IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

U.S. Patent No. 8,856,030)	
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Filed: April 7, 2004)	
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Issued: October 7, 2014)	
)	Art Unit: Not Yet Assigned
For: METHOD, SYSTEM AND SOFTWARE)	
FOR ASSOCIATING ATTRIBUTES)	
WITHIN DIGITAL MEDIA)	
PRESENTATIONS)	
)	
Requestor: TikTok Inc.)	
)	

Mail Stop *Ex Parte* Reexamination
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR EX PARTE REEXAMINATION OF U.S. PATENT NO. 8,856,030 UNDER 35 U.S.C. §§ 302–307 AND 37 C.F.R. § 1.510 *ET SEQ.*

Dear Sir or Madam:

Pursuant to 35 U.S.C. §§ 302–307 and 37 C.F.R. § 1.510 *et seq.*, the undersigned on behalf of TikTok Inc. ("TikTok" or "Requestor") respectfully requests an *ex parte* reexamination of claims 1 and 2 of United States Patent No. 8,856,030 ("the '030 Patent") to David Russek and originally assigned to SevenEcho, LLC because of the substantial new questions of patentability ("SNQ") described herein.

Pursuant to 37 C.F.R. § 1.510, a full copy of the '030 Patent is attached as **Exhibit A**. The '030 Patent issued on October 7, 2014, from an application filed in the United States on April 7, 2004 and claims priority to a provisional application filed on April 7, 2003.

TABLE OF CONTENTS

I. Introduction

Claims 1 and 2 of the '030 Patent (the "Challenged Claims") are directed at a system for presenting targeted content (i.e., advertisements) in a "composite" display, based on a recommendation system that retrieves "user social network information." The prior art shows that collecting information about a user on a networked computer to recommend and present targeted content was well known in the art. A person of ordinary skill in the art attempting to present targeted content to a user would have been motivated to use known methods and technology to collect as much information about a user as possible to improve the content selection or recommendation process. The result of presenting more targeted content was predictable. Thus, under both the broadest reasonable interpretation of the term "user social network information," and a possibly narrower interpretation of the term under the *Phillips* standard, the prior art shows these well-known methods and technology were being used to retrieve "user social network information" to recommend and present more targeted content.

More specifically, the Challenged Claims are obvious in view of combining at least one of the primary references, U.S. Patent No. 7,904,922 to Haberman or U.S. Patent No. 7,334,249 to Byers, and either secondary reference, PCT Publication No. WO 2001/67317 to Hupert-Graff, and U.S. Patent No. 7,571,452 to Gutta. Specifically, both Haberman and Byers disclose the creation and presentation of the targeted content as recited in the Challenged Claims in the context of networked personalized video delivery systems based on a user profile and other collected information. *See* VII.A.1 and VII.B.1, *infra*. Both explore various sources for collecting information about a user to better target the content provided to the user. *Id.* Moreover, both secondary references Hupert-Graff and Gutta teach retrieving the "user social network information" for recommending content (the allegedly novel aspect of the claim). *See* V.C and

V.D, *infra*. Additionally, there is extensive evidence that a person of ordinary skill in the art would have been motivated to combine either secondary reference with Haberman or Byers. *See* VII.A.2.a and VII.A.3.a, VII.B.2.a, and VII.B.3.a, *infra*. Neither Byers, Hupert-Graff, nor Gutta were before the Examiner during prosecution—and are non-cumulative to the references analyzed by the Examiner. Haberman was cited in the prosecution history, but never analyzed by the Examiner—even though Haberman was used to *reject* a substantively similar claim in a related application, by a *different* Examiner.

Specifically, during prosecution, the Examiner found that the prior art reference U.S. Patent No. 6,357,042 to Srinivasan disclosed all limitations of the Challenged Claims but one. The Examiner found that Srinivasan did not teach "retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes." *See* IV.C, *infra*. Subsequently, the Examiner found that U.S. Patent No. 7,483,871 to Herz taught retrieving user information from a social network in the form of a "plurality of bulletin boards." *See* IV.D, *infra*. However, based solely on a cost-benefit analysis, the Examiner found that there was no motivation to combine Herz with Srinivasan. *See id.* More specifically, the Examiner limited his objection to combining Herz and Srinivasan because the "prior art [Srinivasan] does not teach or suggest that the benefits of going to social networks to get user attribute information would outweigh the costs," and instead asserted that a person of ordinary skill in the art would have looked to another reference relating to electronic programming guides. *Id.* Contrary to the law, the Examiner did not analyze the motivation to combine Srinivasan and Herz under *KSR*. *See id.*

Here, this Request demonstrates that there is extensive motivation to combine the new references under *KSR*, and the combinations teach all claim elements—including the allegedly

novel limitation ("retrieving **user social network information** from at least one source **external to** the presented first composite digital media display. . . ."). This is true under both the broadest reasonable interpretation of the claim language and the interpretation provided by Judge DeMarchi's August 14, 2023, claim construction order decided under the *Phillips* standard. For example, the broadest reasonable interpretation of this allegedly novel limitation could include retrieving any information about a user's "social network" (*e.g.*, who is in the user's contact list) stored in any memory external to the display. Judge DeMarchi, however, construed the allegedly novel limitation as: "retrieving **information derived from a user's interactions in an online community** from at least one source **other than** the presented first composite digital media display." Ex. V at 21-22. The prior art invalidates using either standard.

First, Hupert-Graff discloses a personalized recommendation system for classifying data content from various sources and providing content recommendations for a user. *See* V.C, *infra*. Hupert-Graff's recommendation system for content is based on a dynamically updated community profile and real-time monitoring of the user's online activities including chatting with other online users.[1] *See* V.C, *infra*. Hupert-Graff's online community is the group of users that belong to a specific community, for example a group of users that share a common language or personal interests. *See* V.C, *infra*. Hupert-Graff's community profile is derived from the user's interactions in the community: specifically "tracking the user activities while using the interactive communication device and storing thereof in the viewer history log. The history log contains all recorded user selections and **activities** while watching and **communicating** via the Interactive device" (emphasis added). *See* V.C, *infra*. Specifically, Hupert-Graff notes that the "in case the

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[1] Hupert-Graff explicitly teaches that its "DRS [Dynamic Recommendation System] is tracking in real-time user current activities."

system detects frequent successive activities like **engaging in a chat** during certain TV show, this behavior pattern is recorded in the respective PDP [personal dynamic profile] parameters" (emphasis added). *See* V.C, *infra*. Then "all available content and services are processed by a dynamic set of filtering/matching systems, based upon user history and PDP (Personal Dynamic Profile), provider inputs, the history of the entire users community etc." *See* V.C, *infra*. The information retrieved in Hupert-Graff's system is the analysis of the user's dynamic community profile and real-time activities in order "to determine the user behavioral profile." *See* V.C, *infra*. From this information, Hupert-Graff's system then calculates a "Scoring Rate" of the available content and creates a "Recommendation List" for the user. *See* V.C, *infra*.

Second, Gutta discloses a recommendation system for an electronic programming guide (EPG) that uses third-party recommendations along with a user profile to make programming recommendations. Gutta's online community consists of other users of Gutta's EPG system and specifically those third parties such as "friend[s], colleague[s], or trendsetter[s]." *See* V.D, *infra*. Gutta explains that "people who are viewed as 'trendsetters' often influence the viewing or purchasing habits of others. Online retailers, such as Amazon.com, employ collaborative filtering techniques to recommend additional items to a customer based on selections made by other people who purchased the same item." Gutta's recommendation system goes a step further than the traditional collaborative filtering techniques by taking recommendations only from those third parties that the user selects, *i.e.*, only those third parties that the user chooses to interact with online by taking their recommendations. *See* V.D, *infra*. Gutta's system retrieves from the other third-party recommenders, information such as a top-N list of recommended items, recommendation scores for those items, and an indication of whether the third party actually watched or selected the recommended item. *See* V.D, *infra*. From this information, Gutta's system then calculates an

adjusted recommendation score for the various items in an effort to better tailor what is presented to the user.

Both Hupert-Graff and Gutta teach methods for using information learned about a user to improve the recommendation of content or a product—a similar goal to both Haberman and Byers which is to provide more tailored and relevant data to the user.

Dependent claim 2 of the '030 Patent simply recites that the set of digital media assets consists of certain types of well-known multimedia such as foreground images, background images, or audio. This limitation is also disclosed by the primary references of Haberman and Byers, and in combination with the identified secondary references, and is therefore also obvious in view of these combinations.

Accordingly, this Request raises substantial new questions of patentability of the Challenged Claims of the '030 Patent.

II. Requirements for *Ex Parte* Reexamination under 37 C.F.R. § 1.510

Pursuant to 37 C.F.R. § 1.510, each requirement for *ex parte* reexamination of the '030 Patent is satisfied. The application for the '030 Patent was filed on April 7, 2004, and claims priority to provisional application No. 60/460,998, filed on April 7, 2003. The '030 Patent's 7.5-year maintenance fee was due October 7, 2022. The 7.5-year maintenance fee was not timely paid. As provided under 37 C.F.R. § 1.378, on June 29, 2023, Patent Owner revived the '030 Patent by filing an e-Petition to Accept Unintentionally Delayed Payment of Maintenance Fee in an Expired Patent (37 CFR 1.378(b)). On June 29, 2023, the e-Petition was granted by the PTO. The grounds of unpatentability in this request present substantial new questions of patentability, and are a proper basis for declaring reexamination of an issued patent pursuant to 35 U.S.C. § 302.

A. Payment of Fees – 37 C.F.R. § 1.510(a)

The Requestor authorizes the Patent and Trademark Office to charge Deposit Account No. 50-4561 for the fees set forth in 37 C.F.R. § 1.20(c)(1).

B. Prior Art Patents and Printed Publications – 37 C.F.R. § 1.510(a)

Pursuant to 35 U.S.C. §§ 301–302 and 37 C.F.R. § 1.510, Requestor identifies the following prior art patents and printed publications on which this Request is based:

Reference	Priority/Publication Date	Exhibit Designation
U.S. Patent No. 7,904,922 titled "Template Creation and Editing for a Message Campaign" to Haberman, et al. ("Haberman")	April 7, 2000	B
U.S. Patent No. 7,334,249 titled "Method and Apparatus for Dynamically Altering Digital Video Images" to Byers ("Byers")	April 6, 2000	C
PCT Publication No. WO 2001/67317 titled "Method for Personalizing Information and Services from Various Media Sources" to Hupert-Graff, et al. ("Hupert-Graff")	March 8, 2000	D
U.S. Patent No. 7,571,452 titled "Method and Apparatus for Recommending Items of Interest to a User Based on Recommendations For One or More Third Parties" to Gutta ("Gutta")	November 13, 2001	E
U.S. Patent No. 7,472,110 titled "System and Method for Employing Social Networks for Information Discovery" to Achlioptas ("Achlioptas")	January 29, 2003	F
TikTok Inc. v. 10Tales, Inc., IPR2021-00476, Petition - Paper 1 (PTAB February 10, 2021)	February 10, 2021	G
TikTok Inc. v. 10Tales, Inc., IPR2021-00476, Patent Owner's Preliminary Response - Paper 8 (PTAB May 17, 2021)	May 17, 2021	H
TikTok Inc. v. 10Tales, Inc., IPR2021-00476, Board Decision Denying Institution - Paper 13 (PTAB Aug. 13, 2021)	August 13, 2021	I

Reference	Priority/Publication Date	Exhibit Designation
TikTok Inc. v. 10Tales, Inc., IPR2021-00476, Petitioner's Request for Rehearing - Paper 14 (PTAB Sept. 13, 2021)	September 13, 2021	J
TikTok Inc. v. 10Tales, Inc., IPR2021-00476, Board's Decision Denying Request for Rehearing - Paper 15 (PTAB Dec. 5, 2022)	December 5, 2022	K
U.S. Patent No. 8,856,030 File History	April 7, 2003	L
U.S. Application No. 14/506,822 File History	April 7, 2003	M
10Tales' Opening Claim Construction Brief and Exhibits filed in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 4:21-cv-03868-YGR	May 27, 2022	N
Defendants' Amended Responsive Claim Construction Brief and Exhibits filed in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD	June 17, 2022	O
10Tales' Reply Claim Construction Brief and Exhibits filed in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD	July 1, 2022	P
Amended Joint Claim Construction and Prehearing Statement Pursuant to Patent L.R. 4-3 filed in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD	July 6, 2022	Q
Claim Construction Hearing Transcript in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD	July 29, 2022	R
Order Granting in Part and Denying in Part Defendants' Motion for Leave to File Claim Construction Sur-Reply in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD	August 22, 2022	S
10Tales' Supplemental Claim Construction Brief filed in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD	September 9, 2022	T

Reference	Priority/Publication Date	Exhibit Designation
Defendants' Responsive Supplemental Claim Construction Brief filed in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD	September 23, 2022	U
Order Construing Claim Terms of U.S. Patent No. 8,856,030 issued by the Honorable Virginia K. DeMarchi in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD	August 14, 2023	V
10Tales' Opposition to Defendants' Second Motion to Dismiss Plaintiff's Amended Complaint For Failure to State a Claim Pursuant to Fed. R. Civ. P. 12(b)(6) and 35 U.S.C. § 101 filed in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD	January 20, 2022	W
U.S. Patent No. 6,357,042 titled "Method And Apparatus For Multiplexing Separately-Authored Metadata For Insertion Into A Video Data Stream" To Srinivasan et al.	September 16, 1998	X
Declaration of Henry Huoh, Ph.D. in support of Requestor's Ex Parte Reexamination Request	N/A	Y

C. Summary of Substantial New Questions of Patentability – 37 C.F.R. § 1.510(b)(1)

This request is based upon prior art documents identified on accompanying Patent and Trademark Office Form SB/08a.

The detailed identification of each substantial new question of patentability (SNQ) based on 35 U.S.C. § 103 is provided in VII.A and VII.B, *infra*. The SNQs presented by this request are summarized below:

No	SNQ (Grounds for Proposed Rejection)
1	Claims 1 and 2 are invalid for obviousness over the combination of Haberman in view of Hupert-Graff

No.	SNQ (Grounds for Proposed Rejection)
2	Claims 1 and 2 are invalid for obviousness over the combination of Haberman in view of Gutta
3	Claims 1 and 2 are invalid for obviousness over the combination of Byers in view of Hupert-Graff
4	Claims 1 and 2 are invalid for obviousness over the combination of Byers in view of Gutta
5	Claims 1 and 2 are invalid for obviousness over the combination of Haberman in view of Hupert-Graff in further view of Achlioptas
6	Claims 1 and 2 are invalid for obviousness over the combination of Haberman in view of Gutta in further view of Achlioptas
7	Claims 1 and 2 are invalid for obviousness over the combination of Byers in view of Hupert-Graff in further view of Achlioptas
8	Claims 1 and 2 are invalid for obviousness over the combination of Byers in view of Gutta in further view of Achlioptas

D.   Identification of Claims for *Ex Parte* Reexamination – 37 C.F.R. § 1.510(b)(2)

The Requestor respectfully requests *ex parte* reexamination of claims 1 and 2 of the '030 Patent. Detailed explanations of the pertinence and manner of applying the prior art references to each claim for which reexamination is requested may be found in VII.A and VII.B, *infra*.

E.   Copy of Prior Art and Translations – 37 C.F.R. § 1.510(b)(3)

Copies of the patent, prior art patents, printed publications, and other relevant documents relied upon in this Request are included as Exhibits A–Y as required by 37 C.F.R. § 1.510(b)(3).

F.   Copy of U.S. Patent No. 8,856,030 – 37 C.F.R. § 1.510(b)(4)

Attached as Exhibit A is a copy of the '030 Patent as required by 37 C.F.R. § 1.510(b)(4). The Requestor is not aware of any disclaimer, certificate of correction, terminal disclaimer, or reexamination certificate for the '030 Patent. 37 C.F.R. § 1.501(b)(4).

G.   Certification of Service on Patent Owner – 37 C.F.R. § 1.510(b)(5)

The undersigned certifies that a complete and entire copy of this Request for *Ex Parte*

Reexamination and all supporting documents have been provided to the Patent Owner by serving

the attorney/agent of record at the Patent Office for the '030 Patent at the following addresses:

> Troutman Pepper Hamilton Sanders LLP
> 501 Grant Street, Suite 300
> Pittsburgh, PA 15219-4429
>
> -and- litigation Counsel of Record at:
>
> Thomas J. Fisher
> Cozen O'Connor
> 1200 19th Street, NW
> Washington, D.C. 20036

**H.   Certification that Estoppel Does Not Prohibit *Ex Parte* Reexamination –
37 C.F.R. § 1.510(b)(6)**

Requestor hereby certifies that the statutory estoppel provisions of 35 U.S.C. § 315(e)(1)

or 35 U.S.C. § 325(e)(1) do not prohibit Requestor from filing this Request for Reexamination.

Neither the Requestor nor those in privity with Requestor have previously requested an *Inter*

Partes Review or Post-Grant Review of the '030 Patent that resulted in a final written decision.

35 U.S.C. §§ 315(e)(1), 325(e)(2); 37 C.F.R. § 1.510(b)(6).

I.   Reservation of Rights

TikTok respectfully requests reexamination of the '030 Patent in view of the substantial

new questions of patentability explained in detail below. TikTok reserves all rights and defenses

including, without limitation, defenses as to indefiniteness, invalidity, and unenforceability. By

filing this Request, TikTok does not represent, agree, or concur that the claims of the '030 Patent

are definite or enforceable, or not invalid for reasons excluded from this Request as improper

subject matter. TikTok specifically asserts that the claims of the '030 Patent are in fact not

patentable and are indefinite, and as such the Patent and Trademark Office should reexamine and

find them unpatentable and cancel those claims, rendering them null, void, or otherwise unenforceable.

III.   Identification and Status of Pending Litigation Involving the '030 Patent

The '030 Patent is the subject of pending litigation against Requestor. Initially, Patent Owner asserted the '030 Patent against Requestor in the Western District of Texas on September 2, 2020. The action was assigned to Judge Alan Albright and captioned *10Tales, Inc. v. TikTok, Inc.*, Case No. 6:20-cv-00810-ADA. On November 30, 2020, TikTok moved to transfer the case to the Northern District of California. Prior to deciding the motion to transfer, the court permitted the parties to conduct limited venue discovery which concluded on April 28, 2021. In addition, claim construction briefing proceeded with 10Tales filing its Opening Claim Construction on April 2, 2021, TikTok filing its Responsive Claim Construction brief on April 23, 2021, and 10Tales filing its Reply Claim Construction brief on May 7, 2021.

On May 21, 2021, prior to the due date for filing TikTok's Sur-Reply Claim Construction brief, Judge Albright transferred the case to the Northern District of California where it was assigned to Judge Yvonne Gonzalez-Rogers and captioned *10Tales, Inc. v. TikTok Inc., et al.*, Case No. 4:21-cv-03868-YGR. On June 16, 2022, the case was reassigned to Judge DeMarchi, in the action captioned *10Tales, Inc. v. TikTok Inc., et al.*, Case No. 5:21-cv-03868-VKD. Based on the transfer and differences in the patent local rules, the court ordered the parties to re-brief claim construction. The parties completed claim construction briefing on July 1, 2022. On July 29, 2022, Judge DeMarchi held a claim construction hearing. On August 22, 2022, Judge DeMarchi ordered supplemental claim construction briefing, which the parties completed on September 23, 2022.

On August 14, 2023, Judge DeMarchi issued the Court's Order Construing Claim Terms of U.S. Patent No. 8,856,030. Requestor reserves all rights to appeal this order, including but not limited to, its arguments that certain terms in Claim 1 are indefinite. Judge DeMarchi further ordered that the parties file a Joint Case Management Statement by September 12, 2023, including a proposed schedule for further proceedings through trial. On September 19, 2023, a Case Management Conference was held, in which the court agreed to delay entry of a scheduling order until the resolution of TikTok's Rule 12(c) motion based on 35 U.S.C. § 101 and *Alice* is decided. In addition, the parties stipulated, and the court affirmed, that all discovery in the district court litigation is stayed until a decision on TikTok's Rule 12(c) motion issues.

The '030 Patent was also the subject of a petition for *inter partes* review in *TikTok Inc. v. 10Tales, Inc.*, IPR2021-00476 filed on February 10, 2021. The Board denied institution on August 13, 2021. Petitioner filed a Request for Rehearing on September 13, 2021. The Board denied Petitioner's Request for Rehearing on December 5, 2022.

This Request presents evidence and prior art not previously addressed in the PTAB's decision in IPR2021-00476, and therefore, raises substantial new questions of patentability. The prior art includes Haberman, Byers, Hupert-Graff, Gutta, and Achlioptas, none of which were specifically combined with the prior art addressed in IPR2021-00476, nor in the original prosecution of the '030 Patent.

IV. Overview of the '030 Patent

A. The Challenged Claims of the '030 Patent

The '030 Patent has two claims, with claim 1 being the sole independent claim. Both claims are challenged in this Request for Reexamination. Claim 1 recites the following limitations:

1. A system for associating user attributes with digital media asset attributes and creating a user specific composite digital media display, the system comprising:

a) a server;

b) a computer-readable storage medium operably connected;

c) wherein the computer-readable storage medium contains one or more programming instructions for performing a method of associating user attributes with digital media asset attributes and creating a user specific composite digital media display, the method comprising:

identifying a first set of digital media assets stored on the computer-readable storage medium,

creating, from the first set of digital media assets, a first composite digital media display,

presenting to the user via a display server, the first composite digital media display;

retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes;

selecting, based on the user attributes in the social network information, a second set of digital media assets, wherein the second set of digital media assets is associated with one or more user attributes found in the user social network information;

monitoring the first composite digital media display for the presence of a trigger, wherein the trigger indicates a personalization opportunity in the first set of digital media assets;

performing a rule based substitution of one or more of the digital media assets from the first set of digital media assets with one or more of the digital media assets from the second set of digital media assets to create a user specific set of digital media assets;

creating, from the user specific digital media assets, a user specific composite digital media display; and

presenting to the user via the display server, the second composite digital media display.

Claim 2 recites the following:

2. The system of claim 1 wherein the first set of digital media assets includes one or more of a foreground image, a background image, or audio.

B.   Summary of the Claims and Disclosure of the '030 Patent

The '030 Patent's background focuses on human thinking: how media content is interpreted (texts, stories, narratives) and how that interpretation can be influenced depending on the viewer's position in life and how it is delivered (*e.g.*, advertisements with humor). '030 Patent at 1:18-51. The background then identifies an alleged need for improved methods to attract individuals to digital media narrative content, including advertisements, by making the narrative personally more relevant and impactful through demographics, psychodemographics, emotional states, affinities (cognitive, emotional and social, etc.). *Id.* at 1:41-45; *see also* 1:62-2:7, 2:53-61, 6:59-67; Figs. 6-9, 12. The '030 Patent's goal is to use information about the user to create customized content. For example, the '030 Patent's summary describes presenting a "dynamic digital media narrative" (i.e., an advertisement or media content) with optional embedded content that can be customized using the user's information to give "the user a personalized experience." *Id.* 3:7-11.

Figure 3 depicts a single conceptual illustration of how customized digital media assets (i.e., aspects of the advertisement) are included in a digital media asset video sequence. *Id.* at Fig. 3. The corresponding description provides a high level suggestion on how to create the

composite with customized content: use a generic "script [to] cause the insertion of a product advertisement on a location in the video screen." *Id.* at 10:29-30.

The specification extensively describes using a user's "narrative perception identification framework" to describe the types of information gathered about a user that could allegedly be useful in selecting more relevant content. *Id.* at 3:59-62; 4:29-32; 4:35-41; 4:42-49; 6:1-3; 6:34-38; 7:5-9; 13:22-14:14; 16:34-40; 19:11-30; 20:9-36. Figures 6-9 and 13 provide numerous examples of the categories of information about a user that allegedly could assist in selecting more relevant content for a user. *Id.* at Figs. 6-9, 13.

The '030 Patent specification describes obtaining this type of information about the user by asking a series of questions or allowing the user to choose certain content to determine which content (or assets) the user has a high affinity. *Id.* 3:19-62; 4:41-53. For example, the specification uses the term "internal narrative traits preference topology," which is the "representation of personality, similar to the Myers-Briggs personality classification scheme . . ." or the "Keirsey temperament sorter." *Id.* at 6:39-58. The system gathers information from a user to "create a personality inventory of themselves" including "using individual's interactions with the interactive narrative." *Id.* Likewise, the specification mentions using the well-known technique of profiling users based on the user's interactions such as "the user's web surfing characteristics, shopping habits, television viewing habits, and/or actual purchases." *Id.* at 6:26-31. These were all well-known ways of obtaining more information about a user to better tailor the customized content.

Claim 1 is generally directed towards a system that customizes media content based on retrieved "user social network information" containing a "user attribute." *Id.* at 2:12-14, 2:53-61; claim 1. The specification defines "user attributes" as "aspects, characteristics, and qualities of the user that are useful for determining (matching, correlating, and selecting) digital media assets,"

which "may include characteristics such as affinities, likes or dislikes as described outside of affinities, perceptions, experiences." *Id.* at 6:32-38, 20:62-22:15. Claim 1 also generically recites a server and a computer-readable storage medium that contains programming instructions. *Id.* at claim 1, 20:62-21:6; *see also id.* at Abstract, 2:65-3:10. The '030 Patent specification does not use the term "user social network information," nor describe a mechanism to retrieve information from a "social network" that contains a "user attribute."

The claims of the '030 Patent suffer from a number of drafting flaws, including numerous claim terms lacking proper antecedent basis (*e.g.*, "the user" (21:11), "the presented first composite digital media display" (21:14-15), "the user attributes" (21:17), "the social network information" (21:17-18), "the user specific digital media assets" (22:12), "the second composite digital media display" (22:14-15)). More specifically, the term "the user" lacks antecedent basis because "a user" is never introduced and the only mention of "user" is through the introduction of "user attributes." *Id.* at 21:11. The term "the presented first composite digital media display" lacks antecedent basis because it is never introduced as a static element or noun: "a presented first composite digital media display." Because "the presented first composite digital media display" is not a noun, it is impossible to determine what is internal or external to it. However, the claim requires "at least one **source external** to the presented first composite digital media display." *Id.* at 21:13-14 (emphasis added). The term "the user attributes" lacks antecedent basis because "user attributes" are introduced as "one or more user attributes," making it unclear if more than one "user attribute" is required. *Id.* at 21:17. The term "the social network information" lacks antecedent basis because "social network information" is introduced as "user social network information" and not just "social network information." *Id.* at 21:17-18. The term "the user specific digital media assets" lacks antecedent basis because "user specific digital media assets" is introduced as "a user

specific *set* of digital media assets" (i.e., the "set" is dropped). *Id.* at 22:12-13 (emphasis added). The term "the second composite digital media display" lacks antecedent basis because it is not previously introduced, and it could refer to either the "user specific composite digital media display," or a different second composite digital media display altogether. *Id.* at 22:14-15.

Additionally, while both the preamble (20:61-62) and "wherein clause" (21:3-4) recite "associating user attributes with digital media asset attributes," there are no recited method steps for performing "associating user attributes with digital media asset attributes." *See id.* at claim 1.

The '030 Patent specification also suffers from failing to disclose a number of recited limitations in claim 1 (*e.g.*, "digital media asset attributes" (20:62-63), "user specific composite digital media display" (20:63-64), "display server" (21:11), "user social network information" (21:13), "one source external to the presented first composite digital media display" (21:14-15), "first composite digital media display" (21:9-10), "performing a rule based substitution of one or more of the digital media assets from the first set of digital media assets with one or more of the digital media assets from the second set of digital media assets . . ." (22:7-11), "user specific set of digital media assets" (22:11)). These terms did not appear in the claims until nearly five years after the filing of the application—with the third amendment to the claims. Despite the specification's failure to disclose these claim terms, Requestor attempts to use the specification as best as possible to describe the alleged invention.

The '030 Patent background focuses mainly on:

> a need for a method, system, and software to enable a distributor of sponsored or un-sponsored digital media narratives to change the content of the digital media narrative based on user demographics, psychodemographics, emotional states, affinities (cognitive, emotional and social), self-narrating content classification, internal narrative traits preference topology, time sensitive, episodic expectation sequencing, and collective/collaborate attributes.

Id. at 2:53-61.

The preamble and "wherein" clause of claim 1 recites that the alleged invention is directed to a method of "associating user attributes with digital media asset attributes and creating a user specific composite digital media display." *Id.* at claim 1, 21:1-6. While claim 1 describes conventional functions and generic steps for creating a "user specific" digital media "composite" based on information about a user, the claim does not explicitly include *any* step for "associating user attributes with digital media asset attributes." *Id.* at 21:1-22:15. Instead, as discussed below in section IV.C *infra*, according to the Examiner, the alleged point of novelty of claim 1 is "retrieving user social network information" that contains one or more "user attributes." *Id.* at claim 1, 21:13-16. Notably, the specification never describes (nor does the claim require) any method of associating user attributes contained in "user social network information" with "digital media asset attributes." It certainly does not describe a method for obtaining a user attribute from "user social network information." Additionally, although this is a system claim (with a generic server and computer storage), the crux of the alleged invention is found in the method allegedly required by the claimed "programming instructions."

The instructions first require identifying a first set of "digital media assets"—aspects within the media content, *e.g.*, background, foreground, and audio—stored on the computer-readable storage medium, and using these assets to create a "first composite digital media display." *Id.* at claim 1, 21:7-8. The specification does not describe what is meant by a "composite," but instead refers to a "digital media narrative" as:

> content, such as video, audio, and combinations thereof, that is distributed digitally and can be stored digitally. . . . Digital media narrative includes but is not limited to stories presented over the Internet, modifiable digital video including digital television and streaming media, presentations on web sites including animations, still images, sequences of still images, audio, textual presentations, and combinations of all of the abovementioned media.

Id. at 2:12-21. Once the first composite digital media display is created, it is presented to "the user via a display server." *Id.* at 21:11-12. Both "the user" and "the display server" lack antecedent basis, and the specification fails to describe or mention a "display server." Figure 5A of the '030 Patent, reproduced below, illustrates an embodiment of a video substitution system for personalizing digital media narratives, as well as presenting personalized content to the user. *Id.* at 11:65-12:10, Fig. 5A.
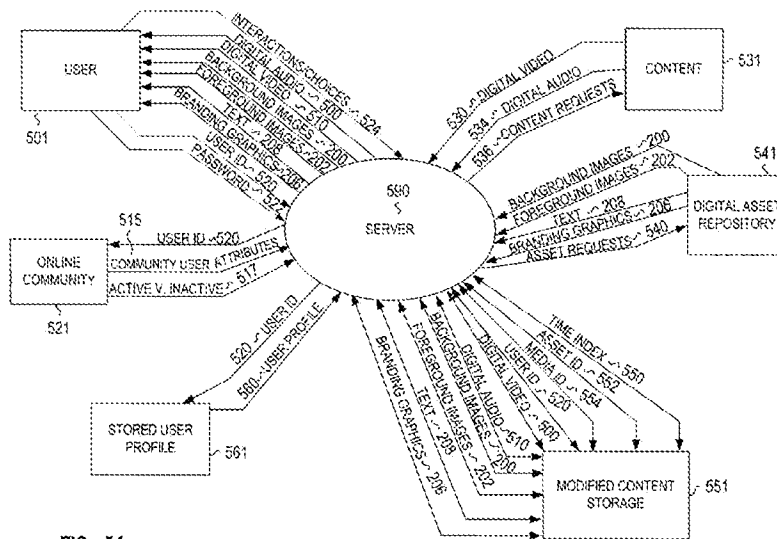
FIG. 5A

Id., Figure 5A.

The specification is not explicit and it is unclear from Fig. 5A, or any other figure, what or where the "display server" exists in the system. For example, the images, digital video and audio, are all sent from the server to the user with a display device (*see* Figs. 20 and 21; *see also* 20:39-44), but there is no mention of a "display" server—or what kind of device it is.

The claimed instructions then require "retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes." *Id.* at claim 1; 21:13-16. As mentioned above, there is no description in the specification for what constitutes "user social

network information" or from where it is retrieved. The specification mentions an "online community 521," and "community user attributes 515." *See id.* Fig. 5; 12:17-30. However, the specification does not describe the community user attributes being associated with digital media asset attributes nor how to obtain "user social network information" from the online community that contains a user attribute.

Next, the claimed instructions require selecting, based on "the user attributes," a second set of digital media assets associated with "one or more user attributes found in the user social network information." *Id.* at 21:17-22:2. The claim is not clear when or how this association is made.

Next, the instructions require monitoring the first composite digital media display for the presence of a "trigger" for a personalization opportunity in the first set of digital media assets. *Id.* at claim 1, 22:7-11. The '030 Patent specification, however, always uses the term "trigger points" to indicate where the personalization may occur. These trigger points are described as embedded within the digital media narrative. *Id.* at 10:1-15, 7:1-9, 11:3-6, 12:63-67, 14:15-31. By contrast, claim 1 only requires that the first composite digital media display be monitored for "triggers" that indicate a personalization opportunity—nothing more. *Id.* at 11:3-5.

After presenting and monitoring the first composite digital media display, the instructions then require "performing a rule based substitution" of one or more digital media assets from the first set, with one or more digital media assets from the second set, to create a user specific set of digital media assets. *Id.* at claim 1; 22:7-11. The '030 Patent specification does not use the term "substitution," other than in claim 1 as amended. The only types of rules described in the specification are "association rules" for "matching digital media assets to an individual, through a correlation of the attributes of the asset with the assets of the individual in order to provide the

highest level of impact." *Id.* at 7:56-67. The specification does not explicitly describe substituting a digital media asset in a set of digital media assets—as required by claim 1. However, in claim 1, the second set of digital media assets are used to personalize the narrative by replacing one or more of the digital media assets in the first set with digital media assets from the second set based on some undefined rule to create a user specific set of digital media assets. *Id.* at 6:21-39, 6:59-67, 10:16-22, 10:47-58, 12:47-62, 13:11-13, 27-29, 13:55-61.

Finally, the instructions require creating a user specific composite digital media display from the user specific set of digital media assets,[2] and presenting a second composite digital media display.[3]

Turning back to the claim term "social network," in its Amendment and Request for Continued Examination, the Applicant argued in support for the new claim language (i.e., "user social network information") that "[s]upport for the utilization of social network or social database information can be found in paragraph 0089 of the originally filed application." *Id.* However, original paragraph 0089 does not use the terms "social network" or "social database," but instead states that "[t]he group and social dynamics database 518 may permit the user to interact with other users of the digital media asset to determine the dynamics between that user and the group." '030 Patent File History at 31 (as-filed specification, paragraph [0089]); '030 Patent at 12:47-62. The specification also describes that "social placement and group interaction dynamics within an online community" can be used to customize and personalize content. *See* '030 Patent at 2:65-3:11.

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[2] The claim language explicitly recites "creating, from the user specific digital media assets, a user specific composite digital media display," as opposed to "creating, from the user specific **[set of]** digital media assets, . . ." *See id.* at claim 1 (emphasis added).

[3] The claim languages actually specifies "presenting to the user via the display server, **the second** composite digital media display," as opposed to "**a second**," or "**the user specific**" composite digital media display. *See id.* at claim 1 (emphasis added).

However, the specification does not describe a method for gathering information based on a user's use of a social network. The only method *described* in the specification for gathering information related to the user is through questioning the user, receiving feedback from the user through interactions with a digital narrative, or from storage—not from a "social network." *Id.* at 3:1-2, 3:19-32, 11:31-52. Neither the Summary of the Invention nor anywhere else in the specification provides any substantive details as to what is meant by social placement or how to determine user attributes from "group interaction dynamics." *Id.* at 2:65-3:7; *see also id.* at 3:19-23 (describing retrieving *from storage* social placement and group interaction dynamics with the online community), *id.* at 12:47-62 (same), *id.* at 9:53-59 (describing the personalized story as being possibly dependent on social placement and/or group interaction dynamics within the online community), *id.* at 11:11-16 (same), *id.* at 12:11-16 (describing that a user may participate in an online community and the online community includes the ability for a user to share content with another user), *id.* at 12:22-26 (describing that the server sends to the online community the user ID and obtains in response from the online community a list of "community user attributes" and "active vs. inactive status"). These passages from the specification do not explain how the system would gather information related to "user social network information," or how such information can be used to associate user attributes to digital media asset attributes. It merely describes customizing digital media based on generic user information—which was already well known in the art. '030 Patent at 6:21-31; 13:33-34; 15:31-34;

C. **The '030 Patent Prosecution History**

The '030 Patent issued on October 7, 2014, from U.S. Application No. 10/819,514 ("the '514 Application"), filed on April 7, 2004, and claims priority to Provisional Application No.

60/460,998, filed on April 7, 2003. The '514 Application contained 7 claims. Ex. L '030 Patent

File History, pp. 44-45.

The Examiner issued a non-final rejection against all of claims of the '514 Application

because they were directed towards non-statutory subject matter, lacked patentable utility, and/or

were anticipated by U.S. Patent No. 5,754,787 to Dedrick. *Id.* at 97-99. In response, the Applicant

amended the 7 claims in an attempt to overcome the rejections, and added 7 new claims. *Id.* at

110-12.

The Examiner issued a final rejection of all 14 claims because they were directed towards

non-statutory subject matter and/or were anticipated by U.S. Patent No. 6,357,042 to Srinivasan.

Id. at 126. In response, the Applicant filed a Request for Continued Examination ("RCE") on

November 25, 2009 that canceled all 14 existing claims and added two new claims that eventually

issued as claims 1 and 2. *Id.* at 139-140; 143-44.

In particular, Applicant argued in its RCE that Srinivasan did not anticipate newly added

claim 15 because "Srinivasan does not utilize social network information obtained from a source

external to the presentation (*e.g.*, video display of *Srinivasan*). Support for the utilization of social

network or social database information can be found in paragraph 0089 of the originally filed

application." *Id.* at 140. Further, Applicant argued that Srinivasan "simply teaches the selection

of a particular video stream at a branch point," whereas newly presented claim 15 "articulates the

creation of [a] second set of digital media assets through rule based substitution" such that other

parts of the media display may "be varied in a way that does not destroy the flow." *Id.* In support,

Applicant specifically cited to paragraphs 119 and 120 of the original application (reproduced

below):

> [0119] The DMA action may include changing any aspect of the digital media
> narrative that enhances the experience without destroying the integrity of the

narrative experience. The action may include time sensitive changes, such as the changing of events, the playback speed, the timing of playback or the sequence of events such as changing the orientation of "scenes." The action may include changing the audio including the volume of playback, the score (i.e., the background music), the language spoken or even the accent of the speaker. The action may include changing the video aspect such as the gender, race or age of a character, the background scenery, the elements of the episode (e.g., a motorcycle, bicycle or horse is ridden), the color of clothing worn, an overcast or sunny sky, or any other visual aspect of the DMA. The invention is intended to cover any DMA actions that make the digital media asset video sequence 300 more connected to the viewer and enhance the experience.

[0120] In an embodiment, the DMA actions are logical and do not break the flow of a narrative or an episodic narrative. In other words, in an embodiment, a changed asset does not destroy the plotline of a story and does not introduce a character or element that has no logical reason for appearing in the frame. For example, in this embodiment, it would not be appropriate to change the background scenery to a cityscape if the character is shown wearing skis, conversely changing the background to a mountain while the main character is carrying shopping bags would destroy the flow of the DMA.

Id. at 40-41.

Srinivasan describes a variety of systems, including a "Personalized and Interactive Ad System/Network." Ex. X Srinivasan at 29:8-16. Srinivasan's system provides "an ad-engine in the form of a software application that has the ability to select video ads according to user profile." *Id.* at 2:64-3:3.

Applicant distinguished the claim from Srinivasan's substituting an entire video at a trigger point. In its RCE, Applicant canceled all existing claims and added independent claim 15, which includes a "rule based substitution" of a digital media asset ("DMA"). Ex. L at 139-140; 143-44. Applicant explained how the substitution in the '514 Application differed from the prior art because it requires "create[ing] [a] second set of digital media assets through rule based substitution" that allows "parts of the media display (e.g., background, timing, audio) to be varied in a way that does not destroy the flow" as opposed to Srinivasan, which merely "teaches the selection of a particular analog video stream at a branch point." *Id.* at 140. Applicant cited to

paragraphs 0119 and 0120 of the original application for written description support. *Id.*

Paragraphs 0119 and 0120 describe "DMA actions" (*e.g.*, substituting a background) limited to

digital media narratives:

> In an embodiment, the DMA actions are logical and do not break the flow of a
> narrative or an episodic narrative. In other words, in an embodiment, a changed
> asset does not destroy the plotline of a story and does not introduce a character or
> element that has no logical reason for appearing in the frame.

Id. at 41. Applicant clarified that claim 15 applies to an embodiment that includes a narrative and

that the substitution must not destroy the flow of the narrative. *Id.* at 140, *see also* '030 Patent at

1:41-45, 1:62-2:7, 2:53-61, 6:59-67.

In the same RCE, Applicant also distinguished the claim from the prior art where user

attributes were obtained from user interactions with the displayed composite digital media

composite. In response to the Examiner's final rejection, Applicant argued that Srinivasan

disclosed a system in which user preferences stored in user profiles were based on the user's

interaction with the displayed media, while newly added claim 15 required "social network

information [be] obtained from a source external to the presentation (e.g., video display)." Ex. L

at 140; Ex. X Srinivasan at 7:38-48, 12:24-33, 31:48-57.

On June 4, 2014, the Examiner issued a notice of allowance and specifically recited the

following reasons for allowance.

> 4. The following is an examiner's statement of reasons for allowance: the closest
> prior art, Srinivasan *et al.*, does not teach or suggest, **retrieving user social
> network information from at least one source external to the presented first
> composite digital media display, wherein the user social network information
> contains one or more user attributes**. Herz (US 7,483,871 B2, claims 17 and 21)
> teaches this limitation,[1] but the prior art does not teach or suggest adding this
> teaching from Herz to the teachings of Srinivasan *et al.* Srinivasan *et al.* gets user
> attribute information by asking the users. The prior art does not teach or suggest
> that the benefits of going to social networks to get user attribute information would
> outweigh the costs.

5. Herz does claim that the user profiles/attributes are "not generated based on input from the user." Surely, observing a user in a social network would yield more information than simply asking the user for his or her characteristics and preferences. Yet the law for rejecting a claim as unpatentable in view of two or more references requires a calculus of costs and benefits. A claim can be rejected under 35 USC 103(a) only if a person of ordinary skill in the art would find that the benefits of the combination of references outweighed the costs. That is not the weight of evidence in this case.

[1] Herz teaches the generation of a *user target profile interest summary* where a *user profile* is a collection of the user's **attributes** (Herz, col. 4, line 51, to col. 5, line 8, and para. [0052] and [0098] of the instant specification. In Herz, the social network is "a plurality of bulletin boards."

Id. at 214-15 (emphasis original).[4]

D. Examiner's Mistaken Evaluation of the Motivation to Combine

Under *KSR* and its progeny, a person of ordinary skill in the art may be motivated to combine one or more references together using a number of possible rationales such as: a) combining prior art elements according to known methods to yield predictable results; b) simple substitution of one known element for another to obtain predictable results; c) use of known technique to improve similar devices (methods, or products) in the same way; d) applying a known technique to a known device (method, or product) ready for improvement to yield predictable results; e) "obvious to try" – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success; f) known work in one field of endeavor may prompt variations of it for use in either the same field of a different one based on design incentives or other market forces if the variations are predictable to a person of ordinary skill in the art; g) some teaching, suggestion, or motivation in the prior art that would have led a person of ordinary skill in the art to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 417-18 (2007). *KSR* issued

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[4] The Examiner misstated the law of obviousness as described in Section IV.D, *infra.*

during the prosecution of the '514 Application and the law concerning motivation to combine should have been applied.

Nonetheless, the Examiner in the '514 Application misstated the law of obviousness and the motivation to combine. Ex. L at 214 ("A claim can be rejected under 35 USC 103(a) only if a person of ordinary skill in the art would find that the benefits of the combination of references outweighed the costs. That is not the weight of evidence in this case."). By contrast, when evaluating costs and benefits under *KSR* rationale (g), the Federal Circuit has stated that "[t]he fact that the motivating benefit comes at the expense of another benefit, however, should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another. Instead, the benefits, both lost and gained, should be weighed against one another." *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000). Rather, "a given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine." *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (citing *Winner Int'l Royalty*, 202 F.3d 1340, 1349 n. 8 (Fed. Cir. 2000)). *Winner Int'l Royalty* was decided pre-*KSR* in which the test for motivation to combine was whether the prior art references provided some teaching, suggestion, motivation ("TSM") to combine the disclosures of the prior art references. *KSR* abrogated TSM as the sole test for motivation to combine.

Accordingly, in the case of the '514 Application, after considering the *Graham* factors in which the Examiner found that Herz disclosed the "social network" limitations, the Examiner should have determined if any of the *KSR* rationales regarding motivation to combine these

references was present.[5] *KSR Inc.*, 550 U.S. at 417-18. The Examiner did not perform this analysis, which was improper. *Id.* The *KSR* standard must be applied in this case.

E. Prosecution History of Child Patent

During prosecution of a continuation patent (U.S. Application No. 14/506,822) from the '030 Patent, the same or similar language (i.e., substantively identical) that issued as the '030 Patent's claims were *rejected* by a different Examiner. The new Examiner of the '822 Application was correct, and the '030 Patent ('514 Application) claims should have been rejected for the same reasons.

The '822 Application, filed on October 6, 2014, is a continuation of the '514 Application (issued as the '030 Patent), and both claim priority to Provisional Application No. 60/460,998, filed April 7, 2003. The '822 Application issued as U.S. Patent No. 10,679,255. The original '822 Application contained 7 claims. Ex. M, at 97-98. By preliminary amendment, the Applicant canceled the original 7 claims and submitted new claims 8-30 for examination. *Id.* at 142-148.

The new Examiner issued a non-final office action ("NFOA") rejecting all claims in the '822 Application for a number of reasons including because they were directed towards non-statutory subject matter, lacked patentable utility, and/or were anticipated by U.S. Patent No. 7,904,922 to Haberman or rendered obvious by Haberman in combination with other prior art including U.S. Patent No. 7,472,110 to Achlioptas. *Id.* at 167, 173-185; 196-97. As illustrated in

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[5] For example, the Examiner could have analyzed Srinivasan to identify the motivation to generate better profiles of users or viewers (*e.g.*, beyond being limited to whether the viewer is a sports fan because they are watching a football game) as a reason for combining Srinivasan and Herz—where Herz taught generating a better user profile based on retrieving information about a user from a social network. Applying the technique from Herz to improve a known device (i.e., Srinivasan's video substitution and recommendation system based on a user profile) that is ready for improvement would have yielded a predictable result—more targeted content.

the Table below (noted as NFOA), the rejected claim language in the '822 Application is the same as or similar to the claim language issued in the '030 Patent ('514 Application). The rejections apply equally to both applications.

Even after amending to add limitations, the Examiner issued a final office action ("FOA") rejecting claims 8-30 of the '822 Application because they were still directed towards non-statutory subject matter, failed to meet the written description requirement, lacked patentable utility, and/or were anticipated by U.S. Patent No. 7,904,922 to Haberman or rendered obvious by Haberman in combination with other prior art including U.S. Patent No. 7,472,110 to Achlioptas. *Id.* at 234, 237-72. As illustrated in the Table below, in the FOA, the Examiner rejected claim language in the '822 Application over Haberman and in view of Achlioptas, that was inexplicably allowed by the Examiner of the '030 Patent despite being substantively identical. Notably, the Examiner of the '030 Patent failed to raise or cite to the Haberman and Achlioptas references when reviewing the '030 Patent application. This is one of the reasons why the Examiner of the '030 Patent erred during prosecution of the '030 Patent.

Table 1:

'030 Claim	'030 Allowed Claim Language	'822 Rejected Claim Language	'822 Claim No(s).	'822 Rejection
1(pre)	A system for associating user attributes with digital media attributes and creating a user specific composite digital media display, the system comprising...	A system creating user specific composite digital media display, the system comprising...	8, 22	Rejected in view of Haberman at 15:60-66, *see also* 16:29-37; 02/01/18 NFOA

'030 Claim	'030 Allowed Claim Language	'822 Rejected Claim Language	'822 Claim No(s).	'822 Rejection
1(pre), 1(a), 1(b), 1(c)	a system for associating user attributes with digital media asset attributes and creating a user specific composite digital media display, the system comprising: a) a server; b) a computer-readable storage medium operably connected; c) wherein the computer-readable storage medium contains one or more programming instructions for performing a method of	a system creating a user specific composite digital media display, the system comprising a central processing unit; and a computer-readable storage medium operably connected to the central processing unit and comprising one or more programming instructions that, when executed, cause the central processing unit to	8	Rejected in view of Haberman at 15:60-66, *see also* 16:29-37; 7/31/18 FOA
1(d), 1I	identifying a first set of digital media assets stored on the computer-readable storage medium, creating, from the first set of digital media assets, a first composite digital media display	identifying, by a central processing unit, a first plurality of digital media assets, creating, by the central processing unit, a first composite digital media stream including at least a portion of the first plurality of digital media assets	22	Rejected in view of Haberman at 4:41-44; 7/31/18 FOA
1(g)	retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes·	retrieving, by the central processing unit, user information for the at least one user, the user information containing one or more user attributes for the at least one user	22	Rejected in view of Haberman at 5:53-64, Fig. 8; 7/31/18 FOA

'030 Claim	'030 Allowed Claim Language	'822 Rejected Claim Language	'822 Claim No(s).	'822 Rejection
1(g)	wherein the user social network information contains one or more user attributes	the system of claim 8, wherein the user information comprises social network information.	20	Rejected in view of Achlioptas at 5:35-55; 7/31/18 FOA & 02/01/18 NFOA
1(h)	selecting, based on the user attributes in the social network information, a second set of digital media assets, wherein the second set of digital media assets is associated with one or more user attributes found in the user social network information;	retrieve second user information for a second user, wherein the second user information contains one or more user attributes for the second user	9, 22, 23	Rejected in view of Haberman at 4:44-49, 13:54-65 and Figs. 6 & 7; 7/31/18 FOA & 02/01/18 NFOA
1(i)	monitoring the first composite digital media display for the presence of a trigger, wherein the trigger indicates a personalization opportunity in the first set of digital media assets;	monitor the first composite digital media stream for the presence of a trigger, wherein the trigger indicates a personalization opportunity in the first composite digital media stream	10, 24, 26	Rejected in view of Haberman at Fig. 4, *see also* 9:1-8; 7/31/18 FOA & 02/01/18 NFOA
1(j)	performing a rule based substitution of one or more of the digital media assets from the first set of digital media assets with one or more of the digital media assets from the second set of digital media assets to create a user specific set of digital media assets	perform a rule-based substitution of one or more of the digital media assets from the first set of digital media assets with one or more of the digital media assets from the second set of digital media assets to create a user-specific set of digital media assets	16, 27	Rejected in view of Haberman at 8:25-37, 15:13-18, 16:13-28 and Fig. 4; 7/31/18 FOA & 02/01/18 NFOA

'030 Claim	'030 Allowed Claim Language	'822 Rejected Claim Language	'822 Claim No(s).	'822 Rejection
1(j), 1(k), 1(l)	performing a rule based substitution of one or more of the digital media assets from the first set of digital media assets with one or more of the digital media assets from the second set of digital media assets to create a user specific set of digital media assets; creating, from the user specific digital media assets, a user specific composite digital media display; and presenting to the user via the display server, the second composite digital media display.	creating, by the central processing unit, a user-specific composite digital media stream by inserting the determined first portion of the second plurality of digital media assets into the first composite digital media stream, and transmitting, by the central processing unit, the user-specific composite digital media stream to the at least one user	8, 22	Rejected in view of Haberman at 16:13-28, *see also* 15:13-18 and Fig. 4; 7/31/18 FOA & 02/01/18 NFOA
2	The system of claim 1 wherein the first set of digital media assets includes one or more of a foreground image, a background image, or audio.	the system of claim 8, wherein the first set of digital media assets includes one or more of a foreground image, a background image, or audio	8, 21	Haberman at 5:49-58, *see also* 7:8-13; 7/31/18 FOA & 02/01/18 NFOA

Specifically, for each allowed limitation in the '030 Patent, the Examiner of the '822 Application rejected claim language that was the same as or substantially the same as the language of the issued claims of the '030 Patent. Walking through the claim language of the '030 Patent:

> 1. A system for associating user attributes with digital media asset attributes and creating a user specific composite digital media display, the system comprising:
>
> a) a server;

b) a computer-readable storage medium operably connected;

c) wherein the computer-readable storage medium contains one or more programming instructions for performing a method of;

The July 31, 2018, FOA rejected the '822 Application based on Haberman at 15:60-66, the

following language:

a system creating a user specific composite digital media display, the system comprising a central processing unit; and a computer-readable storage medium operably connected to the central processing unit and comprising one or more programming instructions that, when executed, cause the central processing unit to

Claim language of the '030 Patent:

identifying a first set of digital media assets stored on the computer-readable storage medium, creating, from the first set of digital media assets, a first composite digital media display;

The July 31, 2018, FOA rejected the '822 Application based on Haberman at 4:41-44, the

following language:

identifying, by a central processing unit, a first plurality of digital media assets, creating, by the central processing unit, a first composite digital media stream including at least a portion of the first plurality of digital media assets;

Claim language of the '030 Patent:

retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes;

The July 31, 2018, FOA rejected the '822 Application based on Haberman at 5:53-64 and Figure 8,

the following language:

retrieving, by the central processing unit, user information for the at least one user, the user information containing one or more user attributes for the at least one user;

Claim language of the '030 Patent:

wherein the user social network information contains one or more user attributes;

The February 1, 2018, NFOA and the July 31, 2018, FOA rejected the '822 Application based on

Haberman in view of Achlioptas at 5:35-55, the following language:

> the system of claim 8, wherein the user information comprises social network information.

Claim language of the '030 Patent:

> selecting, based on the user attributes in the social network information, a second set of digital media assets, wherein the second set of digital media assets is associated with one or more user attributes found in the user social network information;

The February 1, 2018, NFOA and the July 31, 2018, FOA rejected the '822 Application based on

Haberman at 4:44-49, 13:54-65, and Figs. 6-7, the following language:

> retrieve second user information for a second user, wherein the second user information contains one or more user attributes for the second user;

Claim language of the '030 Patent:

> monitoring the first composite digital media display for the presence of a trigger, wherein the trigger indicates a personalization opportunity in the first set of digital media assets;

The February 1, 2018, NFOA and the July 31, 2018, FOA rejected the '822 Application based on

Haberman at 9:1-8 and Fig. 4, the following language:

> monitor the first composite digital media stream for the presence of a trigger, wherein the trigger indicates a personalization opportunity in the first composite digital media stream;

Claim language of the '030 Patent:

> performing a rule based substitution of one or more of the digital media assets from the first set of digital media assets with one or more of the digital media assets from the second set of digital media assets to create a user specific set of digital media assets

The February 1, 2018, NFOA and the July 31, 2018, FOA rejected the '822 Application based on

Haberman at 8:25-37, 15:13-18, 16:13-28 and Fig. 4, the following language:

perform a rule-based substitution of one or more of the digital media assets from the first set of digital media assets with one or more of the digital media assets from the second set of digital media assets to create a user-specific set of digital media assets

Claim language of the '030 Patent:

creating, from the user specific digital media assets, a user specific composite digital media display; and

presenting to the user via the display server, the second composite digital media display.

The February 1, 2018, NFOA and the July 31, 2018, FOA rejected the '822 Application based on

Haberman at 16:13-28, *see also* 15:13-18 and Fig. 4, the following language:

creating, by the central processing unit, a user-specific composite digital media stream by inserting the determined first portion of the second plurality of digital media assets into the first composite digital media stream, and transmitting, by the central processing unit, the user-specific composite digital media stream to the at least one user

Claim language of the '030 Patent:

The system of claim 1 wherein the first set of digital media assets includes one or more of a foreground image, a background image, or audio.

The February 1, 2018, NFOA and the July 31, 2018, FOA rejected the '822 Application based on

Haberman at 5:49-58; *see also* 7:8-13, the following language:

the system of claim 8, wherein the first set of digital media assets includes one or more of a foreground image, a background image, or audio.

In response to the Examiner's rejections in the FOA, Applicant cancelled claims 1-30 and added new claims 31-50. *Id.* at 312. The Examiner issued a restriction/election requirement on those claims. In response, the Applicant canceled claims 31-50 and presented new claims 51-54 with subject matter and language significantly different than original claims 8-30 and not at all similar to the claims of the issued '030 Patent. Claim 54 was cancelled via preliminary amendment. Applicant proceeded through a second non-final and final office action before the

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claims were allowed after cancellation of claims 52 and 53 and amendments to claim 51 that recited

the requirement of "user-generated digital media assets," which is not a claim term in the '030

Patent.

On March 11, 2020, and in response to Applicant's cancellation of claims 52 and 53, the

Examiner issued a notice of allowance as to claim 51 of the '822 Application and specifically

recited the following reason for allowance:

> because the claims now require the inserting of a particular user-generated digital
> media asset into the first composite digital media story based on the classification
> of the particular user-generated digital media asset provided by a creator of the
> particular user-generated digital media asset and if the user would respond
> favorably or not to the first user-generated digital media asset and if the particular
> user-generated digital media asset matches or does not match the user attribute.

Id. at 537.

As seen from the prosecution history, the Applicant for the '822 Application and the '030

Patent are the same, and the '822 Application issued only after the Applicant acquiesced to the

Examiner's rejections and instead amended the claims to add limitations not at issue in the '030

Patent. The '030 Patent should be rejected for the same reasons as the earlier '822 Application.

F.   Inventorship and Assignment of the '030 Patent

The '030 Patent lists one inventor: David J. Russek. When the application for the '030

Patent was filed, it was assigned to Sevenecho, LLC. In 2015, approximately 11 years after the

application for the '030 Patent was filed, it was assigned to 10Tales, Inc. ("10Tales").

G.   Claim Construction

Challenged claims are to be interpreted according to their broadest reasonable

interpretation ("BRI") during an *ex parte* reexamination proceeding for an unexpired patent. *See*

MPEP § 2258(G). This standard differs from the claim construction standard applied in district

court litigation, *inter partes* reviews, and for expired patents that use the *Phillips* standard (claims

are to be construed according to their plain and ordinary meaning as understood by a person of ordinary skill in the art). *See Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005); *In re CSB-Sys. Int'l, Inc.*, 832 F.3d 1335, 1342 (Fed. Cir. 2016); 37 C.F.R. § 42.100.

The patentability analysis of the Challenged Claims in this Request should be performed in accordance with the Patent Office's BRI rule of claim interpretation during reexamination. Necessarily, the scope of the claim language under the BRI standard must encompass the scope determined by a *Phillips* construction. While the construction of claim terms under BRI may be as narrow as the *Phillips* standard, axiomatically, it cannot be narrower, and in some instances may in fact be broader. Additionally, although BRI may be the standard required in this Request, this Request also takes into consideration other interpretations: 1) the claim interpretation argued by the Patent Owner during claim construction in the district court; 2) Judge DeMarchi's claim construction order using the *Philips* standard in the parallel district court litigation; and 3) the claim interpretation used by the PTAB in the previous IPR and in its denial of TikTok's Request for Rehearing in IPR2021-00476. To be clear, the BRI necessarily encompasses all three of these interpretations.[6]

Specifically, because the Examiner identified the element "retrieving user social network information from at least one source external to the presented first composite digital media display" as the allegedly novel element of claim 1, significant discussion is focused on the construction of this element. At the time of the filing of the '541 Application, the term "social network" was not in the claims nor the specification. The term "social network" was not a term

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[6] It is well understood that claims interpreted under *Phillips* are necessarily within the scope of BRI. *Facebook, Inc. v. Pragmatus AV, LLC*, 582 F. App'x 864 (Fed. Cir. 2014) (nonprecedential) ("The broadest reasonable interpretation of a claim term may be the same as or broader than the construction of a term under the *Phillips* standard. But it cannot be narrower.")

of art as of the filing date of the application, and it did not have a common meaning or understanding. The term "user social network information" was only added in 2009 by amendment, more than 5 years after the application was filed. Neither the specification nor the claim explains what is meant to retrieve from a "source external," nor does it explain how to obtain information about a user from other than asking the user questions or the user providing feedback about content being displayed. Moreover, neither the specification nor the claim restricts the "user social network information" to be sourced from a "social network" external to the system.

Finally, "social network" did not have the meaning it carries today—*e.g.*, an electronic platform that allows users to communicate with each other via posting messages, comments, images, and/or videos. Instead, read broadly, a user's "social network" could simply be the people that the user is connected with socially, perhaps those found in his rolodex or contact list. Based on the plain language of the words in the term "user social network information," and breaking it down linguistically, the term could mean information about the user's social network, *e.g.*, who the user is friends or family with. Or it could mean answers the user gave when responding about his or her tendencies for social dynamics, i.e., "social personas (how people perceive you socially)" as described in element 808 in Fig. 8 of the '030 Patent.

During claim construction briefing before the district court, Patent Owner argued that the term "retrieving user social network information from at least one source external to the presented first composite digital media display" should be construed as "a step carried out by software that retrieves social network information associated with a user from a source other than the first composite digital media display, where the social network information includes one or more user attributes, which include information relating to a particular user of the system's interaction within a networked community, e.g., a user affinity or relationship with another user." Ex. N at 17. As

noted below, this is broader than the interpretation used by the PTAB. Thus, at a minimum under

Patent Owner's interpretation of the claim, the claim must cover at least any information that

relates to a particular user's interactions within a networked community—i.e., the networked

community is not limited to an external online community, nor is the information limited to a

specific interactions with other users.

With the benefit of full briefing and the PTAB's construction, the district court determined

the scope of the claims under the *Phillips* standard. Using the same *Phillips* standard, Judge

DeMarchi concluded that the key limitation of "user social network information" to mean

"information derived from a user's interactions in an online community," and the phrase "at least

one source external to" to mean "at least one source other than." Ex. V at 21-22. When put

together, the court construed "retrieving user social network information from at least one source

external to the presented first composite digital media display ..." to mean "retrieving information

derived from a user's interactions in an online community from at least one source other than the

presented first composite digital [media] display." *Id.*

In all, the parties briefed ten disputed terms (including seven terms that Requestor argued

were indefinite) that were construed by the court as summarized in the following table:

Claim Term	Court's Construction
"the system comprising ... a computer-readable storage medium ... wherein the computer-readable storage medium contains one or more programming instructions for performing a method ... the method comprising ..."	Not construed by the court – "the Court concludes that this claim term requires no construction"
"creating, from the first set of digital media assets, a first composite digital media display"	"creating, from the first set of digital media assets, a first composite digital media display that combines two or more digital media assets"

Claim Term	Court's Construction
"creating, from the user specific digital media assets, a user specific composite digital media display"	"creating, from the user specific digital media assets, a user specific composite digital media display that combines two or more digital media assets"
"display server"	Not formally construed by the court – "a 'server' in a conventional server-client model as understood by a person of ordinary skill in the art at the time of the invention"
"presenting to the user via [a/the] display server"	No construction necessary and not limited to "any particular mode of presenting, such as visual presentation"
"user social network information"	"information derived from a user's interactions in an online community"
"retrieving user social network information from at least one source external to the presented first composite digital media display ..."	"retrieving information derived from a user's interactions in an online community from at least one source other than the presented first composite digital [media] display"[7]
"monitoring the first composite digital media display for the presence of a trigger"	"monitoring the first composite digital media display for the presence in the display of an indication of a personalization opportunity"
"performing a rule based substitution of one or more of the digital media assets from the first set of digital media assets with one or more of the digital media assets from the second set of digital media assets"	No construction required
"the second composite digital media display"	"the user specific digital media display"

Under the *ex parte* reexamination BRI standard for claim terms, the grounds presented in

this Request demonstrate that the Challenged Claims are not patentable. Additionally, even under

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[7] This is the key limitation that the Examiner relied on in issuing a notice of allowance in the '514 Application.

the district court claim construction order from Judge DeMarchi under the *Phillips* standard, the grounds presented here at least satisfy those constructions as well. Requestor does not necessarily agree with the court's constructions, and specifically reserves the right to challenge those constructions on appeal or within the current litigation at an appropriate juncture and with the court's permission. Requestor notes that while the BRI standard of claim construction may be as narrow as the *Phillips* construction of these claim terms, it cannot be narrower. Necessarily, if the prior art invalidates under the *Phillips* construction, it must also invalidate under a BRI. Under either construction standard, the prior art presented in this Request present substantial new questions of patentability under both *Phillips* and BRI.

H.   TikTok's Prior *Inter Partes* Review of the '030 Patent in IPR2021-00476

On February 9, 2021, TikTok filed a Petition for *Inter Partes* Review ("IPR Petition") against claims 1 and 2 of the '030 Patent, set forth in Section III, *supra*. *See* Ex. G *TikTok Inc. v. 10Tales, Inc.*, Case No. IPR2021-00476, Paper 1 (February 9, 2021).

The IPR Petition[8] presented a single term for claim construction, i.e., user attribute, arguing that the patentee acted as his own lexicographer in construing the term:

> Thus, PO acted as its own lexicographer, and "user attributes" should be construed to mean "aspects characteristics, and qualities of the user that are useful for determining digital media assets, including characteristics such as affinities, likes, dislikes, perceptions, and/or experiences." TTI-1001, 10:52-56 ("affinity for a second user"), 13:11-14:14 (example affinities, including social affinities).

Ex. G at 10.

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[8] *Inter partes* review is based solely on pre-AIA 35 U.S.C. § 102 or § 103 and only on the basis of prior art patents and publications. *See* 35 U.S.C. § 311. *Inter partes* review does not consider patentability issues such as indefiniteness under pre-AIA 35 U.S.C. § 112, ¶ 2, lack of written description or enablement under 35 U.S.C. § 112, ¶ 1, or lack of patentable subject matter under 35 U.S.C. § 101. *See Neptune Generics, LLC v. Eli Lilly & Co.*, 921 F.3d 1372, 1378 (Fed. Cir. 2019).

The IPR relied on the following three obviousness based grounds to argue claims 1 and 2 are unpatentable. Ex. G at 3.

1. WO 1999/26416 titled "Method and System for Personalizing Images Inserted into a Video Stream" to Bar-El, et al. in view of United States Patent Publication No. 2011/0219419 A1 titled "Method and Apparatus for Browsing Using Alternative Linkbases" to Reisman under pre-AIA 35 U.S.C. § 103. *Id.* at 22-48.

2. WO 1999/26416 titled "Method and System for Personalizing Images Inserted into a Video Stream" to Bar-El, et al. in view of United States Patent Publication No. 2011/0219419 A1 titled "Method and Apparatus for Browsing Using Alternative Linkbases" to Reisman in further view of U.S. Patent No. 6,587,127 titled "Content player method and server with user profile" to Leeke, et al. under pre-AIA 35 U.S.C. § 103. *Id.* at 48-54.

3. U.S. Patent No. 6,587,127 titled "Content player method and server with user profile" to Leeke, et al. in view of United States Patent Publication No. 2011/0219419 A1 titled "Method and Apparatus for Browsing Using Alternative Linkbases" to Reisman under pre-AIA 35 U.S.C. § 103. *Id.* at 55-72.

On August 13, 2021, the PTAB issued its decision denying institution. Before assessing the merits of patentability, the PTAB rejected Petitioner's construction of "user attributes," and found that "that no claim term or phrase requires an express construction to reach a determination in this proceeding." Ex. I IPR2021-00746 Paper 13 at 10. However, despite finding that no claim term or phrase requires an express construction, the PTAB using the *Phillips* standard implicitly added two narrowing limitations for the claim term "user attribute." *Id.* at 16. These limitations are (1) that the user attributes must be sourced from the user social network information and (2)

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the social network source must be external to the entire system and not just external to the presented first composite digital media display. In denying institution based on all three grounds, the PTAB stated that Reisman fails to "disclose[] retrieving user social network information containing one or more user attributes from an external source" and fails to "disclose[] or suggest[] a system that retrieves user attribute information from a social network external to the system." *Id.* These limitations are found nowhere in the specification (even where the Applicant acted as its own lexicographer), claim, or file history. Thus, when the PTAB imported these narrowing limitations to deny institution it directly violated the *Phillips* standard. *See Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005); 37 C.F.R. § 42.100. Accordingly, on September 13, 2021, TikTok filed a Request for Rehearing pursuant to 37 C.F.R. § 42.71. Ex. J. On December 5, 2022, the PTAB denied the request. Ex. K.

The PTAB denied TikTok's Request for Rehearing, relying on the same limitation, "retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes." Ex. K IPR2021-00476 Paper 15 at 2. The PTAB stated that TikTok's argument that user attributes "do not need to be sourced from a social network, [] ignores the express language of independent claim 1." *Id.* at 4. The PTAB reasoned that because "the one or more user attributes" are obtained only through the retrieval of the 'user social network information'" that the plain meaning requires that "user attributes" be "obtained (i.e., sourced) via the retrieval of user social network information." *Id.* at 5.

Finally, the PTAB reconfirmed its understanding that the "social network" is ***external*** to the recited system based on the specification of the '030 Patent. *Id.* at 5. Accordingly, under the PTAB's interpretation, the claimed "user attribute" must be sourced from the user social network

information and "user social network information" must be retrieved from a "social network" external to the recited system. *Id.* at 6.

Patent Owner's response to TikTok's IPR and TikTok's request for rehearing of the IPR appeared to disagree with the PTAB's construction and interpretation of the claim. Patent Owner's Preliminary Response did not propose or use the construction adopted by the PTAB. *See* Ex. H. In addition, Patent Owner never proposed or argued for the PTAB's construction in any of the District Court Claim Construction proceedings.

Nonetheless, in light of the new evidence presented herein, claims 1 and 2 of the '030 Patent should not have been issued under any possible interpretation of "user attributes" and "retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes."

V. Summary of the Prior Art

Application No. 10/819,514, which issued as the '030 Patent, was filed on April 7, 2004, claiming priority to U.S. Provisional Application No. 60/460,998, filed on April 7, 2003. Patent Owner bears the burden to demonstrate entitlement to the provisional filing date and/or an earlier date of invention. Here, each of the prior art references relied upon by this Request qualifies as prior art as of the April 7, 2003, priority date as discussed below.

A. Overview of Haberman (Exhibit B)

United States Patent No. 7,904,922 B1 titled "Template Creation and Editing for a Message Campaign" to Haberman et al. ("Haberman") issued on March 8, 2011, from Application No. 09/545,524 filed on April 7, 2000, and therefore qualifies as prior art against the '030 Patent under at least 35 U.S.C. § 102(e).

Haberman describes dynamically creating individualized, multimedia messages with messages, stories, and/or advertisements assembled on demand into a template or a dynamic "narrative framework." Haberman at Abstract; *Id.* at 4:33-51. Using the template, the system selects specific media segments (i.e., content such as graphics, video, sounds, animation, etc.) based on user profile information. *Id.* at 4:33-51.

Figures 3 and 4 of Haberman illustrate a high level exemplary embodiment for the system used to create the customized message, and are reproduced below.
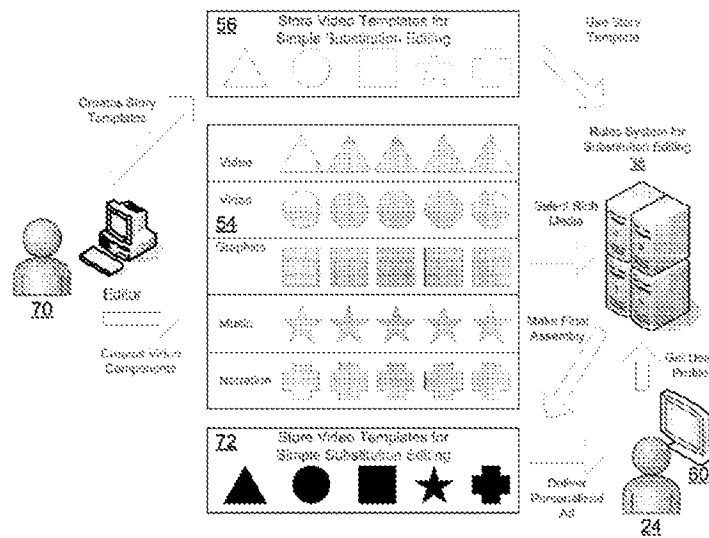
Fig. 3
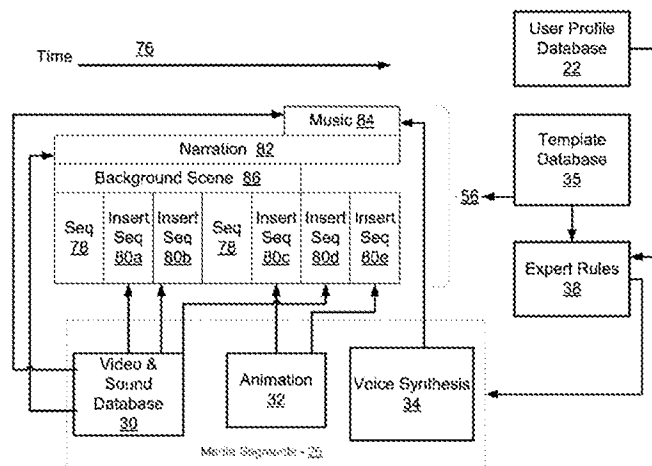
Fig. 4

Id., Figures 3 and 4. These figures illustrate an embodiment of Haberman's system for creating a customized message by implementing "substitution editing." *Id.* at 8:25-9:48. First, a producer creates a message template 56 comprised of different types of multi-media slots (i.e., Music 84, Narration 82, Background Scene 86, and predefined sequences 78 and 80.) *Id.* 8:25-63. Then a "rules system for substitute editing 38" is fed user profile information and other information to select media segments from the media segment database 54 to combine with the message template 56 and create a completed personalized message delivered to the user. *Id.* at 8:25-37; Fig. 3.

Haberman describes some of the deficiencies in the prior art for creating customized media, in particular from where user profile information is obtained:

> the user must intentionally interact with the program to select the preferences. Also, the only selectable segments are those produced as part of the program. There is no real-time search for or compilation of new materials. The user preferences are only evaluated according to the pre-selected criteria that correspond to segment selections. Each video segment is either played or not played; but the video segment itself is not modified according to any user inputs.

Id. at 2:65-3:6. Haberman describes that in a related area of recommendation systems, customer relationship management (CRM) solutions provide personalized offerings selected by combining information from consumers visiting websites and their "purchasing behaviors," as well as "information gathered elsewhere." *Id.* at 3:47-56.

Thus, to address the alleged deficiencies in the prior art, Haberman teaches collecting information internally and externally to the system about the user, and from multiple locations, for creating and updating the user profile:

> This user profile database 22 can be in any form, including a proprietary database of information owned by one entity, or publicly available information at one or at multiple locations, including information from ***user interactions on web sites*** or shopping networks. For example, the database may be a subscriber database accessed by the system 20 on a per-transaction system. The user profile database

may contain any type of information regarding the individual 24, including demographics, address, monetary income, political affiliations, known preferences, buying patterns etc.

Id. at 6:55-64 (emphasis added); Fig. 1. An alleged advantage of the system includes tailoring the messages "to the individual and any combination of information known about the target viewer and the present environment" and "gathering user profile information from a variety of different sources and databases. . . ." *Id.* at 5:27-45.

Haberman also uses environmental status factors: "a description for existing environmental factors, for example weather, current interest rates; current travel fares, etc. that need to be updated at the time the message is transmitted to enhance the timeliness and relevance of the personalized communication packets." *Id.* at 10:39-44. Haberman contemplates retrieving these environmental factors, and other up-to-date information, by constantly polling the appropriate information channels that make the data available, such as "the Internet, the weather service, a private intranet, local sensors, etc." *Id.* at 13:34-40. For example, the Appendix provides an example of an expert rule for presetting a set of user-defined and environmental parameters—wherein the user's zip code is an input, and the weather and temperature are retrieved based on the user's zip code. *Id.* at 16:57-17:19. In other words, fine tuning information about the user to recommend content.

Haberman describes additional advantages of its system, such as "the ability to match the presentation options with an educated and timely assessment of the target audience according to a number of templates. A campaign plan defines what the target group is (entity qualification), and what individual viewer information is relevant (entity profile) for target entities within the target group." *Id.* at 4:52-59.

> Another advantage is an expert rule base which allows the selection of proper media features for an individual, based on collected information about the individual. The expert rule base is able to use incomplete data or knowledge to make appropriate

decisions about selecting media segments for an individual. The expert rule base can also make inferences about an individual based on available data.

Id. at 5:63-6:2; 7:44-46.

With respect to creating the personalized content, Haberman describes at least one deficiency of the prior art being "that the video and corresponding web content are static and defined by the video producer during production." *Id.* at 1:61-64. Haberman further describes the use of "trigger points" in the prior art where the computer system can select a different video segment, graphic, or audio segment to be played based on user preferences of language entered into on-screen graphics by the user. *Id.* at 2:53-65.

Haberman's solution to this deficiency was to create a template, as shown in Figure 6, that provided opportunities to personalize various slots of the message at specific times throughout the message, depending on the type of content being altered, i.e., titling, overlay graphics, voice, music, etc. *Id.* at Fig. 6. The timing for when to replace the selected personalized content in the default message is decided beforehand by the campaign scheduler 142, and included in the message template 56. *Id.* at 16:5-9. A person of ordinary skill in the art would understand that the specific times in the message would be trigger points for modifying the actual message after it has left the video producer's control. Ex. Y, ¶ 71. Thus, Haberman describes its message template as being advantageous over the prior art.

> Other advantages of the present invention include a system for creating templates with multiple insertable media features to create a personalized message for an individual or a group. The number or type of insertable media features is not limited. For example, every element of a television commercial may be selected (or dynamically created) to fill in a template, including background view (such as a city skyline, and seasonal choices as well), music (background and jingles), language and accent of narrative, the choice of what narrative to add, the product being shown (for example a car or truck), the appearance of the product (for example the color of a car or accessorizations), selectable video of real actors, the length the commercial runs, any screen over text, etc.

Haberman at 5:46-59. Haberman further describes that "message creation time 58 and message delivery time 64 may be contemporaneous, in that the message is created on the fly, or 'just in time.'" *Id.* at 8:18-24.

Figures 5-8 in Haberman show additional features of the alleged decribed invention in Figures 1-4, focusing on the process of creating a message campaign or message template 56 for the substitution editing using the various media segments 54 in the message resource library 26. *Id.* at 9:50-15:6.

B.   Overview of Byers (Exhibit C)

United States Patent No. 7,334,249 B1 titled "Method and Apparatus for Dynamically Altering Digital Video Images" to Byers ("Byers") issued on February 19, 2008, from Application No. 09/560,245 filed on April 26, 2000, and therefore qualifies as prior art against the '030 Patent under at least 35 U.S.C. § 102(e).

Byers describes a system and method for "dynamically altering a portion of a digital video image based on a user profile." Byers at Abstract. The described alteration replaces a portion of the digital video image with a replacement digital image based upon a desired characteristic of the user. *Id.* The characteristic is based on a retrieved user profile. *Id.* Byers describes its invention as being useful for "targeted product placement, target advertising, parental screening of appropriate images to be received, dynamic advertising based upon advertising rates or number of subscribers, dynamic advertising based upon factors such as demographics or geographic location, and numerous other applications in which the modifications of a portion of a video stream is desired." *Id.* at 10:2-9.

Figures 1 and 2 of Byers illustrate an exemplary embodiment and are reproduced below.
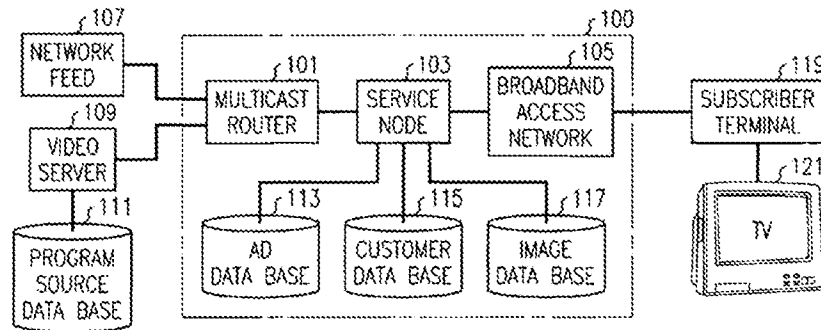
FIG. 1
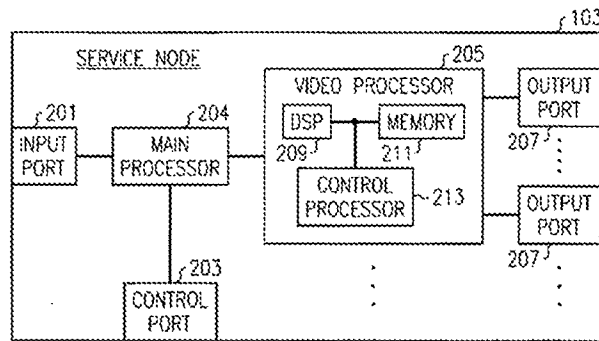
FIG. 2

Id., Figures 1-2.

At a high level, Byers teaches the alteration of a "portion of a digital video image based upon a user profile." *Id.* at 1:50-52. Byers specifically notes that "[a] feature of the present invention is that each subscriber may receive a different altered image, with the alteration being based upon a characteristic of the subscriber." *Id.* at 1:57-59.

Byers teaches that numerous different rules could be used to determine the replacement image.

> The service node chooses (605) a replacement image based at least in part upon the first profile. The replacement image can be selected based upon various criteria. One method of choosing a replacement image comprises choosing a replacement image based upon a user profile. The replacement image can be chosen based upon

demographic information, the time of day, a parental rating code, advertising information, or geographic information.

Id. at 9:6-13.

Byers also broadly describes its user profile, and suggests that other sources of information about the user that could be used to select replacement images. Specifically, Byers teaches that the user profile "includes information pertaining to a desired characteristic relating" to the user. *Id.* at 9:4-5. Byers notes that use of these characteristics addresses a problem in the prior art that there was "no way to customize the video stream for users, either based upon individual characteristics relating to the user or group characteristics." *Id.* at 1:34-43. Byers describes creating a customer database 115 that can include demographic information about a user. *Id.* at 4:48-51.

> For example, the profile could include the income level of the user, information about the area in which the user lives, the age of the user, the family status of the user, the number of children he or she has, or any other demographic information that would be useful in determining an effective product image to be inserted in the video stream. An appropriate replacement image would then be retrieved from image database 117 based upon the profile including demographic information.

Id. at 4:51-59.

Some additional examples of the types of information used to select content include "demographic information, time of day information, advertising information, geographic information, or parental consent information." *Id.* at 9:49-52.

C.   Overview of Hupert-Graff (Exhibit D)

PCT Publication No. WO 2001/067317 A1 titled "Method for Personalizing Information and Services from Various Media Sources" to Hupert-Graff et al. ("Hupert-Graff") published on September 13, 2001, from an International Application filed on March 8, 2001, that designated the United States and published in English, claiming priority to an Israeli application filed on March 8,

2000, and therefore qualifies as prior art against the '030 Patent under at least 35 U.S.C. §§ 102(a)-(b) and (e).

Hupert-Graff describes its prime objective as providing a method for conveying and classifying data content from various sources over a network to provide an end user with personalized recommendations of the most relevant data content fitting his preferences, habits and taste. Hupert-Graff at Abstract; p. 3, ll. 14-18. Hupert-Graff's other objectives include providing a system for media suppliers to personalize their information to achieve efficient conveyance of their content to their clients. *Id.* at p. 3, ll. 18-20. Content in this case is "passive and interactive TV or radio programs, VOD [Video on Demand] and NVOD [Near Video on Demand] services, multimedia applications, electronic messages data, web sites content etc." *Id.* at p. 6, ll. 14-17.

Hupert-Graff's system has two sub-systems as shown in Figure 1, the Recommendation learning system—which learns information about the user—and the Categorization and Scoring System ("CSS")—which categorizes and scores the available content. Figs. 1-3. The recommendation learning system (Fig. 2) creates personalized recommendations based on information gathered about a user, including a "history log of user selections and activities ('User Behavior')." *Id.* at p. 4, ll. 1-17.

Hupert-Graff's dynamic recommendation system ("DRS") accesses databases that contain both personal profile information and community profile information, both of which are dynamically updated. *Id.* at p. 7, l. 18 – p. 8, ll. 3; Fig. 2. More specifically, the DRS makes recommendations "based upon the PDP (Personal Dynamic Profile) database which contains the user behavioral profiles and CDP (Community Dynamic Profile) database containing community profiles both updated by the DPU (Dynamic Profile Update) application, according to the history collected and analyzed by the EM (Evaluation Module) application." *Id.* at p. 7, l. 21 – p. 8, l. 3.

One step for obtaining this user information is by "assessing user behaviors (Behavior Evaluations) relating to the selected content or services and recording thereof in the user history log." *Id.* at p. 4, ll. 8-9. The Dynamic Recommendations System then makes content recommendations using "Behavioral Profiles," "Content and Services Attributes," and "Personal Dynamic Profile" parameters. *Id.* at p. 4, ll. 1-14.

Hupert-Graff teaches that its recommendation system can be implemented "as [a] central service application located at gateway servers or partly as add-ons application (WG user interaction model) at the user communication device, or any combination [of] these implementations." *Id.* at 7, ll. 14-17. Hupert-Graff's system classifies its users "into different community categories according to the reported personal details and his history activities. For example the user community categorization can be defined according to his mother tongue and dedicated passion for watching nature films." *Id.* at p. 8, ll. 11-14. Hupert-Graff teaches that "the history of the entire users community" is used to filter/match available content. *Id.* at p. 8, ll. 17-20. Hupert-Graff specifically claims "creating a third profile ('Community Profile') of users where the profile features evaluations are based upon matching the user history log and Personal Profile to relevant history logs and personal profile of **other users**." *Id.* at p. 19, claim 13 (emphasis added). Hupert-Graff describes the various activities that are captured in the history logs as representative of "the user preferences and behavioral characteristic relating the various content and services" along with "user selections and activities while watching and communicating . . . includ[ing] viewing TV shows, listening to radio programs, navigating web-pages through the Internet or cellular network, conducting commercial transactions etc." *Id.* at p. 10, l. 23 – p. 11, l. 2, p. 12, ll. 16-20. Hupert-Graff explains that:

> the history log is analyzed and organized to determine the user behavioral profile.
> This profile is based among other attributes (as described above) upon the following

measured parameters: the total viewing time for each content or service, the viewer attention, viewer decisions and all interactive action preformed [sic] by the user e.g. conducting search through the internet, rating the current show etc. The history log is compared with the expected activity behavior as predicted by the BRS.

Id. at p. 12, l. 20 – p. 13, l. 3.

Fig. 5
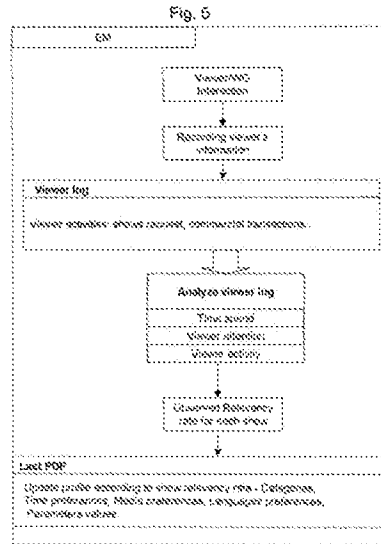
Id., Figure 6.

Hupert-Graff further teaches that the profiles represent "user preferences according to time schedule, content and services type, and pre-defined categories indicating the user favorite subjects of interest or user attitude to different styles e.g. action movies." *Id.* at p. 9, ll. 1-3. Hupert-Graff's system then scores "the incoming content and services . . . according to the PDP vectors parameters values, where each of the PDP parameters is matched with the relevant attributes of the content or services." *Id.* at 9, ll. 6-8. Hupert-Graff provides a concrete example.

For example let us assume that the user profiles indicate his desire to watch comedy shows, as a result the relevant shows defined by the content attributes as comedy are scored accordingly. The evaluating process further enables to coordinate between plurality of the content and services attributes and PDP parameters, as a result the content and services evaluating mechanism can reflect complex relations of the user preferences. For example, if the user prefers to watch action movies in the afternoon and romantic one in the evenings the content or services are evaluated

respectively. The relations between the parameters are not limited to time schedules but can refer to any possible combination of the said attributes.

Id. at p. 9, ll. 8-18. Hupert-Graff suggests that other approaches are possible as well: "[t]he system uses diverse approaches for user profiling and personalization." *Id.* at p. 9, ll. 19-20.

Finally, Hupert-Graff describes its recommendation lists, and how it monitors and tracks users' activity in real-time, including Internet forums and Internet chatting—which includes communications or interactions with other users on the Internet or cellular network:

> Once the user is activating the Interactive communication device he is prompted with relevant recommendation lists personalized according to the pre-defined aspects of user activities, for example: content media like TV shows, video films, interactive multimedia application etc. [c]ommercial activities like sales, community activities like ***Internet forums***, advertisements and ***chatting activities*** through the Internet or cellular network. While the user selects from the available recommendation lists as created by the BRS system or alternatively from new relevant shows or services, the ***DRS online system is tracking in real-time user current activities*** as illustrated in fig 5. The DRS system is operating according to the same principles of the BRS system as described above. The DRS system applies the BRS method for classifying and scoring the current content and services with regard to up-to-date profile of the user as represented by his current choices.

Id. at p. 12, ll. 1-13 (emphasis added). A person of ordinary skill in the art would understand Hupert-Graff teaches users interacting on a system online, and that the system is gathering information about the user's activities online, such as activities on Internet forums, and chatting using a messaging application on a mobile device through the Internet. Ex. Y, ¶¶ 110-11. A person of ordinary skill in the art would understand that this information collected about the user's online activities translates into a user's affinity for certain content, which can be used to make additional or more tailored recommendations. *Id.*

D.   Overview of Gutta (Exhibit E)

United States Patent No. 7,571,452 titled "Method and Apparatus for Recommending Items of Interest to a User Based on Recommendations for One or More Third Parties" to Gutta

("Gutta") issued on August 4, 2009, from Application No. 10/014,194 filed on November 13, 2001, and therefore qualifies as prior art against the '030 Patent under at least 35 U.S.C. § 102(e).

Gutta describes a recommendation system that recommends items of interest, *e.g.*, television programming to a user, based on a number of factors including "recommendations that were generated for one or more third parties, for example, by a third-party program recommender 120." Gutta at 2:59-63; Abstract. Gutta's system is presented in the context of television programming recommendations, but explicitly discloses that the described system "can be applied to any automatically generated recommendations that are based on an evaluation of user behavior, such as a viewing history or a purchase history." *Id.* at 2:53-58. The system "recommender evaluates the viewing or purchase habits of a user and communicates with one or more other recommenders to determine the items that are being recommended by such other recommenders." *Id.*, Abstract.

Gutta explains, that at the time, there was no mechanism to "recommend television programs or other items of interest based on recommendations made to a selected third party, such as a friend, colleague or trendsetter." *Id.* at 1:54-56. Additionally, Gutta found there were no mechanisms "for a plurality of recommenders to share recommendations and generate recommendation scores based on information about what other recommenders are recommending." *Id.* at 1:58-61. Gutta explained that "[o]nline retailers, such as Amazon.com, employ collaborative filtering techniques to recommend additional items to a customer based on selections made by other people who purchased the same item." *Id.* at 45-48. Gutta's system goes a step further than traditional collaborative filtering, by allowing the user to select specifically which third parties providing online recommendations should be listened to for recommendations. *Id.* at 1:54-57; 2:64-67; 5:31-34.

Gutta's system initially obtains the programming information from an electronic programming guide and calculates or obtains an initial conventional recommendation score based on the user's viewing habits. *Id.* at 3:6-21, 4:62-5:1. Then, to address the alleged prior art deficiency, an adjusted program recommendation score is calculated for the user based on information obtained from selected third-party sources. *Id.* at 5:6-31. A person of ordinary skill in the art at the time of the alleged invention would have understood that the user and the third-party recommenders are connected through a system online because "[t]he primary recommender 100 and the third party [sic] recommender 120 may exchange recommendations in any known manner, including a wired or wireless link." *Id.* at 2:64-67; Ex. Y, ¶ 115.

Gutta describes that the online third-party source must be selected by the user (*id.* at 1:54-57, 5:31-34, claim 1 ("receiving a selection of at least one third party [sic] recommender from said user")), and may be "for example, a friend, colleague or trendsetter." *Id.* at 2:63-64. Gutta teaches that a "weighted average can be employed to selectively emphasize, for example, the program recommendations scores generated by the television programmer recommender 100 for the given user or by the third party [sic] program recommender 120 for *any selected* third parties." *Id.* at 5:18-23 (emphasis added). Gutta's system explicitly contemplates that the online third-party information used by its recommendation algorithm is external to the system (the Television Program recommender 100) and is sourced from other than the display itself as shown in Gutta's Figure 1, reproduced below.
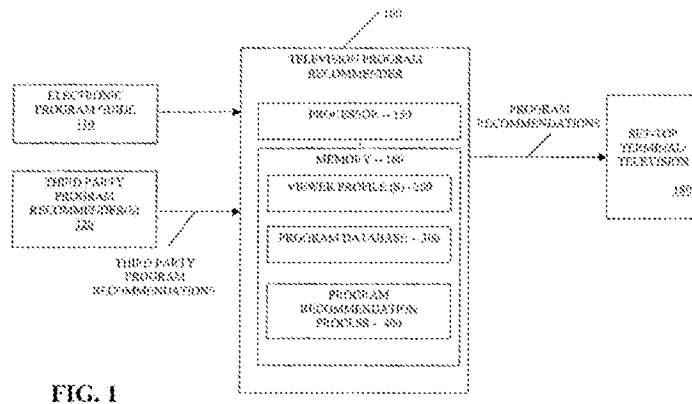
FIG. 1

Id., Figure 1.

Gutta describes that the information obtained from the third-party recommendations "may be a top-N list of recommendations for a given third party, and may optionally include a recommendation score and an indication of whether or not the third party actually watched or recorded the recommended program." *Id.* at 3:1-6. Based on this information, Gutta's system "corroborates with other recommenders when recommending programs and adjusts a conventional program recommender score based on third party [sic] recommendations." *Id.* at 3:17-21.

A person of ordinary skill in the art would understand that a user selecting a third party recommender is information about a user's social network, and that this information can be used to improve recommendations. Ex. Y, ¶¶ 118-19. Additionally, the user's active selection of a third-party recommender is an indication that the user trusts the third party and the third party's recommendations. Ex. Y, ¶ 119. Based on that trust, the third party's recommendations, retrieved independently from the user's online activities, can be retrieved and used to improve recommendations for the user. Ex. Y, ¶ 119.

E.   Overview of Achlioptas (Exhibit F)

United States Patent No. 7,472,110 B2 titled "System and Method for Employing Social Networks for Information Discovery" to Achlioptas ("Achlioptas") issued on December 30, 2008, from Application No. 10/353,623 filed on January 29, 2003, and therefore qualifies as prior art against the '030 Patent under at least 35 U.S.C. § 102(e).

Achlioptas describes a system of users connected through a network, where information about the users is gathered and used to determine a trustworthy source of information, without making the information about the user public. Achlioptas 2:54-63. Thus, for example, instead of sending a query for information through a group distribution email, the system gathers information about its users and acts as a "compass to facilitate guiding users toward reliable social information and opportunities whilst maintaining privacy of the set of users requests" for responding to requests for recommendations or information by a user. *Id.* at 2:14-23; 7:22-25.

Specifically, Achlioptas describes a system that includes storage of data including "user/entity profiles 124, indices 114, and a directed graph 130 of a social network." *Id.* at 5:35-37. Specifically, the profiles "contain attributes of individuals or entities associated with a social network" *Id.* at 5:37-40. Examples of the "personal attributes" of a user would be "experience, occupation, interests, hobbies, [and] historical information[.]" While Achlioptas acknowledges that the profile information could be directly entered by the users, it also contemplates "that any variety of information gathering schemes and sub-schemes (e.g., data mining, cookies, data scavenging, 3rd party providers . . .) could be employed." *Id.* at 5:41-47. The social network graph that Achlioptas describes "functionally represents intra-relationships between subsets of individuals and/or entities within the social network." *Id.* at 5:50-55.

FIG. 1

Id., Figure 1. Achlioptas teaches that the social network information could be used internally or

by a third party:

> Additionally, the social network once populated can be employed by 3rd party
> services (e.g., on-line auction sites) to employ the social network in connection with
> a social or business purpose coincident with the 3rd party's service. Furthermore,
> the system 300 can package the social network and distribute it in its entirety or in
> a modified version to a plurality of 3rd parties for independent use.

Id. at 7:36-42.

F.   Requestor's Arguments Are Not Barred by 35 U.S.C. § 325(d)

Under 35 U.S.C. § 325(d), the Director may consider several factors in evaluating whether

to deny a request because a requestor relies on the same or substantially similar prior art or

argument as those previously presented to the Patent Office:

1)   the similarities and material differences between the asserted art and the prior art

   involved during examination;

2)   the cumulative nature of the asserted prior art and the prior art evaluated during

   examination;

3)   the extent to which the asserted art was evaluated during examination, including

   whether the prior art was the basis for rejection;

4) the extent of the overlap between the arguments made during examination, and how the requestor relies on the prior art or patent owner distinguishes the prior art;

5) whether the requestor has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and

6) the extent to which additional evidence and facts presented in the request warrant reconsideration of the prior art or arguments.

Becton, Dickinson & Co. v. B. Braun Melsungen AG, IPR2017-01586, Paper 8, at 17-18 (PTAB Dec. 15. 2017) (precedential as to § III.C.5, first paragraph–designated August 2, 2019). Because Requestor's art and arguments are new to the Patent Office, 35 U.S.C. § 325(d) does not apply to this Request.

Turning first to Haberman, factors 1, 2, and 4 favor granting this Request because Haberman's disclosures are unlike the prior art that was actually considered during prosecution. Haberman discloses a system that dynamically creates individualized multimedia messages, stories, or advertisements based on a user profile, by using a message template with indications of where personalization may occur. *See* V.A, *supra*. The Haberman system describes obtaining user information from a variety of sources, both internally and externally to the system. None of the prior art that was actually considered during prosecution disclosed such a system. For example, U.S. Patent No. 6,357,042 to Srinivasan, relied on by the Examiner during prosecution, describes a system where advertisements are selected based on a user profile, however, the personalized advertisements are inserted by stopping the main video stream and inserting a new advertising stream. Ex. X at 32:57-67. To overcome the Srinivasan reference, patent owner amended the claims to include the "retrieving user social network information" and "performing a rule based substitution" limitations and argued that Srinivasan "simply teaches the selection of a particular

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analog video stream at a branch point (e.g., see, col. 23 [sic], ll. 57-58 of Srinivasan)." Ex. L at 140-44. Haberman is unlike Srinivasan because Haberman provides a system for substituting content within a template to personalize a message. Additionally, Haberman is unlike Srinivasan because Haberman teaches the value of gathering information about the user and other environmental factors related to the user, internally and externally to the system, to assist in making recommendations more relevant to the users—whereas Srinivasan taught retrieving information from user input. Thus, factors 1, 2, and 4 favor granting this request because Haberman is not cumulative to Srinivasan and there are significant material differences from the other prior art analyzed by the examiner during prosecution.

Moreover, factors 3 and 5 likewise favors granting this Request. Although Haberman was submitted in an Information Disclosure Statement, the Examiner never substantively discussed Haberman nor was Haberman ever the basis of a rejection. *See Samsung Elecs. Co., Ltd. v. Manuf. Resources Intern., Inc.*, IPR2023-00254, Paper 11, at 65-68 (PTAB June 20, 2023) (instituting IPR petition based on prior art cited on the face of the patent but not discussed substantively by the examiner); *Lite-On Tech. Corp. v. Sensor Elec. Tech. Inc.*, IPR2022-00780, Paper 11, at 30-32 (PTAB Oct. 28, 2022) (same). Haberman, although not relied on for a rejection in the '514 Application, was extensively relied upon by a different examiner in rejecting claims of the '822 Application (the child application to the '030 Patent with initially the same or similar claim scope.) *See* IV.E, *supra*. Thus, the prosecution history of the related '822 Application sufficiently shows Haberman should have, but was not, analyzed by the Examiner.

Additionally, the combination of Haberman with the secondary references: Hupert-Graff, Gutta, and Achlioptas have never been considered by the Office, and thus factor 4 favors granting this Request. As discussed above in section IV.E, *supra*, a different examiner relied heavily on

the combination of Haberman with Achlioptas to reject similar claim language in a child application. Finally, factor 6 favors granting this Request because the Examiner misstated the law of obviousness in allowing the '030 Patent over the combination of Srinivasan and Herz, as described in section IV.D, *supra*.[9] This Request presents additional facts and evidence that warrants reconsideration.

Like Haberman, Byers also describes a system for dynamically altering a portion of a digital image based on a user profile. *See* V.B, *supra*. Factors 1 and 2 favor granting this Request because Byers was not before the Examiner during prosecution and Byers is not cumulative of Srinivasan for the same reasons as Haberman. Factors 1 and 2 favor granting this Request for the same reasons as the Haberman reference. Factors 3-6 do not apply because the Examiner never addressed Byers.

Turning to Hupert-Graff, factors 1 and 2 favor granting this Request because Hupert-Graff's disclosures are unlike the prior art considered during prosecution. Specifically, Hupert-Graff discloses a recommendation system based on dynamic user and community profiles that monitor and analyze users' Internet activity including Internet chatting and community activities like Internet forums. *See* V.C, *supra*. The Examiner cited only U.S. Patent No. 7,483,871 to Herz as teaching the social network in the form of a "plurality of bulletin boards," which is unlike Hupert-Graff's system or any other prior art considered by the Examiner, and thus Hupert-Graff

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[9] In the Examiner's Notice of Allowance, the Examiner noted that Herz taught the "retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes" limitation, but that there was no motivation to combine Herz with Srinivasan. As discussed above, the Examiner failed to use the proper analysis and standard of law of obviousness and the acceptable rationales for motivation to combine under *KSR* and its progeny.

is not cumulative of the considered prior art. Factors 3-6 favor granting this Request because the Examiner did not consider, and the Applicant did not distinguish Hupert-Graff during prosecution.

Next, turning to Gutta, factors 1 and 2 favor granting this Request because Gutta's disclosures are unlike the prior art considered during prosecution. Specifically, Gutta discloses a video recommendation system in the context of an electronic programming guide that uses selected third-party recommenders such as friends, colleagues, and trendsetters to make recommendations for a user. *See* V.D, *supra.* The Examiner cited only U.S. Patent No. 7,483,871 to Herz as teaching the social network in the form of a "plurality of bulletin boards," which is unlike Gutta's system or any other prior art considered by the Examiner, and thus Gutta is not cumulative of the considered prior art. The Examiner explicitly noted that "if one of ordinary skill in the art at the time of the invention, wanted to improve Srinivasan *et al.*, he or she would more likely have done so by using an EPG [electronic programming guide], as taught by Ward, III, *et al.*, than by using social networks, as taught by Herz." Ex. L at 215. Gutta discloses both an EPG and using a social network in the context of a video programming recommendation system. Factors 3-6 favor granting this Request because the Examiner did not consider, and the Applicant did not distinguish over Gutta during prosecution.

Finally, turning to Achlioptas, factors 1 and 2 favor granting this Request because Achlioptas' disclosures are unlike the prior art considered during prosecution. Specifically, Achlioptas discloses a social network in the form of a directed graph for use in an information retrieval system. *See* V.E, *supra.* The Examiner cited only U.S. Patent No. 7,483,871 to Herz as teaching the social network in the form of a "plurality of bulletin boards," which is unlike Achlioptas' system or any other prior art considered by the Examiner, and thus Achlioptas is not cumulative of the considered prior art. Likewise, factor 3 also favors granting this Request.

Achlioptas, although not relied on for a rejection in the '514 Application, was extensively relied upon by a different examiner in rejecting claims of the '822 Application (the child application to the '030 Patent with initially the same or similar claim scope.) *See* IV.E, *supra*. Factors 4-6 also favor granting this Request because the Examiner did not consider, and the Applicant did not distinguish over Achlioptas during prosecution.

VI. Statement Pointing Out Each Substantial New Question of Patentability

This request is based on the prior art references cited in Section V. Regarding the references presented with the instant Request, with the exception of Haberman, none of the references relied on in this Request were part of the prior art of record, nor were they considered during prosecution of the '030 Patent. With regard to Haberman, while the corresponding PCT Application No. WO 2001/0177939 was identified in an IDS, Haberman was never cited by the Examiner in an office action during the prosecution of the '030 Patent. This is particularly important because, as noted above in Section IV.E, the issued Haberman patent was cited by a different examiner to reject claims in a child application similar to the Challenged Claims in this Request. Haberman's teachings in this Request are in combination with other unconsidered references, and thus the Haberman combinations presented here were not relied upon by the Examiner for a rejection.

Moreover, as discussed in detail in V.F, *supra*, the references and combinations of references are not merely cumulative to prior art already considered by the Office in prior examination of the Challenged Claims. As such, and in view of the teachings thereof, the attached references present substantial new questions of patentability with respect to the Challenged Claims of the '030 Patent.

A detailed explanation of the pertinence and suggested manner of applying and/or combining the cited prior art under 35 U.S.C. §§ 102, 103 to claims 1-2 of the '030 Patent is set forth below in VII.A, VII.B, and VII.C, *infra*. For rejections proposed under 35 U.S.C § 103, at least one basis for combining the respective references is provided in accordance with MPEP § 2217(I).

A.   Summary Identification of Substantial New Questions

For ease of reference, the substantial new questions raised by the prior art cited in this Request are set forth in the list below, in the form of proposed rejections.

No	SNQ (Grounds for Proposed Rejection)
1	Claims 1 and 2 are invalid for obviousness over the combination of Haberman in view of Hupert-Graf
2	Claims 1 and 2 are invalid for obviousness over the combination of Haberman in view of Gutta
3	Claims 1 and 2 are invalid for obviousness over the combination of Byers in view of Hupert-Graff
4	Claims 1 and 2 are invalid for obviousness over the combination of Byers in view of Gutta
5	Claims 1 and 2 are invalid for obviousness over the combination of Haberman in view of Hupert-Graff in further view of Achlioptas
6	Claims 1 and 2 are invalid for obviousness over the combination of Haberman in view of Gutta in further view of Achlioptas
7	Claims 1 and 2 are invalid for obviousness over the combination of Byers in view of Hupert-Graff in further view of Achlioptas
8	Claims 1 and 2 are invalid for obviousness over the combination of Byers in view of Gutta in further view of Achlioptas

VII. **Detailed Explanation of the Pertinence and Manner of Applying the Prior Art References to Every Claim for Which Reexamination is Requested**

A detailed explanation of the pertinence and manner of applying the prior art references to all of the claims for which reexamination is requested is provided below. The sub-parts of the independent claim of the '030 Patent have been labeled for ease of reference.

A. **Obviousness of Claims 1 and 2 of the '030 Patent based on Haberman in view of the Identified Secondary References**

Patent Owner, in its opposition to Requestor's Motion to Dismiss based on *Alice*, characterized the problem that the '030 Patent was trying to solve as improving the selection of media for a user: "[a]s technology was evolving, advertisers were confronted with the use of technology to avoid advertisements, e.g., by stopping pop-up ads or skipping over the ads. None of these systems, however, addressed how technology could be used to understand the individual's likes or dislikes or the individual's current mood to more appropriately adapt the content for the individual," i.e., a better recommendation system. Ex. W, at 4. The '030 Patent was directed at selecting content more relevant to a user based on alleged analysis of user attributes, and modifying targeted advertisements to avoid disrupting the narrative of the story for the content viewed by the user. The purported point of novelty of the '030 Patent, added more than 5 years after the original application was filed, is retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes, and then using those user attributes to select the replacement images for the displayed video. But that technique was already known and taught in the prior art as evidenced by each of the combination of each of the primary and secondary references identified in this Request, and therefore the Challenged Claims are unpatentable.

1.   **Haberman Discloses the Video Substitution Limitations of the Challenged Claims**

Claims 1 and 2 would have been obvious based on the combination of Haberman in view of each of the identified secondary references. Claim 1 is an open-ended claim that comprises a server and a computer-readable storage medium that contains instructions to perform the recited limitations.

As explained in detail below, each element of claims 1 and 2 is disclosed, taught, or suggested by the teachings of Haberman in combination with the teachings of each of the identified secondary references.

a.   **Claim 1 [Preamble]: "A system for associating user attributes with digital media asset attributes and creating a user specific composite digital media display, the system comprising:"**

To the extent that the preamble is limiting, Haberman discloses this limitation under both BRI and *Phillips*. Haberman teaches a system "for dynamically creating individualized, multi-media messages and to deliver the messages to specific target groups or individual viewers." Haberman at Abstract. The "user profile" in Haberman comprises attributes, *e.g.*, demographic data as well as purchasing behavior, or user interactions on a website or shopping network, which are used to create the individualized message. *Id.* at 6:55-59. The "specific media segments" are associated with user attributes, such that the "rule system 38" can select the corresponding "media segment" depending on the user profile. "[F]or example the video and sound database 30 can include footage of several different actors providing dialog for a message, and the rule system 38 selects footage of a certain actor based on information from the user profile 22." Haberman at 9:24-30. Haberman expressly teaches that "[s]pecific media segments are selected and merged according to the message template and information about the viewer derived from a user profile. . . . The merged composite is then encoded to match the distribution media and forwarded to the

user for viewing." *Id.* at 4:44-51; *see also* 15:60-66 (". . . The transaction processor 138 oversees much of the operation of creating the personalized message . . ."), 19:29-37 (describing how various components of Haberman's system "run on separate general purpose computers" or "may run on one machine as one application, or as separate processes"). A "user specific composite digital media display" is created when the media segments are merged according to the message template.

During prosecution of the related '822 Application, in a non-final office action dated February 1, 2018, the Examiner cited Haberman 15:60-66, 16:29-37, and Haberman's abstract as disclosing similar claim language of the pending claims of the '822 Application: "a system creating a user specific composite digital media display, the system comprising (abstract): a processing device; and a computer-readable storage medium operably connected to the processing device and comprising one or more programming instructions that, when executed, cause the processing device to. . . ." Ex. M at 179.

Subsequently, on July 31, 2018, the Examiner again cited Haberman when issuing a final office action rejecting the claims in the related '822 Application. More specifically, the Examiner cited Haberman 15:60-66, 16:29-37, and Haberman's abstract as disclosing similar claim language of the pending claims of the '822 Application: "a system creating a user specific composite digital media display, the system comprising: a central processing unit; and a computer-readable storage medium operably connected to the central processing unit and comprising one or more programming instructions that, when executed, cause the central processing unit to. . . ." Ex. M at 256.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed

that the preamble, to the extent it has patentable weight, was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

b.   1[a]: "a) a server;"

Haberman discloses this limitation under both BRI and *Phillips*. Haberman's system includes servers, and/or general purpose computers. As illustrated in Figure 1, Haberman's "system 20 is for a personal message creation and delivery," which includes the databases 26 and 35, assembly system 36, expert rules server 38, and delivery medium 40 used for creating the personalized message. Haberman at 6:52-53, Fig. 1.
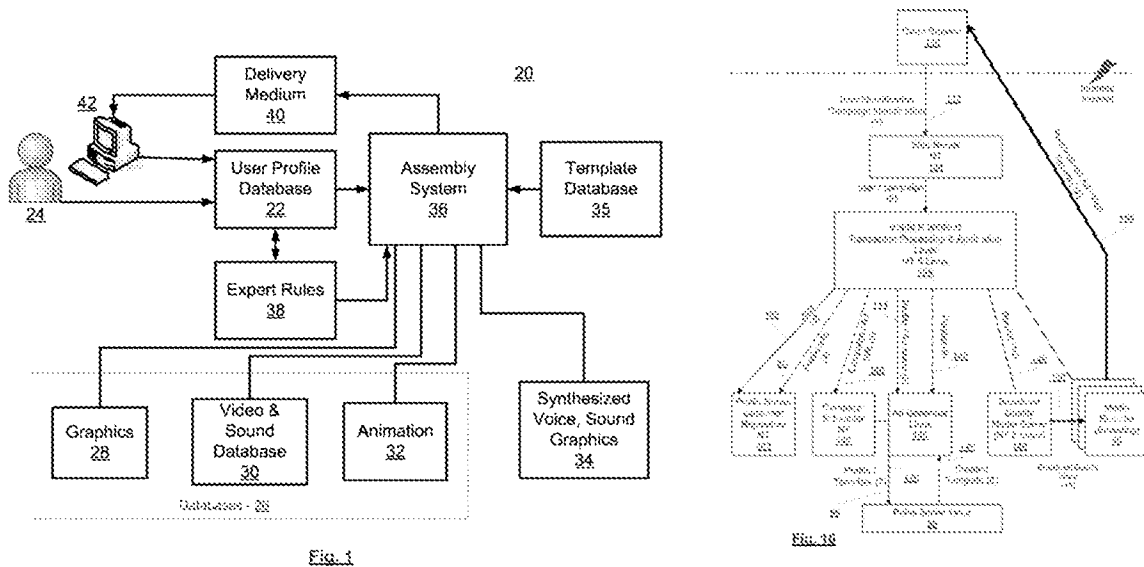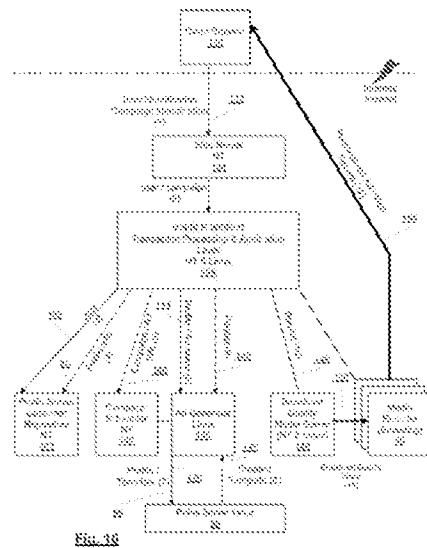
Id., Figures 1 and 10.

Figure 3 likewise depicts a Rules System for Substitution Editing 38. Figure 10 depicts Rule System 38 and describes that the transaction processor 138, **profile server 503**, campaign scheduler 142, message generator 145, **expert rules server 38**, **media server 149** and media encoder 40 run on separate general purpose computers running Windows NT or Linux. *Id.* at 16:29-33. Haberman explains that a "transaction processor 138 oversees much of the operation of creating the personalized message, including sequencing of many of the steps in the operation."

Id. at 15:63-66. The transaction processor 138 is analogous to the Assembly System 36 of Figure 1. These computers are interconnected as appropriate for the location of each component and the bandwidth requirements for communication therebetween. Alternatively, **several components may run on one machine** as one application, or as separate processes." *Id.* at 16:29-37. Thus, Haberman suggests that all of the components of its system exist on a single server, and therefore teaches this limitation.

Furthermore, during prosecution of the related '822 Application, in a non-final office action dated February 1, 2018, the Examiner cited Haberman 15:60-66, 16:29-37, and Haberman's abstract as disclosing similar claim language of the pending claims of the '822 Application: "a system creating a user specific composite digital media display, the system comprising (abstract): a processing device; and a computer-readable storage medium operably connected to the processing device and comprising one or more programming instructions that, when executed, cause the processing device to. . . ." Ex. M at 179.

Subsequently, during prosecution of the related '822 Application, in a final office action dated July 31, 2018, the Examiner again cited Haberman 15:60-66, 16:29-37, and Haberman's abstract as disclosing similar claim language of the pending claims of the '822 Application: "a system creating a user specific composite digital media display, the system comprising: a central processing unit; and a computer-readable storage medium operably connected to the central processing unit and comprising one or more programming instructions that, when executed, cause the central processing unit to. . . ." Ex. M at 256.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed

that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

> c. 1[b]: "b) a computer-readable storage medium operably connected;"

Haberman discloses this limitation under both BRI and *Phillips*. Haberman teaches that "one or more libraries or databases 26 include media segments which are used to assemble the personalized message. The databases 26 include a compendium of elements that may be broadly categorized as graphics 28, video and sound segments 30, and animation 32." Ex. B at 7:6-10. Haberman also teaches, as discussed above, that the expert rules 38, assembly system 36, and transaction processor 138 may be an application running on a general purpose computer. *Id.* at 16:29-37. A person of ordinary skill in the art would have recognized that a library or database that includes media segments or user profiles, and/or that an application running on a general purpose computer must be stored on a computer-readable storage medium, which includes programming instructions for running the application. Ex. Y, ¶ 61. For example, Haberman also graphically depicts and describes the interconnections between the assembly system, the expert rules and the databases. "The personalized messages are assembled by an assembly system 36. The assembly system receives a message template from the template database 35, and uses media segments from the databases 26 to put together the message. The assembly system 36 receives input on the user 24 from the user profile database 22, and also receives input from expert rules 38, which interpret the user profile data, and direct the assembly system 36 to select which particular segments from the databases 26 to combine for the personalized media message." Haberman at 7:36-44. A person of ordinary skill in the art would have recognized that this process includes programming instructions stored on a computer-readable storage medium to perform this process. Ex. Y, ¶ 61.

Fig. 1

Haberman, Figure 1.

Furthermore, during prosecution of the related '822 Application, in a non-final office action dated February 1, 2018, the Examiner cited Haberman 15:60-66, 16:29-37, and Haberman's abstract as disclosing similar claim language of the pending claims of the '822 Application: "a system creating a user specific composite digital media display, the system comprising (abstract): a processing device; and a computer-readable storage medium operably connected to the processing device and comprising one or more programming instructions that, when executed, cause the processing device to. . . ." Ex. M at 179.

Subsequently, during prosecution of the related '822 Application, in a final office action dated July 31, 2018, the Examiner again cited Haberman 15:60-66, 16:29-37, and Haberman's abstract as disclosing similar claim language of the pending claims of the '822 Application: "a system creating a user specific composite digital media display, the system comprising (abstract): a central processing unit; and a computer-readable storage medium operably connected to the central processing unit and comprising one or more programming instructions that, when executed, cause the central processing unit to. . . ." Ex. M at 256.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

> **d.   1[c]: "wherein the computer-readable storage medium contains one or more programming instructions for performing a method of associating user attributes with digital media asset attributes and creating a user specific composite digital media display, the method comprising;"**

Haberman discloses this limitation under both BRI and *Phillips*. As noted above in section IV.G *supra*, the court concluded that this claim term did not require construction using the *Phillips* standard. Ex. V at 9.

As described above, Haberman describes a rules system for substitution editing 38 that selects media segments 54 that correspond to the user's profile 60, which are substituted into a message template 56 for creating a personalized message. Ex. B at 8:25-37. Haberman also describes that the expert rules system 38, assembly system 36, and transaction processor 138 may be combined as a single application or be running as separate processes on a general purpose computer. *Id.* at 16:29-37. These elements are capable of associating user attributes found in the user profile with media segment attributes, and creating a user specific "individualized, multimedia messages." *Id.* at Abstract, 4:34-34. The Appendix provides exemplary computer programming instructions (in a Lisp programming language) for applying expert rules for evaluating user profile information, i.e., user attributes, to select the appropriate associated content, i.e., digital media assets, for the user. *Id.* at 14:62-67; 16:57-17:18. A person of ordinary skill in the art would have understood that the programming instructions used to run this application on a general purpose computer would have first been stored on a computer-readable storage medium. Ex. Y, ¶ 61.
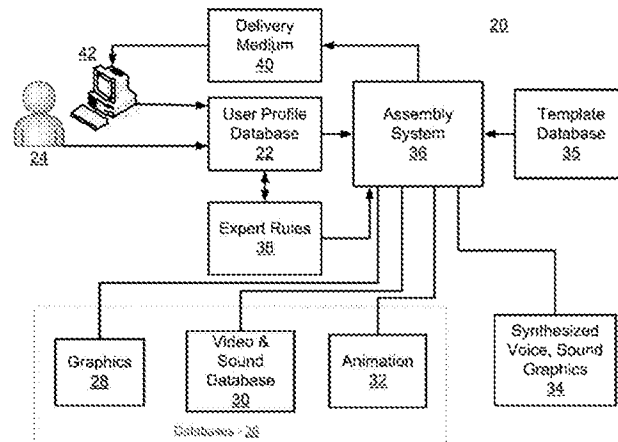
Furthermore, during prosecution of the related '822 Application, in a non-final office action dated February 1, 2018, the Examiner cited Haberman 15:60-66, 16:29-37, and Haberman's abstract as disclosing similar claim language of the pending claims of the '822 Application: "a system creating a user specific composite digital media display, the system comprising (abstract): a processing device; and a computer-readable storage medium operably connected to the processing device and comprising one or more programming instructions that, when executed, cause the processing device to. . . ." Ex. M at 179.

Subsequently, during prosecution of the related '822 Application, in a final office action dated July 31, 2018, the Examiner again cited Haberman 15:60-66, 16:29-37, and Haberman's abstract as disclosing similar claim language of the pending claims of the '822 Application: "a system creating a user specific composite digital media display, the system comprising: a central processing unit; and a computer-readable storage medium operably connected to the central processing unit and comprising one or more programming instructions that, when executed, cause the central processing unit to. . . ." Ex. M at 256.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

e. 1[d]: "identifying a first set of digital media assets stored on the computer-readable storage medium,"

Haberman discloses this limitation under both BRI and *Phillips*. Haberman teaches that

> [o]ne or more libraries or databases 26 include media segments which are used to assemble the personalized message. The databases 26 include a compendium of elements that may be broadly categorized as graphics 28, video and sound segments 30, and animation 32. These media segments may be part of a general library of available material, for example pictures of individual city skylines,

attractions, or natural scenery for use in backgrounds. Alternatively, media segments may be generally or specifically created for a certain message campaign.

Haberman at 7:6-15. Haberman specifically teaches that "[t]he assembly system receives a message template from the template database 35, and uses media segments from the databases 26 to put together the message. The assembly system 36 receives input on the user 24 from the user profile database 22, and also receives input from expert rules 38, which interpret the user profile data, and direct the assembly system 36 to select which particular segments from the databases 26 to combine for the personalized media message." *Id.* at 7:37-44.
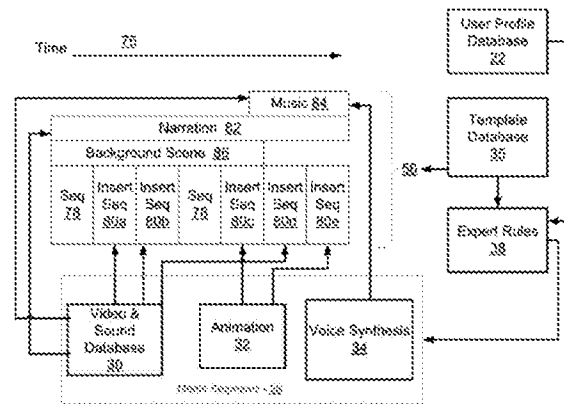
Id., Figure 4.

Haberman specifically teaches that "the predefined sequences are stored in the media segment database 26, and inserted at the appropriate locations in the message template 56. The predefined sequences 78 only differ in [that] [sic] the same predefined sequence 78 is always selected for that location in the personalized message." *Id.* at 8:55-61; *see also id.* at 4:41-44 ("The message campaign includes a message template and a collection of media segments.").

As another example, Haberman's figure 7 illustrates a message resource library or media segment database 26 which includes "Default Neutral" audio and video segments. *Id.* at Fig. 7. Haberman also describes creating a default message example 102, that serves as a message

template containing a rich media video composition of the message that the client wishes to deliver to his audience. *Id.* at 12:1-8. A person of ordinary skill in the art would understand that the default message template was created using, for example, Default Neutral media segments. *See id.* at Fig. 7; Ex. Y, ¶ 62.

The '030 Patent describes the same concept. "The server 590 may develop the personalized digital media asset 212 from content 531 and the digital asset repository 541." '030 Patent at 12:4-6.

FIG. 5A
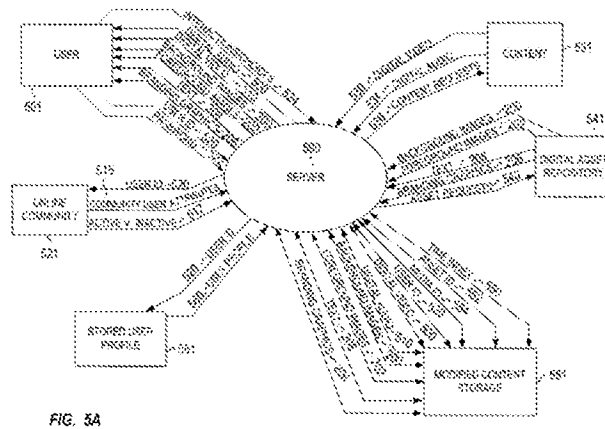
Id., at Figure 5A.

Furthermore, during prosecution of the related '822 Application, in a non-final office action dated February 1, 2018, the Examiner cited Haberman 4:41-44 as disclosing similar claim language of the pending claims of the '822 Application: "identify a first set of digital media assets, create a first composite digital media stream including at least a portion of the first set of digital media assets." Ex. M at 179.

Subsequently, during prosecution of the related '822 Application in a final office action dated July 31, 2018, the Examiner again cited Haberman 4:41-44 as disclosing similar claim language of the pending claims of the '822 Application: "identifying, by a central processing unit,

a first plurality of digital media assets, creating, by the central processing unit, a first composite digital media stream including at least a portion of the first plurality of digital media assets." Ex. M at 244.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

      f.   **1[e]: "creating, from the first set of digital media assets, a first composite digital media display,"**

Haberman discloses this limitation under both BRI and *Phillips*. The court construed this term to mean: "creating, from the first set of digital media assets, a first composite digital media display that combines two or more digital media assets." Ex. V at 13. Haberman teaches that "a background scene 86 such as a geographic landscape, is selected from the video and sound database 30 and used as a common background for the predefined segments 78." Haberman at 9:18-22; *see also id.* 4:41-44.

The first composite digital media display in this embodiment consists of a combination of the predefined sequence 78 in combination with the background scene 86, and the narration 82, and/or the music 84 using the message template 56 as a blueprint as shown in Figure 4.
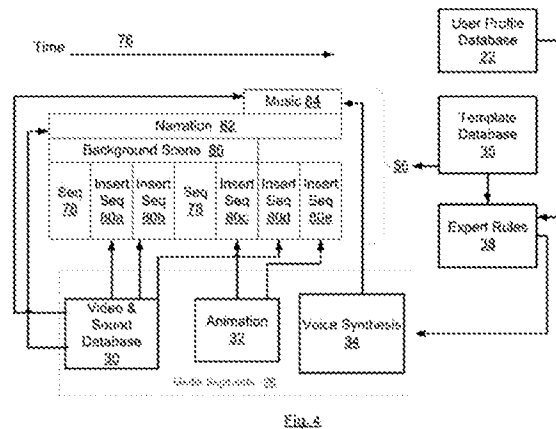
Id., Figure 4.

Additionally, Haberman describes that creating the message and delivering the message may be done contemporaneously. *Id.* at 8:18-24. A person of ordinary skill in the art would understand this to mean that the system may begin to present the message prior to or at the same time that the substitution editing occurs in the message. Ex. Y, ¶ 62.

In another embodiment, Haberman describes creating a default message template:

> When creating the campaign plan, the campaign manager working with the client to encode a default message example 102. The example serves as a message template containing a rich media video composition of the message that the client wishes to deliver to his audience. The example is of the prescribed duration and exhibits one complete advertising or other message as an example of one specific version of the intended communication to be delivered. This provides the starting point for later construction of a message template 400 and a resource library 300 from which the various personalized versions of the message are to be assembled.

Haberman at 12:1-11. A person of ordinary skill in the art would understand this to mean the system could play the default message until the expert rules determine a new media segment must be selected and substituted for example, the "Default Neutral" video or audio segment. *Id.* at Fig. 7; Ex. Y, ¶ 62.

The '030 Patent describes the same concept. "Fig. 4 illustrates a default experience 400 being shown to a user with interactive opportunities 402 in conjunction with trigger points 320.

. . . The enhanced user profile 404 may subsequently be used in conjunction with trigger points 320 to create a personalized experience 406." '030 Patent at 11:3-11.

Furthermore, during prosecution of the related '822 Application, in a non-final office action dated February 1, 2018, the Examiner cited Haberman 4:41-44 as disclosing similar claim language of the pending claims of the '822 Application: "identify a first set of digital media assets, create a first composite digital media stream including at least a portion of the first set of digital media assets." Ex. M at 179.

Subsequently, during prosecution of the related '822 Application, in a final office action dated July 31, 2018, the Examiner again cited Haberman 4:41-44 as disclosing similar claim language of the pending claims of the '822 Application: "identify a first plurality of digital media assets, create a first composite digital media stream including at least a portion of the first plurality of digital media assets." Ex. M at 257.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

> **g.   1[f]: "presenting to the user via a display server, the first composite digital media display;"**

Haberman discloses this limitation under both BRI and *Phillips*. The court declined to construe this term formally and stated the display server was a "'server' in a conventional server-client model as understood by a person of ordinary skill in the art at the time of the invention" and that "presenting to the user" also does not require construction and is not limited to "any particular mode of presenting, such as visual presentation"—meaning that at least visual presentation is within the scope of presenting to the user. Ex. V at 16-17.

Haberman teaches that "[t]he assembled personalized message is encoded for delivery medium 40, and then delivered to the individual viewer 24, typically by a display device 42, which can be any of various types of receiver including television, computer monitor, radio, phone etc." Haberman at 7:51-55. Haberman further teaches that "present invention facilitates real-time creation." *Id.* at 7:59-62. Thus, the first composite digital media display is created and presented to the user visually in real-time. The assembly system 36 delivers the personalized messages to the delivery medium and is analogous to a display server. *Id.* at 7:36-55.
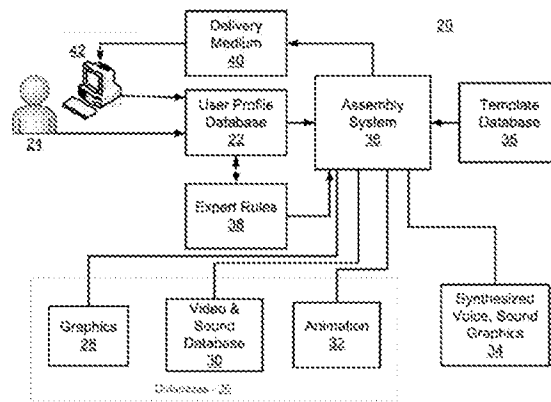
Id., Figure 1.

Furthermore, Haberman teaches that Fig. 10 is a block diagram of an embodiment that explicitly discloses a "Broadcast Quality Media Server (NT & Linux)."
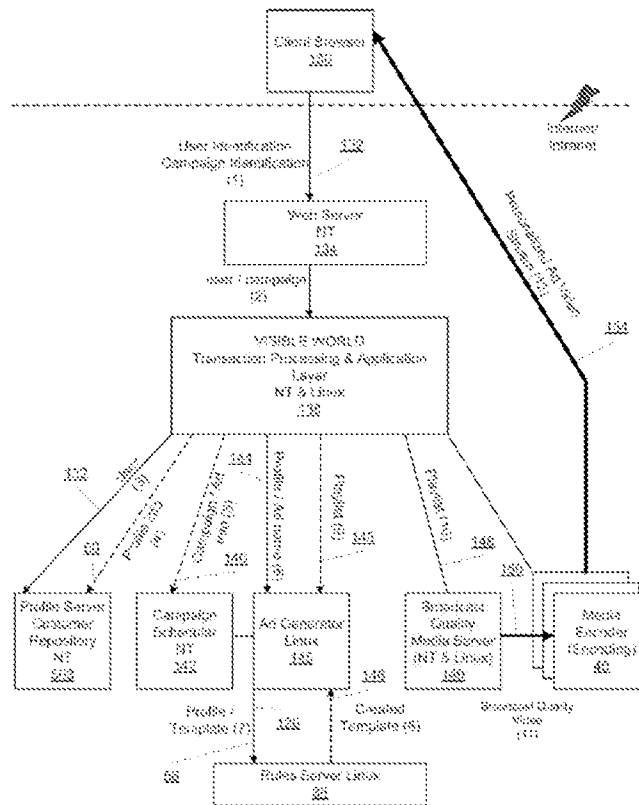
Fig. 10

Id., Figure 10. Haberman teaches that the

> transaction processor 138 provides the media playout list 148 to the media server 149 which assembles all the media segments together to produce the video stream 150 of the personalized message. The video stream is provided to the media encoder 40, to properly encode the video stream for delivery. In the present embodiment, this is an encoded video stream 154 which is sent to the client browser 130, for delivery to the user.

Id. at 16:21-28. Taking figures 3 and 10 together, it is clear that label 40 (media encoder in figure 10, delivery medium in figure 3) is used in both, and discloses or at least suggests that assembly system 36 includes the media server 140 of figure 10.

The '030 Patent describes the same concept. "Fig. 4 illustrates a default experience 400 being shown to a user with interactive opportunities 402 in conjunction with trigger points 320. . . . The enhanced user profile 404 may subsequently be used in conjunction with trigger points 320 to create a personalized experience 406." '030 Patent at 11:3-11.

The '030 Patent describes that the system diagram of figure 5A "illustrates a context diagram for one embodiment of a digital media narrative asset personalization system (server) 590." *Id.* at 11:65-67.

FIG. 5A

Id. at Fig. 5A. The '030 Patent describes in some instances that "the personalized digital media asset is presented to the user 501 via the server 590." *Id.* at 12:7-10. Specifically, the "user 501 may be presented with digital video 500, digital audio 510, background images 200, foreground images 202, text 208, digital media graphics, digital animation, and/or branding graphics 206." *Id.* at 12:19-22.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

h. 1[g]: "retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes;" and 1[h]: "selecting, based on the user attributes in the social network information, a second set of digital media assets, wherein the second set of digital media assets is associated with one or more user attributes found in the user social network information;

Haberman describes its user profile broadly: "[t]his user profile database 22 can be in any form, including a proprietary database of information owned by one entity, or publicly available information at one or at multiple locations, including information from user interactions on web sites or shopping networks." Haberman at 6:55-59. Haberman's system retrieves the stored user profile from a source other than the presented first composite digital media display. Specifically, Haberman teaches that its "user profile database 22 can be in any form, including a proprietary database of information owned by one entity, or publicly available information at **one or multiple locations**, including information from **user interactions on websites** or shopping networks." *Id.* at 6:55-59. Thus, a person of ordinary skill in the art would understand that the information stored and retrieved for Haberman's user profile can be retrieved from an source internal to the system (e.g., an internal proprietary system), or a source external to the system (e.g., publicly available information at a location other than the video distribution site). Ex. Y, ¶ 66. In either case, it follows that Haberman teaches that user information is retrieved from a source external to and/or other than the presented first composite digital media display—i.e., a memory or database that is not part of a display.

Haberman also teaches an automated dynamic message assembly based upon "entity and environmental factors that are in constant flux, yet combined in a manner that addresses the communicative objectives of the campaign." Haberman at 5:8-12. Haberman further describes message creation "with story-driven message assembly tailored to the individual and any combination of information known about the target viewer and the present environment." *Id.* at

5:27-31. Haberman obtains current environment information by constantly polling the appropriate information channels, which can be obtained from numerous places such as the internet, a private internet or intranet, etc. *Id.* 11:33-40. Thus, Haberman teaches customizing messages based on information received about users interactions and behaviors in environments both internal and external to the system.

However, Haberman alone does not specifically disclose or teach "user social network information." Requestor addresses in detail below how Haberman can be combined with each of the identified secondary references to teach the user social network information limitations.

          i.   **1[i]: "monitoring the first composite digital media display for the presence of a trigger, wherein the trigger indicates a personalization opportunity in the first set of digital media assets;"**

Haberman discloses this limitation under both BRI and *Phillips*. The court construed "monitoring the first composite digital media display for the presence of a trigger" as "monitoring the first composite digital media display for the presence in the display of an indication of a personalization opportunity." Ex. V at 24. Haberman specifically teaches that "[t]he message template 56 describes a framework to create and complete a personalized message 72 for the selected individual 24. The message template 56 runs for a certain length of time, as shown by arrow 76. . . . The message template 56 may include both predefined sequences 78 and insertable sequences 80." Haberman at 8:41-51. The trigger includes the identification of the insertable sequences within the template, but is not limited to that. Haberman goes on and teaches that while "the predefined sequences 78 and insertable sequences 80 are shown in the present example with no overlap, however, the present invention is not limited to orthogonal assembling of media segments. All elements of the personalized message can be controlled, and combined in various forms to provide powerful customization." *Id.* at 9:13-18. When an insertable sequence is reached,

Haberman teaches that the insertable sequences "are filled in as directed by the rule system 38." *Id.* at 8:64-65; *see also id.* at 9:1-8 ("The rule system then determines the appropriate media segments to insert into the insertable sequences 80 of the message template 56."). The rule system knows where the insertable sequence is based on the message template. *Id.* at 8:65-9:1. Thus the message templates' indication of an insertable sequence and the system's monitoring of the template for the insertable sequence locations are an indication of a personalization opportunity in the display. Finally, Haberman's system "facilitates real-time creation" of the personalized message "based on the user profile." *Id.* at 7:59-62.
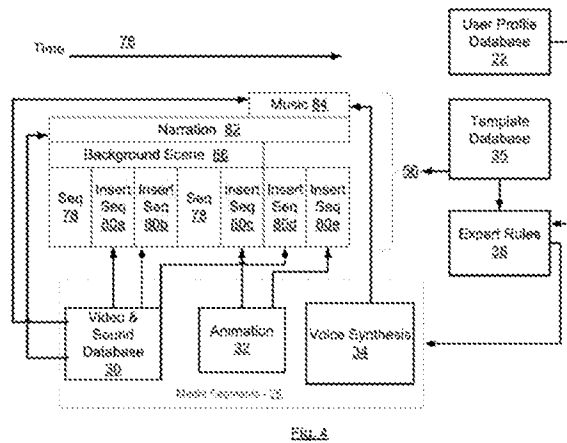
Id., Figure 4.

Haberman describes contemporaneous delivery and creation of a customized message, and teaches creating a default message template. *Id.* 8:1-12; 18-24.

The '030 Patent describes the same concept. The '030 Patent describes trigger points as providing a "mechanism for content management and the creation of a more personalized digital media asset based on a user's personal experiences. Trigger points 320 can be placed at various points in the digital media content." '030 Patent at 10:1-6. Trigger points can be placed at "various points in time, when a certain character appears on the screen, when certain text is displayed, when

words are spoken or sung, or based on other features of the digital presentation." *Id.* at 10:6-11.

When a trigger point occurs, "a script or other software program is executed" that "may cause a

computing device to access a database containing profile data relating to the user, and based on

the user profile information . . . may cause the insertion and/or replacement of video, graphics,

audio, or other material in the digital presentation." *Id.* at 10:11-20.

Furthermore, during prosecution of the related '822 Application, in a non-final office

action dated February 1, 2018, the Examiner cited Haberman 9:1-8 and Figure 4 as disclosing

similar claim language of the pending claims of the '822 Application: "monitor the first composite

digital media stream for the presence of a trigger, wherein the trigger indicates a personalization

opportunity in the first composite digital media stream." Ex. M at 183.

Subsequently, during prosecution of the related '822 Application, in a final office action

dated July 31, 2018, the Examiner again cited Haberman 9:1-8 and Figure 4 as disclosing similar

claim language of the pending claims of the '822 Application: "[m]onitoring, by the central

processing unit, the first composite digital media stream for a trigger, wherein the trigger indicates

a personalization opportunity in the first composite digital media stream." Ex. M at 248.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the

allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed

that this limitation was not novel and was known in the Srinivasan prior art that was relied upon

in the prior rejection.

>   **j.   1[j]: "performing a rule based substitution of one or more of
> the digital media assets from the first set of digital media assets with one or more of the
> digital media assets from the second set of digital media assets to create a user specific set of
> digital media assets;"**

Haberman discloses this limitation under both BRI and *Phillips*. The court concluded that

no construction was necessary for this term. Ex. V at 25. Haberman specifically teaches that

"[u]ser profiles 60 about the user 24 are obtained and fed to a rules system 38 for substitution editing. The rules system then selects raw materials from the media segments database 54 according to the message template 56 and user profile 60 and combines them to form a completed personalized message 72 that is delivered to viewer 24." Haberman at 8:32-37. Haberman illustrates this rule based substitution in Figure 3 and Figure 4 ("rules based substitution editing"). Haberman teaches that the rule system "determines the appropriate media segments to insert into the insertable sequences 80 of the message template." *Id.* at 9:1-3; *see also id.* at 16:13-28 ("The message generator 145 provides the profile information 120 and message template 56 to the expert rules system 38, which is responsible for completing the message template 56 with selected media segments for each of the template."). Haberman provides examples of expert rules in the form of Lisp code in the appendix. *Id.* at 16:55-18:10. The first set of digital media assets are the default assets associated with the template. *Id.* at 8:55-58 ("In this presented embodiment, the predefined sequences are stored in the media segment database 26, and inserted at the appropriate locations in the message template 56.").

The second set of digital media assets are Haberman's selection of raw materials according to the message template and user profile. *Id.* at 8:64-9:3 ("The other sequences are insertable sequences 80, which are filled in as directed by the rule system 38. The rule system 38 receives information from the template database 35 regarding the message template 56 being assembled, and also receives the user profile information 22. The rule system then determines the appropriate media segments to insert into the insertable sequences 80 of the message template 56."). The combination of the selected assets and the default assets from which the personalized message is created is the user specific set of digital media assets.
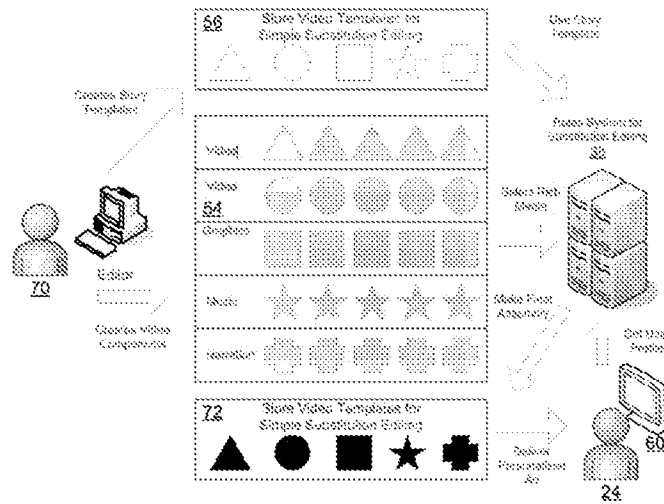
Fig. 3
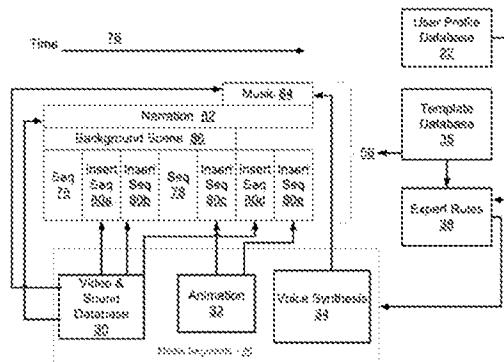
Fig. 4

Id., Figures 3-4.

The '030 Patent describes the same concept of creating a user specific set of digital media assets based on association rules to create a user specific set of digital media assets. The server in the '030 Patent "may develop the personalized digital media asset 212 from content 531 and the digital asset repository 541" by making requests to the digital asset repository for items "such as background images 200, foreground images 202, text 208, and branding graphics 206." '030 Patent at 12:4-6, 34-39. The server makes the request for items based on:

association rules [that] provide the ability to match digital media assets to an individual, through a correlation of the attributes of the asset with assets (sic) [attributes] of the individual in order to provide the highest level of impact. The correlation of the attributes may consist of summing the number of matching attributes, identifying key attributes, or providing a true/false test for one or more attributes. A relative weighting scheme may be incorporated into the correlation to give preference to or emphasize certain attributes. Correlation thus refers to the process of matching or selecting a digital media asset based on the overlap between the attributes of the individual and the asset, with the goal of having a greater narrative impact.

Id. at 7:56-67.

Additionally, Haberman describes another example in the form of a default message 102 which comprises a default of one specific version of the intended communication to be delivered. Haberman at 12:1-8. This default message then "provides the starting point for later construction of a message template 400 and resource library 300 from which the various personalized versions of the message are assembled." *Id.* at 12:8-10. Haberman teaches that the default message example 102 was created from a first set of digital media assets, and the personalized version of the message was assembled using a second set of digital media assets, which were a user specific set of digital media assets. *Id.*

The '030 Patent describes the same concept with its default experience 400, which a person of ordinary skill in the art would understand was created using a first set of digital media assets. '030 Patent at 11:3-5; Ex. Y, ¶ 63. The '030 Patent further describes an enhanced user profile 404 may be used in conjunction with the trigger points 320 to create a personalized experience 406, which a person of ordinary skill in the art would understand was created using a second set of digital media assets. '030 Patent at 11:8-10; Ex. Y, ¶ 64.

Furthermore, during prosecution of the related '822 Application, in a non-final office action dated February 1, 2018, the Examiner cited Haberman 8:25-37 and Figure 3 as disclosing similar claim language of the pending claims of the '822 Application: "perform a rule-based

substitution of one or more of the digital media assets from the first set of digital media assets with one or more of the digital media assets from the second set of digital media assets to create a user-specific set of digital media assets." Ex. M at 184.

Subsequently, during prosecution of the related '822 Application, in a final office action dated July 31, 2018, the Examiner again cited Haberman 8:25-37 and Figure 3 as disclosing similar claim language of the pending claims of the '822 Application: "performing, by the central processing unit, a rule-based substitution of one or more of the digital media assets from the first plurality of digital media assets with one or more of the digital media assets from the second plurality of digital media assets to create a user-specific plurality of digital media assets." Ex. M at 250.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

k.   1[k]: "creating, from the user specific digital media assets, a user specific composite digital media display; and"

Haberman discloses this limitation under both BRI and *Phillips*. The court construed this term to mean "creating, from the user specific digital media assets, a user specific composite digital media display that combines two or more digital media assets." Ex. V at 13. Haberman teaches that the "rules system then selects raw materials from the media segments database 54 according to the message template 56 and user profile 60 and combines them to form a completed personalized message 72 that is delivered to the viewer 24." Haberman at 8:33-37.

Id., Figure 3.

More specifically, Haberman teaches that "[t]he other sequences are insertable sequences 80, which are filled in as directed by the rule system 38. . . . The rule system then determines the appropriate media segments to insert into the insertable sequences 80 of the message template 56." *Id.* at 8:64-9:3; *see also* 16:13-28 (describing overall process for delivery of a personalized video to a user in the context of Figure 10). As illustrated in the annotated Figure 4 from Haberman below, the highlighted section is a user specific composite digital media display as it consists of the combination of the user specific insertable sequence 80a, the background scene 86, and the narration 82.

Id., Figure 4.

The '030 Patent describes the same concept of creating a user specific composite digital media display. Specifically, the '030 Patent describes that "the server 590 may develop the personalized digital media asset 212 from content 531 and the digital asset repository 541" where the server makes "asset requests" to the digital asset repository for "background images 200, foreground images 202, text 208, and branding graphics 206." '030 Patent at 12:4-6, 34-37.

FIG. 5A

Id., Figure 5A.

l.   **1[l]: "presenting to the user via the display server, the second composite digital media display."**

Haberman discloses this limitation under both BRI and *Phillips*. The court declined to construe this term, noting only that "presenting to the user" is not limited to "any particular mode of presenting, such as visual presentation." Ex. V at 17. The court construed the term "the second composite digital media display" to mean "the user specific composite digital media display." Ex. V at 25-26. As discussed above at VII.A.1.g, Haberman presents the user specific composite digital media display to the user. Haberman's personalized video stream, which includes an insertable media sequence along with a background element, is both a second and the user specific composite digital media display. Haberman at 5:46-48, 5:50-58.

Furthermore, during prosecution of the related '822 Application, in a non-final office action dated February 1, 2018, the Examiner cited Haberman 16:13-28 as disclosing similar claim language of the pending claims of the '822 Application: "transmit the second user-specific composite digital media stream to the second user." Ex. M at 182.

Subsequently, during prosecution of the related '822 Application, in a final office action dated July 31, 2018, the Examiner again cited Haberman 16:13-28 as disclosing similar claim language of the pending claims of the '822 Application: "transmitting, by the central processing unit, the user-specific composite digital media stream to the at least one user." Ex. M at 245.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

     m.   Claim 2: "The system of claim 1 wherein the first set of digital media assets includes one or more of a foreground image, a background image, or audio."

As discussed above Haberman discloses the video substitution limitations of claim 1. In addition, Haberman teaches that the first set of digital media assets includes a background image. "One or more libraries or databases 26 include media segments which are used to assemble the personalized message. The databases 26 include a compendium of elements that may be broadly categorized as graphics 28, video and sound segments 30, and animation 32. These media segments may be part of a general library of available material, for example pictures of individual city skylines, attractions, or natural scenery for use in backgrounds." Haberman at 7:6-13; *see also id.* at 5:49-58.
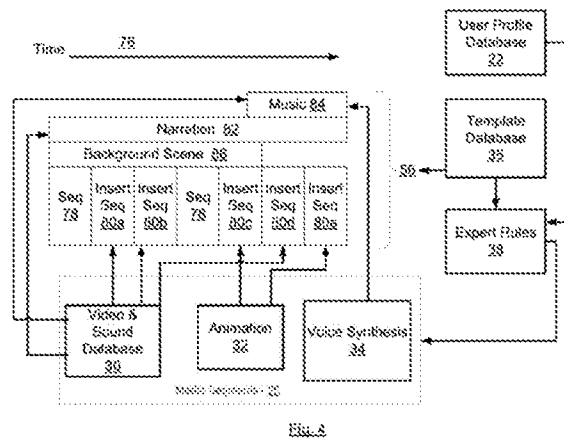
Id., Figure 4.

Haberman specifically teaches that "a background scene 86 such as a geographic landscape, is selected from the video and sound database 30 and used as a common background for the predefined segments 78 while insertable segments 80 are added to the message template." *Id.* at 9:18-22.

The '030 Patent describes the same concept. Specifically, the '030 Patent explains that "[a] digital asset repository 541 may receive asset requests 540 from the server 590 and may

provide items such as background images 200, foreground images 202, text 208, and branding graphics 206." '030 Patent at 12:34-37.

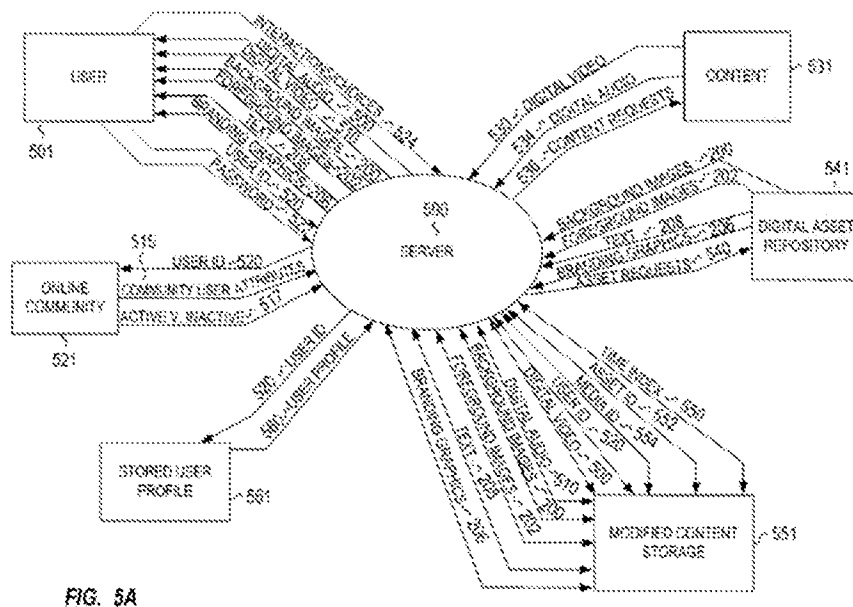Furthermore, during prosecution of the related '822 Application, in a non-final office action dated February 1, 2018, the Examiner cited Haberman 5:49-58 and 7:8-13 as disclosing similar claim language of the pending claims of the '822 Application: "wherein the first set of digital media assets includes one or more of a foreground image, a background image, or audio." Ex. M at 185.

Subsequently, during prosecution of the related '822 Application, in a final office action dated July 31, 2018, the Examiner cited again Haberman 5:49-58 and 7:8-13 as disclosing similar claim language of the pending claims of the '822 Application: "wherein the first plurality of digital media assets includes one or more of a foreground image, a background image, or audio." Ex. M at 263-64.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

2. [SNQ 1]: Haberman in View of Hupert-Graff Discloses the User Social Network Information Limitations of Claim 1

As set forth below, all elements of claim 1 of the '030 Patent are satisfied by the combination of Haberman in view of Hupert-Graff. Each element of claim 1 is disclosed, taught, or suggested by the teachings of Haberman incorporating the community profiles and real-time tracking of user activity of Hupert-Graff. As set forth above, Haberman discloses the video substitution limitations of the '030 Patent, and as explained in detail below, Haberman in view of Hupert-Graff discloses the allegedly novel limitations of the '030 Patent. Additionally, an

explanation of why a person of ordinary skill in the art at the time of the alleged invention would have been motivated to combine Haberman and Hupert-Graff with a reasonable expectation of success is explained demonstrating the obviousness of the Challenged Claims.

> a. **Motivation to Combine Haberman and Hupert-Graff with a Reasonable Expectation of Success**

Haberman and Hupert-Graff are in related fields and are both directed toward providing personalized individualized recommendations and/or experiences, and thus can be applied in an obvious combination. Ex. Y, ¶¶ 123-33; *see also Unwired Planet LLC v. Google, Inc.*, 841 F.3d 995, 1000, (Fed. Cir. 2016) ("Prior art is analogous and can be applied in an obviousness combination if it either (1) 'is from the same field of endeavor, regardless of the problem addressed or (2) 'is reasonably pertinent to the particular problem with which the inventor is involved.'"). Patent Owner, in its opposition to Requestor's Motion to Dismiss based on *Alice*, characterized the problem that the '030 Patent was trying to solve as improving the selection of media for a user: "[a]s technology was evolving, advertisers were confronted with the use of technology to avoid advertisements, e.g. by stopping pop-up ads or skipping over the ads. None of these systems, however, addressed how technology could be used to understand the individual's likes or dislikes or the individual's current mood to more appropriately adapt the content for the individual," i.e., a better recommendation system. Ex. W, at 4; *see also Unwired* 842 F.3d at 1001 ("The field of endeavor of a patent is not limited to the specific point of novelty, the narrowest possible conception of the field, or the particular focus within a given field."). Haberman is specifically directed toward "a system for creating personalized messages based on user information." Haberman at 1:7-9. Likewise, Hupert-Graff teaches providing personalized recommendations that include the "most relevant data content and services available fitting his preferences, habits, and tastes." Hupert-Graff at Abstract, p. 1.

Haberman describes its user profile broadly: "[t]his user profile database 22 can be in any form, including a proprietary database of information owned by one entity, or publicly available information at one or at multiple locations, including information from user interactions on web sites or shopping networks." Haberman at 6:55-59. Additionally, Haberman also teaches an automated dynamic message assembly based upon "entity and environmental factors that are in constant flux, yet combined in a manner that addresses the communicative objectives of the campaign." *Id.* at 5:8-12. Haberman further describes message creation "with story-driven message assembly tailored to the individual and any combination of information known about the target viewer and the present environment." *Id.* at 5:27-31. Haberman obtains current environment information by constantly polling the information channels, including the internet, a private internet or intranet, etc. *Id.* at 11:33-40. Thus, Haberman teaches customizing the messages based on information received about users' interactions and behaviors in environments both internal and external to the system. Haberman further describes overcoming deficiencies in prior art, such as those in a "customer relationship management (CRM) solution[]" that personalizes offerings based on information gathered about consumers by asking questions, tracking navigation and purchasing behavior, as well as elsewhere. *Id.* at 3:47-56.

Hupert-Graff is directed toward providing personalized recommended content to a user based on user preferences. Hupert-Graff at p. 1, Abstract. Hupert-Graff describes that its recommendation engine makes recommendations for passive multimedia presentations *e.g.*, TV or radio programs (claim 2) and/or interactive multimedia applications *e.g.*, interactive TV programs, games etc. (claim 3). Like Haberman, Hupert-Graff identified a deficiency in the prior art that providing recommendations to users historically required significant input by the user. *See* Hupert-Graff at 2-3. Haberman similarly identified a deficiency in the prior art that required the

user to interact with the viewed program to determine user preferences. Haberman at 2:65-67 ("As with other version of this approach, the user must intentionally interact with the program to select the preferences."). Haberman suggests retrieving information about the user from other sources, and specifically teaches that user profile information could come from "user interactions on web sites." *Id.* at 6:55-59. Likewise, Hupert-Graff also recognizes and teaches that user social network information in the form of a community profile based on the history and interactions of all users in the community can be used to determine user preferences. Hupert-Graff at p. 8, l. 9 – p. 9, l. 4, Claim 13, Fig. 4. Hupert-Graff also explicitly teaches that monitoring the user's activity in real time, including "community activities like Internet forums" and "chatting activities through the Internet," can be used to determine user preferences as well. *Id.* at p. 12, ll. 1-13.

A person of ordinary skill in the art would have been motivated to incorporate retrieving additional information about the user, and more specifically environmental information and data that is updated frequently. Ex. Y, ¶¶ 130-33. For example, a person of ordinary skill in the art would have been motivated to include Hupert-Graff's real-time monitoring within Haberman's system because it would have been beneficial to collect the latest information about a user's interactions to create individualized and personalized multimedia messages, stories, or advertisements, based on the user attributes found in Hupert-Graff's system. Ex. Y, ¶ 130. Likewise, Haberman teaches collecting real-time information about a user's environment on the public Internet or private internets or intranets. Haberman at 11:33-40. A person of ordinary skill in the art would have known that using Hupert-Graff's system overcomes the deficiencies of the prior art that used only the user's interactions with the presented media to collect information regarding the user profile. Ex. Y, ¶ 131. Doing so would have incorporated a known technique (Hupert-Graff's external community profiles and real-time monitoring of chatting activities

through the internet) to improve Haberman's personalized selection system, in the same way Hupert-Graff uses the external community profiles and real-time monitoring to update and improve its recommendation and selection engine. Ex. Y, ¶ 131-32; *see also KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 417-18 (2007); *see also Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1380-81 (Fed. Cir. 2023) ("There is a motivation to combine when a known technique 'has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way,' using the 'prior art elements according to their established functions.'") (cleaned up); *Unwired Planet LLC v. Google Inc.*, 841 F.3d 995, 1003 (Fed. Cir. 2016) (finding motivation to combine two references under *KSR's* known technique rationale stating: "[f]or the technique's use to be obvious, the skilled artisan need only be able to recognize, based on her background knowledge, its potential to improve the device and be able to apply the technique" to combination of prior art references where the first reference searched for information based on location and the second reference provided an improvement on how to present the information). The benefit of using Hupert-Graff's community profiles and real-time monitoring of the user's internet activities to obtain user social network information for use in obtaining better more personalized content in Haberman's system would have been apparent to a person of ordinary skill in the art, because Haberman suggested such information could be obtained from "user interactions on web sites," and from collecting information about a user's environment from the Internet and/or private internet or intranet. Haberman at 6:55-59; 11:33-40; Ex. Y, ¶ 130. Moreover, creating and presenting more personalized content without requiring user input would have provided the benefit of at least longer and more interested user engagement and creating an enhanced interaction by moving closer to a "one-to-one" relationship with the user. *See* Haberman at 3:39-43 ("On the Internet, where many traditional factors associated with

purchasing decisions become less relevant, the ability to establish a one to one relationship with a consumer is paramount. Similarly, it is most desirable to offer, if possible, service and products reflecting that one-on-one relationship."); Hupert-Graff at pp. 3, ll. 18-22 ("It is thus another object of the invention to provide the media suppliers with method and system for personalizing and managing their information and services to achieve efficient transformation and regulation of content to their clients, thus supporting the rapidly changing environment of technology improvements."); *see also* '030 Patent at 3:63-67 ("One advantage of an embodiment of the method, system, and software presented herein is that the user is presented with an enhanced experience of the creator's content that creates a greater emotional experience for the user and more impactful narrative.").

A person of ordinary skill in the art would have reasonably expected success in using Hupert-Graff's community profiles and real-time monitoring to select insertable media features into Haberman's system. Ex. Y, ¶ 132-33. Like Hupert-Graff, Haberman's system is a multi-user system designed to present media segments to multiple users. Haberman at 7:59-62 ("As the present invention facilitates real-time creation, personalized messages to individuals may be delivered in many different ways, based on the user profile."). Those users may be related and have similar interests, "demographics, address, monetary income, political affiliations, known preferences, buying patterns etc." *Id.* at 6:61-64. Hupert-Graff also describes classifying users into different community categories based on the user's personal characteristics. Hupert-Graff at p. 8, ll. 11-16. Hupert-Graff's community profiles and real-time monitoring of chatting can be used to help select which insertable media to present to the user in Haberman's system as well. Hupert-Graff states that its invention "relates to the field of electronic information and media systems and, in particular, to a method and a system for automatically determining and

dynamically configuring customized and personalized recommendation content lists according to user preferences, habits and taste in a global information super highway network." Hupert-Graff at p. 1. A person of ordinary skill in the art would have reasonably expected success because using community profiles based on external user social network information and real-time monitoring to make recommendations and selections was known in the art. *Id.* at p. 8, l. 9 – p. 9, l. 4, p. 12, ll. 4-6; Ex. Y, ¶ 133.

Accordingly, a person of ordinary skill in the art would have been motivated to use Hupert-Graff's external community profiles and real-time monitoring in Haberman's system to help select the insertable media segment with a reasonable expectation of success. Ex. Y, ¶ 133.

b.   1[g]: "retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes;"

Haberman in view of Hupert-Graff discloses this limitation under both BRI and *Phillips.* The court construed the term "user social network information" to mean "information derived from a user's interactions in an online community." Ex. V at 21. The court further construed the term "retrieving user social network information from at least one source external to the presented first composite digital media display" to mean "retrieving user social network information from at least one source other than the presented first composite digital [media] display." Ex. V at 22. As discussed above, a person of ordinary skill in the art would have been motivated to combine Haberman with Hupert-Graff to use Hupert-Graff's additional information about the user from the community profiles (generated from external social network information) and Hupert-Graff's real-time monitoring of Internet forums and Internet chatting (external user social network interactions in an online community) to make recommendations about new content. Moreover, Haberman specifically suggests that "[t]he expert rules 38 system is capable of interpreting user profile data

from many different sources and in many different formats." Haberman at 7:44-47. Hupert-Graff

provides two data sources for additional user profile data—online community profiles and real-

time monitoring of Internet activity including users chatting online.

Hupert-Graff's community profiles are derived from a user's interaction in an online

community. For example, Hupert-Graff teaches that "[e]ach user is classified into different

community categories according to the reported personal details and his history activities. For

example, the user community categorization can be defined according to his mother tongue and

dedicated passion for watching nature films." Hupert-Graff at p. 8, ll. 11-14 (emphasis added).

Hupert-Graff further explains that "all available content and services are processed by a dynamic

set of filtering/matching systems, based upon user history and PDP (Personal Dynamic Profile),

provider inputs, the history of the entire users community etc." *Id.* at p. 8, ll. 17-20. More

specifically, Hupert-Graff teaches that its Dynamic Recommendations System (DRS) updates both

the community profiles and user profiles using the Dynamic Profile Update (DPU), according to

the history collected and analyzed. *Id.* at p. 7, l. 18 – p. 8, l. 3. In other words, Hupert-Graff's

community profiles are a function of the activity of all users that belong to that community, and

the community profile is updated to represent the community's preferences "according to time

schedule, content and services types, and pre-defined categories indicating the [community's]

favorite subjects of interest or [community] attitude to different styles e.g. action movies." *Id.* at

p. 8, l. 21 – p. 9, l. 3.

Fig. 4

Id., Figure 4.

Hupert-Graff's analysis of the real-time activities of the user with respect to Internet forums and Internet-based chat is also information derived from a user's interactions in an online community. Hupert-Graff teaches that the "DRS online system is tracking in real-time user current activities" that could include "community activities like Internet forums, . . . chatting activities through the Internet" basically "all recorded user selections and activities while watching and communicating via the Interactive device." *Id.* at p. 12, l. 5, p. 12, ll. 8-9, p. 12, ll. 16-17. Internet forums and Internet chatting are examples of where an how users interact in an online community. Hupert-Graff explains that the user history is "analyzed and organized to determine the user behavioral profile" and used to update the user profile to improve the recommendation system's ability to recommend items. *Id.* at p. 12, l. 20 – p. 13, l. 3. Hupert-Graff's analysis to produce a behavioral profile is information derived from a user's interactions in an online community.

Fig. 6

Id., Figure 6.

Hupert-Graff's community profiles and real-time monitoring are sourced from the user's

interactions in an online community, and specifically from members of the user's social network

that belong to the same community profile, or browse and interact with the same Internet forum,

or participate in Internet chatting with the user. Hupert-Graff explicitly claims "[c]reating a third

profile ('Community Profile') of users where the profile features evaluations are based upon

matching the user history log and Personal Profile to relevant history logs and personal profile of

other users." *Id.* at p. 19, claim 13 (emphasis added). Hupert-Graff also provides examples of

user interaction over a social network such as chatting:

> For example, in case the system detect frequent successive activities like engaging
> in a chat during certain TV shows, this behavior pattern is recorded in the respective
> PDP parameters. Thus next time the user performs an anterior activity the
> successive activity will be evaluated accordingly. The recognized pattern is not
> limited to schedule relations or direct associations between two activities.

Id. at p.13, l. 20 – p. 14, l. 2; *see also id.* at p. 2, ll. 12-15 ("More over this new media enables interactive interface with the user creating a new platform for interactive activities, e.g. e-commerce, interactive multimedia shows, chatting and messaging activities games etc."). The user's social network including those that are members of the same community, others that participate in the same Internet forum or Internet chatting, and are from a source other than Haberman's or Hupert-Graff's presented first composite digital media display and are examples of an external social network. Finally, Hupert-Graff also teaches that its learning system "can be implemented as a central service application located at gateway servers or partly as add-ons application (WG user interaction model) at the user communication device, or any combination [of] these implementations." *Id.* at p. 7, ll. 14-17. At the very least, to the extent that the learning system is at the user's communication device, it must communicate with other users that are external to the recommendation system in order to update the community profile based on other users. *Id.* at p. 19, claim 13.

Hupert-Graff's system generates a user attribute in the form of a "scoring rate" or "relevancy rate" for content based at least in part on the community profiles and real-time monitoring. *Id.* at p. 4, l. 15, Fig. 4. Hupert-Graff teaches that its recommendation system evaluates:

> the available content and services as a function of their relevance to the Behavioral Profile by comparing the Content and Services Attributes to relevant PDP parameters; scoring ("Scoring Rate") the available Content and services as a combination of the said PDP Evaluation; and conducting a first selection ("Recommendation List") of available content and services according to said Scoring Rate.

Id. at p. 4, ll. 12-17.
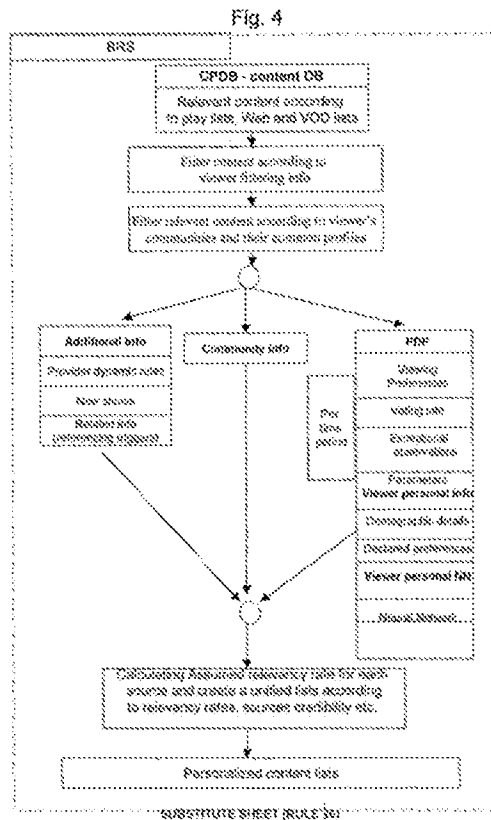
Fig. 4

Id., Figure 4.

A person of ordinary skill in the art would have recognized that Hupert-Graff complements Haberman's personalization system, and would have been motivated to use Hupert-Graff's community profiles and real-time monitoring to make recommendations or selections of media for personalization. Ex. Y, ¶¶ 123-33.

> c.   1[h]: "selecting, based on the user attributes in the social network information, a second set of digital media assets, wherein the second set of digital media assets is associated with one or more user attributes found in the user social network information;"

Haberman in view of Hupert-Graff discloses this limitation under both BRI and *Phillips.* As discussed above, a person of ordinary skill in the art would have been motivated to combine Haberman with Hupert-Graff to use Hupert-Graff's community profiles and real-time monitoring to make recommendations about new content.

Haberman in view of Hupert-Graff teaches using Hupert-Graff's user attribute sourced from user social network information to select a second set of digital media assets associated with the user attribute. Specifically, Haberman teaches that "[u]ser profiles 60 about the user 24 are obtained and fed to a rules system 38 for substitution editing. The rules system then selects raw materials from the media segments database 54 according to the message template 56 and user profile 60 and combines them to form a completed personalized message 72 that is delivered to viewer 24." Haberman at 8:32-37; *see also id.* Figs. 6–7, 4:44-49 ("Specific media segments are selected and merged according to the message template and information about the viewer derived from a user profile. The information from the user profile is interpreted by an expert rule system to determine which of several potential media segments to select for use in the personalized message."). A person of ordinary skill in the art would have found it obvious to use Hupert-Graff's user attribute as a basis for the rules system's substitution editing and selection of raw materials from the media segments database. Ex. Y, ¶¶ 130-31. Specifically, Haberman teaches that the rules systems selects raw materials, *e.g.,* a set of digital media assets, based on the user profile. The Haberman-Hupert-Graff system selects raw materials based on Hupert-Graff's user attribute that computes a scoring rate as a function of the relevancy of the content to the user's profile. The process of selecting the various raw materials from the media segments database is the same as selecting a second set of digital media assets.
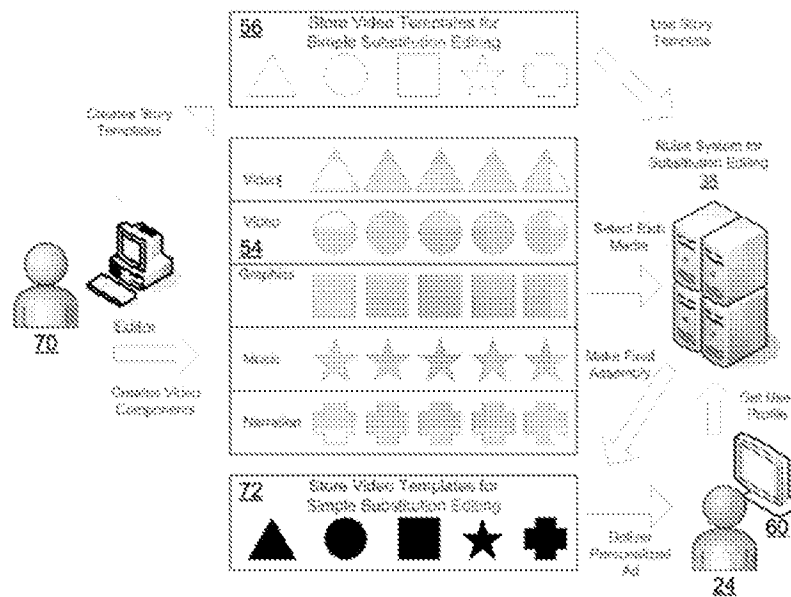
Fig. 3

Haberman, Figure 3.

This is the same as described in the '030 Patent. The '030 Patent describes user attributes as "aspects, characteristics, and qualities of the user that are useful for determining (matching, correlating, and **selecting**) digital media assets." '030 Patent at 6:32-34 (emphasis added). The '030 Patent explains that:

> the user profile can then be used to present the most appropriate digital assets to the subscriber, namely those with which the user has the highest affinity, or those which map well to the user's tendencies and temperament, which may be included in the user's internal narrative perception identification framework. The internal narrative perception identification framework may include a collection of attributes, qualities, and measurements regarding the user that allow for matching, correlation and/or selection of digital media assets that are appropriate for that user and the effective communication of the message.

'030 Patent at 3:42-53. Just like Haberman, the server in the '030 Patent "may develop the personalized digital media asset 212 from content 531 and the digital asset repository 541." '030 Patent at 12:4-6. To accomplish this, the "digital asset repository 541 may receive asset requests

540 from the server 590 and may provide items such as background images 200, foreground images 202, text 208, and branding graphics 206." '030 Patent at 12:34-37.

During prosecution of the related '822 Application, in a non-final office action dated February 1, 2018, the Examiner cited Haberman 4:44-49 as disclosing similar claim language of the pending claims of the '822 Application: "select a second set of digital media assets, wherein at least a portion of the second set of digital media assets is associated with one or more user attributes found in the user information." Ex. M at 180.

During prosecution of the related '822 Application, in a final office action dated July 31, 2018, the Examiner again cited Haberman 4:44-49 as disclosing similar claim language of the pending claims of the '822 Application: "selecting, by the central processing unit, a second plurality of digital media assets, wherein at least a portion of the second plurality of digital media assets is associated with one or more user attributes found in the user information." Ex. M at 245.

3. **[SNQ 2]: Haberman in View of Gutta Discloses the User Social Network Information Limitations of Claim 1**

As set forth below, all elements of claim 1 of the '030 Patent are satisfied by the combination of Haberman in view of Gutta. Each element of claim 1 is disclosed, taught, or suggested by the teachings of Haberman incorporating the third-party recommendations of Gutta. As set forth above, Haberman discloses the video substitution limitations of the '030 Patent, and as explained in detail below, Haberman in view of Gutta discloses the allegedly novel limitations of the '030 Patent. Additionally, an explanation of why a person of ordinary skill in the art at the time of the alleged invention would have been motivated to combine Haberman and Gutta with a reasonable expectation of success is explained demonstrating the obviousness of the Challenged Claims.

a. **Motivation to Combine Haberman and Gutta with a Reasonable Expectation of Success**

Haberman and Gutta are in related fields and are both directed toward providing personalized individualized recommendations and/or experiences and thus can be applied in an obvious combination. Ex. Y, ¶¶ 140-48. *See Unwired Planet LLC v. Google, Inc.*, 841 F.3d 995, 1000 (Fed. Cir. 2016) ("Prior art is analogous and can be applied in an obviousness combination if it either (1) 'is from the same field of endeavor, regardless of the problem addressed or (2) 'is reasonably pertinent to the particular problem with which the inventor is involved.'"). Patent Owner, in its opposition to Requestor's Motion to Dismiss based on *Alice*, characterized the problem that the '030 Patent was trying to solve as improving the selection of media for a user: "[a]s technology was evolving, advertisers were confronted with the use of technology to avoid advertisements, e.g. by stopping pop-up ads or skipping over the ads. None of these systems, however, addressed how technology could be used to understand the individual's likes or dislikes or the individual's current mood to more appropriately adapt the content for the individual," i.e., a better recommendation system. Ex. W, at 4; *see also Unwired* 842 F.3d at 1001 ("The field of endeavor of a patent is not limited to the specific point of novelty, the narrowest possible conception of the field, or the particular focus within a given field."). Haberman is specifically directed toward "a system for creating personalized messages based on user information." Haberman at 1:7-9. Gutta is directed toward providing television programming recommendations. Gutta at Abstract, 1:8-13. The Examiner noted that a person of ordinary skill in the art looking to improve recommendation systems like Haberman would have looked to references that used an electronic programming guide (like Gutta), in his reasons for allowance of the '030 Patent. Ex. L at 215.

Haberman describes its user profile broadly: "[t]his user profile database 22 can be in any form, including a proprietary database of information owned by one entity, or publicly available information at one or at multiple locations, including information from user interactions on web sites or shopping networks." Haberman at 6:55-59. Additionally, Haberman also teaches an automated dynamic message assembly based upon "entity and environmental factors that are in constant flux, yet combined in a manner that addresses the communicative objectives of the campaign." *Id.* at 5:8-12. Haberman further describes message creation "with story-driven message assembly tailored to the individual and any combination of information known about the target view and the present environment." *Id.* at 5:27-31. Haberman obtains current environment information by constantly polling the information channels, including the internet, a private internet or intranet, etc. *Id.* at 11:33-40. Thus, Haberman teaches customizing the messages based on information received about users' interactions and behaviors in environments both internal and external to the system. Haberman further describes overcoming deficiencies in prior art, such as those in a "customer relationship management solution (CRM)" that personalizes offerings based on information gathered about consumers by asking questions, tracking navigation and purchasing behavior, as well as elsewhere. *Id.* at 3:48-56.

Gutta is directed toward providing personalized television programming recommendations based on user preferences and selected third-party recommenders. Gutta at 3:11-21. Haberman identified a deficiency in the prior art that required the user to interact with the viewed program to determine user preferences. Haberman at 2:65-67 ("As with other version of this approach, the user must intentionally interact with the program to select the preferences."). Haberman suggests retrieving information about the user from other sources, and specifically teaches that user profile information could come from "user interactions on web sites." *Id.* at 6:55-59. Likewise, Gutta

also recognizes and teaches information derived from a user's interactions in an online community in the form of selected third-party recommenders that can be used to adjust recommendations for a user. Gutta at 2:19-25 ("Thus, a given recommender evaluates the viewing or purchase habits of a user and communicates with one or more other recommenders to determine the items that are being recommended by such other recommenders. The third-party recommendations reflect the viewing or purchase habits of one or more third parties."). Gutta explicitly teaches that the selected third-party recommender could be "a friend, colleague or trendsetter." *Id.* at 2:63-64. Gutta acknowledges that "[o]nline retailers, such as Amazon.com, employ collaborative filtering techniques to recommend additional items to a customer based on selections made by other people who purchased the same item"—but that such a collaborative filtering system was unable "to recommend television programs or other items of interest based on recommendations made to a selected third party, such as a friend, colleague or trendsetter." *Id.* at 1:45-57. Gutta teaches that the user and these third party recommenders communicate in an online community as they exchange recommendations through any "wired or wireless link." *Id.* at 2:65-67. Gutta addressed this issue by allowing the user to pick and choose which of those third parties from the online community that would become recommenders.

Each of those third parties and their recommendations is an example of information derived from a user's interactions in an online community and contains user attribute information regarding which shows that they like and are recommending. Gutta provides a source of additional information that comes from third parties. Furthermore, the third parties must be selected by the user—the act of selecting specific third-party recommenders by the user, and exchanging recommendations through a "wired or wireless link" is an example of the user interacting with the online community by indicating from which third parties, *e.g.*, friends, colleague, or trendsetter,

the user listens, follows, and/or wants to and does receive recommendations. *Id.* at claim 1 ("receiving a selection of at least one third party [sic] recommender from said user"); 5:31-34 ("In one implementation, the programs that are highly recommended for the ***selected one or more third parties*** can be highlighted when presented during step 480.") (emphasis added).

A person of ordinary skill in the art would have been motivated by Haberman to incorporate retrieving the third-party recommendations from Gutta's recommendation system for use within Haberman's system to create individualized and personalized multimedia messages, stories, or advertisements, based on the third-party recommendations from Gutta's system. Ex. Y, ¶¶ 141-46. A person of ordinary skill in the art would have understood that using Gutta's third-party recommendations overcomes the deficiencies of the prior art that used only the user's interactions with the presented media to collect information regarding the user profile. Ex. Y, ¶ 146. Doing so would have incorporated a known technique (Gutta's external third-party recommendations) to improve Haberman's personalized selection system to select more tailored, specific, and individualized media segments, and to create a closer one-to-one relationship with the provider of a product and the user as desired in Haberman, in the same way Gutta uses the third-party recommendations. *See KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 417-18 (2007); *see also Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1380-81 (Fed. Cir. 2023) ("There is a motivation to combine when a known technique 'has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way,' using the 'prior art elements according to their established functions.'") (cleaned up); *Unwired Planet LLC v. Google Inc.*, 841 F.3d 995, 1003 (Fed. Cir. 2016) (finding motivation to combine two references under *KSR's* known technique rationale stating: "[f]or the technique's use to be obvious, the skilled artisan need only be able to recognize, based on her background

knowledge, its potential to improve the device and be able to apply the technique" to combination of prior art references where the first reference searched for information based on location and the second reference provided an improvement on how to present the information in an ordered fashion). Gutta explicitly states that its purpose is for "recommending items of interest, . . . to a particular user based on items that have been recommended to one or more third parties." Gutta at 1:8-13. The benefit of using Gutta's third-party recommendations in Haberman would have been apparent to a person of ordinary skill in the art, because Haberman suggested such information could be obtained from "user interactions on web sites," and from collecting information about a user's environment from the Internet and/or private internet or intranet. Ex. Y, ¶¶ 146-47; Haberman at 6:55-59; 11:33-40. Moreover, creating and presenting better and more personalized content without requiring user input would create a closer one-on-one relationship between the provider/advertiser and the user and have provided the benefit of at least longer and more interested user engagement. *See* Haberman at 3:39-43 ("On the Internet, where many traditional factors associated with purchasing decisions become less relevant, the ability to establish a one to one relationship with a consumer is paramount. Similarly, it is most desirable to offer, if possible, service and products reflecting that one-on-one relationship."); *see also* '030 Patent at 3:63-67 ("One advantage of an embodiment of the method, system, and software presented herein is that the user is presented with an enhanced experience of the creator's content that creates a greater emotional experience for the user and more impactful narrative.").

A person of ordinary skill in the art would have reasonably expected success in using Gutta's third-party recommendations to select insertable media features in Haberman's system. Ex. Y, ¶¶ 146-48. Like Gutta, Haberman's system is a multi-user system designed to present media segments to multiple users. Haberman at 7:59-62 ("As the present invention facilitates real-

time creation, personalized messages to individuals may be delivered in many different ways, based on the user profile."). Those users may be related and have similar interests, "demographics, address, monetary income, political affiliations, known preferences, buying patterns etc." *Id.* at 6:61-64. Gutta also describes using both implicit and explicit sources of information to generate user profiles and preference information about the user:

> Generally, television program recommendation tools obtain the viewer preferences using implicit or explicit techniques, or using some combination of the foregoing. Implicit television program recommendation tools generate television program recommendations based on information derived from the viewing history of the viewer, in a non-obtrusive manner. Explicit television program recommendation tools, on the other hand, explicitly question viewers about their preferences for program attributes, such as title, genre, actors, channel and date/time, to derive viewer profiles and generate recommendations.

Gutta at 1:31-41. Gutta extends this idea to make recommendations that are "influenced by recommendations generated by one or more third parties, such as a friend, colleague or trendsetter." *Id.* at 1:67-2:4. This is exactly the type of information Haberman contemplated using when it discussed "including information from user interactions on web sites or shopping networks." Haberman at 6:55-59. Additionally, both Haberman and Gutta use purchasing history as components of their recommendation systems, and a person of ordinary skill in the art who was aware of Haberman would have been motivated to find references like Gutta that describe recommendation systems that use purchasing history as a component of how they recommend items. Haberman at 6:61-64 ("buying patterns"); Gutta at 2:53-58 ("purchase history"). Ex. ¶¶ 66, 144-146. A person of ordinary skill in the art would have reasonably expected success because Gutta's use of third-party recommendations in a recommendation system was known in the art. Ex.Y, ¶¶ 144, 148; Gutta at 1:65-2:29, Fig. 1, Fig. 4.

Accordingly, a person of ordinary skill in the art would have been motivated to use Gutta's third-party recommendations in Haberman's system to help select the insertable media segment with a reasonable expectation of success. Ex. Y, ¶ 148.

b.   1[g]: "retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes;"

Haberman in view of Gutta discloses this limitation under both BRI and *Phillips*. The court construed the term "user social network information" to mean "information derived from a user's interactions in an online community." Ex. V at 21. The court further construed the term "retrieving user social network information from at least one source external to the presented first composite digital media display" to mean "retrieving user social network information from at least one source other than the presented first composite digital [media] display." Ex. V at 22. As discussed above, a person of ordinary skill in the art would have been motivated to combine Haberman with Gutta to use Gutta's third-party recommendations to make recommendations about new content in Haberman's system. Moreover, Haberman specifically suggests that "[t]he expert rules 38 system is capable of interpreting user profile data from many different sources and in many different formats." Haberman at 7:44-47. Gutta provides an external data source for making recommendations—third-party recommendations that can be sourced from a "wired or wireless link" demonstrating that the information is external to Gutta's recommendation system and is other than both Gutta's and Haberman's presentation of media content.
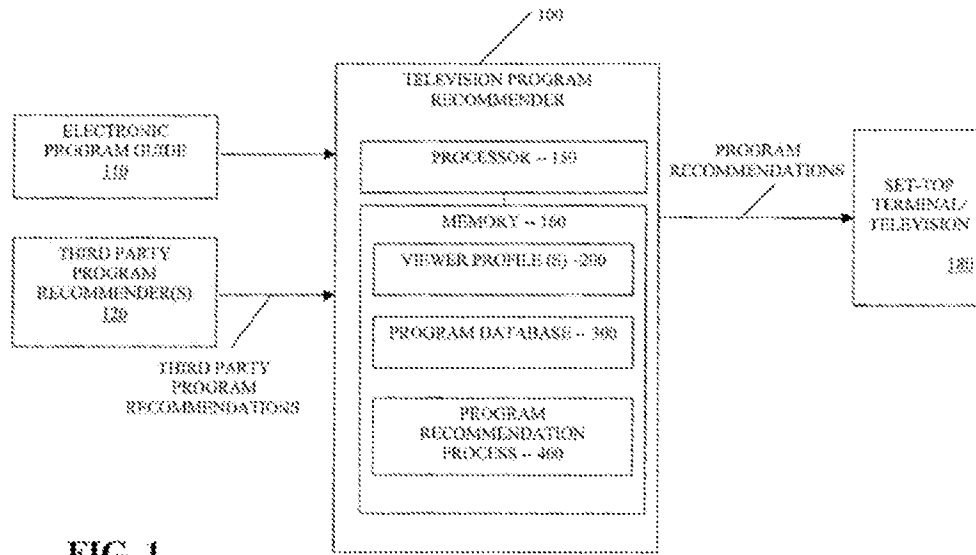
FIG. 1

Gutta, Figure 1.

Gutta's third-party recommendations is information derived from a user's interactions in an online community. For example, Gutta teaches that the third-party recommendations come from "a friend, colleague or trendsetter." Gutta at 2:59-67. Gutta teaches that the user **selects** the third parties from whom the user wants to receive recommendations, and the exchange of recommendations occur online, through a wired or wireless link. *Id.* A person of ordinary skill in the art would understand this exchange of recommendations creates an online community. Ex. Y, ¶ 144. Recommendations from each of these would be an example of information derived from a user's interactions in an online community, as friends and colleagues are known to be elements of a person's personal and professional social network. Additionally well-known trendsetters or influencers are often monitored and imitated by their followers forming a social network focused on the trendsetter. Furthermore, the users of Gutta's system must select which "friend[s], colleague[s], or trendsetter[s]" that the user wants the recommendation system to take third-party recommendations from. Gutta at 1:54-57; 5:18-23; 5:31-34; claim 1 (collectively, indicating that

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the user must select the third-party recommender). This selection of third-party recommenders by the user is an example of information derived from the user's interactions in an online community. Gutta explicitly refers to the information received from the third-party recommenders as coming from a "wired or wireless link" meaning that the network of third-party recommenders is online.

The users of Gutta's system, including the third-party recommenders, interact with each other. Gutta teaches that "[a] given recommender evaluates the viewing or purchasing habits of a user and *communicates* with one or more other recommenders to determine the items that are being recommended by such other recommenders. The third-party recommendations reflect the viewing or purchase habits of one or more third parties." Gutta at 2:19-25 (emphasis added). Finding and watching programs that others have watched to stimulate conversation and interaction is a goal that Gutta explicitly describes: "many individuals often wish that they had watched a television program that was watched by a friend or colleague." Gutta at 1:52-54.

Gutta's third-party recommendations also contain user attribute information. Gutta describes that the recommendation information could be "a top-N list of recommendations . . . and may optionally include a recommendation score and an indication of whether or not the third party actually watched or recorded the recommended program." *Id.* at 3:1-6. The additional information includes the user attribute of at least whether or not the program was actually watched and the third party's recommendation score for that program, which is an indication of whether or not the third party liked the program. This information falls within the '030 Patent's description of user attributes as including "aspects, characteristics, and qualities of the user . . . [and] may include characteristics such as affinities, likes or dislikes." '030 Patent at 6:32-38.

Gutta also calculates an adjusted recommendation score based on the user social network information obtained from the third-party recommenders. Specifically, Gutta teaches that "[a]n

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adjusted program recommendation score, A, is calculated during step 450 for each program in the

time period of interest as follows:

$$A \approx \frac{\sum_{1}^{n} P}{n},$$

where n is the number of recommenders contributing recommendation scores." Gutta at 5:6-17.

Gutta describes its algorithm in Figure 4 reproduced below, where the electronic program guide

provides the initial information about available shows, and then adjusted program

recommendations are calculated based on the third-party recommendations. Gutta at 4:62-5:40.

FIG. 4

Id., Figure 4. Specifically, the adjusted program recommendation scores are presented to the user in step 480. Gutta at Fig. 4; 5:28-31.

A person of ordinary skill in the art would have recognized that Gutta complements Haberman's personalization system, and would have been motivated to use Gutta's third-party recommendations to make selections of media for personalization. Ex. Y, ¶¶ 145-46.

c. **1[h]: "selecting, based on the user attributes in the social network information, a second set of digital media assets, wherein the second set of digital media assets is associated with one or more user attributes found in the user social network information;"**

Haberman in view of Gutta discloses this limitation under both BRI and *Phillips*. As discussed above, a person of ordinary skill in the art would have been motivated to combine Haberman with Gutta to use Gutta's third-party recommendations to make recommendations about new content.

Haberman in view of Gutta teaches using Gutta's third-party recommendations to select a second set of digital media assets associated with the user attribute. Specifically, Haberman teaches that "[u]ser profiles 60 about the user 24 are obtained and fed to a rules system 38 for substitution editing. The rules system then selects raw materials from the media segments database 54 according to the message template 56 and user profile 60 and combines them to form a completed personalized message 72 that is delivered to viewer 24." Haberman at 8:32-37; *see also id.* Figs. 6-7, 4:44-49 ("Specific media segments are selected and merged according to the message template and information about the viewer derived from a user profile. The information from the user profile is interpreted by an expert rule system to determine which of several potential media segments to select for use in the personalized message."). A person of ordinary skill in the art would have found it obvious to use Gutta's third-party recommendations as a basis for the Haberman's rules system's substitution editing and selection of raw materials from the media

segments database. Ex. Y, ¶¶ 143-47. Specifically, Haberman teaches that the rules systems

selects raw materials, *e.g.*, a set of digital media assets, based on the user profile. The Haberman-

Gutta system selects raw materials based on Gutta's third-party recommendations that contain user

attributes, including for example, Gutta's top-N list of recommendations or Gutta's adjusted

recommendation score. The process of selecting the various raw materials from the media

segments database is the same as selecting a second set of digital media assets as described by the
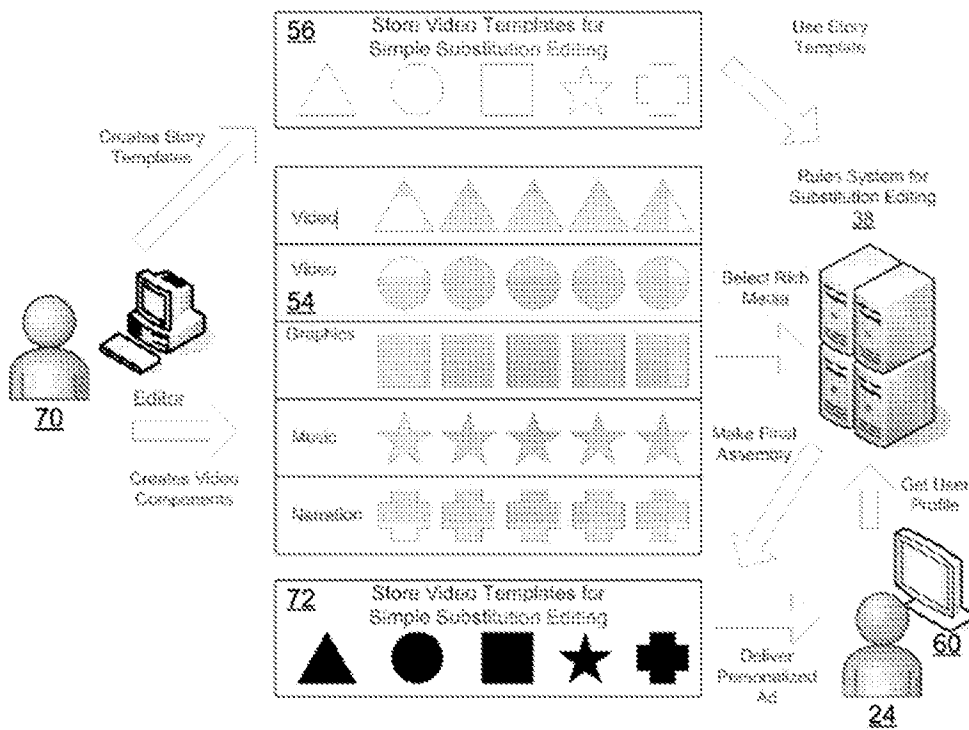
'030 Patent.

Haberman, Figure 3.

The '030 Patent describes user attributes as "aspects, characteristics, and qualities of the user that are useful for determining (matching, correlating, and **selecting**) digital media assets." '030 Patent at 6:32-34 (emphasis added). The '030 Patent explains that

> the user profile can then be used to present the most appropriate digital assets to the subscriber, namely those with which the user has the highest affinity, or those which map well to the user's tendencies and temperament, which may be included in the user's internal narrative perception identification framework. The internal narrative perception identification framework may include a collection of attributes, qualities, and measurements regarding the user that allow for matching, correlation and/or selection of digital media assets that are appropriate for that user and the effective communication of the message.

'030 Patent at 3:42-53. Just like Haberman, the server in the '030 Patent "may develop the personalized digital media asset 212 from content 531 and the digital asset repository 541." *Id.* at 12:4-6. To accomplish this, the "digital asset repository 541 may receive asset requests 540 from the server 590 and may provide items such as background images 200, foreground images 202, text 208, and branding graphics 206." *Id.* at 12:34-37.

During prosecution of the related '822 Application, in a non-final office action dated February 1, 2018, the Examiner cited Haberman 4:44-49 as disclosing similar claim language of the pending claims of the '822 Application: "select a second set of digital media assets, wherein at least a portion of the second set of digital media assets is associated with one or more user attributes found in the user information." Ex. M at 180.

During prosecution of the related '822 Application, in a final office action dated July 31, 2018, the Examiner again cited Haberman 4:44-49 as disclosing similar claim language of the pending claims of the '822 Application: "selecting, by the central processing unit, a second plurality of digital media assets, wherein at least a portion of the second plurality of digital media assets is associated with one or more user attributes found in the user information." Ex. M at 245.

B.   Obviousness of Claims 1 and 2 of the '030 Patent based on Byers in view of the Identified Secondary References

Patent Owner, in its opposition to Requestor's Motion to Dismiss based on *Alice*, characterized the problem that the '030 Patent was trying to solve as improving the selection of media for a user: "[a]s technology was evolving, advertisers were confronted with the use of technology to avoid advertisements, e.g. by stopping pop-up ads or skipping over the ads. None of these systems, however, addressed how technology could be used to understand the individual's likes or dislikes or the individual's current mood to more appropriately adapt the content for the individual," i.e., a better recommendation system. Ex. W, at 4. The '030 Patent is directed at selecting content more relevant to a user based on alleged analysis of user attributes, and modifying targeted advertisements to avoid disrupting the narrative of the story for the content viewed by the user. The purported point of novelty of the '030 Patent is retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes, and then using those user attributes to select the replacement images in the displayed video. But that technique was already known and taught in the prior art as evidenced by the numerous secondary references identified in this Request, and therefore the Challenged Claims are unpatentable.

1.   Byers Discloses the Video Substitution Limitations of the Challenged Claims

Claims 1 and 2 would have been obvious based on the combination of Byers in view of each of the identified secondary references. Claim 1 is an open-ended claim that comprises a server and a computer-readable storage medium that contains instructions to perform the recited limitations.

As explained in detail below, each element of claims 1 and 2 is disclosed, taught, or suggested by the teachings of Byers in combination with the teachings of each of the identified secondary references.

    a. **Claim 1 [Preamble]: "A system for associating user attributes with digital media asset attributes and creating a user specific composite digital media display, the system comprising:"**

To the extent that the preamble is limiting, Byers discloses this limitation under both BRI and *Phillips*. Byers teaches a system that "dynamically alters a portion of a digital video image based upon a user profile," which "can include information pertaining to a desired characteristic of the user." Byers at 1:50-54. Byers specifically teaches that a "video processor determines the product or replacement images to be inserted into the digital video stream . . . based at least in part upon a customer profile." *Id.* at 2:6-10. The customer profile (or user profile) "includes information pertaining to a desired characteristic relating to the first user." *Id.* at 4:31-34. The altered video is then "transmitted over an output port to a broadband access network, which in turn transmits the modified video stream to a subscriber terminal," which can be used to display the video. *Id.* at 2:18-23.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

    b. **1[a]: "a) a server;"**

As illustrated below in Figures 1 and 2 from Byers and the associated description, Byers' system includes a service node consisting of a main processor and video processor that has networked communication capability, *i.e.* a server. *Id.* at 4:6-10; 5:45-6:11. Byers describes a

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"service node 103" that "includes an input port 201, a control port 203, a main processor 204, a video processor 205, and at least one output port 207." Byers at 4:6-10. Within the service node 103, the "[i]nput port 201 is effective in receiving the digital video stream" and the "output port 207 is effective in transmitting a modified video stream to subscriber terminal 119." *Id.* at 4:11-12, 6:12-15. The service node 103 has networked communication capability. Additionally, within the service node 103, there are multiple processors (main processor 204 and video processor 205) and memory. *Id.* at 4:6-10; 5:45-6:12. A person of ordinary skill in the art would have understood that the service node 103 is a general purpose computer. Ex. Y, ¶ 85. Therefore, the service node 103 is a server.

Additionally, as illustrated below in Figure 1 from Byers and the associated description, Byers' system includes a "[m]ulticast router 101 [that] is effective in receiving a digital video stream," where "[t]he digital video stream can also come from a video server 109, such as a database that stores pre-recorded programs such as movies or the like. Video server 109 accesses program source database 111 to retrieve a predetermined program and transmits the digital video stream to multicast router 101." Byers at 3:51-58. The video server 109 is another example of a server disclosed in Byers' system.

FIG. 1

FIG. 2

Id., Figures 1-2.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

        c.   **1[b]: "b) a computer-readable storage medium operably connected;"**

Byers discloses this limitation under both BRI and *Phillips*. As explained above, Byers teaches that a multicast router 101 receives a digital video stream. Byers also teaches that "[m]ulticast router 101 then sends the digital video stream to service node 103." Byers at 3:65-66. The service node 103 includes a "[c]ontrol port 203 [that] is effective in accessing an advertiser database 113, a customer database 115, and an image database 117," where "the replacement images that are to be inserted into the input video stream are stored in image database 117 in digital form." *Id.* at 4:14-18. A person of ordinary skill in the art would have recognized that these databases (depicted in Figure 1 of Byers) are computer-readable storage medium. Ex. Y, ¶ 83.
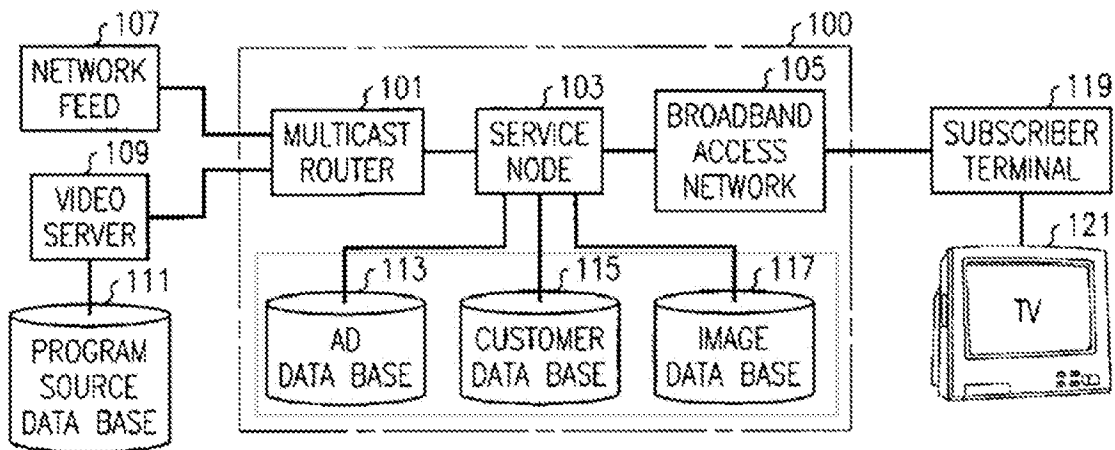
FIG. 1

Byers, Figure 1. A person of ordinary skill in the art at the time of the alleged invention would have understood that each of these individual databases may have been stored in a single computer-readable storage medium such as the processor's main memory or mass storage device such as a hard disc drive. Ex. Y, ¶¶ 61, 83. A person of ordinary skill in the art at the time of the alleged invention would have understood that a processor has a main memory that stores both program instrusctions as well as program data, such as a database, much like how a mass storage device stores both program data, as well as the programming instructions for the various applications as well. Ex. Y, ¶¶ 61, 85-86.

Byers also discloses that the service node 103 includes video processor 205 that "preferably performs the processing necessary to insert the replacement digital image into the original video stream." Byers at 5:45-47. Video processor 205 includes memory 211 (depicted in Figure 2 of Byers), which is also used to "stor[e] replacement images" and is "preferably a frame buffer, but can alternately be any type of storage medium that is capable of storing digital images." *Id.* at 5:53-55, 6:1-3. Memory 211 is also a form of computer-readable storage media.
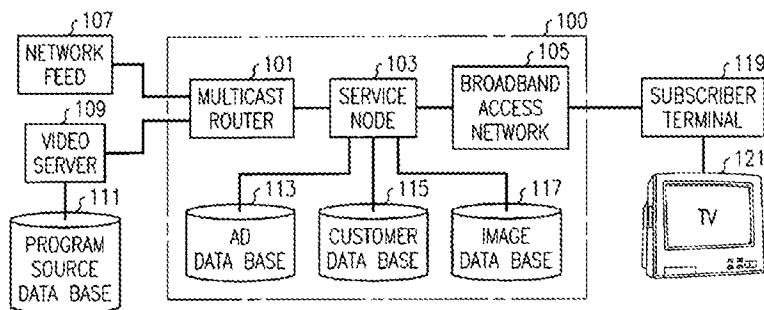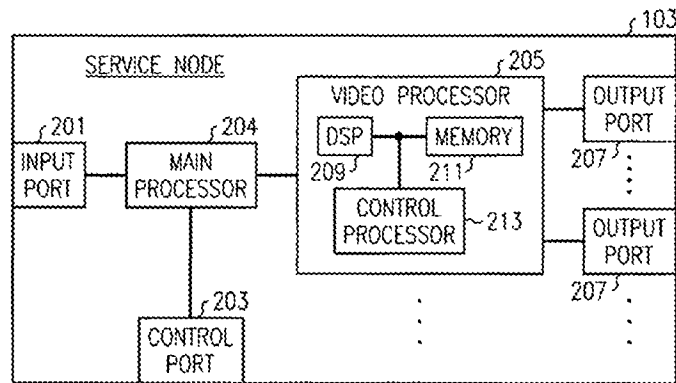
FIG. 2

Id., Figure 2.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

> **d.   1[c]: "wherein the computer-readable storage medium contains one or more programming instructions for performing a method of associating user attributes with digital media asset attributes and creating a user specific composite digital media display, the method comprising;"**

Byers discloses this limitation under both BRI and *Phillips*. As noted above in section IV.G *supra*, the court concluded that this claim term did not require construction using the *Phillips* standard. Ex. V at 9. As explained above, Byers teaches that the service node 103 "receives the digital video stream, determines a replacement image to insert in the digital video stream, performs target geometry transforming and lighting model, digitally alters the digital video stream by

inserting the replacement image, and transmits the altered video image to broadband access network 105." Byers at 3:67-4:5. Specifically, Byers teaches that the service node 103 includes a video processor 205 that "performs the processing necessary to insert the replacement digital image into the original video stream." *Id.* at 5:45-47. A person of ordinary skill in the art would have understood that the processes performed by the service node 103 and video processor 205 must be based on one or more programming instructions that must be stored on a computer-readable storage medium. Ex. Y, ¶¶ 85-86.
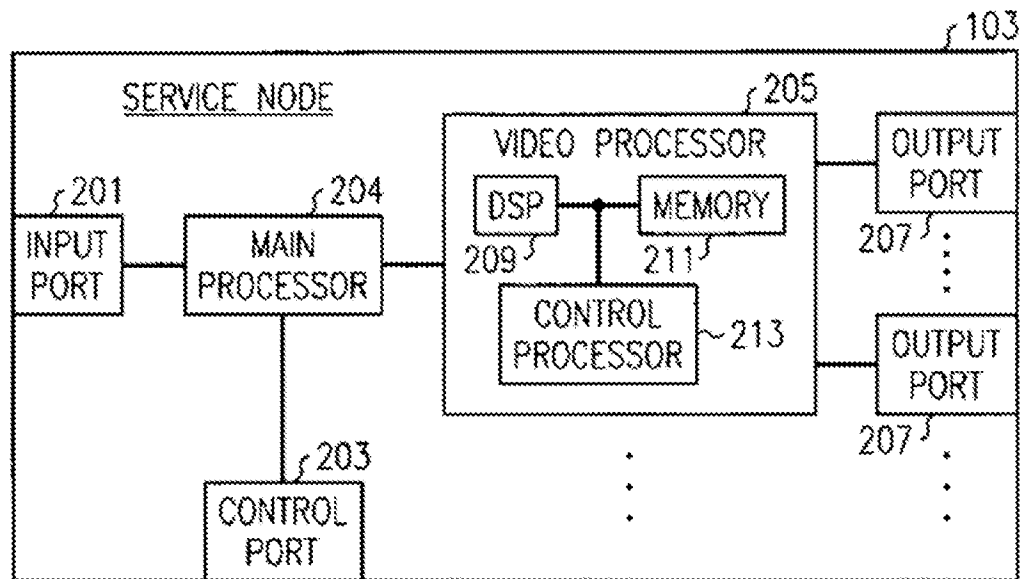
Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

> e.   1[d]: "identifying a first set of digital media assets stored on the computer-readable storage medium,"

Byers discloses this limitation under both BRI and *Phillips*. As explained above, Byers teaches a service node 103 that receives a digital video stream initially obtained from a video server and that includes a video processor 205 that "performs the processing necessary to insert the replacement image into the original video stream." Byers at 5:45-47. Byers also teaches that video processor 205 includes "digital signal processor (DSP) 209" and memory 211 that "is preferably a frame buffer, but can alternately be any type of storage medium that is capable of storing digital images." *Id.* at 5:45-49, 6:1-3. Byers further teaches an embodiment where within the service node 103, "a computing device marks (601) an original element in a digital video image. The original element includes a portion of the digital video image. Such original element can be a billboard, storefront, object, or any other part of the digital image." *Id.* at 8:60-67. The "DSP 209 is effective in replacing the original elements with the replacement images to form a modified

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video stream." *Id.* at 5:56-58. A person of ordinary skill in the art would have recognized that the various original elements that make up the original digital video image *(e.g.,* "billboard, storefront, object, or any other part of the digital image") can be stored on the frame buffer *(i.e.,* memory 211), potentially with the assistance of DSP 209. Ex. Y, ¶ 87. The first set of digital media assets in this embodiment consists of these components of the original digital video image (including the various original elements) stored in memory 211. Ex. Y, ¶ 87.
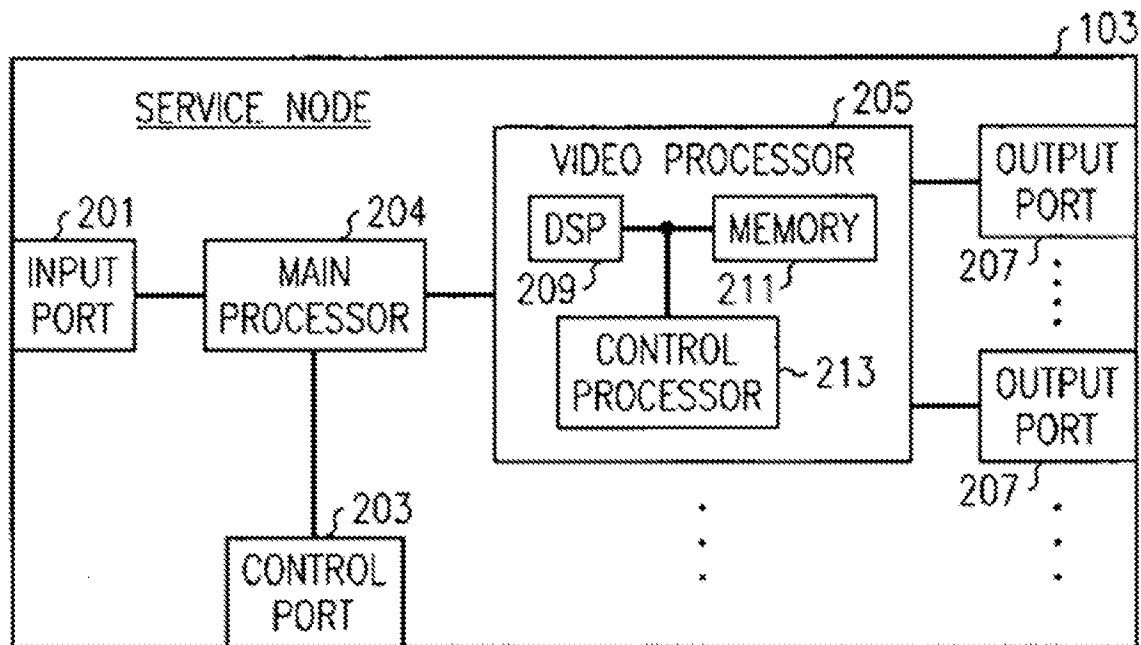
FIG. 2

Byers, Figure 2.

        f.   1[e]: "creating, from the first set of digital media assets, a first composite digital media display,"

Byers discloses this limitation under both BRI and *Phillips.* The court construed this term to mean: "creating, from the first set of digital media assets, a first composite digital media display that combines two or more digital media assets." Ex. V at 13. As explained above, Byers describes

that the original digital video stream can be comprised of original elements (including billboard, storefront, object, or any other part of the digital image) that can optionally be marked for replacement by a computing device. For example, as explained with respect to Figure 6, Byers teaches that the original elements can be marked and sometime thereafter the "service node alters (607) the digital video image by replacing the original element with the replacement image to produce a dynamically altered video image." Byers at 8:60-9:17.

FIG. 6

600

601

MARK AN ORIGINAL ELEMENT
IN A DIGITAL VIDEO IMAGE

603

RETRIEVE A FIRST PROFILE
ASSOCIATED WITH A FIRST USER

605

CHOOSE A REPLACEMENT IMAGE
BASED UPON THE FIRST PROFILE

607

ALTER THE DIGITAL VIDEO
IMAGE TO PRODUCE A DYNAMICALLY
ALTERED VIDEO IMAGE
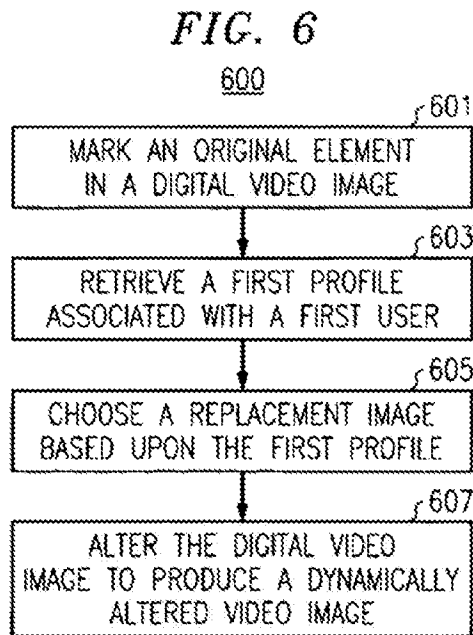
Id., Figure 6.

Byers generally describes the alteration/replacement step as being performed by the DSP 209:

> DSP 209 is effective in replacing the original elements with the replacement images to form a modified video stream. DSP 209 preferably decompresses the original image, which was preferably received in a compressed format. DSP 209 preferably accomplishes the replacement of the original element by calculating the geometry of the replacement image, determining the lighting present in the original image, determining the transparency of the replacement area in the original image, determining the object order and motion, and overwriting selected portions of the frame buffer that include the original video image. DSP 209 then preferably compresses the resultant modified image.

Id. at 5:56-67.
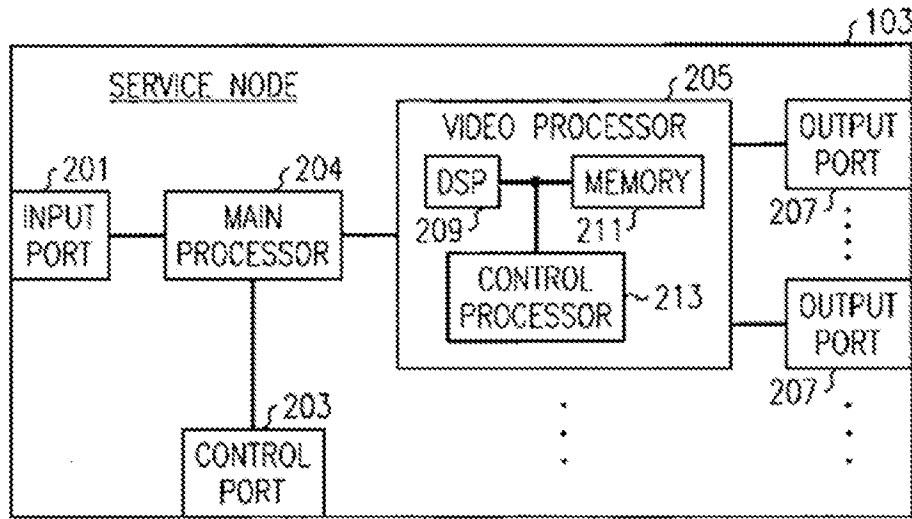
FIG. 2

Id., Figure 2.

Byers also teaches that only portions of the original digital video stream may need to be replaced, explaining that "the present invention provides an improved method and apparatus for providing custom-tailored video streams by digitally altering *portions* of incoming video streams." Byers at 3:11-13 (emphasis added). A person of ordinary skill in the art would have recognized that the original digital video stream received by service node 103 and processed by DSP 209 includes *portions* that will have an original element to be replaced with a replacement image and *portions* that will not have an original element to be replaced by a replacement image. Ex. Y, ¶ 90.

The first composite digital media display in this embodiment consists of the portion of the original digital video stream that is being processed by DSP 209 but that does not have an original element to be replaced by a replacement image.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed

that this limitation was not novel and was known in the Srinivasan prior art that was relied upon

in the prior rejection.

> **g.** **1[f]: "presenting to the user via a display server, the first composite digital media display;"**

Byers discloses this limitation under both BRI and *Phillips*. The court declined to construe

this term formally and stated the display server was a "'server' in a conventional server-client

model as understood by a person of ordinary skill in the art at the time of the invention" and that

"presenting to the user" also does not require construction and is not limited to "any particular

mode of presenting, such as visual presentation"—meaning that at least visual presentation is

within the scope of presenting to the user. Ex. V at 16-17.

Byers teaches that "[t]he service node then transmits (811) the modified frame to an output

port, and the modified image will eventually be sent to a subscriber terminal. In the preferred

embodiment of the present invention, the service node compresses the modified image prior to

transmitting the modified image." Byers at 8:40-44. Byers' service node operates as a display

server and presents the composite digital media display to the user. Byers further teaches that each

"output port 207 is effective in transmitting a modified video stream to subscriber terminal 119."

Id. at 6:13-15. Specifically, Byers explains that

> broadband access network 105 is effective in receiving the altered video stream
> from service node 103. In the preferred embodiment of the present invention,
> broadband access network 105 is effective in transmitting the altered video stream
> preferably to subscriber terminal 119, which in turn transmits the image to
> television 109 or the like for display or storage. As an example, broadband access
> network 105 can be xDSL ('x' Digital Subscriber Line), broadband wireless, or any
> other broadband network capable of carrying video streams.

Id. at 6:20-30. Byers depicts this arrangement of components in Figures 1 and 2.

FIG. 1

FIG. 2

Id., Figures 1-2.

The '030 Patent describes the same concept. "Fig. 4 illustrates a default experience 400 being shown to a user with interactive opportunities 402 in conjunction with trigger points 320. . . . The enhanced user profile 404 may subsequently be used in conjunction with trigger points 320 to create a personalized experience 406." '030 Patent at 11:3-11.

-135-

The '030 Patent describes that the system diagram of figure 5A "illustrates a context diagram for one embodiment of a digital media narrative asset personalization system (server) 590." *Id.* at 11:65-67.

FIG. 5A

Id. at Fig. 5A. The '030 Patent describes in some instances that "the personalized digital media asset is presented to the user 501 via the server 590." *Id.* at 12:7-10. Specifically, the "user 501 may be presented with digital video 500, digital audio 510, background images 200, foreground images 202, text 208, digital media graphics, digital animation, and/or branding graphics 206." *Id.* at 12:19-22.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

h.   1[g]: "retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes;" and 1[h]: "selecting, based on the user attributes in the social network information, a second set of digital media assets, wherein the second set of digital media assets is associated with one or more user attributes found in the user social network information;

Byers describes the composition of its user profiles broadly, providing that user attributes may be derived from a host of available information, including "demographic information, time of day information, advertising information, geographic information, or parental consent information." Byers at 9:47-51. Thus, Byers teaches retrieving user attributes from beyond the user's input. Byers' system retrieves the stored user profile from a source other than the presented first composite digital media display. Specifically, Byers teaches that "[c]ustomer database 115 preferably includes a first profile associated with a first user. The first profile preferably includes information pertaining to a desired characteristic relating to the first user. In the preferred embodiment, the profile includes demographic information related to the user. For instance, the profile can include information pertaining to the user, such as their buying preferences, their location, their economic level, or their preference related to any sort of good, such as consumer goods." Id. at 4:31-39. Byers also teaches that its "[c]ustomer database 115 can all include a profile that includes demographic information. In this embodiment, the information can include information about the demographics of the user. For example, the profile could include the income level of the user, information about the area in which the user lives, the age of the user, the family status of the user, the number of children he or she has, or any other demographic information that would be useful in determining an effective product image to be inserted in the video stream." Id. at 4:48-57. Thus, a person of ordinary skill in the art would understand that the information stored and retrieved for Byers' user profile can be retrieved from an source internal to the system (e.g., customer database), or a source external to the system (e.g., buying preferences, demographic

information, geographic information (*id.* at 5:32-35)). Ex. Y, ¶¶ 80-81. In either case, it follows that Byers teaches that user information is retrieved from a source external to and/or other than the presented first composite digital media display—i.e., a memory or database that is not part of a display.

However, Byers alone does not disclose or teach "user social network information." Requestor addresses in detail below how Byers can be combined with each of the identified secondary references to teach the user social network information limitations.

> ### i. 1[i]: "monitoring the first composite digital media display for the presence of a trigger, wherein the trigger indicates a personalization opportunity in the first set of digital media assets;"

Byers discloses this limitation under both BRI and *Phillips*. The court construed "monitoring the first composite digital media display for the presence of a trigger" as "monitoring the first composite digital media display for the presence in the display of an indication of a personalization opportunity." Ex. V at 24. Byers teaches that in the service node 103 "a computing device marks (601) an original element in a digital video image. The original element includes a portion of the digital video image. Such original element can be a billboard, storefront, object, or any other part of the digital image. This can be accomplished using keying techniques, fiducials, or a set survey linked to camera moves and lens settings." Byers at 8:54-9:2. Byers also teaches that when the marked original element is detected, the service node 103 "retrieves (603) a first profile associated with a first user . . . chooses (605) a replacement image based at least in part upon the first profile . . . [and] alters (607) the digital video image by replacing the original element with the replacement image to produce a dynamically altered video image." *Id.* at 9:14-17. This process is shown in the flowchart depicted in Figure 6. This marking of an original element in the

digital video image is analogous to a trigger or monitoring for the indication of a personalization

opportunity.

FIG. 6

600

```
                                          ┌601
┌──────────────────────────────────────┐
│         MARK AN ORIGINAL ELEMENT       │
│         IN A DIGITAL VIDEO IMAGE       │
└──────────────────────────────────────┘
                     │
                     ▼                    ┌603
┌──────────────────────────────────────┐
│         RETRIEVE A FIRST PROFILE       │
│        ASSOCIATED WITH A FIRST USER    │
└──────────────────────────────────────┘
                     │
                     ▼                    ┌605
┌──────────────────────────────────────┐
│        CHOOSE A REPLACEMENT IMAGE      │
│        BASED UPON THE FIRST PROFILE    │
└──────────────────────────────────────┘
                     │
                     ▼                    ┌607
┌──────────────────────────────────────┐
│           ALTER THE DIGITAL VIDEO      │
│       IMAGE TO PRODUCE A DYNAMICALLY   │
│            ALTERED VIDEO IMAGE         │
└──────────────────────────────────────┘
```
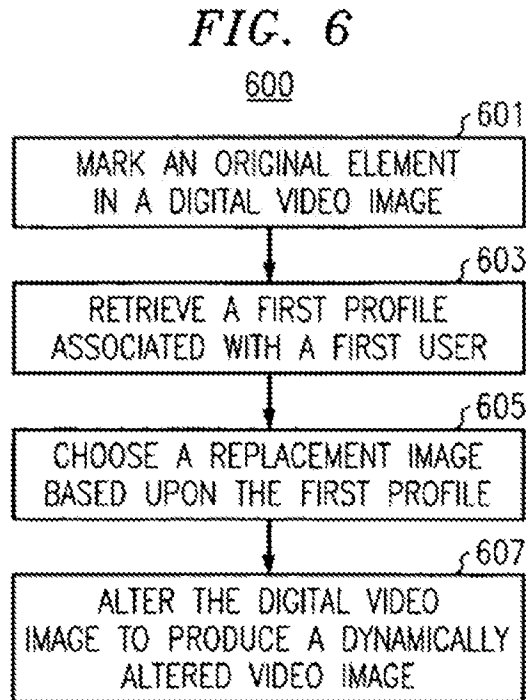
Id., Figure 6.

The '030 Patent describes the same concept. The '030 Patent describes trigger points as

providing a "mechanism for content management and the creation of a more personalized digital

media asset based on a user's personal experiences. Trigger points 320 can be placed at various

points in the digital media content." '030 Patent at 10:1-6. Trigger points can be placed at "various

points in time, when a certain character appears on the screen, when certain text is displayed, when

words are spoken or sung, or based on other features of the digital presentation." *Id.* at 10:6-11.

When a trigger point occurs, "a script or other software program is executed" that "may cause a

computing device to access a database containing profile data relating to the user, and based on

the user profile information . . . may cause the insertion and/or replacement of video, graphics,

audio, or other material in the digital presentation." *Id.* at 10:11-20.

j.   1[j]: "performing a rule based substitution of one or more of the digital media assets from the first set of digital media assets with one or more of the digital media assets from the second set of digital media assets to create a user specific set of digital media assets;"

Byers discloses this limitation under both BRI and *Phillips*. The court concluded that no construction was necessary for this term. Ex. V at 25. As discussed above, Byers teaches that the service node 103 can mark an original element in the received digital video image, where the original element "can be a billboard, storefront, object, or any other part of the digital image." Byers at 8:54-67. Byers further teaches that the service node 103 can "alter (607) the digital video image by replacing the original element with [a] replacement image to produce a dynamically altered video image." *Id.* at 9:14-16. Byers explains that the "replacement image" is chosen based on a user profile (rule based substitution) that includes information about the user:

> The service node retrieves (603) a first profile associated with a first user. The first profile includes information pertaining to a desired characteristic relating to the first user.

> The service node chooses (605) a replacement image based at least in part upon the first profile. The replacement image can be selected based upon various criteria. One method of choosing a replacement image comprises choosing a replacement image based upon a user profile. The replacement image can be chosen based upon demographic information, the time of day, a parental rating code, advertising information, or geographic information.

Id. at 9:6-13. Byers' selection of a replacement image according to the user profile is the second set of digital media assets which are then used to replace the original element in the digital video image to form the user specific set of digital media assets. This process is shown in the flowchart depicted in Figure 6.

FIG. 6

600
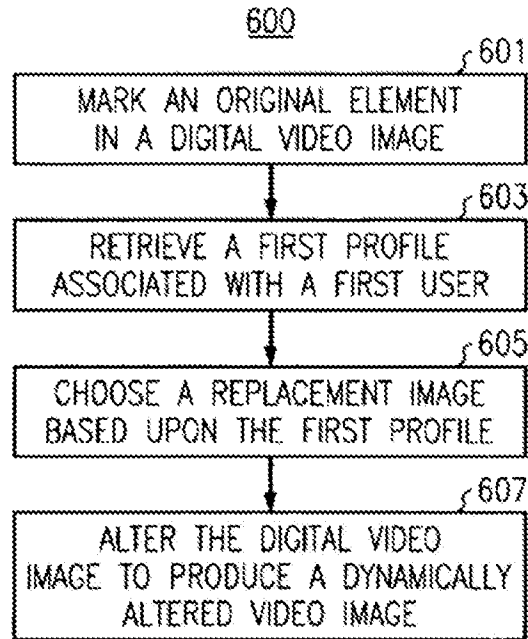
Id., Figure 6.

Byers also discloses the specific process by which the digital video image is altered with a

replacement image. *See* Byers at 7:62-8:48.

The '030 Patent describes the same concept of creating a user specific set of digital media

assets based on association rules to create a user specific set of digital media assets. The server in

the '030 Patent "may develop the personalized digital media asset 212 from content 531 and the

digital asset repository 541" by making requests to the digital asset repository for items "such as

background images 200, foreground images 202, text 208, and branding graphics 206." '030

Patent at 12:4-6, 34-39. The server makes the request for items based on:

> association rules [that] provide the ability to match digital media assets to an
> individual, through a correlation of the attributes of the asset with assets (sic)
> [attributes] of the individual in order to provide the highest level of impact. The
> correlation of the attributes may consist of summing the number of matching
> attributes, identifying key attributes, or providing a true/false test for one or more
> attributes. A relative weighting scheme may be incorporated into the correlation to
> give preference to or emphasize certain attributes. Correlation thus refers to the

process of matching or selecting a digital media asset based on the overlap between the attributes of the individual and the asset, with the goal of having a greater narrative impact.

'030 Patent at 7:56-67.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

k. 1[k]: "creating, from the user specific digital media assets, a user specific composite digital media display; and"

Byers teaches this limitation. The court construed this term to mean "creating, from the user specific digital media assets, a user specific composite digital media display that combines two or more digital media assets." Ex. V at 13. As discussed above, Byers teaches replacing an original element in a digital video image with a replacement image chosen based on a user's profile. Byers further teaches that, following the replacement, the service node 103 "transmits [] the modified frame to an output port" and preferably "compresses the modified image prior to transmitting the modified image." Byers at 8:39-44. The user specific composite digital media display in this embodiment consists of the portions of the original digital video stream that have original elements that are replaced and subsequently transmitted to the output port.

The '030 Patent describes the same concept of creating a user specific composite digital media display. Specifically, the '030 Patent describes that "the server 590 may develop the personalized digital media asset 212 from content 531 and the digital asset repository 541" where the server makes "asset requests" to the digital asset repository for "background images 200, foreground images 202, text 208, and branding graphics 206." '030 Patent at 12:4-6, 34-37.

FIG. 5A

Id., Figure 5A.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

l.   1[l]: "presenting to the user via the display server, the second composite digital media display."

Byers discloses this limitation under both BRI and *Phillips*. The court declined to construe this term, noting only that "presenting to the user" is not limited to "any particular mode of presenting, such as visual presentation." Ex. V at 17. The court construed the term "the second composite digital media display" to mean "the user specific composite digital media display." Ex. V at 25-26. As discussed above at VII.B.1.g, Byers presents the user specific composite digital

media display to the user. Byers' personalized video stream, which includes portions of an original digital video steam with replaced elements is both a second and the user specific composite digital media display. Byers at 3:1-13.

Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

         m.   **Claim 2: "The system of claim 1 wherein the first set of digital media assets includes one or more of a foreground image, a background image, or audio."**

As discussed above Byers discloses the video substitution limitations of claim 1. In addition, Byers teaches that the first set of digital media assets includes a background image and/or a foreground image. "[A] computing device marks (601) an original element in a digital video image. The original element includes a portion of the digital video image. Such original element can be a billboard, storefront, object, or any other part of the digital image." Byers at 8:62-67. Further, this "predefined area that is to be replaced by a replacement video image . . . could be a billboard in the background of the input video stream." *Id.* at 5:9-12.

The '030 Patent describes the same concept. Specifically, the '030 Patent explains that "[a] digital asset repository 541 may receive asset requests 540 from the server 590 and may provide items such as background images 200, foreground images 202, text 208, and branding graphics 206." '030 Patent at 12:34-37.
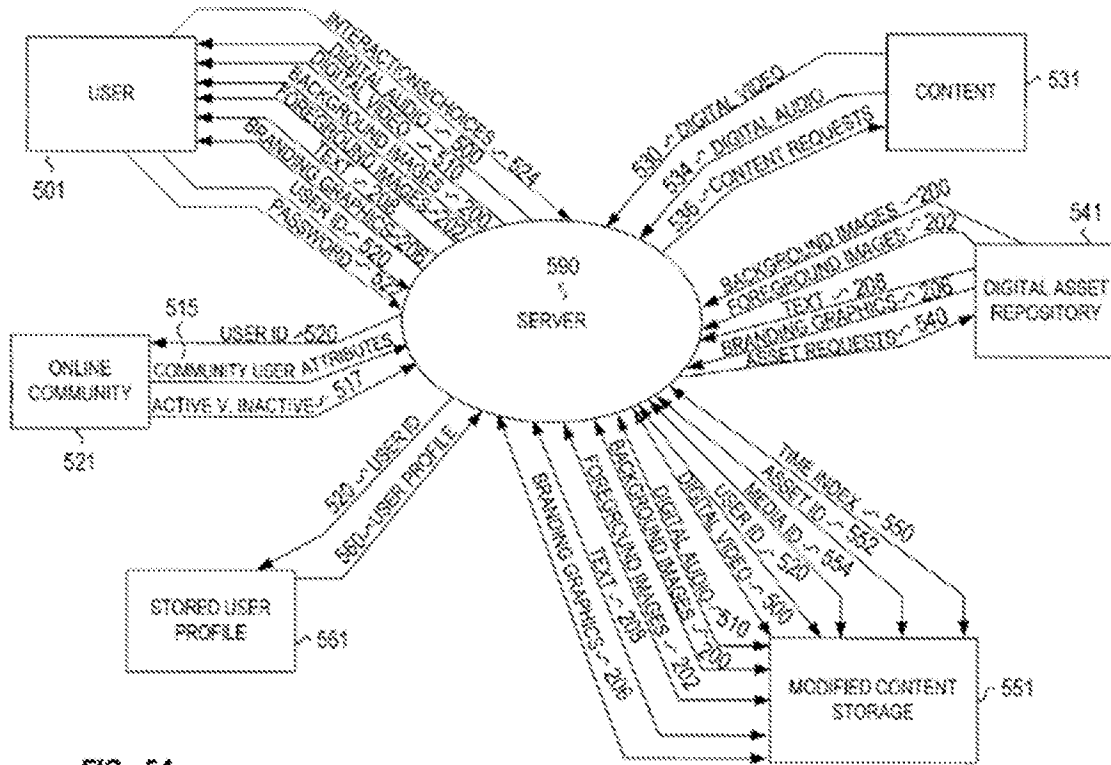
Finally, the Examiner noted in his reasons for allowance for the '030 Patent that the allegedly novel limitation was 1[g]. The notice of allowance suggests that the Examiner believed that this claim limitation was not novel and was known in the Srinivasan prior art that was relied upon in the prior rejection.

2.   [SNQ 3]: Byers in view of Hupert-Graff Discloses the User Social Network Information Limitations of Claim 1

As set forth below, all elements of claim 1 of the '030 Patent are satisfied by the combination of Byers in view of Hupert-Graff. Each element of claim 1 is disclosed, taught, or suggested by the teachings of Byers incorporating the community profiles and real-time tracking of user activity of Hupert-Graff. As set forth above, Byers discloses the video substitution limitations of the '030 Patent, and as explained in detail below, Byers in view of Hupert-Graff discloses the allegedly novel limitations of the '030 Patent. Additionally, an explanation of why a person of ordinary skill in the art at the time of the alleged invention would have been motivated to combine Byers and Hupert-Graff with a reasonable expectation of success is explained demonstrating the obviousness of the Challenged Claims.

a.   Motivation to Combine Byers and Hupert-Graff with a Reasonable Expectation of Success

Byers and Hupert-Graff are in related fields and are both directed toward providing personalized individualized recommendations and/or experiences and thus can be applied in an obvious combination. Ex. Y, ¶¶ 154-162; *see also Unwired Planet LLC v. Google, Inc.*, 841 F.3d 995, 1000 (Fed. Cir. 2016) ("Prior art is analogous and can be applied in an obviousness combination if it either (1) 'is from the same field of endeavor, regardless of the problem addressed or (2) 'is reasonably pertinent to the particular problem with which the inventor is involved.'"). Patent Owner, in its opposition to Requestor's Motion to Dismiss based on *Alice*, characterized the problem that the '030 Patent was trying to solve as improving the selection of media for a user: "[a]s technology was evolving, advertisers were confronted with the use of technology to avoid advertisements, e.g. by stopping pop-up ads or skipping over the ads. None of these systems, however, addressed how technology could be used to understand the individual's likes or dislikes

or the individual's current mood to more appropriately adapt the content for the individual," i.e., a better recommendation system. Ex. W, at 4; *see also Unwired* 842 F.3d at 1001 ("The field of endeavor of a patent is not limited to the specific point of novelty, the narrowest possible conception of the field, or the particular focus within a given field."). Byers is specifically directed toward a system that "dynamically alters a portion of a digital video image based upon a user profile" such that "each subscriber may receive a different altered image, with the alteration being based upon a characteristic of the subscriber." Byers at 1:50-59.

Hupert-Graff is directed toward providing personalized recommended content to a user based on user preferences. Hupert-Graff at p. 1, Abstract. Hupert-Graff describes that its recommendation engine makes recommendations for passive multimedia presentations *e.g.*, TV or radio programs (claim 2) and/or interactive multimedia applications *e.g.*, interactive TV programs, games etc. (claim 3). Hupert-Graff explicitly explains that "[d]ata of all kinds will become readily available to the public in quantities never before imaginable. Recent breakthroughs in digital broadcasting and video compression technologies are expected to extend the 'Information Super Highway' right into the video realm by allowing customers to receive literally hundreds of TV and video channels in their homes." Hupert-Graff at p. 2, ll. 2-7.

Byers identified a deficiency in prior art video networks in that identical video streams are sent across the network to all users of the network. Byers at 1:29-33. Byers notes that "[t]here is currently no way to customize the video stream for users, either based upon individual characteristics relating to the user or group characteristics." *Id.* at 1:37-39. As a result, Byers is directed to a system for "dynamically altering digital video images to allow customization of a digital video stream based upon characteristics associated with a user," where the characteristics associated with the user are obtained from a "user profile." *Id.* at 1:40-57. Byers suggests that the

information in the user profile can be based on "group characteristics," the user's "buying preferences," the user's "preference related to any sort of good," or "any other demographic information that would be useful in determining an effective product image to be inserted into the video stream." *Id.* at 1:37-39, 4:31-57. This is similar to what is described in the '030 Patent, where it describes the "user profile" as something that "describes one or more aspects of the user, such as demographics, psychodemographics, and attributes," and explains that "the profile can be determined for the user's web surfing characteristics, shopping habits, television viewing habits, and/or actual purchases." '030 Patent at 3:54-59, 6:26-29. Likewise, Hupert-Graff also recognizes and teaches that user social network information in the form of a community profile based on the history and interactions of all users in the community can be used to determine user preferences. Hupert-Graff at p. 8, l. 9 – p. 9 l. 4, Claim 13, Fig. 4. Hupert-Graff also explicitly teaches that monitoring the user's activity in real time, including "community activities like Internet forums" and "chatting activities through the Internet," can be used to determine user preferences as well. *Id.* at p. 12, ll. 1-13.

A person of ordinary skill in the art would have been motivated by Byers to incorporate the community profiles and real-time monitoring of Hupert-Graff within Byers' system to create customized and individualized digital video streams based on the user attributes found in Hupert-Graff's system. Ex. Y, ¶¶ 155-160. A person of ordinary skill in the art would have understood that using Hupert-Graff's system overcomes the deficiencies of the prior art that did not customize digital video streams based on a user's profile. Ex. Y, ¶¶ 156, 160-61. Doing so would have incorporated a known technique (Hupert-Graff's external community profiles and real-time monitoring) to improve Byers' personalized digital video stream system, in the same way Hupert-Graff uses the external community profiles and real-time monitoring to update and

improve its recommendation and selection engine. *See KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 417-18 (2007); *see also Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1380-81 (Fed. Cir. 2023) ("There is a motivation to combine when a known technique 'has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way,' using the 'prior art elements according to their established functions.'") (cleaned up); *Unwired Planet LLC v. Google Inc.*, 841 F.3d 995, 1003 (Fed. Cir. 2016) (finding motivation to combine two references under *KSR's* known technique rationale stating: "[f]or the technique's use to be obvious, the skilled artisan need only be able to recognize, based on her background knowledge, its potential to improve the device and be able to apply the technique" to combination of prior art references where the first reference searched for information based on location and the second reference provided an improvement on how to present the information). Moreover, creating and presenting better and more personalized content without requiring user input, and creating a closer one-to-one relationship between the advertiser and user, would have provided the benefit of at least longer and more interested user engagement. *See* Byers at 2:47-67 ("... targeted product placement refers to placing products into scenes from a play, television show, or movie. Such placement can lead to a boon in sales ... Utilizing the present invention alleviates this problem by facilitating the placement of replacement images that are related to a user profile, thereby linking the products inserted into a video stream with a user of the video stream."); Hupert-Graff at pp. 3, ll. 18-22 ("It is thus another object of the invention to provide the media suppliers with method and system for personalizing and managing their information and services to achieve efficient transformation and regulation of content to their clients, thus supporting the rapidly changing environment of technology improvements."); *see also* '030 Patent at 3:63-67 ("One advantage of an embodiment of the method, system, and software presented

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herein is that the user is presented with an enhanced experience of the creator's content that creates a greater emotional experience for the user and more impactful narrative.").

A person of ordinary skill in the art would have reasonably expected success in using Hupert-Graff's community profiles and real-time monitoring to select replacement images for Byers' system. Ex. Y, ¶ 162. Like Hupert-Graff, Byers' system is a multi-user system designed to present digital video streams to multiple users. Byers at 6:12-16 ("Service node 103 preferably includes multiple output ports 207, as depicted in FIG. 2. Each output port 207 is effective in transmitting a modified video stream to subscriber terminal 119."). Byers' user profile contains characteristics about the user, for example, "demographic information, time of day information, advertising information, geographic information, and parental consent information." *Id.* at 1:52-57. Hupert-Graff also describes classifying users into different community categories based on the user's personal characteristics. Hupert-Graff at p. 8, ll. 11-16. Hupert-Graff's community profiles and real-time monitoring can be used to help select which replacement images to use in the digital video streams sent to the user in Byers' system as well. Hupert-Graff states that its invention "relates to the field of electronic information and media systems and, in particular, to a method and a system for automatically determining and dynamically configuring customized and personalized recommendation content lists according to user preferences, habits and taste in a global information super highway network." Hupert-Graff at 1. A person of ordinary skill in the art would have reasonably expected success because using community profiles and real-time monitoring to make recommendations and selections was known in the art. *Id.* at p. 8, l. 9 – p. 9, l. 4, p. 12, ll. 4-6; Ex. Y, ¶ 162.

Accordingly, a person of ordinary skill in the art would have been motivated to use Hupert-Graff's external community profiles and real-time monitoring in Byers' system to help select
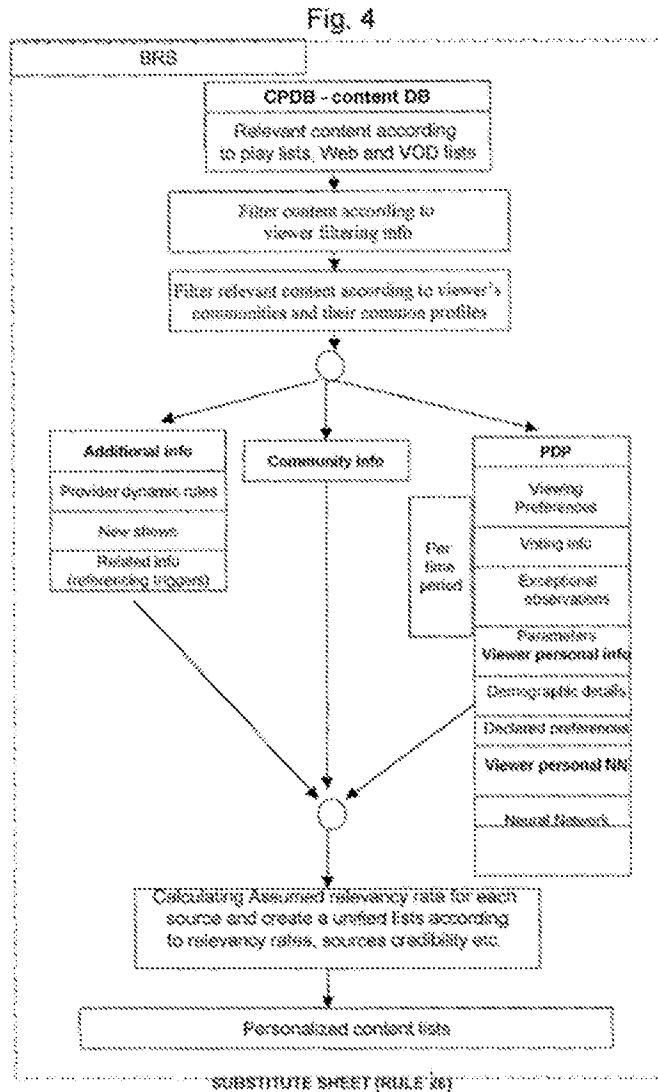
replacement images with a reasonable expectation of success. Ex. Y, ¶ 162.

> **b.   1[g]: "retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes;"**

Byers in view of Hupert-Graff discloses this limitation under both BRI and *Phillips*. The court construed the term "user social network information" to mean "information derived from a user's interactions in an online community." Ex. V at 21. The court further construed the term "retrieving user social network information from at least one source external to the presented first composite digital media display" to mean "retrieving user social network information from at least one source other than the presented first composite digital [media] display." Ex. V at 22. As discussed above, a person of ordinary skill in the art would have been motivated to combine Byers with Hupert-Graff to use Hupert-Graff's additional information about the user from the community profiles (generated from external social network information) and Hupert-Graff's real-time monitoring of Internet forums and Internet chatting (external user social network interactions in an online community) to select replacement images for use in Byers' system. Moreover, Byers specifically suggests that the user profile used to determine replacement images "preferably includes information pertaining to a desired characteristic relating to the first user. In the preferred embodiment, the profile includes demographic information related to the user. For instance, the profile can include information pertaining to the user, such as their buying preferences, their location, their economic level, or their preference related to any sort of good, such as consumer goods. . . . For example, the profile could include the income level of the user, information about the area in which the user lives, the age of the user, the family status of the user, the number of children he or she has, *or any other demographic information that would be useful in determining an effective product image to be inserted in the video stream.*" Byers at 4:31-59

(emphasis added). Hupert-Graff provides two data sources for additional user profile data—community profiles and real-time monitoring—providing the "any other demographic information that would be useful in determining an effective product image to be inserted in the video stream" as suggested by Byers. Byers at 4:31-59.

Hupert-Graff's community profiles are derived from a user's interaction in an online community. For example, Hupert-Graff teaches that "[e]ach user is classified into different community categories according to the reported personal details and *his history activities*. For example, the user community categorization can be defined according to his mother tongue and dedicated passion for watching nature films." Hupert-Graff at p. 8, ll. 11-14 (emphasis added). Hupert-Graff further explains that "all available content and services are processed by a dynamic set of filtering/matching systems, based upon user history and PDP (Personal Dynamic Profile), provider inputs, the history of the entire users community etc." *Id.* at p. 8, ll. 17-20. More specifically, Hupert-Graff teaches that its Dynamic Recommendations System (DRS) updates both the community profiles and user profiles using the Dynamic Profile Update (DPU), according to the history collected and analyzed. *Id.* at p. 7, l. 18 – p. 8, l. 3. In other words, Hupert-Graff's community profiles are a function of the activity of all users that belong to that community, and the community profile is updated to represent the community's preferences "according to time schedule, content and services types, and pre-defined categories indicating the [community's] favorite subjects of interest or [community] attitude to different styles e.g. action movies." *Id.* at p. 8, l. 21 – p. 9, l. 3.

Fig. 4

Id., Figure 4.

Hupert-Graff's analysis of the real-time activities of the user with respect to Internet forums and Internet-based chat is also information derived from a user's interactions in an online community. Hupert-Graff teaches that the "DRS online system is tracking in real-time user current activities" that could include "community activities like Internet forums, . . . chatting activities through the Internet" basically "all recorded user selections and activities while watching and communicating via the Interactive device." *Id.* at p. 12, ll. 5, p. 12, ll. 8-9, p. 12, ll. 16-17. Internet

forums and Internet chatting are examples of where and how users interact in an online community.

Hupert-Graff explains that the user history is "analyzed and organized to determine the user

behavioral profile" and used to update the user profile to improve the recommendation system's

ability to recommend items. *Id.* at p. 8, l. 21 – p. 9, l. 3. Hupert-Graff's analysis to produce a

behavioral profile is information derived from a user's interactions in an online community.

Fig. 6

Id., Figure 6.

Hupert-Graff's community profiles and real-time monitoring are sourced from the user's

interactions in an online community, and specifically from members of the user's social network

that belong to the same community profile, or browse and interact with the same Internet forum, or participate in Internet chatting with the user. Hupert-Graff explicitly claims "[c]reating a third profile ('Community Profile') of users where the profile features evaluations are based upon matching the user history log and Personal Profile to relevant history logs and personal profile of **other users**." *Id.* at p. 19, claim 13 (emphasis added). Hupert-Graff also provides examples of user interaction over a social network such as chatting:

> For example, in case the system detect frequent successive activities like engaging in a chat during certain TV shows, this behavior pattern is recorded in the respective PDP parameters. Thus next time the user performs an anterior activity the successive activity will be evaluated accordingly. The recognized pattern is not limited to schedule relations or direct associations between two activities.

Id. at p. 13, l. 20 – p. 14, l. 2; *see also id.* at p. 2, ll. 12-15 ("More over this new media enables interactive interface with the user creating a new platform for interactive activities, e.g. e-commerce, interactive multimedia shows, chatting and messaging activities games etc."). The user's social network including those that are members of the same community, others that participate in the same Internet forum or Internet chatting, are from a source other than Byers' or Hupert-Graff's presented first composite digital media display and are examples of an external social network. Finally, Hupert-Graff also teaches that its learning system "can be implemented as a central service application located at gateway servers or partly as add-ons application (WG user interaction model) at the user communication device, or any combination [of] these implementations." *Id.* at p. 7, ll. 14-17. At the very least, to the extent that the learning system is at the user's communication device, it must communicate with other users that are external to the recommendation system in order to update the community profile based on other users. *Id.* at p. 19, claim 13.

Hupert-Graff's system generates a user attribute in the form of a "scoring rate" or "relevancy rate" for content based at least in part on the community profiles and real-time monitoring. *Id.* at p. 4, l. 15, Fig. 4. Hupert-Graff teaches that its recommendation system evaluates:

> the available content and services as a function of their relevance to the Behavioral Profile by comparing the Content and Services Attributes to relevant PDP parameters; scoring ("Scoring Rate") the available Content and services as a combination of the said PDP Evaluation; and conducting a first selection ("Recommendation List") of available content and services according to said Scoring Rate.

Id. at 4, ll. 12-17.
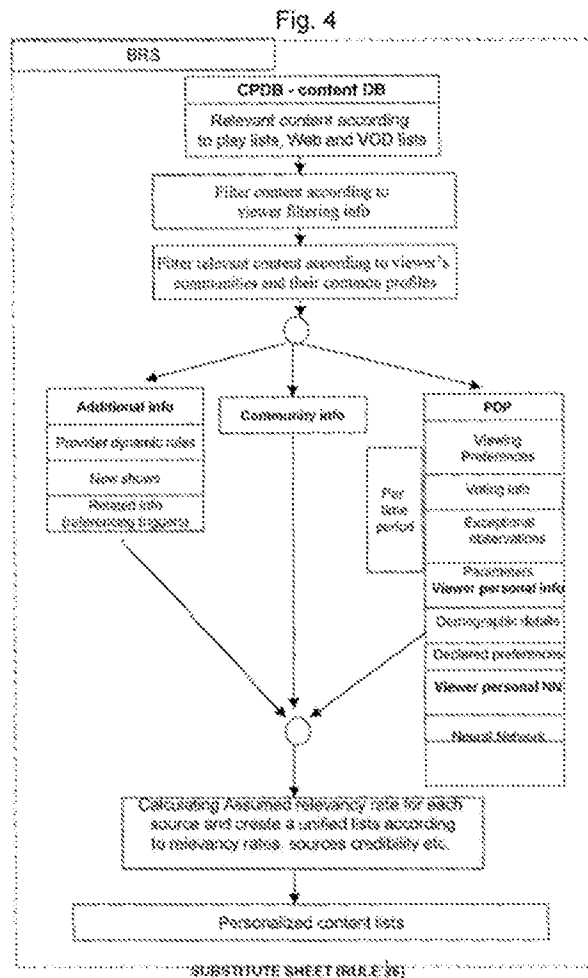
Id., Figure 4.

A person of ordinary skill in the art would have recognized that Hupert-Graff complements

Byers' personalization system, and would have been motivated to use Hupert-Graff's community

profiles and real-time monitoring to select replacement images for personalization of a digital

video stream. Ex. Y, ¶ 162.

        **c.   1[h]:   "selecting, based on the user attributes in the social
network information, a second set of digital media assets, wherein the second set of digital
media assets is associated with one or more user attributes found in the user social network
information;"**

Byers in view of Hupert-Graff discloses this limitation under both BRI and *Phillips*. As

discussed above, a person of ordinary skill in the art would have been motivated to combine Byers

with Hupert-Graff to use Hupert-Graff's community profiles and real-time monitoring to make

determinations about which replacement images to select.

Byers in view of Hupert-Graff teaches using Hupert-Graff's user attribute sourced from

user social network information to select a second set of digital media assets associated with the

user attribute. Specifically, Byers teaches that

> [v]ideo processor 205 preferably performs the processing necessary to insert the
> replacement digital image into the original video stream. Video processor 205
> preferably includes a digital signal processor (DSP) 209, memory 211, and a control
> processor 213. Control processor 213 is effective in determining the product
> images to be inserted, and preferably makes this determination based at least in part
> upon a customer profile retrieved from customer database 115, as described above.
> Control processor 213 is also effective in retrieving replacement images from image
> database 117 and storing the replacement images in memory 211.
>
> DSP 209 is effective in replacing the original elements with the replacement images
> to form a modified video stream.

Byers at 5:45-58. A person of ordinary skill in the art would have found it obvious to use Hupert-

Graff's user attribute as a basis for the video processor's 205 image replacement and selection of

replacement images from the image database 117. Ex. Y, ¶¶ 158-161. Specifically, Byers teaches

that the video processor 205 selects replacement images, *e.g.*, a set of digital media assets, based

on the user/customer profile. The Byers-Hupert-Graff system selects replacement images based on Hupert-Graff's user attribute that computes a scoring rate as a function of the relevancy of the content to the user's profile. The process of selecting the replacement images from the image database 117 is the same as selecting a second set of digital media assets.
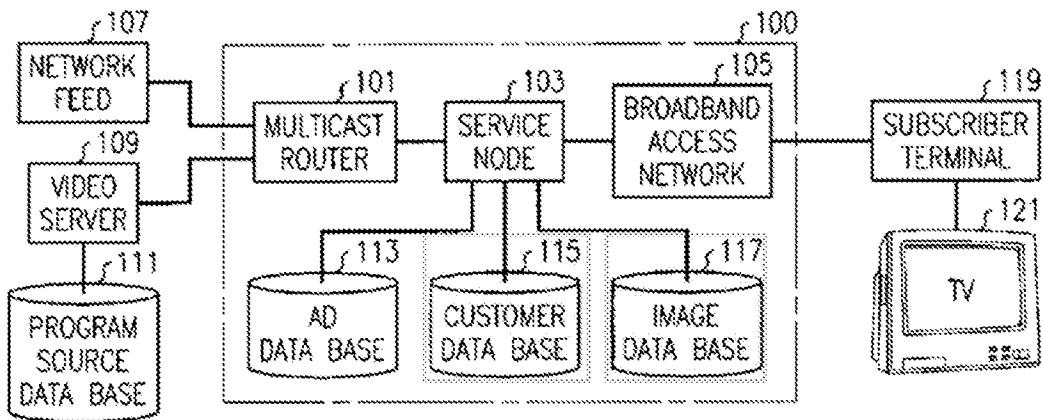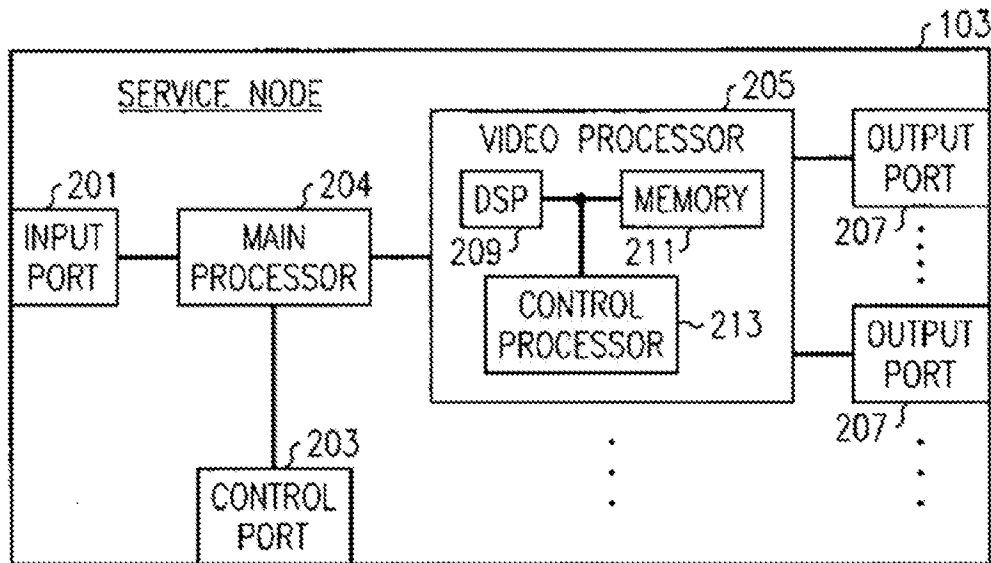

FIG. 1

FIG. 2

Byers, Figures 1-2.

This is the same as described in the '030 Patent. The '030 Patent describes user attributes as "aspects, characteristics, and qualities of the user that are useful for determining (matching, correlating, and **selecting**) digital media assets." '030 Patent at 6:32-34 (emphasis added). The '030 Patent explains that

> the user profile can then be used to present the most appropriate digital assets to the subscriber, namely those with which the user has the highest affinity, or those which map well to the user's tendencies and temperament, which may be included in the user's internal narrative perception identification framework. The internal narrative perception identification framework may include a collection of attributes, qualities, and measurements regarding the user that allow for matching, correlation and/or selection of digital media assets that are appropriate for that user and the effective communication of the message.

'030 Patent at 3:42-53. Just like Byers, the server in the '030 Patent "may develop the personalized digital media asset 212 from content 531 and the digital asset repository 541." '030 Patent at 12:4-6. To accomplish this, the "digital asset repository 541 may receive asset requests 540 from the server 590 and may provide items such as background images 200, foreground images 202, text 208, and branding graphics 206." '030 Patent at 12:34-37.

3. [SNQ 4]: Byers in view of Gutta Discloses the User Social Network Information Limitations of Claim 1

As set forth below, all elements of claim 1 of the '030 Patent are satisfied by the combination of Byers in view of Gutta. Each element of claim 1 is disclosed, taught, or suggested by the teachings of Byers incorporating the third-party recommendations of Gutta. As set forth above, Byers discloses the video substitution limitations of the '030 Patent, and as explained in detail below, Byers in view of Gutta discloses the allegedly novel limitations of the '030 Patent. Additionally, an explanation of why a person of ordinary skill in the art at the time of the alleged invention would have been motivated to combine Byers and Gutta with a reasonable expectation of success is explained demonstrating the obviousness of the Challenged Claims.

a. Motivation to Combine Byers and Gutta with a Reasonable Expectation of Success

Byers and Gutta are in related fields and are both directed toward providing personalized individualized recommendations and/or experiences and thus can be applied in an obvious combination. Ex. Y, ¶¶ 169-177; *see also Unwired Planet LLC v. Google, Inc.*, 841 F.3d 995, 1000 (Fed. Cir. 2016) ("Prior art is analogous and can be applied in an obviousness combination if it either (1) 'is from the same field of endeavor, regardless of the problem addressed or (2) 'is reasonably pertinent to the particular problem with which the inventor is involved.'"). Patent Owner, in its opposition to Requestor's Motion to Dismiss based on *Alice*, characterized the problem that the '030 Patent was trying to solve as improving the selection of media for a user: "[a]s technology was evolving, advertisers were confronted with the use of technology to avoid advertisements, e.g. by stopping pop-up ads or skipping over the ads. None of these systems, however, addressed how technology could be used to understand the individual's likes or dislikes or the individual's current mood to more appropriately adapt the content for the individual," i.e., a better recommendation system. Ex. W, at 4; *see also Unwired* 842 F.3d at 1001 ("The field of endeavor of a patent is not limited to the specific point of novelty, the narrowest possible conception of the field, or the particular focus within a given field."). Byers is specifically directed toward a system that "dynamically alters a portion of a digital video image based upon a user profile" such that "each subscriber may receive a different altered image, with the alteration being based upon a characteristic of the subscriber." Byers at 1:50-59. Gutta is directed toward providing television programming recommendations. Gutta at Abstract, 1:8-13. The Examiner noted that a person of ordinary skill in the art looking to improve recommendation systems like Byers would have looked to references that used an electronic programming guide (like Gutta), in his reasons for allowance of the '030 Patent. Ex. L at 215.

More specifically, Byers identified a deficiency in prior video networks in that identical video streams are sent across the network to all users of the network. Byers at 1:29-33. Byers notes that "[t]here is currently no way to customize the video stream for users, either based upon individual characteristics relating to the user or group characteristics." *Id.* at 1:37-39. As a result, Byers is directed to a system for "dynamically altering digital video images to allow customization of a digital video stream based upon characteristics associated with a user," where the characteristics associated with the user are obtained from a "user profile." *Id.* at 1:40-57. Byers suggests that the information in the user profile can be based on "group characteristics," the user's "buying preferences," the user's "preference related to any sort of good," or "any other demographic information that would be useful in determining an effective product image to be inserted into the video stream." *Id.* at 1:37-39, 4:31-57. Likewise, Gutta also recognizes and teaches information derived from a user's interactions in an online community in the form of selected third-party recommendations that can be used to adjust recommendations for a user. Gutta at 2:19-25 ("Thus, a given recommender evaluates the viewing or purchase habits of a user and communicates with one or more other recommenders to determine the items that are being recommended by such other recommenders. The third-party recommendations reflect the viewing or purchase habits of one or more third parties."). Gutta explicitly teaches that the selected third-party recommender could be "a friend, colleague or trendsetter." *Id.* at 2:63-64. Each of those third parties and their recommendations is an example of information derived from a user's interactions in an online community and contains user attribute information regarding which shows that they like and are recommending. Gutta provides a source of additional information that comes from third parties. Furthermore, the third parties must be selected by the user—the act of selecting specific third-party recommenders by the user is an example of the user interacting with the online

community by indicating which third parties, *e.g.*, friends, colleague, or trendsetter, the user listens to, follows, and/or wants to receive recommendations from. *Id.* at claim 1 ("receiving a selection of at least one third party [sic] recommender from said user"); 5:31-34 ("In one implementation, the programs that are highly recommended for the **selected one or more third parties** can be highlighted when presented during step 480.") (emphasis added).

A person of ordinary skill in the art would have been motivated by Byers to incorporate the third-party recommendations from Gutta's recommendation system within Byers' system to create customized and individualized digital video streams based on the third-party recommendations from Gutta's system. Ex. Y, ¶¶ 170-76. A person of ordinary skill in the art would have known that using Gutta's third-party recommendations overcomes the deficiencies of the prior art that did not customize digital video streams based on a user's profile. Ex. Y, ¶¶ 171-75. Doing so would have incorporated a known technique (Gutta's external third-party recommendations) to improve Byers personalized digital video stream system, in the same way Gutta uses the third-party recommendations. *See KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 417-18 (2007); *see also Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1380-81 (Fed. Cir. 2023) ("There is a motivation to combine when a known technique 'has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way,' using the 'prior art elements according to their established functions.'") (cleaned up); *Unwired Planet LLC v. Google Inc.*, 841 F.3d 995, 1003 (Fed. Cir. 2016) (finding motivation to combine two references under *KSR's* known technique rationale stating: "[f]or the technique's use to be obvious, the skilled artisan need only be able to recognize, based on her background knowledge, its potential to improve the device and be able to apply the technique" to combination of prior art references where the first reference searched for information based on

location and the second reference provided an improvement on how to present the information).

Gutta explicitly states that its purpose is for "recommending items of interest, . .. to a particular user based on items that been recommended to one or more third parties." Gutta at 1:8-13. Moreover, creating and presenting better and more personalized content without requiring user input, and creating a closer one-to-one relationship between the advertiser and user, would have provided the benefit of at least longer and more interested user engagement. *See* Byers at 2:47-67 ("... targeted product placement refers to placing products into scenes from a play, television show, or movie. Such placement can lead to a boon in sales ... Utilizing the present invention alleviates this problem by facilitating the placement of replacement images that are related to a user profile, thereby linking the products inserted into a video stream with a user of the video stream."); *see also* '030 Patent at 3:63-67 ("One advantage of an embodiment of the method, system, and software presented herein is that the user is presented with an enhanced experience of the creator's content that creates a greater emotional experience for the user and more impactful narrative.").

A person of ordinary skill in the art would have reasonably expected success in using Gutta's third-party recommendations to select replacement images into Byers' system. Ex. Y, ¶¶ 175, 177. Like Gutta, Byers' system is a multi-user system designed to present digital video streams to multiple users. Byers at 6:12-16 ("Service node 103 preferably includes multiple output ports 207, as depicted in FIG. 2. Each output port 207 is effective in transmitting a modified video stream to subscriber terminal 119."). Byers' user profile contains characteristics about the user, for example, "demographic information, time of day information, advertising information, geographic information, and parental consent information." *Id.* at 1:52-57. Gutta also describes

using both implicit and explicit sources of information to generate user profiles and preference

information about the user:

> Generally, television program recommendation tools obtain the viewer preferences using implicit or explicit techniques, or using some combination of the foregoing. Implicit television program recommendation tools generate television program recommendations based on information derived from the viewing history of the viewer, in a non-obtrusive manner. Explicit television program recommendation tools, on the other hand, explicitly question viewers about their preferences for program attributes, such as title, genre, actors, channel and date/time, to derive viewer profiles and generate recommendations.

Gutta at 1:31-41. Gutta extends this idea to make recommendations that are "influenced by

recommendations generated by one or more third parties, such as a friend, colleague or

trendsetter." *Id.* at 1:67-2:4. This is exactly the type of information that Byers contemplated using

when it discussed using "historical viewing preferences or buying patterns of the user" to select

the replacement image. Byers at 3:1-10; *see also id.* at 4:36-39 ("... profile can include

information pertaining to the user, such as their buying preferences, ..."). Additionally, both

Byers and Gutta use purchasing history as components of their recommendation systems, and a

person of ordinary skill in the art who was aware of Byers would have been motivated to find

references like Gutta that describe recommendation systems that use purchasing history as a

component of how they recommend items. Byers at 3:1-10 ("buying patterns"), 4:36-39 ("buying

preferences"); Gutta at 2:53-58 ("purchase history"); Ex. Y, ¶¶ 171, 173, 175. A person of ordinary

skill in the art would have reasonably expected success because Gutta's use of third-party

recommendations in a recommendation system was known in the art. Ex. Y, ¶¶ 173, 177; Gutta

at 1:65-2:29, Fig. 1, Fig. 4.

Accordingly, a person of ordinary skill in the art would have been motivated to use Gutta's

third-party recommendations in Byers' system to help select the replacement images with a

reasonable expectation of success. Ex. Y, ¶ 177.

    b. 1[g]: "retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes;"

  Byers in view of Gutta discloses this limitation under both BRI and *Phillips*. The court construed the term "user social network information" to mean "information derived from a user's interactions in an online community." Ex. V at 21. The court further construed the term "retrieving user social network information from at least one source external to the presented first composite digital media display" to mean "retrieving user social network information from at least one source other than the presented first composite digital [media] display." Ex. V at 22. As discussed above, a person of ordinary skill in the art would have been motivated to combine Byers with Gutta to use Gutta's third-party recommendations to select replacement images for use in Byers' system. Moreover, Byers specifically suggests that the user profile used to determine replacement images "preferably includes information pertaining to a desired characteristic relating to the first user. In the preferred embodiment, the profile includes demographic information related to the user. For instance, the profile can include information pertaining to the user, such as their buying preferences, their location, their economic level, or their preference related to any sort of good, such as consumer goods. . . . For example, the profile could include the income level of the user, information about the area in which the user lives, the age of the user, the family status of the user, the number of children he or she has, *or any other demographic information that would be useful in determining an effective product image to be inserted in the video stream*." Byers at 4:31-59 (emphasis added). Gutta provides an external data source for making recommendations—third-party recommendations that can be sourced from a "wired or wireless link" demonstrating that the information is external to Gutta's recommendation system and is external to both Gutta's and Byers' presentation of media content.
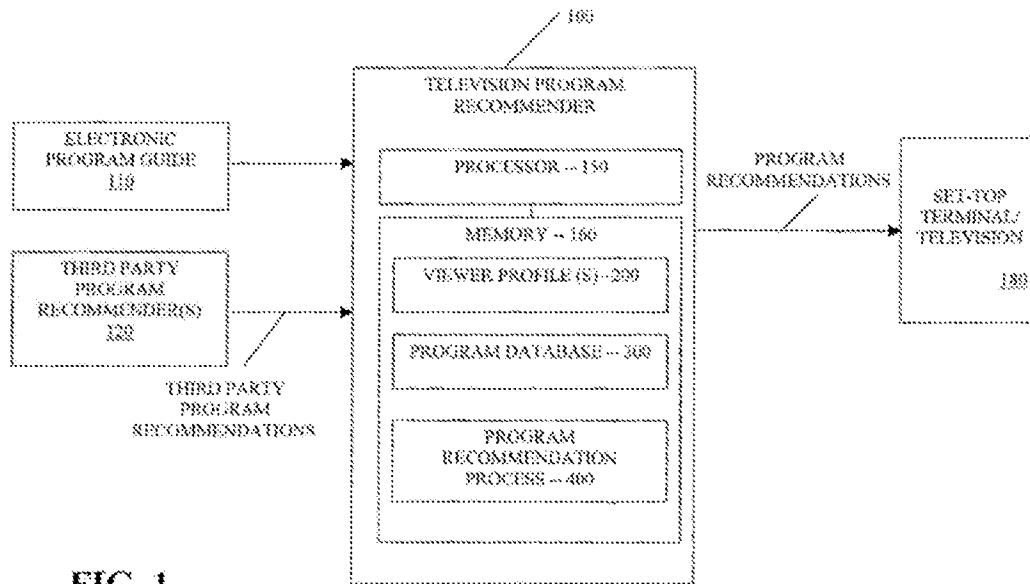
FIG. 1

Gutta, Figure 1.

Gutta's third-party recommendations is information derived from a user's interactions in an online community. For example, Gutta teaches that the third-party recommendations come from "a friend, colleague or trendsetter." Gutta at 2:59-64. Recommendations from each of these would be an example of information derived from a user's interactions in an online community, as friends and colleagues are known to be elements of a person's personal and professional social network. Additionally well-known trendsetters are often monitored and imitated by their followers forming a social network focused on the trendsetter. Furthermore, the users of Gutta's system must select which "friend[s], colleague[s], or trendsetter[s]" that the user wants the recommendation system to take third-party recommendations from. *Id.* at 1:54-57; 5:18-23; 5:31-34; claim 1 (collectively, indicating that the user must select the third-party recommender). This selection of third-party recommenders by the user is an example of information derived from the user's interactions in an online community. Gutta explicitly refers to the information received

from the third-party recommenders as coming from a "wired or wireless link" meaning that the network of third-party recommenders is online.
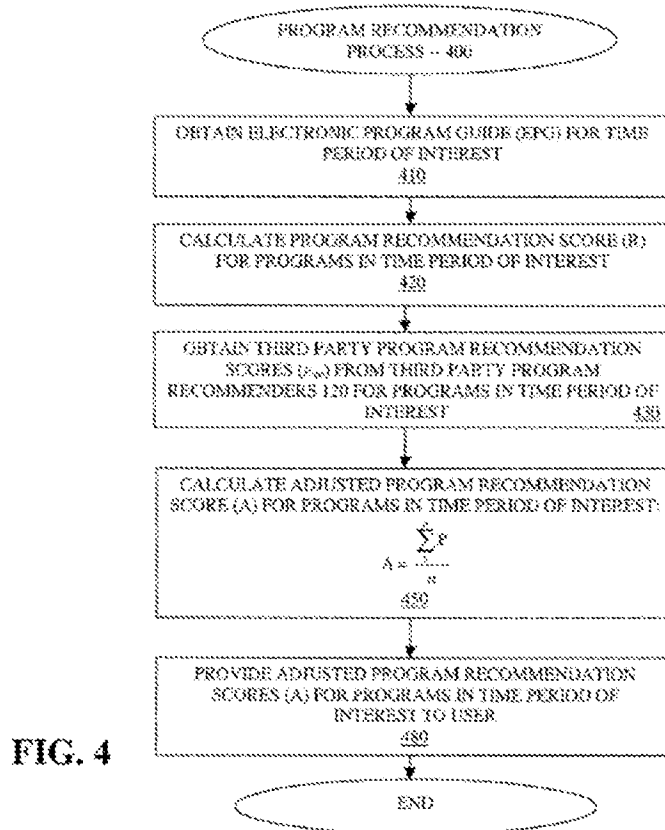
The users of Gutta's system, including the third-party recommenders interact with each other. Gutta teaches that "[a] given recommender evaluates the viewing or purchasing habits of a user and **communicates** with one or more other recommenders to determine the items that are being recommended by such other recommenders. The third-party recommendations reflect the viewing or purchase habits of one or more third parties." Gutta at 2:19-25 (emphasis added). Finding and watching programs that others have watched to stimulate conversation and interaction is a goal that Gutta explicitly describes: "many individuals often wish that they had watched a television program that was watched by a friend or colleague." Gutta at 1:52-54.

Gutta's third-party recommendations also contain user attribute information. Gutta describes that the recommendation information could be "a top-N list of recommendations . . . and may optionally include a recommendation score and an indication of whether or not the third-party actually watched or recorded the recommended program." *Id.* at 3:1-6. The additional information includes the user attribute of at least whether or not the program was actually watched and the third party's recommendation score for that program, which is an indication of whether or not the third party liked the program. This information falls within the '030 Patent's description of user attributes as including "aspects, characteristics, and qualities of the user . . . [and] may include characteristics such as affinities, likes or dislikes." '030 Patent at 6:32-38.

Gutta also calculates an adjusted recommendation score based on the user social network information obtained from the third-party recommenders. Specifically, Gutta teaches that "[a]n adjusted program recommendation score, A, is calculated during step 450 for each program in the time period of interest as follows:

$$A = \frac{\sum_{1}^{n} P}{n}.$$

where n is the number of recommenders contributing recommendation scores." Gutta at 5:6-17.

Gutta describes its algorithm in Figure 4 reproduced below, where the electronic program guide

provides the initial information about available shows, and then adjusted program

recommendations are calculated based on the third-party recommendations. Gutta at 4:62-5:40.

FIG. 4

Id., Figure 4. Specifically, the adjusted program recommendation scores are presented to the

user in step 480. Gutta at Fig. 4; 5:28-31.

A person of ordinary skill in the art would have recognized that Gutta complements Byers'

personalization system, and would have been motivated to use Gutta's third-party

recommendations to select replacement images for personalization of a digital video stream.

> c. 1[h]: "selecting, based on the user attributes in the social
network information, a second set of digital media assets, wherein the second set of digital
media assets is associated with one or more user attributes found in the user social network
information;"

Byers in view of Gutta discloses this limitation under both BRI and *Phillips*. As discussed

above, a person of ordinary skill in the art would have been motivated to combine Byers with Gutta

to use Gutta's third-party recommendations to make determinations about which replacement

images to select.

Byers in view of Gutta teaches using Gutta's third-party recommendations to select a

second set of digital media assets associated with the user attribute. Specifically, Byers teaches

that

> [v]ideo processor 205 preferably performs the processing necessary to insert the
> replacement digital image into the original video stream. Video processor 205
> preferably includes a digital signal processor (DSP) 209, memory 211, and a control
> processor 213. Control processor 213 is effective in determining the product
> images to be inserted, and preferably makes this determination based at least in part
> upon a customer profile retrieved from customer database 115, as described above.
> Control processor 213 is also effective in retrieving replacement images from image
> database 117 and storing the replacement images in memory 211.
>
> DSP 209 is effective in replacing the original elements with the replacement images
> to form a modified video stream.

Byers at 5:45-58. A person of ordinary skill in the art would have found it obvious to use Gutta's

third-party recommendations as a basis for the video processor's 205 image replacement and

selection of replacement images from the image database 117. Ex. Y, ¶¶ 174-76. Specifically,

Byers teaches that the video processor 205 selects replacement images, *e.g.,* a set of digital media

assets, based on the user/customer profile. The Byers-Gutta system selects replacement images

based on Gutta's third-party recommendations that contain user attributes, including for example,

Gutta's top-N list of recommendations or Gutta's adjusted recommendation score. The process of

selecting the replacement images from the image database 117 is the same as selecting a second

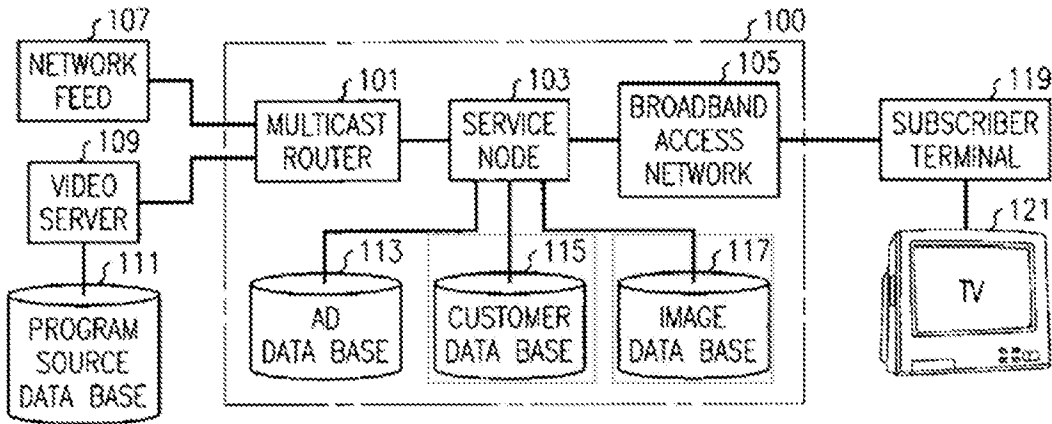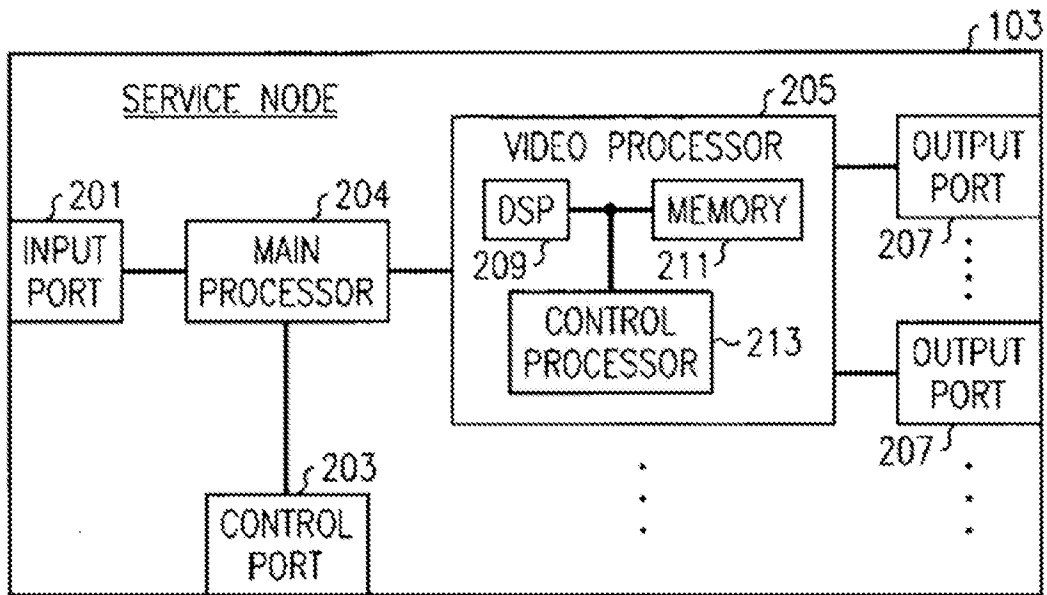set of digital media assets as described by the '030 Patent.

FIG. 1

FIG. 2

Byers, Figures 1-2.

The '030 Patent describes user attributes as "aspects, characteristics, and qualities of the user that are useful for determining (matching, correlating, and **selecting**) digital media assets." '030 Patent at 6:32-34 (emphasis added). The '030 Patent explains that

> the user profile can then be used to present the most appropriate digital assets to the subscriber, namely those with which the user has the highest affinity, or those which map well to the user's tendencies and temperament, which may be included in the user's internal narrative perception identification framework. The internal narrative perception identification framework may include a collection of attributes, qualities, and measurements regarding the user that allow for matching, correlation and/or selection of digital media assets that are appropriate for that user and the effective communication of the message.

Id. at 3:42-53. Just like Byers, the server in the '030 Patent "may develop the personalized digital media asset 212 from content 531 and the digital asset repository 541." *Id.* at 12:4-6. To accomplish this, the "digital asset repository 541 may receive asset requests 540 from the server 590 and may provide items such as background images 200, foreground images 202, text 208, and branding graphics 206." *Id.* at 12:34-37.

C.   [SNQ 5] – [SNQ 8]: Obviousness of Claims 1 and 2 of the '030 Patent in further view of Achlioptas

The video substitution system of the '030 Patent uses conventional and known methods and techniques to perform the actual video substitution—as demonstrated by the disclosures of Haberman and Byers as discussed above in sections VII.A and VII.B, *supra*, respectively. Patent Owner, in its opposition to Requestor's Motion to Dismiss based on *Alice*, characterized the problem that the '030 Patent was trying to solve as improving the selection of media for a user: "[a]s technology was evolving, advertisers were confronted with the use of technology to avoid advertisements, e.g. by stopping pop-up ads or skipping over the ads. None of these systems, however, addressed how technology could be used to understand the individual's likes or dislikes

or the individual's current mood to more appropriately adapt the content for the individual," i.e., a better recommendation system. Ex. W, at 4. The supposed point of novelty is the retrieving of user social network information from at least one source external to the presented first composite digital media display, and then using those attributes to select the replacement images in the displayed video. As described above, that technique was already known and taught in the prior art by the identified secondary references: Hupert-Graff and Gutta. To the extent that the identified secondary references did not explicitly teach or disclose a user social network, Achlioptas remedies that deficiency.

As set forth above in [SNQ 1] through [SNQ 4], each of Haberman and Byers disclose the video substitution limitations of the '030 Patent, i.e., limitations 1[a] – 1[f], 1[i] – 1[l], and claim 2. Further, as set forth above in [SNQ 1] through [SNQ 4], each of Haberman and Byers in view of Hupert-Graff or Gutta individually disclose the remaining limitations of the '030 Patent, i.e., limitations 1[g] and 1[h]. This section describes [SNQ 5] through [SNQ 8], which are based on the combinations of [SNQ 1] through [SNQ 4] as set forth above with the addition of Achlioptas to disclose the user social network limitation of 1[g] to the extent any of the identified secondary references in [SNQ 1] through [SNQ 4] are deemed to not explicitly teach or disclose the user social network limitation of 1[g]. Therefore, the sections below explain the motivation to combine Achlioptas and each of the identified secondary references with a reasonable expectation of success[10] and explain how Achlioptas discloses the user social network limitation of 1[g].

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[10] The motivations to combine each of Haberman and Byers with the secondary references—Hupert-Graff and Gutta—are set forth above in [SNQ 1] through [SNQ 4].

1.   Motivation to Combine Hupert-Graff and Achlioptas with a Reasonable Expectation of Success and the Hupert-Graff-Achlioptas system with Haberman or Byers

Hupert-Graff and Achlioptas are in related fields and are both directed toward information gathering from social networks and thus can be applied in an obvious combination. Ex. Y, ¶¶ 134-139, 149-153; *see also Unwired Planet LLC v. Google, Inc.*, 841 F.3d 995, 1000 (Fed. Cir. 2016) ("Prior art is analogous and can be applied in an obviousness combination if it either (1) 'is from the same field of endeavor, regardless of the problem addressed or (2) 'is reasonably pertinent to the particular problem with which the inventor is involved.'"). Hupert-Graff recognizes and teaches that user social network information in the form of a community profile based on the history and interactions of all users in the community can be used to determine user preferences. Hupert-Graff at 8:9-9:4, Claim 13, Fig. 4. Hupert-Graff also explicitly teaches that monitoring the user's activity in real time, including "community activities like Internet forums" and "chatting activities through the Internet," can be used to determine user preferences as well. *Id.* at 12:4-6. Achlioptas is titled "System and Method for Employing Social Networks for Information Discovery" and notes that "[s]ocial networks are often relied upon for opinion based information such as for example, movies, restaurants, travel locations and the like." Achlioptas at 1:52-54. Achlioptas' system includes "storage 120 that stores a variety of data such as for example, user/entity profiles 123, indices 114, and a directed graph 130 of a social network." *Id.* at 5:35-37. For example, the user profiles in Achlioptas can be based on "cookie information for a particular user" that indicates the user frequently visits a certain type of web site, suggesting an interest in that type of information. *Id.* at 7:65-8:2.

FIG. 1
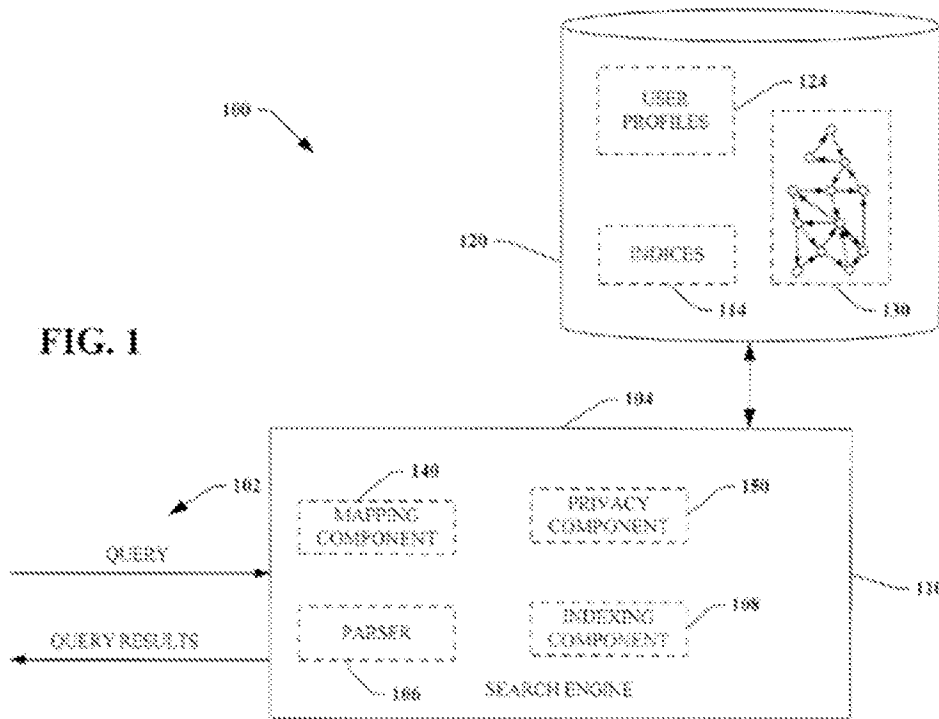
Id., Figure 1.

Hupert-Graff identified a potential deficiency in the prior art's ability to provide a user "with [the] most relevant data content and services available fitting [the user's] preferences, habits and taste." Hupert-Graff at 3:14-18. Hupert-Graff suggests that a community profile based on the history and interactions of all users in the community can be used to determine user preferences. Hupert-Graff at 8:9-9:4, Claim 13, Fig. 4. Achlioptas expands on this concept and suggests that other information gathering schemes such as "cookies, data scavenging, 3rd party providers . . ." could be used to obtain profile information based on social networks, which Achlioptas describes as:

> a directed graph 130 [that] is a large collection of information relating to individuals and relationships between those individuals. The directed graph 130 although pictorially depicted as a graph of vertices and arc can take many data-structure type

forms (e.g., table, relational databases, XML based databases), and functionally represents intra-relationships between subsets of individuals and/or entities within the social network."

Achlioptas at 5:41-55.

A person of ordinary skill in the art would have been motivated to incorporate the community profile information source of Hupert-Graff with the directed social network of Achlioptas to use Achlioptas' directed user social network graph to build a complete picture of the social network. Ex. Y, ¶¶ 135-137; 164-66. Achlioptas teaches that "[o]ne of the most effective channels of disseminating and obtaining information is through direct, personal relationships referred to as social networks." Achlioptas at 1:13-15. Doing so would have incorporated a known technique (Achlioptas' directed user social network graph) to improve Hupert-Graff's ability to obtain user preferences from a community profile in the same way that Achlioptas uses the directed user social network graph to improve its information discovery. *See KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 417-18 (2007); *see also Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1380-81 (Fed. Cir. 2023) ("There is a motivation to combine when a known technique 'has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way,' using the 'prior art elements according to their established functions.'") (cleaned up); *Unwired Planet LLC v. Google Inc.*, 841 F.3d 995, 1003 (Fed. Cir. 2016) (finding motivation to combine two references under *KSR's* known technique rationale stating: "[f]or the technique's use to be obvious, the skilled artisan need only be able to recognize, based on her background knowledge, its potential to improve the device and be able to apply the technique" to combination of prior art references where the first reference searched for information based on location and the second reference provided an improvement on how to present the information).

Accordingly, a person of ordinary skill in the art would have reasonably expected success in using Achlioptas' directed user social network graph to help Hupert-Graff build the community profiles from which Hupert-Graff determines user profile information. Ex. Y, ¶¶ 138, 167. Like Achlioptas, Hupert-Graff's community profile information can be based on a user's community activities online. Hupert-Graff at 12:4-6. By using Achlioptas' directed user social network graph, generating Hupert-Graff's profile information would be more accurate and useful. A person of ordinary skill in the art would have reasonably expected success because using a directed user social network graph was known in the art. Achlioptas at 1:13-18; 1:52-57; 5:35-55; Ex. Y, ¶¶ 134, 138, 164, 167.

The resulting Hupert-Graff-Achlioptas system would have been the basis for improving the recommendation systems of both Haberman and Byers for the reasons stated in sections VII.A.2.a and VII.A.3.a. Ex. Y, ¶¶ 139, 168. Specifically, the Hupert-Graff-Achlioptas system has more and better information about the user than Hupert-Graff alone due to the inclusion of Achlioptas' directed user social network graph.

2. Motivation to Combine Gutta and Achlioptas with a Reasonable Expectation of Success and the Gutta-Achlioptas system with Haberman or Byers

Gutta and Achlioptas are in related fields and are both directed toward information gathering from social networks and thus can be applied in an obvious combination. Ex. Y, ¶¶ 149-153, 178-182; *see also Unwired Planet LLC v. Google, Inc.*, 841 F.3d 995, 1000 (Fed. Cir. 2016) ("Prior art is analogous and can be applied in an obviousness combination if it either (1) 'is from the same field of endeavor, regardless of the problem addressed or (2) 'is reasonably pertinent to the particular problem with which the inventor is involved.'"). Gutta specifically states that "many individuals often wish that they had watched a television program that was watched by a friend or colleague. There is currently no mechanism, however, to recommend television programs or other

items of interest based on recommendations made to a selected third party, such as a friend,

colleague or trendsetter." Gutta at 1:52-57. Gutta addresses this problem by specifically

employing electronic communication between its recommendation system and third parties (a

social network):

> According to one feature of the present invention, the recommendation scores
> generated by the television programming recommender 100 are influenced by
> recommendations that were generated for one or more third parties, for example,
> by a third party [sic] program recommender 120. The third party may be, for
> example, a friend, colleague or trendsetter. The primary recommender 100 and the
> third party [sic] recommender 120 may exchange recommendations in any known
> manner, including a wired or wireless link.
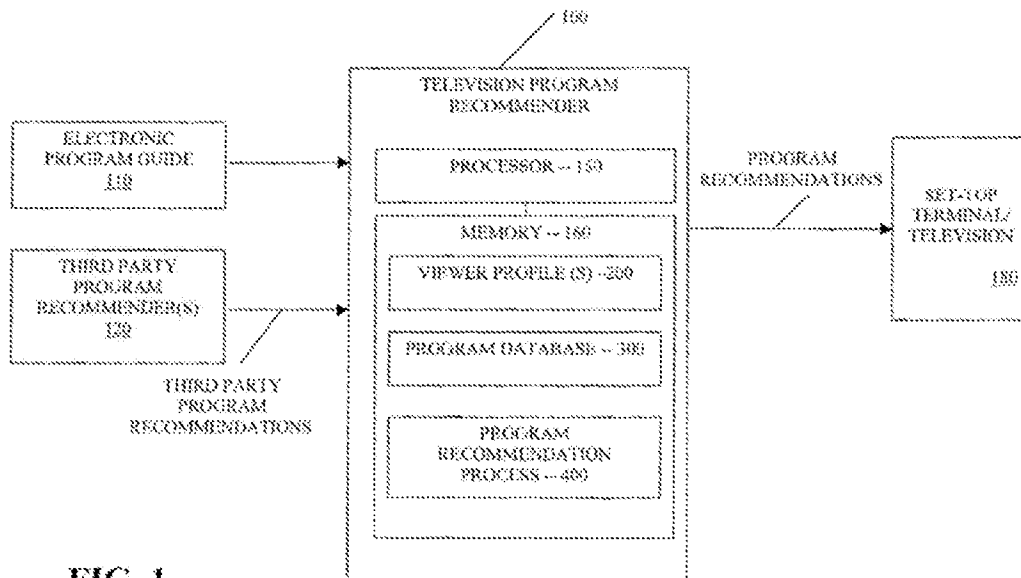

FIG. 1

Id. at 2:59-67, Fig. 1. Achlioptas is titled "System and Method for Employing Social Networks

for Information Discovery" and notes that "[s]ocial networks are often relied upon for opinion

based information such as for example, movies, restaurants, travel locations and the like."

Achlioptas at 1:52-54. Achlioptas' system includes "storage 120 that stores a variety of data such

as for example, user/entity profiles 123, indices 114, and a directed graph 130 of a social network."

Id. at 5:35-37.

FIG. 1
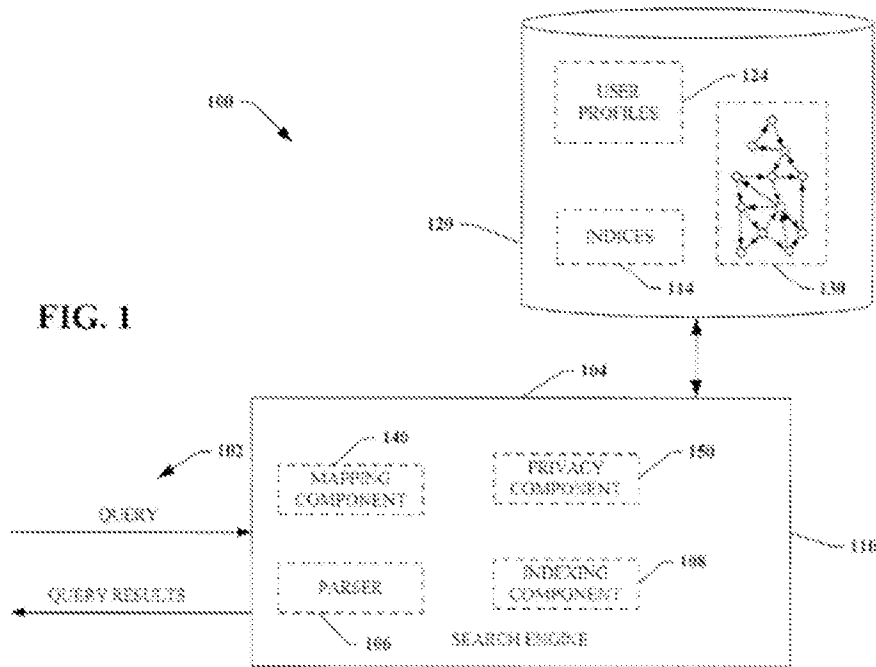
Id., Figure 1.

Gutta explains the value of being able to use recommendations from a third party (social network):

> In addition, many individuals often wish that they had watched a television program that was watched by a friend or colleague. There is currently no mechanism, however, to recommend television programs or other items of interest based on recommendations made to a selected third party, such as a friend, colleague or trendsetter. In addition, there is currently no mechanism for a plurality of recommenders to share recommendations and generate recommendation scores based on information about what other recommenders are recommending.

Gutta at 1:52-61. As described above, Gutta teaches that its recommendations are "influenced by one or more third parties, for example, by a third-party program recommender 120. The third party

may be, for example, a friend, colleague, or trendsetter." *Id.* at 2:59-64. Achlioptas explains the same concept and teaches that "[s]ocial networks are often relied upon for opinion based information such as for example, movies, restaurants, travel locations and the like. Such information within a large number of the general populous is typically more relied on than well known [sic] restaurant and movie critics." Achlioptas at 1:52-57. Achlioptas' social network is:

> a directed graph 130 [that] is a large collection of information relating to individuals and relationships between those individuals. The directed graph 130 although pictorially depicted as a graph of vertices and arc can take many data-structure type forms (e.g., table, relational databases, XML based databases), and functionally represents intra-relationships between subsets of individuals and/or entities within the social network.

Id. at 5:48-55. Achlioptas provides the implementation suggested by Gutta—using the directed user social network graph of Achlioptas as the source of Gutta's third-party recommendations. Gutta also contemplates the receipt of such electronic third-party recommendation information from a "wired or wireless link." Gutta at 2:64-67.

A person of ordinary skill in the art would have been motivated to incorporate the third-party recommendation source of Gutta with the directed social network of Achlioptas to use Achlioptas' directed user social network graph to determine social network information. Ex. Y, ¶¶ 150-52, 179-81. Achlioptas teaches that "[o]ne of the most effective channels of disseminating and obtaining information is through direct, personal relationships referred to as social networks." Achlioptas at 1:13-15. Doing so would have incorporated a known technique (Achlioptas' directed user social network graph) to improve Gutta's third-party recommendation system, in the same way that Achlioptas uses the directed user social network graph to improve its information discovery. *See KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 417-18 (2007); *see also Intel Corp. v. PACT XPP Schweiz AG*, 61 F.4th 1373, 1380-81 (Fed. Cir. 2023) ("There is a motivation to combine when a known technique 'has been used to improve one device, and a person of ordinary

skill in the art would recognize that it would improve similar devices in the same way,' using the 'prior art elements according to their established functions.'") (cleaned up); *Unwired Planet LLC v. Google Inc.*, 841 F.3d 995, 1003 (Fed. Cir. 2016) (finding motivation to combine two references under *KSR's* known technique rationale stating: "[f]or the technique's use to be obvious, the skilled artisan need only be able to recognize, based on her background knowledge, its potential to improve the device and be able to apply the technique" to combination of prior art references where the first reference searched for information based on location and the second reference provided an improvement on how to present the information).

Accordingly, a person of ordinary skill in the art would have reasonably expected success in using Achlioptas' directed user social network graph to help Gutta's system obtain more third-party recommendations. Ex. Y, ¶¶ 152, 181. Like Achlioptas, Gutta's recommendation engine is based at least in part on other user's recommendations. Gutta at 4:62-5:27. By using Achlioptas' directed user social network graph, Gutta's recommendation system would be able to obtain potentially a greater number of third-party recommendations with greater relevancy for the user in question. A person of ordinary skill in the art would have reasonably expected success because using a directed user social network graph was known in the art. Achlioptas at 1:13-18; 1:52-57; 5:35-55; Ex. Y, ¶¶ 150, 152, 179, 181.

The resulting Gutta-Achlioptas system would have been the basis for improving the recommendation systems of both Haberman and Byers for the reasons stated in sections VII.B.2.a and VII.B.3.a. Ex. Y, ¶¶ 153,182. Specifically, the Gutta-Achlioptas system has more and better information about the user than Gutta alone due to the inclusion of Achlioptas' directed user social network graph.

3.   1[g]: "retrieving user social network information from at least one source external to the presented first composite digital media display, wherein the user social network information contains one or more user attributes;"

Each of the primary references of Haberman and Byers in view of any of the secondary references of Hupert-Graff or Gutta in further view of Achlioptas disclose this limitation under both BRI and *Phillips*. The court construed the term "user social network information" to mean "information derived from a user's interactions in an online community." Ex. V at 21. The court further construed the term "retrieving user social network information from at least one source external to the presented first composite digital media display" to mean "retrieving user social network information from at least one source other than the presented first composite digital [media] display." Ex. V at 22.

Achlioptas teaches a directed user social network graph in electronic form. Achlioptas at 5:35-55 ("The system 100 further includes . . . a directed graph 130 of a social network. . . . The directed graph 130 . . . can take many data-structure type forms (e.g. table, relational databases, XML based databases)."). Achlioptas describes its user social network as:

> The directed graph 130 is a large collection of information relating to individuals and relationships between those individuals. The directed graph 130 . . . functionally represents intra-relationships between subsets of individuals and/or entities within the social network.
>
> * * *
>
> With the graph 130 individuals and/or entities in a particular social network are represented by vertices (e.g., nodes), and a relationship between two vertices are represented via an arc connecting the vertices.

Id. at 5:48-55; 6:36-39.

FIG. 2

Id., Figure 2.

A person of ordinary skill in the art would have recognized that Achlioptas complements the systems of the identified secondary references, and would have been motivated to use Achlioptas' directed user social network graph as an explicit teaching or description of user social network information from which the identified secondary references could determine user attributes, as explained above in [SNQ 1] through [SNQ 4].

VIII. List of Exhibits

A. United States Patent No. 8,856,030 to Russek ("Russek").

B. United States Patent No. 7,904,922 to Haberman et al. ("Haberman")

C. United States Patent No. 7,334,249 to Byers ("Byers")

D. PCT Publication No. WO 2001/67317 to Hupert-Graff et al. ("Hupert-Graff")

E. United States Patent No. 7,571,452 to Gutta ("Gutta")

F. United States Patent No. 7,472,110 to Achlioptas ("Achlioptas")

G. *TikTok Inc. v. 10Tales, Inc.*, IPR2021-00476, Petition - Paper 1

H. *TikTok Inc. v. 10Tales, Inc.*, IPR2021-00476, Patent Owner's Preliminary Response - Paper 8

I.   *TikTok Inc. v. 10Tales, Inc.*, IPR2021-00476, PTAB Decision Denying Institution - Paper 13

J.   *TikTok Inc. v. 10Tales, Inc.*, IPR2021-00476, Petitioner's Request for Rehearing - Paper 14

K.   *TikTok Inc. v. 10Tales, Inc.*, IPR2021-00476, PTAB Decision Denying Request for Rehearing - Paper 15

L.   U.S. Patent No. 8,856,030 File History

M.   U.S. Application No. 14/506,822 File History

N.   10Tales' Opening Claim Construction Brief and Exhibits filed in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 4:21-cv-03868-YGR

O.   Defendants' Responsive Claim Construction Brief and Exhibits filed in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD

P.   10Tales' Reply Claim Construction Brief and Exhibits filed in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD

Q.   Amended Joint Claim Construction and Prehearing Statement Pursuant to Patent L.R. 4-3 filed in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD

R.   Claim Construction Hearing Transcript in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD

S.   Order Granting in Part and Denying in Part Defendants' Motion for Leave to File Claim Construction Sur-Reply in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD

T.   10Tales' Supplemental Claim Construction Brief filed in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD

U.   Defendants' Responsive Supplemental Claim Construction Brief filed in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD

V.   Order Construing Claim Terms of U.S. Patent No. 8,856,030 issued by the Honorable Virginia K. DeMarchi in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD

W.   10Tales' Opposition to Defendants' Second Motion to Dismiss Plaintiff's Amended Complaint For Failure to State a Claim Pursuant to Fed. R. Civ. P. 12(b)(6) and 35 U.S.C. § 101 filed in *10Tales, Inc. v. TikTok Inc., et al.*, Civil Action No. 5:21-cv-03868-VKD

X.   U.S. Patent No. 6,357,042 to Srinivasan et al. ("Srinivasan")

Y.   Declaration of Henry Huoh, Ph.D. in support of Requestor's Ex Parte Reexamination Request

IX.   Conclusion

For the foregoing reasons, the references cited in this Request provide new, non-cumulative technological teachings that were not previously considered during the prosecution of the '514 Application that matured into the '030 Patent. A reasonable examiner would consider the references cited in this Request relevant, important, and material in deciding the patentability of the Challenged Claims. Accordingly, the Challenged Claims of the '030 Patent are not patentable under 35 U.S.C. § 103 as described in this Request.

Cancellation of Claims 1 and 2 is requested to preclude the Patent Owner of the '030 Patent from excluding others from practicing that which was already known in the prior art and constitutes part of the public knowledge.

X.   Certificate of Service

Requestor's representative, by signing below, certifies that pursuant to 37 C.F.R, § 1.33(c) a copy of this Request for *Ex Parte* Reexamination in its entirety has been served on the attorney of record for the Patent Owner at the address listed in the PTO PAIR database:

Date: October 10, 2023

Respectfully submitted,

Customer No. 30764
650 Town Center Drive, 10th Floor
Costa Mesa, California 92626
United States of America

By: /Stephen S. Korniczky/
Registration No. 34,853