital advertising content based on the advertisement requirement; and
--

As explained with respect to limitation [1e], Doherty's scheduler reschedules the items of information based on an estimation of the next available advertising time slot and repeats the rescheduling if the estimated time changes. *Supra* §V.A.3[1e]; Ex-1005, ¶25, ¶39, ¶57, Figs. 2, 10. Doherty explains this process:

The schedule of items of information will be cleared in response to such a user interrupt and a time is estimated on how long the user will interact

with the user interface. The process will then schedule items of information for the current estimated time. If the user is still interacting with the user interface at the end of the current estimated time, then the process will again clear the schedule, estimate a further time and schedule items of information for the next estimated time. This continues until the user is finished with the user interface and the process will then display the scheduled items of information at the current estimated time according to their priority.

Ex-1005, ¶25; Ex-1003, ¶110.

Figure 2 illustrates this repeated rescheduling process using a loop:

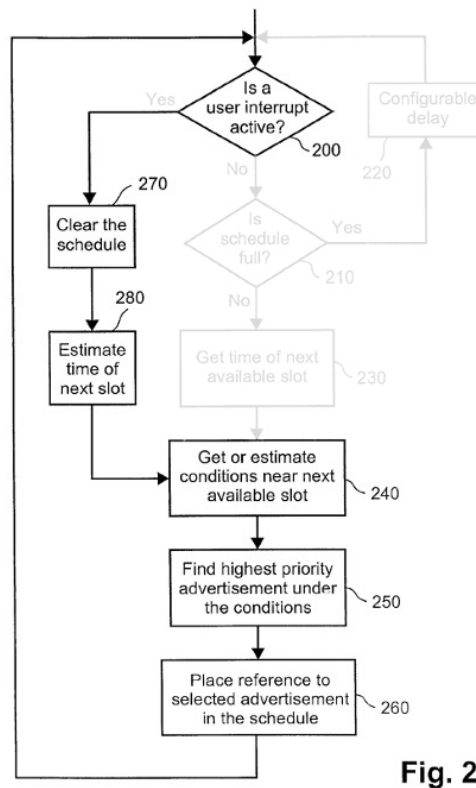


Fig. 2

Ex-1005, Fig. 2, ¶39, ¶57 (“During the period of user interaction the scheduling process 140 continuously re-schedules the advertisements expecting the user to finish at any time.”), Fig. 10; Ex-1003, ¶111.

As explained above, Doherty's rescheduling process changes a predetermined advertisement insertion point in the digital media content to an adapted advertisement insertion point in the digital media content, in response to receiving a user input. *Supra* §V.A.3[1e]. When the rescheduling process is repeated, it **modifies the adapted insertion point of digital advertising content**. Wu contemplates that the advertising content is in a digital format. Ex-1004, 6:31-49. The modification is **based on the advertisement requirement** because Doherty's rescheduling process selects and schedules an advertisement to an available time slot when the advertisement has the highest priority for the time slot. *Supra* §V.A.3[1e]; Ex-1003, ¶112.

When applying Doherty's teachings to Wu, a POSITA would have realized the need to implement Doherty's repeated rescheduling. A POSITA would have understood that user inputs for skipping over or fast forwarding through digital media content may vary in length. For example, the user may input multiple consecutive skipping commands or holding a fast forwarding button for a certain period of time to get to a desired play position in the digital media content. A POSITA would have found it beneficial to repeatedly estimate when the user input ends and schedules advertisements and other content accordingly because doing so would have ensured that suitable content is ready when the user interaction

completes. *See* Ex-1005, ¶57. The combination thus teaches limitation [1g]. Ex-1003, ¶¶110-113.

[1h] request, from the advertisement rotator, digital advertising content to be played at the adapted advertisement insertion point.

As explained above, the combination of Wu and Doherty teaches an advertisement rotator (e.g., output compiler) that manages requests from the intersplicer (e.g., scheduler) for advertisements to be displayed. *Supra* §V.A.3[1c]. For example, Doherty's scheduler outputs to the output compiler a schedule including a reference to an advertisement, in response to which the output compiler retrieves digital advertising content for presentation. *Supra* §V.A.3[1c]; Ex-1005, ¶28, ¶¶37-38, ¶¶54-55. The reference to advertisement in Doherty is a request for advertising content because it is sent from the scheduler to the output compiler, requesting advertising content to be retrieved and output. *Supra* §V.A.3[1c]; Ex-1005, ¶¶37-38, Fig. 2. Moreover, the combination teaches that advertisements are scheduled to be played at the adapted advertisement insertion point. *Supra* §V.A.3[1e]; Ex-1003, ¶114.

Therefore, the combination of Wu and Doherty teaches that the intersplicer (e.g., scheduler) **requests, from the advertisement rotator (e.g., output compiler) digital advertising content to be played at the adapted advertisement insertion point.** Ex-1003, ¶115.

4. Dependent Claim 2

2. **The digital media system of claim 1, wherein the digital advertising content is different from a predetermined advertisement selected to be played at the predetermined advertisement insertion point.**

The combination teaches the digital media system of claim 1 and the additional limitations of claim 2. *Supra* §V.A.3; Ex-1003, ¶¶116-118.

As explained with respect to limitation [1e], the combination of Wu and Doherty teaches that advertisements are scheduled to be inserted at predetermined advertisement insertion points in digital media content. *Supra* §V.A.3[1e]; Ex-1004, 6:31-49, 7:23-37, Fig. 4A; Ex-1005, ¶25, ¶29, ¶¶37-38, ¶57, Figs. 2, 10. This teaches **a predetermined advertisement selected to be played at the predetermined advertisement insertion point**. Ex-1003, ¶117.

The combination of Wu and Doherty teaches scheduling a different advertisement for the adapted advertisement insertion point. *Supra* §V.A.3[1e]; Ex-1004, 7:44-8:12; Ex-1005, ¶40, ¶48, ¶¶49-50, ¶52, Figs. 3A-3D, 6. The requested digital advertising content corresponds to the advertisement for the adapted advertisement insertion point. *Supra* §V.A.3[1h]; Ex-1005, ¶28, ¶¶37-38, ¶¶54-55, Fig. 2. Thus, the combination teaches that **the digital advertising content is different from a predetermined advertisement**. Ex-1003, ¶118.

5. Dependent Claim 3

3. **The digital media system of claim 1, wherein the intersplicer is further configured to change the predetermined advertisement insertion point to the adapted advertisement insertion point by adaptively modifying a presentation position of a predetermined advertisement from the predetermined advertisement insertion point to the adapted advertisement insertion point in the digital media content, the adapted advertisement insertion point being different than the predetermined advertisement insertion point.**

The combination teaches the digital media system of claim 1 and the additional limitations of claim 3. *Supra* §V.A.3; Ex-1003, ¶¶119-121.

As explained above with respect to limitations [1d] and [1e], the combination of Wu and Doherty teaches **an intersplicer configured to change the predetermined advertisement insertion point to the adapted advertisement insertion point**. *Supra* §§V.A.3[1d]-[1e]; Ex-1003, ¶120.

The combination of Wu and Doherty teaches scheduling the same advertisement from the predetermined advertisement insertion point to the adapted advertisement insertion point. *Supra* §V.A.3[1e]; Ex-1004, 7:44-8:12; Ex-1005, ¶40, ¶48, ¶¶49-50, ¶52, Figs. 3A-3D, 6. Because the advertisement was originally scheduled for insertion at the predetermined advertisement insertion point, it is a predetermined advertisement. Doherty teaches changing advertisement insertion points by adaptively rescheduling advertisements and other items of information based on estimations of next available advertising time slot. *Supra* §V.A.3[1e]; Ex-

1005, ¶25, ¶39, ¶57, Figs. 2, 10. Thus, the combination of Wu and Doherty teaches claim 3. Ex-1003, ¶121.

6. Dependent Claim 5

5. The digital media system of claim 1, wherein the adaptive preference rule is based on at least one of a number of tracks played since a previous digital advertisement, a length of time associated with playing the digital media content, and a number of digital media data blocks played since the previous digital advertisement.

The combination teaches the digital media system of claim 1 and the additional limitations of claim 5. *Supra* §V.A.3; Ex-1003, ¶¶122-125. Claim 5 recites three alternatives and is satisfied by any one of the three alternatives.

As explained with respect to limitation [1f], Doherty teaches that the adapted advertisement insertion point is determined by an adaptive preference rule (e.g., rules for determining the priority of items of information for each time slot), which is based on conditions considered for scheduling advertisements. *Supra* §V.A.3[1f]; Ex-1005, ¶25, ¶38, ¶53, Fig. 7. The conditions include, among others, “time since [the advertisement] has last been played[.]” and “frequency that the advertisement is played[.]” *Supra* §V.A.3[1f]; Ex-1005, ¶¶40-47; Ex-1003, ¶123.

The condition “time since [the advertisement] has last been played” teaches **a length of time associated with playing the digital media content** because digital media content is played in between advertisements. *Supra* §V.A.3[1e]. Furthermore, digital media content in video or audio form were conventionally

encoded and distributed in terms of tracks and data blocks. *See, e.g.,* Ex-1020, 5:54-65 (“The data streams[] are shown comprising a number of data blocks []. Each block[] generally represents a section of the recorded audio/video signal.”); Ex-1019, 1:34-41. In the period of time since the advertisement has last been played, a number of tracks (e.g., items of information) or data blocks (e.g., blocks of video data) has been played. Therefore, Doherty teaches **a number of tracks played since a previous digital advertisement and a number of digital media data blocks played since the previous digital advertisement**. Ex-1003, ¶124.

The condition “frequency that the advertisement is played” teaches or suggests all three alternatives of claim 5. It was widely known to those skilled in the art that frequency may be defined in terms of time, such that the advertisement is played every time a certain period of playtime has passed. Alternatively, the frequency may be defined in terms of the amount of content, such that the advertisement is played every time a certain amount of content (e.g., measured in terms of tracks, packets, data blocks, segments, or frames) has been displayed. The frequency, as defined in these manners, pertains to **a number of tracks played since a previous digital advertisement, a length of time associated with playing the digital media content, and a number of digital media data blocks played since the previous digital advertisement**, where the previous digital

advertisement corresponds to a previous time when the advertisement was played.

Ex-1003, ¶125.

7. Dependent Claim 6

6. The digital media system of claim 1, wherein the intersplicer is configured to generate a control signal configured to interrupt a course of presentation of the digital media content with a presentation of the digital advertising content at the adapted advertisement insertion point.

The combination teaches the digital media system of claim 1 and the additional limitations of claim 6. *Supra* §V.A.3; Ex-1003, ¶¶126-130.

As explained above, the combination of Wu and Doherty teaches the intersplicer (e.g., scheduler) generates a reference to an advertisement in a schedule, which is sent to an advertisement rotator (e.g., output compiler) to cause the retrieval and display of the advertisement in a media stream. *Supra* §V.A.3[1c]. Here, the reference to the advertisement **is generated by the intersplicer as a control signal** that causes the presentation of the advertisement. It would at least have been obvious to use control signals to communicate the reference to the advertisement because control signals were conventionally used to communicate between different software and hardware components. Ex-1003, ¶127. Doherty's reference to advertisement satisfies "control signal" as the term is used in the '768 patent, which uses this term only in the abstract to mean a signal that "caus[es] the

media player to present the ad files with the selected media files.” Ex-1001, Abstract; Ex-1003, ¶128.

Furthermore, the combination of Wu and Doherty teaches that the intersplicer (e.g., scheduler) is configured to change a predetermined advertisement insertion point to an adapted advertisement insertion point, where the digital advertising content is presented. *Supra* §§V.A.3[1e]-[1h]. The presentation of the digital advertising content interrupts a course of presentation of the digital media content by, for example, stopping or pausing the media stream. Ex-1004, 8:36-45. Thus, the combination teaches that the intersplicer is configured to generate a control signal configured to **interrupt a course of presentation of the digital media content with a presentation of the digital advertising content at the adapted advertisement insertion point**. Ex-1003, ¶129.

The teachings of the combination falls within the scope of “interrupt,” as the term is used in the ’768 patent. The ’768 patent explains that insertion of an advertisement between portions of digital media content interrupts the course of presentation of the digital media content. Ex-1001, 23:31-45, 32:1-15. This is consistent with Wu’s teachings. Ex-1003, ¶130.

8. Dependent Claim 7

7. **The digital media system of claim 1, wherein the advertisement rotator selects the digital advertising content based on the advertisement requirement that applies to the digital media system.**

The combination teaches the digital media system of claim 1 and the additional limitations of claim 7. *Supra* §V.A.3; Ex-1003, ¶¶131-133.

As explained above with respect to limitation [1f], the combination of Wu and Doherty teaches determining the adapted insertion point based on an advertisement requirement that applies to the digital media system, where the advertisement requirement is satisfied by Doherty's requirement to select and schedule an advertisement based on its priority profile. *Supra* §V.A.3[1f]. Once an advertisement is selected for presentation, its reference is placed in a schedule. *Supra* §V.A.3[1d]; *see, e.g.*, Ex-1005, ¶38, Fig. 2; Ex-1003, ¶132.

As explained above with respect to limitation [1c], the combination of Wu and Doherty teaches an advertisement rotator (e.g., output compiler) that selects, retrieves, and renders for display advertisements based on references to advertisements included in the schedule. *Supra* §V.A.3[1c]; *see, e.g.*, Ex-1005, ¶28. Here, the advertisement rotator selects an advertisement to retrieve from local storage according to the reference to the advertisement in the schedule, which in turn is determined based on advertisement requirements. Thus, the combination of Wu and Doherty teaches that **the advertisement rotator** (e.g., output compiler)

selects the digital advertising content based on the advertisement requirement (e.g., a requirement to select and schedule an advertisement based on its priority profile) **that applies to the digital media system.** Ex-1003, ¶133.

9. Dependent Claim 8

8. The digital media system of claim 1, wherein the intersplicer eliminates the advertisement requirement, in response to presenting the digital advertising content at the adapted insertion point of digital advertising content.

The combination teaches the digital media system of claim 1 and the additional limitations of claim 8. *Supra* §V.A.3; Ex-1003, ¶¶134-138.

The combination of Wu and Doherty teaches **presenting the digital advertisement content at the adapted insertion point of digital advertising content.** Ex-1004, 8:20-45, 2:24-35, 5:40-55, Fig. 2; Ex-1005, ¶57; *supra* §§V.A.3[1e], [1h]; Ex-1003, ¶135.

Doherty teaches an advertisement requirement that applies to the digital media system through its disclosure of a requirement to select and schedule an advertisement based on its priority profile. *Supra* §V.A.3[1f]. Doherty teaches **eliminating such an advertisement requirement in response to** presenting an advertisement. For example, Doherty teaches a ramp priority profile that “increases [its] priority level with time and continues to do so until the advertisement is played[.]” Ex-1005, ¶50, Fig. 3D:

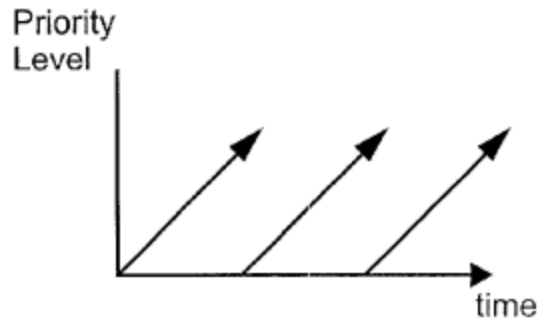


Fig. 3D

After the advertisement is played, the priority level goes back to a low value, eliminating the requirement to select and schedule the advertisement. Doherty further teaches the priority profile of an advertisement being calculated based on the parameter “time since [the advertisement] has last been played.” Ex-1005, ¶40, ¶44. It would have been obvious to use this parameter to reduce the priority level of an advertisement when the time since it has last been played is short. This again eliminates the requirement to select and schedule the advertisement. Ex-1003, ¶136.

Because the Doherty’s scheduler, which teaches the intersplicer (*supra* §V.A.3[1d]) selects and schedules advertisement based on their priorities (*supra* §§V.A.3[1e]-[1h]), Doherty teaches that **the intersplicer** carries out the operation of claim 8. Ex-1003, ¶137.

Wu teaches that a goal of its solution is to prevent the user from easily avoid viewing advertising content by skipping advertisement. Ex-1004, Abstract, 2:36-

3:4, 2:24-35, 5:40-55, 8:20-35. The goal of letting the user view the content of the advertisement is achieved after an advertisement is presented, at which point, it is appropriate to eliminate the requirement for presenting the advertisement. Thus, a POSITA would have found it obvious to apply Doherty's teachings regarding eliminating an advertisement requirement in response to presenting an advertisement to Wu. *See also supra* §V.A.3[1e]. That Doherty's priority-based mechanism is consistent with Wu's goal of letting the user view the content of an advertisement, provides yet another reason for a POSITA to apply Doherty's teachings to Wu. Ex-1003, ¶138.

10. Dependent Claim 9

9. The digital media system of claim 2, wherein the predetermined advertisement is scheduled to play at the predetermined advertisement insertion point, and wherein the advertisement rotator is configured to manage one or more requests to replace the predetermined advertisement.

The combination teaches the digital media system of claim 2 and the additional limitations of claim 9. *Supra* §§V.A.3-4; Ex-1003, ¶¶139-141.

As explained above with respect to limitation [1e] and claim 2, the combination of Wu and Doherty teaches that advertisements are scheduled to be inserted at predetermined points in digital media content. *Supra* §§V.A.3[1e], V.A.4; Ex-1004, 6:31-49, 7:23-37, Fig. 4A; Ex-1005, ¶25, ¶29, ¶¶37-38, ¶57, Figs.

2, 10. This teaches that **the predetermined advertisement is scheduled to play at the predetermined advertisement insertion point**. Ex-1003, ¶140.

Furthermore, the combination teaches the advertisement scheduled at the adapted advertisement insertion point being different from the predetermined advertisement scheduled at the adapted advertisement insertion point. *Supra* §§V.A.3[1e], V.A.4; Ex-1004, 7:44-8:12; Ex-1005, ¶40, ¶¶48,-50, ¶52, Figs. 3A-3D, 6. In this scenario, the predetermined advertisement is replaced with a newly scheduled advertisement. The combination further teaches the advertisement rotator manages requests from the intersplicer by retrieving and outputting requested advertisements. *Supra* §V.A.3[1c]; Ex-1005, ¶28, ¶¶54-55, Fig. 8. When the newly scheduled advertisement is different from the predetermined advertisement, the advertisement rotator **manages one or more requests to replace the predetermined advertisement**. Ex-1003, ¶141.

11. Independent Claims 10, 19, and 27

[10a]. A digital media advertisement presentation control system comprising: at least one processor; a non-transitory computer-readable storage medium storing instructions that, when executed by the processor, cause the processor to perform operations comprising:

Ground 1 teaches the preamble and any additional limitations of element [10a]. Ex-1003, ¶¶142-145.

As explained above with respect to limitation [1a], Wu teaches an electronic digital recording/play back system. *Supra* §V.A.3[1a]; Ex-1004, 4:39-53, 2:18-59,

5:56-6:11, Figs. 1-2. Wu's electronic digital recording/play back system is a **digital media advertisement control system** because it controls the presentation of digital media and advertisements. *Supra* §V.A.3[1b] (explaining that Wu's system controls a course of presentation of digital media content) (citing Ex-1004, 1:42-63); §V.A.3[1e] (explaining that Wu's system controls the presentation of advertisements) (citing Ex-1004, 2:24-35, 5:40-55, 6:31-49, 7:23-37, 8:20-45); Ex-1003, ¶143.

Wu teaches that its system comprises **at least one processor and a non-transitory computer-readable storage media storing instructions** and that **the processor executes the instructions to perform operations** of the system. Ex-1004, 4:39-53 (“[C]ertain processes and steps are discussed that are realized, in one embodiment, as a series of *instructions (e.g., software program)* that reside within *computer readable memory units* of electronic digital recording/play back system 100 and executed by *processors of system 100*.”), 4:54-5:5, 6:12-50, Fig. 1:

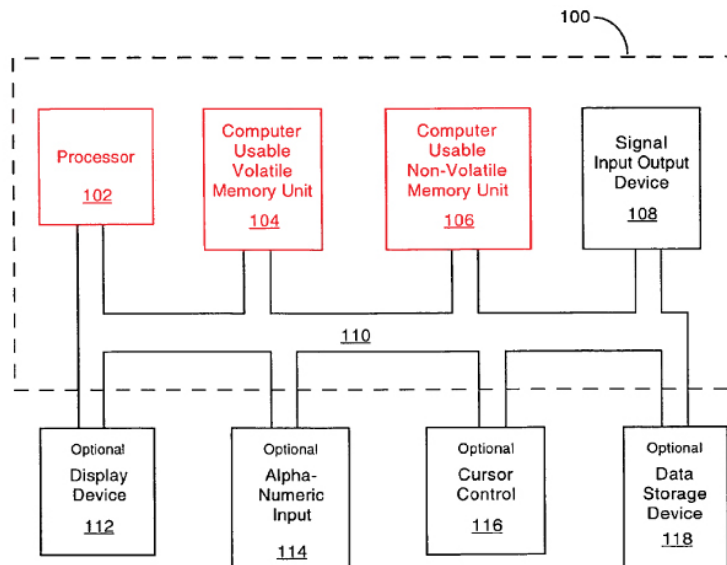


Fig. 1

Wu teaches implementing its memory units using, for example, “random access memory, static RAM, dynamic RAM” and “read only memory, programmable ROM, flash memory, EPROM, EEPROM,” which are forms of non-transitory computer readable storage medium, as opposed to transitory signals. Ex-1004, 4:54-5:5, Fig. 1; Ex-1003, ¶144.

The combination of Wu and Doherty teaches performing operations explained below for [10b]-[10e]. *Infra* §§V.A.11[10b]-[10e]; Ex-1003, ¶145.

[19a] A method embedded in a machine-readable medium in form of executable instructions to cause at least one programmable processor to perform operations comprising:

Ground 1 teaches the preamble. Ex-1003, ¶¶146-148.

Wu teaches using instructions stored on a computer-readable medium (i.e., machine-readable medium) and executable by a processor to cause the processor to perform operations of Wu's system. *Supra* §V.A.11[10a]. Because Wu's processor executes instructions that form software programs (Ex-1004, 4:39-53), it teaches a programmable processor. Wu further teaches a **method** comprising the operations performed by its system. Ex-1004, Abstract (“*A method* and system of providing a non-skippable sub-advertisement stream.”), 2:36-3:4, 6:12-7:22. Therefore, Wu teaches a method embedded in the machine-readable medium in form of the executable instructions stored thereon. Ex-1003, ¶147.

The combination of Wu and Doherty teaches performing operations explained below for [19b]-[19e]. *Infra* §§V.A.11[19b]-[19e]; Ex-1003, ¶148.

[27a] A computer program product comprising a non-transitory machine-readable medium storing instructions that, when executed by at least one programmable processor, cause the at least one programmable processor to perform operations comprising:

Ground 1 teaches the preamble. Ex-1003, ¶¶149-151.

As explained above, Wu teaches a non-transitory machine-readable medium storing instructions that, when executed by at least one programmable processor, cause the at least one programmable processor to perform operations of Wu's system. *Supra* §§V.A.11[10a], [19a]. Wu teaches embedding operations of its system in executable software program stored on a non-transitory medium. Ex-

1004, 4:39-53. Wu therefore applies its teachings to a computer-program product. A POSITA would have found it obvious to have a computer program product that includes a storage medium storing the software program, since computer program products have almost universally stored their software program code in non-transitory mediums (e.g., memory, ROM) for decades. Ex-1004, 4:54-5:5. For example, software program code instructions saved on a CD-ROM had been a very common form of computer program product since the 1990s. Ex-1003, ¶150.

The combination of Wu and Doherty teaches performing operations explained below for [27b]-[27e]. *Infra* §§V.A.11[27b]-[27e]; Ex-1003, ¶151.

[10b]/[19b]/[27b] replacing a predetermined advertisement insertion point in digital media content with an adapted insertion point for digital advertising content, in response to receiving a request to update a current play position in the digital media content to a new play position in the digital media content,
--

As explained above with respect to claim 1, the combination of Wu and Doherty teaches changing a predetermined advertisement insertion point to an adapted advertisement insertion point, in response to receiving a user input to update a current play position in the digital media content to a new play position in the digital media content. *Supra* §V.A.3[1e]; Ex-1003, ¶152.

Wu teaches the user input to update a current play position via its disclosure of a user's request to skip over or fast forward through digital media content. *Supra*

§§V.A.3[1b], [1e]; Ex-1004, 1:42-63, 2:24-35, 5:40-55, 7:6-22. Wu thus teaches receiving a **request** to update a current play position. Ex-1003, ¶153.

Changing a predetermined advertisement insertion point in the digital media content to an adapted advertisement insertion point **replaces** the predetermined advertisement insertion point **with** an adapted insertion point **for digital advertising content** (e.g., advertisement). *Supra* §§V.A.3[1e]; Ex-1004, 2:24-35, 5:40-55, 8:20-35, 8:36-45, Fig. 2; Ex-1005, ¶25, ¶30, ¶39, ¶57, Fig. 10; Ex-1003, ¶154.

The combination of Wu and Doherty therefore teaches limitations [10b]/[19b]/[27b]. Ex-1003, ¶¶152-155.

[10c]/[19c]/[27c] the adapted insertion point determined by an adaptive preference rule based on one or more advertisement requirements;
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As explained above, the combination teaches that the adapted advertisement insertion point is determined by an adaptive preference rule (e.g., rules for determining the priority of items of information for each time slot) based on an advertisement requirement (e.g., a requirement to select and schedule an advertisement based on its priority profile) that applies to the digital media system. *Supra* §§V.A.3[1f]; Ex-1003, ¶156.

[10d]/[19d]/[27d] requesting digital advertising content to be played at the adapted insertion point of digital advertising content; and

As explained above, the combination teaches requesting digital advertising content (e.g., advertisement(s)) to be played at the adapted advertisement insertion point, which is an adapted insertion point of digital advertising content. *Supra* §V.A.3[1h]; Ex-1005, ¶28, ¶¶37-38, ¶¶54-55, Fig. 2; Ex-1003, ¶157.

[10e]/[19e]/[27e] presenting the digital advertising content at the adapted insertion point of digital advertising content.

As explained above, the combination teaches that advertisements are scheduled to be played at the adapted advertisement insertion point. *Supra* §§V.A.3[1e], [1h]. Doherty teaches that the intersplicer (e.g., scheduler) requests digital advertising content (e.g., advertisement(s)) to be played at the adapted advertisement insertion point, which is the adapted insertion point of digital advertising content. *Supra* §V.A.3[1h]; Ex-1005, ¶28, ¶¶37-38, ¶¶54-55, Fig. 2. Next, the digital advertising content is presented (e.g., played) at this adapted insertion point. Ex-1005, ¶57 (“Once the user interaction finishes, the output compiler 110 compiles the advertisement in the schedule 120 and upon completion the output devices 100 play the advertisement. Eventually, the apparatus returns to the normal operating state of scheduling, compiling and playing advertisements.”). Wu similarly teaches presenting an advertisement by outputting it to a display device. Ex-1004, 8:36-45 (“For example, the output of the recorded media stream

204 to display device 112 may be stopped or paused while the present embodiment outputs sub-advertisement stream 206 as a full screen display to display device 112.”). The combination therefore teaches limitations [10e]/[19e]/[27e]. Ex-1003, ¶158.

12. Dependent Claims 11, 20, and 28

- 11. The system of claim 10,**
- 20. The method of claim 19,**
- 28. The computer program product of claim 27,**
- wherein the digital advertising content is different from a predetermined advertisement selected to be played at the predetermined advertisement insertion point.**

The combination teaches the system of claim 10, the method of claim 19, and the computer program product of claim 27. *Supra* §V.A.11. As explained with respect to claim 2, the combination further teaches the additional limitations of claims 11, 20, and 28. *Supra* §V.A.4; Ex-1003, ¶159.

13. Dependent Claims 12, 21, and 29

12. The system of claim 10,
21. The method of claim 19,
29. The computer program product of claim 27,

wherein the replacing the predetermined advertisement insertion point with the adapted insertion point includes adaptively modifying a presentation position of the predetermined advertisement from the predetermined advertisement insertion point to the adapted insertion point in the digital media content.

The combination teaches the system of claim 10, the method of claim 19, and the computer program product of claim 27 and the additional limitations of claims 12, 21, and 29. *Supra* §V.A.11; Ex-1003, ¶¶160-162.

As explained above with respect to limitations [10b], [19b], and [27b], the combination of Wu and Doherty teaches **replacing the predetermined advertisement insertion point with the adapted insertion point**. *Supra* §V.A.11[10b]/[19b]/[27b]; Ex-1003, ¶161.

As explained with respect to claim 3, the combination further teaches that this includes **adaptively modifying a presentation position of the predetermined advertisement from the predetermined advertisement insertion point to the adapted insertion point in the digital media content**. *Supra* §V.A.5; Ex-1003, ¶162.

14. Dependent Claims 14, 23, and 31

- | | |
|-----|---|
| 14. | The system of claim 10, |
| 23. | The method of claim 19, |
| 31. | The computer program product of claim 27, |
| | wherein the adaptive preference rule is based on at least one of: a number of tracks played since a previous digital advertisement, a length of time associated with playing the digital media content, and a number of digital media data blocks played since the previous digital advertisement. |

The combination teaches the system of claim 10, the method of claim 19, and the computer program product of claim 27. *Supra* §V.A.11. As explained with respect to claim 5, the combination further teaches the additional limitations of claims 14, 23, and 31. *Supra* §V.A.6; Ex-1003, ¶163.

15. Dependent Claims 15, 24, and 32

- | | |
|-----|--|
| 15. | The system of claim 10, |
| 24. | The method of claim 19, |
| 32. | The computer program product of claim 27, |
| | wherein the course of presentation of the digital media content is interrupted with a presentation of the digital advertising content at the adapted insertion point. |

The combination of Wu and Doherty teaches the digital media advertisement presentation control system according to claim 10, the method according to claim 19, and the computer program product according to claim 27. *Supra* §V.A.11. The

combination further teaches the additional limitations of claims 14, 23, and 31. Ex-1003, ¶164.

As explained with respect to claim 6, the combination of Wu and Doherty teaches generating a control signal configured to interrupt a course of presentation of the digital media content with a presentation of the digital advertising content at the adapted advertisement insertion point. *Supra* §V.A.7. This teaches that **the course of presentation of the digital media content is interrupted with a presentation of the digital advertising content at the adapted insertion point.** Ex-1003, ¶165.

16. Dependent Claim 16

16. The system of claim 10, wherein the digital advertising content is selected based on one or more advertisement requirements that apply to a user device.
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The combination teaches the system of claim 10 and the additional limitations of claim 16. *Supra* §V.A.11; Ex-1003, ¶¶166-167.

As explained with respect to claim 7, the combination of Wu and Doherty teaches selecting the digital advertising content based on the advertisement requirement that applies to the digital media system. *Supra* §V.A.8. Wu teaches that its digital media system (e.g., electronic digital recording/play back system) is a user device. Ex-1004, 1:42-63 (“One of the ways to provide consumers of the general public with more control over numerous television shows is through the

use of an electronic digital recording/play back device. ... The electronic digital recording/play back device is commonly connected to output these recorded television shows to a television where they can be viewed by the user.”), 4:39-53, 5:56-6:11, Fig. 2. Thus, the combination teaches that **the digital advertising content is selected based on one or more advertisement requirements that apply to a user device.** Ex-1003, ¶167.

17. Dependent Claims 17, 25, and 33

- 17. The system of claim 11,**
25. The method of claim 20,
33. The computer program product of claim 28,
wherein the predetermined advertisement is scheduled to play at the predetermined advertisement insertion point.

The combination of Wu and Doherty teaches the system of claim 11, the method of claim 20, and the computer program product of claim 28. *Supra* §V.A.12. As explained with respect to claim 9, the combination further teaches the additional limitations of claims 17, 25, and 33. *Supra* §V.A.10; Ex-1003, ¶168.

18. Dependent Claim 18

18. The system of claim 16, wherein the advertisement one or more requirements are eliminated in response to presenting the digital advertising content to the user device at the adapted insertion point of digital advertising content.

The combination of Wu and Doherty teaches the system of claim 16 and the additional limitations of claim 18.⁵ *Supra* §V.A.16; Ex-1003, ¶¶169-170.

As explained with respect to claim 8, the combination of Wu and Doherty teaches that the intersplicer eliminates the advertisement requirement, in response to presenting the digital advertising content at the adapted insertion point of digital advertising content. *Supra* §V.A.9. As explained with respect to limitation [10e] and claim 16, the combination further teaches that the digital advertising content is presented to the digital media system that is a user device. *Supra* §§V.A.11[10e], V.A.16. Thus, the combination teaches that **the one or more advertisement requirements are eliminated in response to presenting the digital advertising content to the user device at the adapted insertion point of digital advertising content.** Ex-1003, ¶170.

⁵ The phrase “the advertisement one or more requirements” in claim 18 appears to be erroneous. The Petition assumes that this phrase is intended to read as “the one or more advertisement requirements.”

VI. DISCRETIONARY ANALYSIS FOR REVIEW

Fintiv. Discretionary denial is not warranted. This Petition’s merits are compelling, which “alone demonstrates that the PTAB should not discretionarily deny institution under *Fintiv*.” See June 21, 2022 Director’s Memo, 3-5. The Ground presents compelling obviousness theories that, “if unrebutted in trial, would plainly lead to a conclusion that one or more claims are unpatentable by a preponderance of the evidence.” *Id.*, 4.

Even if the Board were to address *Fintiv*, the factors favor institution. The parallel case in district court is in its early stages. Fact discovery is not complete; expert discovery has not begun; nor has a trial date been set. Judge Staton, who is presiding over the district court case, routinely grants stays pending post-grant proceedings. *E.g.*, *Rembrandt Wireless Techs., LP v. Qualcomm Inc.*, No. 8:19-CV-00705-JLS-JDE, 2020 WL 5044195, at *2 (C.D. Cal. Apr. 9, 2020); *Evolusion Concepts, Inc. d/b/a AR Maglock v. Juggernaut Tactical, Inc. et al.*, No. 8:18-cv-01378-JLS-DFM, Dkt. 218 (C.D. Cal. Jul. 11, 2023). Furthermore, Petitioner filed this Petition promptly, about one and a half months after service of Infringement Contentions.

Advanced Bionics. Denial under §325(d) is likewise unwarranted because neither Wu nor Doherty was relied upon during the ’768 patent’s prosecution. Nor

were they cited on the face of the '768 patent or during prosecution. Ex-1003, ¶31, ¶36.

VII. STANDING

Petitioner certifies that Petitioner is not barred or estopped from requesting this *inter partes* review and the '768 patent is IPR-eligible.

VIII. MANDATORY NOTICES AND FEES

1. **Real Party In Interest:** The real parties-in-interest here are Hulu, LLC and The Walt Disney Company. No other parties directed, controlled, or funded this *Inter Partes* Review proceeding (IPR).

2. **Related Matters:**

Piranha Media Distribution LLC v. Hulu LLC, 2-24-cv-00498 (C.D. Cal.)

3. **Lead and Backup Counsel:** Pursuant to 37 C.F.R. §42.8(b)(3) and 42.10(a), Petitioner designates Harper Batts (Reg. No. 56,160) as lead counsel and Chris Ponder (Reg. No. 77,167), Jeffrey Liang (Reg. No. 69,043), and Fangzhou Qiu (Reg. No. 82,810) as back-up counsel, each of Sheppard, Mullin, Richter & Hampton LLP.

4. **Service Information:** Petitioner consents to service by electronic mail addressed to:

HBatts@sheppardmullin.com;
CPonder@sheppardmullin.com; and
JLiang@sheppardmullin.com
FQiu@sheppardmullin.com

LegalTM-Piranha-CDCA@sheppardmullin.com

5. Petitioner's counsel may also be served by mail or hand delivery at Sheppard, Mullin, Richter & Hampton LLP, 1540 El Camino Real Suite 120, Menlo Park, CA 94025. Petitioner's counsel may be reached by telephone at (650) 815-2600 and by facsimile at (650) 815-2601.

6. **Fees:** The Office is authorized to charge fees for this Petition to Deposit Account 50-4561, Ref. 16VF-388878.

Respectfully submitted,

SHEPPARD, MULLIN,
RICHTER & HAMPTON LLP

/Harper Batts/

Harper Batts (Reg. No. 56,160)
Attorneys for Petitioner

CLAIM APPENDIX

[1a] A digital media system comprising:

[1b] a user interface for receiving user input for controlling a course of presentation of digital media content;

[1c] an advertisement rotator for managing one or more requests for advertising content to be presented during the course of presentation of the digital media content either visually or audibly; and

[1d] an intersplicer in communication with the advertisement rotator, the intersplicer configured to:

[1e] change a predetermined advertisement insertion point in the digital media content to an adapted advertisement insertion point in the digital media content, in response to receiving a user input to update a current play position in the digital media content to a new play position in the digital media content,

[1f] the adapted advertisement insertion point determined by an adaptive preference rule based on an advertisement requirement that applies to the digital media system;

[1g] modify the adapted insertion point of digital advertising content based on the advertisement requirement; and

[1h] request, from the advertisement rotator, digital advertising content to be played at the adapted advertisement insertion point.

2. The digital media system of claim 1, wherein the digital advertising content is different from a predetermined advertisement selected to be played at the predetermined advertisement insertion point.

3. The digital media system of claim 1, wherein the intersplicer is further configured to change the predetermined advertisement insertion point to the adapted advertisement insertion point by adaptively modifying a presentation position of a predetermined advertisement from the predetermined advertisement insertion point to the adapted advertisement insertion point in the digital media content, the adapted advertisement insertion point being different than the predetermined advertisement insertion point.

5. The digital media system of claim 1, wherein the adaptive preference rule is based on at least one of a number of tracks played since a previous digital advertisement, a length of time associated with playing the digital media content, and a number of digital media data blocks played since the previous digital advertisement.

6. The digital media system of claim 1, wherein the intersplicer is configured to generate a control signal configured to interrupt a course of presentation of the digital media content with a presentation of the digital advertising content at the adapted advertisement insertion point.

7. The digital media system of claim 1, wherein the advertisement rotator selects the digital advertising content based on the advertisement requirement that applies to the digital media system.

8. The digital media system of claim 1, wherein the intersplicer eliminates the advertisement requirement, in response to presenting the digital advertising content at the adapted insertion point of digital advertising content.

9. The digital media system of claim 2, wherein the predetermined advertisement is scheduled to play at the predetermined advertisement insertion point, and wherein the advertisement rotator is configured to manage one or more requests to replace the predetermined advertisement.

[10a] A digital media advertisement presentation control system comprising:

at least one processor;

a non-transitory computer-readable storage medium storing instructions that, when executed by the processor, cause the processor to perform operations comprising:

[10b] replacing a predetermined advertisement insertion point in digital media content with an adapted insertion point for digital advertising content, in response to receiving a request to update a current play position in the digital media content to a new play position in the digital media content,

[10c] the adapted insertion point determined by an adaptive preference rule based on one or more advertisement requirements;

[10d] requesting digital advertising content to be played at the adapted insertion point of digital advertising content; and

[10e] presenting the digital advertising content at the adapted insertion point of digital advertising content.

11. The system of claim 10, wherein the digital advertising content is different from a predetermined advertisement selected to be played at the predetermined advertisement insertion point.

12. The system of claim 10, wherein the replacing the predetermined advertisement insertion point with the adapted insertion point includes

adaptively modifying a presentation position of the predetermined advertisement from the predetermined advertisement insertion point to the adapted insertion point in the digital media content.

14. The system of claim 10, wherein the adaptive preference rule is based on at least one of a number of tracks played since a previous digital advertisement, a length of time associated with playing the digital media content, and a number of digital media data blocks played since the previous digital advertisement.

15. The system of claim 10, wherein the course of presentation of the digital media content is interrupted with a presentation of the digital advertising content at the adapted insertion point.

16. The system of claim 10, wherein the digital advertising content is selected based on one or more advertisement requirements that apply to a user device.

17. The system of claim 11, wherein the predetermined advertisement is scheduled to play at the predetermined advertisement insertion point.

18. The system of claim 16, wherein the advertisement one or more requirements are eliminated in response to presenting the digital advertising

content to the user device at the adapted insertion point of digital advertising content.

[19a] A method embedded in a machine-readable medium in form of executable instructions to cause at least one programmable processor to perform operations comprising:

[19b] replacing a predetermined advertisement insertion point in digital media content with an adapted insertion point for digital advertising content, in response to receiving a request to update a current play position in the digital media content to a new play position in the digital media content,

[19c] the adapted insertion point determined by an adaptive preference rule based on one or more advertisement requirements;

[19d] requesting digital advertising content to be played at the adapted insertion point of digital advertising content; and

[19e] presenting the digital advertising content at the adapted insertion point of digital advertising content.

20. The method of claim 19, wherein the digital advertising content is different from a predetermined advertisement selected to be played at the predetermined advertisement insertion point.

21. The method of claim 19, wherein the replacing the predetermined advertisement insertion point with the adapted insertion point includes adaptively modifying a presentation position of the predetermined advertisement from the predetermined advertisement insertion point to the adapted insertion point in the digital media content.

23. The method of claim 19, wherein the adaptive preference rule is based on at least one of: a number of tracks played since a previous digital advertisement, a length of time associated with playing the digital media content, and a number of digital media data blocks played since the previous digital advertisement.

24. The method of claim 19, wherein the course of presentation of the digital media content is interrupted with a presentation of the digital advertising content at the adapted insertion point.

25. The method of claim 20, wherein the predetermined advertisement is scheduled to play at the predetermined advertisement insertion point.

[27a] A computer program product comprising a non-transitory machine-readable medium storing instructions that, when executed by at

least one programmable processor, cause the at least one programmable processor to perform operations comprising:

[27b] replacing a predetermined advertisement insertion point in digital media content with an adapted insertion point for digital advertising content, in response to receiving a request to update a current play position in the digital media content to a new play position in the digital media content,

[27c] the adapted insertion point determined by an adaptive preference rule based on one or more advertisement requirements;

[27d] requesting digital advertising content to be played at the adapted insertion point of digital advertising content; and

[27e] presenting the digital advertising content at the adapted insertion point of digital advertising content.

28. The computer program product of claim 27, wherein the digital advertising content is different from a predetermined advertisement selected to be played at the predetermined advertisement insertion point.

29. The computer program product of claim 27, wherein the replacing the predetermined advertisement insertion point with the adapted insertion point includes adaptively modifying a presentation position of the

predetermined advertisement from the predetermined advertisement insertion point to the adapted insertion point in the digital media content.

31. The computer program product of claim 27, wherein the adaptive preference rule is based on at least one of: a number of tracks played since a previous digital advertisement, a length of time associated with playing the digital media content, and a number of digital media data blocks played since the previous digital advertisement.

32. The computer program product of claim 27, wherein the course of presentation of the digital media content is interrupted with a presentation of the digital advertising content at the adapted insertion point.

33. The computer program product of claim 28, wherein the predetermined advertisement is scheduled to play at the predetermined advertisement insertion point.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on August 22, 2024, true and correct copies of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 11,463,768 and Exhibits 1001-1022 were served in entirety on the Patent Owner at the following addresses of record as listed on Patent Center, via Priority Mail Express®:

Mintz Levin/San Diego Office
One Financial Center
Boston, MA 02111
Official Correspondence Address

The undersigned certifies that true and correct copies of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 11,463,768 and Exhibits 1001-1022 were also sent via electronic mail to the attorneys of record for Plaintiff in the concurrent litigation matter(s):

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**CERTIFICATE OF COMPLIANCE WITH
TYPE-VOLUME LIMITATION, TYPEFACE REQUIREMENTS,
AND TYPE STYLE REQUIREMENTS**

1. This Petition complies with the type-volume limitation of 14,000 words, comprising 13,271 words, as counted using the Microsoft Word software that was used to prepare this paper, excluding the parts exempted by 37 C.F.R. § 42.24(a).

2. This Petition complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word in 14-point Times New Roman.

Respectfully submitted,

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