

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HULU, LLC and
NETFLIX, INC.,
Petitioners,

v.

UNILOC 2017, LLC,
Patent Owner.

Case No. IPR2020-00008
Patent No. 9,721,273 B2

**DECLARATION OF MICHAEL FRANZ IN SUPPORT OF PETITION FOR
INTER PARTES REVIEW OF U.S. PATENT NO. 9,721,273**

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In Support of Petition for *Inter Partes* Review of
U.S. Pat. No. 9,721,273

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I. INTRODUCTION

1. I, Michael Franz, have been retained by Petitioners Hulu, LLC (“Hulu”), and Netflix, Inc. (“Netflix”) (collectively, “Petitioners”) to investigate and opine on certain issues relating to United States Patent No. 9,721,273 (“the ’273 patent”) in their Petition for Inter Partes Review of that patent. The Petition requests that the Patent Trial and Appeal Board (“PTAB” or “Board”) review and cancel claims 1-3 of the ’273 patent.

2. The opinions set forth in this declaration are based on my personal knowledge, my professional judgment, and my analysis of the materials and information referenced in this declaration and its exhibits and appendices.

3. I am being compensated for consulting services including time spent at any depositions that may be held. I am also reimbursed for reasonable and customary expenses associated with my work in this case. I receive no other forms of compensation related to this case. My compensation does not depend on the outcome of this inter partes review or the co-pending district court litigation, and I have no other financial interest in this inter partes review.

4. I understand that the ’273 patent has been assigned to Uniloc 2017 LLC.

5. This declaration is based on the information currently available to me. To the extent that additional information becomes available, I reserve the right to continue my investigation and study, which may include a review of documents and

information that may be produced, as well as testimony from depositions that have not yet been taken.

A. Qualifications

1. Education

6. I completed my undergraduate studies with a Diplomingenieur from the Swiss Federal Institute of Technology in Zurich (“ETH Zurich”) in 1989. In 1994, I obtained my Doctorate of Technical Sciences from ETH Zurich. My dissertation was entitled “Code-Generation On-the-Fly: A Key to Portable Software.”

2. Work Experience

7. I am a tenured Chancellor’s Professor of Computer Science in the Donald Bren School of Information and Computer Sciences at the University of California, Irvine (“UCI”). I am also, by courtesy, a Full Professor of Electrical Engineering and Computer Science in the Henry Samueli School of Engineering at UCI. In 2016, the University awarded me the title of distinction of “Chancellor’s Professor.”

8. I have held visiting faculty appointments at ETH Zurich, the University of California at Berkeley, the University of Klagenfurt in Austria, and the Technical University of Berlin, the Technical University of Brunswick, and the University of Ulm in Germany.

9. I have been elevated to Fellow of the Institute of Electrical and Electronics Engineers (IEEE), the global engineering society. Fellow is the highest of three grades of membership that are awarded based on merit. In every year, IEEE limits the number of new Fellows to one tenth of one percent of the membership, which currently stands at about 430,000 members.

10. I have also been elevated to Fellow of the Association for Computing Machinery (ACM), the global professional society for computer scientists. Fellow is the highest of ACM's four grades of membership. ACM's rules for Fellows are even more restrictive than IEEE's, limiting the total number of Fellows in absolute terms to 1% of the membership, which currently stands at about 100,000 members. ACM has typically elevated no more than 50 individuals to Fellow status in a single year; in 2015, the year I was advanced, there were 42 new Fellows.

11. Furthermore, I am a recipient of the IEEE Computer Society's Technical Achievement Award, "for pioneering contributions to just-in-time compilation and optimization and significantly advancing Web application technology." At most 5 of these awards are given annually by the IEEE Computer Society, the largest of the IEEE's technical societies with a current membership of more than 60,000 members.

12. I am also a recipient of the 2019 Humboldt Research Award, also known as the "Humboldt Prize." The award, given by the Alexander von Humboldt

Foundation of Germany and funded by the German federal government, recognizes renowned researchers outside of Germany whose “fundamental discoveries, new theories or insights have had a significant impact on their own discipline and who are expected to continue producing cutting-edge achievements in the future.” It is the highest award given by the Foundation to researchers based outside of Germany.

13. I have led pioneering research on downloadable code in client-server settings such as what we today call “Web 2.0.” This research has had a real and lasting impact on a great many people. I am the co-inventor (with one of my former Ph.D. students) of the “Trace Tree” compilation technique, for which the United States Patent and Trademark Office has awarded U.S. Patent No. 8,769,511. I collaborated with the non-profit Mozilla Foundation to incorporate this technique into the Firefox web browser, where it became the basis of the “TraceMonkey” JavaScript engine, eventually used by several hundred million people every day.

14. Over the course of my career so far, I have been the Principal Investigator on several high-profile research projects with a total budget of almost \$20M. My expertise in software systems, with distinct emphases on performance and security of client-server and mobile computing, has been sought out repeatedly by the United States Government, and I have participated in many high-level invitation-only meetings on Critical Infrastructure Protection and Cyber Security

organized by the National Intelligence Community, the Department of Defense, the Department of Homeland Security, and the Department of Energy.

15. I am an Associate Editor of one of the flagship journals of the IEEE, the IEEE Transactions on Dependable and Secure Computing (TDSC), and on the editorial board of two further peer-reviewed scholarly journals focusing on software engineering, Software – Practice and Experience (SPE) and Computer Science – Research and Development (CSRD). I have served on the program committees of most major academic conferences that are related to the various themes of my research.

16. I have served as the primary advisor to 28 completed Ph.Ds. and currently serve as the primary advisor on 11 further dissertations in progress.

3. Publications

17. In addition to my dissertation, I co-authored the book “Automated Software Diversity,” released in 2015.

18. I have published 35 strongly peer-reviewed journal and magazine articles since 1993, and over 100 strongly peer-reviewed conference and workshop papers.

19. I am an inventor on five issued U.S. patents, as well as an additional patent that has been given a “notice of allowance” but that has not issued yet. I have one additional U.S. patent application pending.

4. Curriculum Vitae

20. A copy of my curriculum vitae is attached as Appendix A to this declaration.

B. Materials Reviewed

21. My opinions expressed in this declaration are based on documents and materials identified in this declaration, including the '273 patent and its file history, the prior art references and background materials discussed in this declaration, and the other references specifically identified in this declaration. I have considered these materials in their entirety, even if only portions are discussed here.

22. I have also relied on my own experience and expertise in Web technologies.

23. Where I refer to exhibits, they are the exhibits listed in the Exhibit List accompanying the Petition. I also refer to documents that are solely discussed within this declaration and are attached as appendices hereto.

C. Level of Ordinary Skill in the Art

24. I am not an attorney and offer no legal opinions. I have been informed about certain aspects of the law for purposes of my analyses and opinions.¹

¹ I understand that the patent laws were amended by the America Invents Act (AIA), but that the earlier statutory requirements still apply to pre-AIA patents. I have been informed that the '273 Patent is a pre-AIA patent, so the pre-AIA

25. I understand that in analyzing questions of invalidity and infringement, the perspective of a person having ordinary skill in the art at the time of the invention (“POSA”) is often implicated, and the Court may need assistance in determining that level of skill.

26. I understand that the claims and written description of a patent must be understood from the perspective of a POSA at the time of the invention. I have been informed that the following factors may affect the level of skill of a POSA: (1) the educational level of the inventor; (2) the type of problems encountered in the art; (3) the prior-art solutions to those problems; (4) the speed with which innovations are made; (5) the sophistication of the technology; and (6) the educational level of active workers in the field. A person of ordinary skill in the art is also a person of ordinary creativity in the art.

27. Based on my experience of being directly involved in advancing the “Web 2.0” paradigm by contributing major innovations to one of the major web browsers around the time of the alleged invention, as well as my reading of the ’273 Patent, it is my opinion that a person of ordinary skill with respect to the subject matter of the ’273 Patent at the time of the alleged invention would have had at least

requirements control. Unless otherwise stated, my understanding of the law about patent invalidity as set forth in this declaration relates to the pre-AIA requirements.

a bachelor's degree in computer science or a related discipline (or equivalent experience) and would have had at least one year of experience working with web technologies, such as HTTP, HTML, RSS, Javascript and similar technologies. This definition is approximate, and more experience could substitute for education, or vice versa.

28. I was a person of ordinary skill in the art on the date to which the '273 Patent claims priority (August 21, 2008). As shown by my qualifications and my curriculum vitae attached as Appendix A, I am aware of the knowledge and skill possessed by a person of ordinary skill in the art at the time of the alleged invention claimed by the '273 Patent. In performing my analysis, I have applied the standard set forth above.

D. Summary of Opinions

29. It is my opinion that claims 1-3 of the '273 Patent are invalid as obvious based on Darnell in view of Owens.

30. It is my opinion that claims 1-3 of the '273 Patent are invalid as obvious based on Gossweiler in view of Hammersley.

II. OVERVIEW OF THE TECHNOLOGY

A. Priority Date of the Claims

31. I have been informed that a U.S. patent application may claim the benefit of the filing date of an earlier patent application if the earlier patent

application disclosed each limitation of the invention claimed in the later-filed U.S. patent application. I have also been informed that priority is determined on a claim-by-claim basis so that certain claims of a patent may be entitled to the priority date of an earlier-filed patent application even if other claims of the same patent are not entitled to that priority date.

32. I have also been informed that for patent applications filed before March 16, 2013, a patented claim is invalid if the claimed invention was patented or described in a printed publication in any country more than one year before the effective filing date of the claim, regardless of when the applicant conceived of the claimed invention.

33. I understand that the '273 Patent claims a priority date of August 21, 2008.

B. Overview of Relevant Technology When the '273 Patent Was Filed

1. Feeds and Content Syndication

34. The concept of a “feed” for internet content arose just before the turn of the millennium. A feed is a channel that announces new internet content as well as updates to already published content; the activity of making available such a feed for incorporation into other sites or to groups of users is called “syndication.” Feeds typically do not include the full underlying content that they relate to but usually

only information such as a summary or headline and the URL at which the actual content is located.

35. Users subscribe to such feeds to be alerted of new content as well changed content from content providers that they are interested in. The benefit of using a feed is that users no longer have to keep polling the actual content pages to see if anything has changed – the feed pinpoints changes and new content directly. Feeds are not a “push” technology – a user’s browser (or in the early days, dedicated feed-reader) still needs to periodically fetch the feed data and parse it, but this typically requires far less effort than polling all of the actual content pages.

36. Making a collection of feeds – or a collection of any information – accessible in one spot is known as “aggregation.” Aggregation can happen directly at the client (where a user’s browser subscribes to multiple feeds and presents them to the user in a unified interface) or it can happen at a server that combines a feed with other feeds and/or with other internet content.

37. There were three main formats for feeds, as that term was understood at the time the ’273 Patent was filed. The original RSS 1.0 (1.3) standard was published in December 2000 after being developed in the late 1990s. RSS 1.0 uses the Extensible Markup Language (“XML”) to structure the information in the feed document.

38. The other two major feed formats, RSS 2.0 (cited by the '273 Patent) and Atom, also use XML to structure the information in the feed document, and both RSS 2.0 and Atom were the subject of standards at the time of the '273 patent. Ex. 1006 at 17. RSS 1.0 and RSS 2.0 were often described together simply as “RSS,” and the RSS format was far more popular than Atom.

39. XML is a data format defined in 1998 by the World Wide Web Consortium. It was designed to allow machine processing of data objects, yet to remain human-readable. XML contains intermingled character data, typically known as “content,” and markup, which “encodes a description of the document's storage layout and logical structure” – i.e., markup explains to the program processing the XML document (the “XML processor”) how the data should be parsed.

40. Markup is expressed as “elements” – formed as “tags” surrounding character data. For instance,

<markup>Element</markup>

41. XML has no constraints on semantics, and creators of XML documents may use markup tags of their own choosing; however, the XML processor must understand the syntax of a given document to process and display it properly. As a result, for XML documents to be comprehensible to a large number of XML

processors, a consensus about semantics is required. Over time, a large number of different XML-based document formats have been proposed for different purposes by different entities, and some of these have become widely used and adopted as standards by common consensus of the developer community.

42. RSS 1.0, RSS 2.0, and Atom were the three most popular specifications for syndication feeds. Each of these formats contains a designated set of XML elements that XML processors can read to interpret and display the information carried by the feed document.

2. Web 2.0, “Mashups”, and “Web Portals”

43. Around the year 2006, the different types of content on the internet started being combined in what we today call “Web 2.0” and a major buzzword both in academia as well as in the popular discourse was the term “mashup.” A mashup is a web page or a web application that integrates content from multiple sources in a single graphical user interface. Mashups became a very widely discussed topic among computer scientists, and this widespread awareness and discussion would certainly have provided a motivation to experiment with combining related technologies for anyone working on similar topics. Web sites that provided such combined content were often referred to as “portals.”

44. To quote a few representative academic papers from that era, Mulholland (2006) writes:

But the pioneering efforts of independent developers in tandem with services provided by companies like Google, Amazon.com, and many others, have enabled the assembly of simple composite applications commonly called “mashups” to appear on the scene.

Mashups may run inside browsers or in new, richer environments called composite applications. They aren’t based exclusively on HTML delivered by a server. Instead, mashups use services **typically delivered in XML from many different sites** to knit together a useful experience for the customer.”

App. B-1 at 542. Mulholland was published in the Proceedings of the 4th International Conference on Service-Oriented Computing. I am familiar with this conference, and its proceedings are the type of information I would normally rely on to determine the state of the art.

45. HTML (HyperText Markup Language) is the standard language for documents being displayed by a web browser. It was developed in the early 1990s. Like XML, it contains character data and markup tags, but unlike XML, the tags in HTML have a defined syntax and cannot be adapted to individual use. HTML allows web developers to aggregate various content items, such as text, images, audio, video, and other material that can be rendered into single “webpages” for viewers.

46. Similarly, Diaz et al. (2007) notes:

There is an increasing tendency for Web applications to open their data silos and make them available through APIs and RSS-based mechanisms. This permits third parties to tap on those resources, combining them in innovative ways to conform the so-called mashup applications.

App. B-2 at Abstract. Diaz is a publication from the 2007 International Conference on Web Information Systems Engineering. I am familiar with this conference, and its proceedings are the type of information I would normally rely on to determine the state of the art.

47. “APIs” are Application Programming Interfaces. They serve as bridges for components in other applications to communicate. As they do today, at the time of the ’273 Patent was filed, developers could use APIs to embed information from other websites into their own websites.

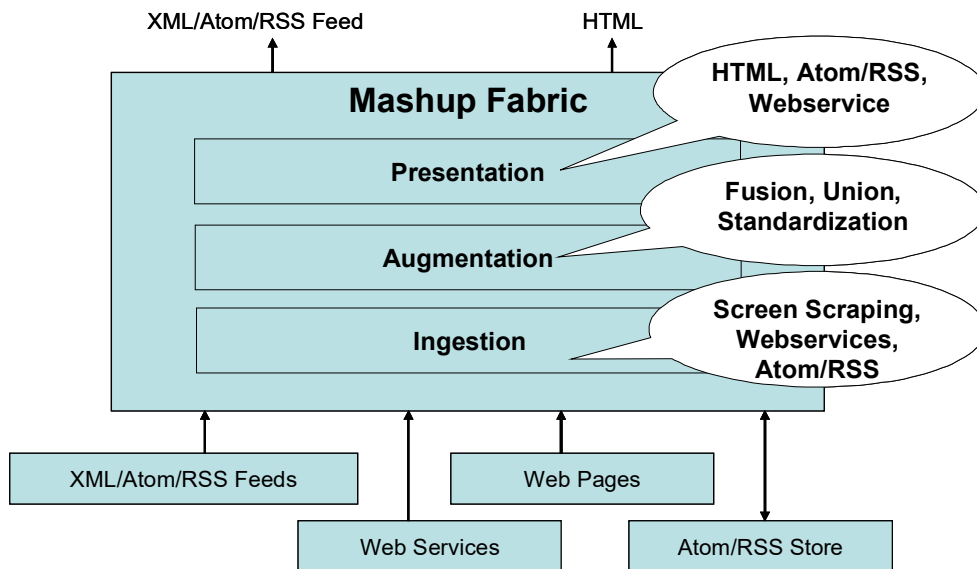
48. Schroth and Janner (2007) notes:

Mashup platforms let users retrieve content or functionality from arbitrary sources, mix it with other resources, and expose it for further reuse by other applications.

App. B-3 at 37. Schroth and Janner is a publication of the IEEE Computer Society, and IEEE publications are the type of information I would normally rely on to determine the state of the art.

49. To be clear, at the time the ’273 Patent was filed, server-side mashups had been designed on a far larger and more complicated scale than that offered by the ’273 Patent. Companies such as IBM initiated projects to design enterprise versions of the mashup idea. For example, in a paper published in September 2006 at the International Conference on Very Large Databases, Anand Jhingran, CTO of IBM’s Information Management Division describes the prototype of an

“information mashup fabric” that ingests, among other data, RSS and similar feeds as well as web pages, is able to provide “fusion, union, and standardization” of the data thus ingested, and is then able to output its results in either feed or HTML form. The following figure is extracted from their 2006 publication:



App. B-4 at 3-4. I am familiar with the Conference on Very Large Data Bases, and its proceedings are the type of information I would normally rely on to determine the state of the art.

50. Jhingran explains:

The mashup fabric consists of a framework that augments and combines information from various sources using various services to achieve the combination. [...] The fabric has some built in services for standardization and augmentation (union, fuse/join, select, transform – all with intuitive semantics) and is extensible through web services [i]n our pro[t]otype, we end up compiling our mashup language to an XQuery like syntax and execute it against our DB2 XQuery and federation engine ...

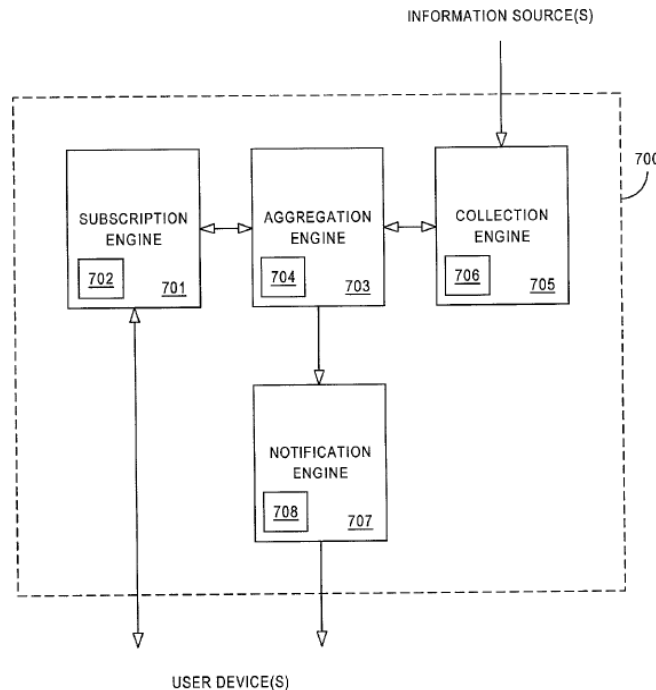
Id. at 4.

51. Hence, they present a server-side data aggregation solution that can combine RSS feeds with other data including web pages and web services and generate HTML (*e.g.* web pages) as a result. And unlike the '273 Patent, which simply puts forth the idea of aggregating multiple collections of audio-visual presentations from feed and non-feed sources, developers had come up with actual processes to implement aggregation of data from feed and non-feed sources on a far larger scale.

52. Contrary to the statement in the '273 Patent that its system was an advantage over the prior art because it aggregated data at the server level rather than on a user's device, server-side aggregation of feed sources was a routine and conventional technique long before the '273 Patent's priority date. There had already been a significant amount of activity in this space; portals were often realized as servers or groups of servers that integrated local and remote web content with multimedia and other internet content.

53. Around the turn of the millennium, researchers realized that the main technical hurdle to this integration activity was the breadth of different content standards that all needed to be integrated by the portal. For instance, a 2002 patent application to Sadeghi is directed to "systems and methods to facilitate a distribution of information" by aggregating and analyzing data from multiple information

sources and providing filtered data to the user's device. App. B-5 ¶¶[0033], [0055]-[0057]; *see also id.* at Fig. 4:

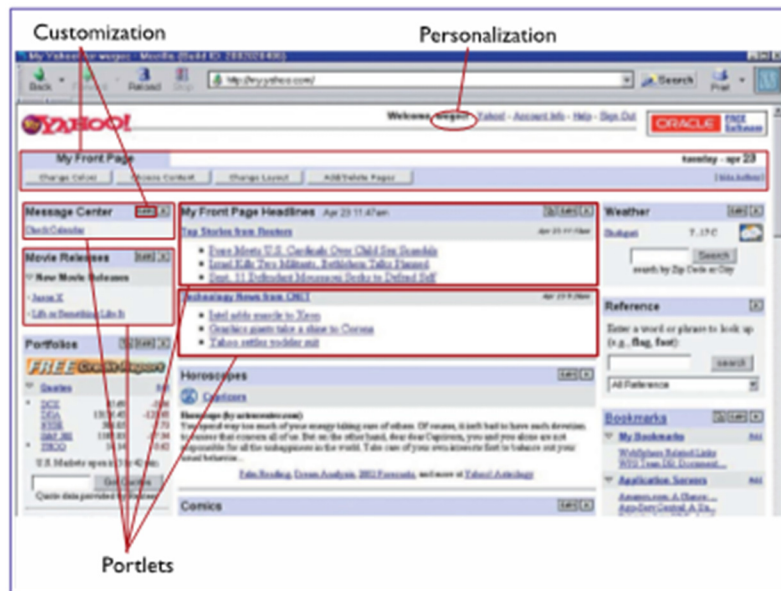


“Information sources” can include, but are not limited to, an “Internet portal.” A feed would certainly fall within the scope of the patent.

54. One of approaches developed to overcome this aggregation problem is the solution of adding “portlets” to the portal server: each of these portlets is a “plug-in” that enables the portal server to embed a specific type of content into the portal page. Hence, by the addition of additional portlets, the portal server can be extended to handle almost any type of media.

55. A 2002 publication by Christian Wege gives a good example of such a portlet-based system and mentions both content aggregation and context syndication,

specifically RSS. Ex.1018. The following figure from Wege illustrates the overall approach, demonstrating that commercial provider Yahoo had already implemented server-side aggregation of web feeds with other information by 2002:



Ex.1018 at 74. Wege is a publication of IEEE Internet Computing, and as previously mentioned, IEEE publications are the type of information I would normally rely on to determine the state of the art.

56. In 2003, the product “Bloglines” launched. Bloglines was an entirely web-based—i.e., server-side—RSS aggregation and access system that provided, among other features, searching and friend sharing. App. B-6. I am aware that this product was publicly available prior to 2008; I was also able to download historical versions of the Bloglines webpage from the Internet Archive that are dated before 2008. *Id.* The Internet Archive is a free web resource that captures, time-stamps,

and archives publicly available webpages, and it is a resource I would consult in determining what webpages were published at a particular point in time. Bloglines is also cited on the face of Owens. Ex.1004 at cover page.

57. Similarly, Google Reader was available to the public before the '273 Patent's priority date. I recall it being available prior to 2008, and I downloaded an archived version of the Google Reader main page from the Internet Archive that confirmed its availability at that time. App. B-7. Like Bloglines, Google Reader was a web-based RSS reader that was eventually discontinued by Google in favor of integrating RSS support directly into Google's Chrome browser.

58. Both of these products were available to the public for a significant amount of time prior to the '273 Patent's priority date, and they would have informed anyone working in the field.

59. Another publication, US2006/0074980 to Sarkar (App. B-8), with a priority date of 2004, made clear that RSS feeds could be "pulled together in central server and be categorized in an unambiguous manner." US20060173985A1 to Moore (App. B-9), with a priority date of 2005, stated "Data streams such as RSS data feeds may be searched, aggregated, and filtered into a processed feed ... A server may provide a complementary search engine to locate new feeds and to store and/or index items or posts in known feeds."

60. During this period, there was also significant commercial interest in server-side content aggregation systems. For example, patent filings from Google (App. B-10, US20070083536A1), Humanizing Tech (App. B-11, US20040098451A1), Microsoft (App. B-12, US20090089380A1), Sybase (App. B-13, US20060259462A1), Yahoo (App. B-14, US8020106B2), as well as independent inventors such as Abdehak (App. B-15, US20050097190A1) all describe various aspects of performing aggregation of different kinds of internet media at a server for subsequent usage and viewing by a user on a client. The fact that many of the patent applications in this space eventually were abandoned is indicative of the rapid development of this field in its early days, which rendered many of these ideas obvious or conventional by the time the respective patent applications were filed.

61. These publications make clear that given the expanding number of data sources available on the Internet, combining sources of data, including data from feeds, on a single webpage was well known and routine.

C. Data v. Metadata

62. Media files at the time of the '273 Patent were very large in comparison to then-available consumer device storage and transmission technologies (on the order of 700MB per hour of standard-definition video); on top of that, image and video compression algorithms were not as far evolved as they are now. One of the

major goals of Web architecture, including RSS feeds, was to minimize redundant data transmission.

63. Separating between “content” and “metadata” was one of the design principles that led to manageable systems that were actually deployable. Metadata is “data that provides information about aspects of other data”—i.e., it describes other data. For instance, if the “data” in question were content data such as a full-length movie, the “metadata” could include the title, description, run-time, category (e.g., drama, comedy, horror, etc.), year created, and the like.

64. It is easy to see that the case of a web feed, in which the feed document is downloaded again and again by its subscribers, it would be disadvantageous if the feed contained actual large content items such as movies. It would be extremely wasteful to transfer this content again and again on every feed update. Hence the typical use of feeds was to transfer only short data items, and for larger items, resort to descriptive metadata.

65. Having metadata about content enabled users to determine, with a reasonable degree of certainty, whether it would be worth the time and bandwidth/storage costs to actually download the referenced content.

66. Though it is not explicit, the '273 Patent's use of the term “presentation data” is consistent with content, and its use of the phrase “indicative of” is consistent with metadata.

67. For the claimed “first collection,” the system would store both the content (“presentation data”) and metadata (data “indicative of”). But for the claimed second collection, involving feeds, it would make far more sense to keep the video files on a server but use a feed that might include descriptive (“indicative”) things such as titles, runtimes, and thumbnails (which are indicative in this case, and not content), plus a URL that references the original video file to allow the user to identify and obtain specific large files only at the time that they are actually required by the user.

D. The '273 Patent

68. The '273 Patent claims a method of aggregating three collections of presentations on a single webpage. Ex.1001 at 12:39-59. The first collection contains presentations that are stored on the system, while the second collection of presentations is identified by information from “feeds.” Ex.1001 at Abstract, 2:39-55, 12:39-59, Fig. 8 (showing local storage of content).

69. The '273 Patent describes “a need for a system and method of using the Internet as a global network to unite people with common interests,” (Ex.1001 at 2:6-10), and states that search engines are not able to effectively locate particular content on the Internet (*id.* at 1:49-2:5).

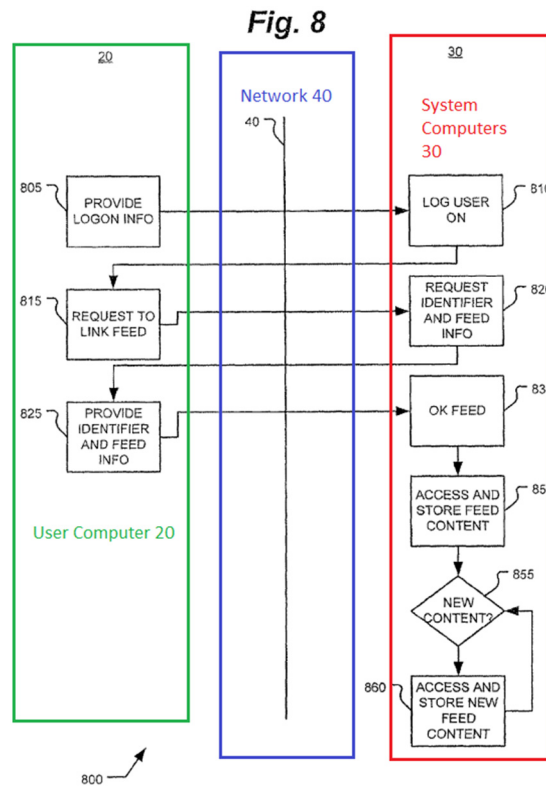
70. To be clear, the '273 Patent does not contain any claims directed to an improved method of searching to address these supposed deficiencies, or indeed any

searching at all. Instead, it claims only the simple concept of using a computing system and network to aggregate three presentations on a single webpage. Ex.1001 at 12:39-40, 12:57-59.

71. One of the claimed collections, the “second collection,” must be identified by a “feed.” *See* Ex.1001 at 12:46-51. The ’273 Patent uses RSS 2.0 as an example feed type, but it specifies that RSS 2.0 is a non-limiting example and that other types of content feeds may be suitable with some embodiments. Ex.1001 at 11:14-19.

72. “Feed” is a term with multiple meanings in the technology world. However, the ’273 Patent uses it in a very specific way, in relation to syndication of Internet content as discussed in ¶34. For example, Exhibit 1001 at 10:63-11:3 and at 12:4-29 describes feeds and the advantages the ’273 Patent supposedly provides over typical RSS readers.

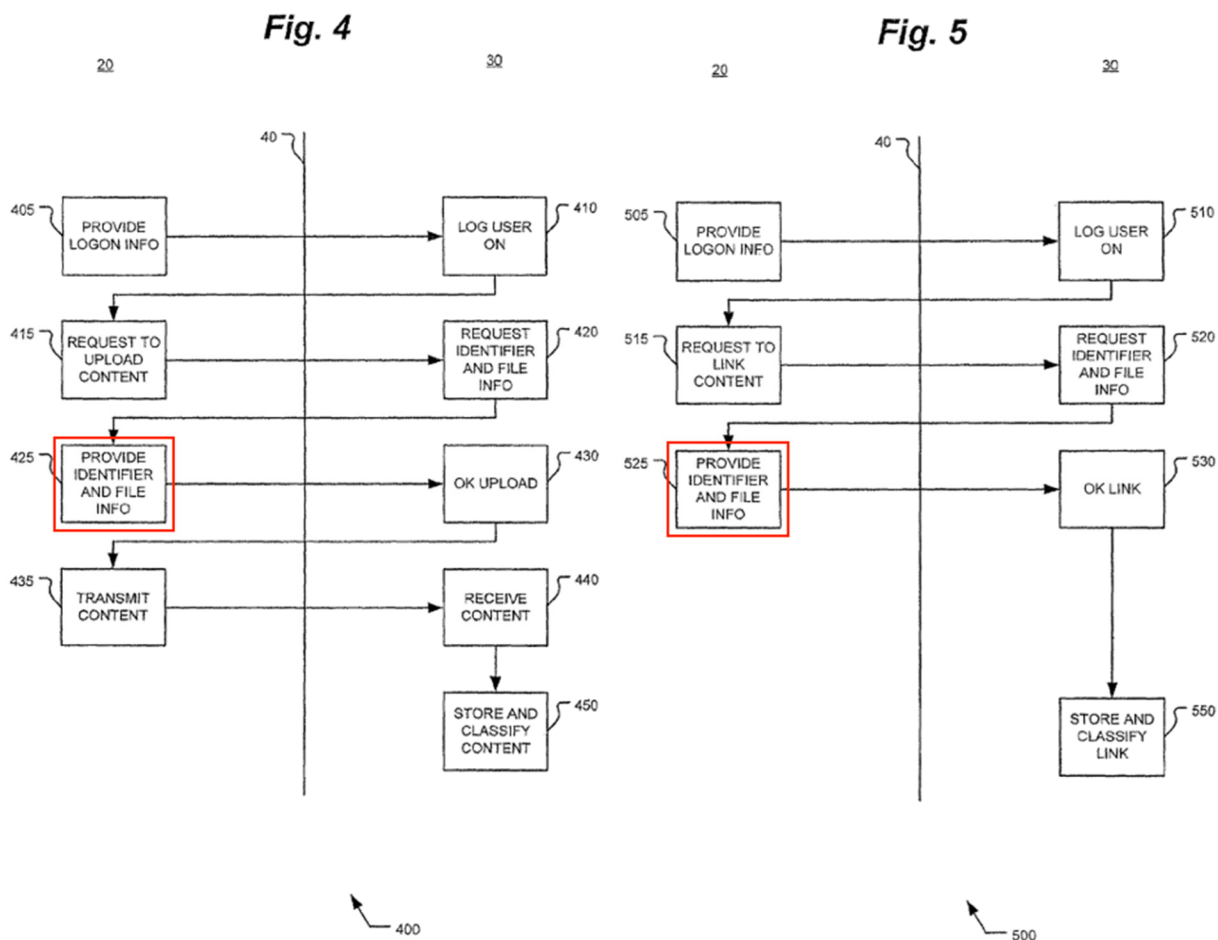
73. The ’273 Patent’s only substantive discussion of aggregating content with information from feeds is in columns 10-12 of its specification as well as Figure 8. According to the ’273 Patent and Figure 8 (annotated with different colors based on Ex.1001 at 11:20-26), the user computer 20 provides log on information to system computers 30 through a network 40, and receives, in some cases, a webpage.



Id. at 11:27-29. The system computers 30 then request content information in a conventional manner through the network 40; the requested information can include “content title, series information and description, akin to that displayed in a corresponding indicator,” as well as “feed identification and/or access information through which the feed may be accessed.” *Id.* at 11:32-37. The system computers 30 may then store the identifier or access information “for later use in populating web pages.” *Id.* at 11:49-52. The system computers 30 can access the feed to “acquire information regarding and/or either links to or the feed content itself then present.” *Id.* at 11:52-54.

74. The '273 Patent states that the information can be aggregated using the methods described regarding Figures 4 and 5, “where the feed information (*e.g.*, RSS associated XML data) is used in lieu of user provided information.” *Id.* at 11:54-59.

75. Below, annotated Figure 4 of the '273 Patent shows a process for users to directly upload data to the system; annotated Figure 5 depicts a process of linking content housed “elsewhere in memory” to be accessible to the system. Further description is provided in Ex.1001 at 6:38-7:19 and at 7:20-63.



In discussing Figure 8, the '273 Patent directly references the operations in Figures 4 and 5: “[in Figure 8 operations] information ... may be automatically aggregated ... in accordance with the methods described herein-above with regard to FIGS. 4 and/or 5, where the feed information (*e.g.*, RSS associated XML data) is used in lieu of user provided information.” A POSA would have understood this to mean that, when performing the operations of Figure 8, the feed would be used in place of the “identifier and file info,” highlighted in the images above in Figures 4 and 5. The system computers would use the provided feed information to either receive the content directly and store and classify it (Figure 4) or instead receive a link to the content in (Figure 5), in which case the link itself would be stored and classified, while the content would remain stored elsewhere on the network.

76. The '273 Patent describes that the system computers (shown in the red box in Figure 8 above) may use conventional methods to check for new content in the feeds “including periodically checking when the feed was last updated.” *Id.* at 11:63-67. Feed technology is a “pull” technology (and not a “push” technology); this means that the feed is simply made available for download on a server, and readers are responsible for intermittently downloading the feed from the server. Therefore, feed reader applications were typically set to download feeds at periodic intervals, and had been working this way since the development of the feed formats; otherwise, readers would not know whether a feed was updated, absent a notification

from the publisher—and because publishers do not typically know who is reading a feed document, notifications are typically not sent.

E. The Challenged Claims

77. Independent claim 1 recites “a method for providing content via a computer network and computing system.” The specified “content” has three separate collections, each with one or more presentations. Ex.1001 at 12:39-59. Data “representing content” of the first collection is stored within, or is otherwise directly accessible to (e.g., through a network) the system, while the second collection must be identified by one or more feeds stored by the system; data representing the second collection’s content cannot be stored within the feed and must be accessible via the computer network. *Id.* at 12:41-43, 12:46-51. The language of the claim does not limit the source of presentation data in the first collection, and it does not provide information regarding the source of the third collection or its nature, other than reciting that data associated with the third collection is stored, and it is aggregated along with the first and the second collections. *Id.* at 12:55-56. Claim 1 recites:

1. A method for providing content via a computer network and computing system, the method comprising:
 - [a] storing presentation data that represents content of a first collection of one or more presentations using the computer system;

- [b] storing data indicative of the first collection of presentations so as to be associated with the presentation data;
- [c] storing feed data that represents a collection of one or more feeds using the computer system, wherein each of the feeds identifies a corresponding second collection of one or more presentations being accessible via the computer network and includes no data representing content of the second collection of presentations;
- [d] automatically and periodically accessing each of the feeds to identify each of the corresponding second collection of presentations, using the computer system;
- [e] storing data associated with a third collection of one or more presentations; and
- [f] aggregating each of the first, identified second, and third collections of presentations for delivery via the computer network using a common web page.

Id. at 12:39-59. Claim 2 is substantively identical to Claim 1, but its preamble recites a non-transitory computer-readable-media form useful in association with a computer and other computer-related elements. *Id.* at 12:60-13:19. Claim 3 depends from Claim 2, and requires that Claim 2's computer include at least one web server, at least one database server, and at least one file server. *Id.* at 13:20-22.

F. Claim Construction

78. I understand that claim terms generally are construed in accordance with the ordinary and customary meaning they would have to a POSA at the time of the invention in light of the claim language, the specification, and the prosecution history. I understand that dictionaries and other extrinsic evidence may be

considered as well, though such evidence is typically regarded as less significant than the intrinsic record in determining the meaning of the claim language

79. For all terms of the challenged claims of the '273 patent, I have interpreted them as they would have been understood by a POSA at the time of the invention, *i.e.*, August 21, 2008.

80. It is my opinion that the following terms require construction to address this Petition; I do not address terms that may require construction only in the district court case.

1. “presentation data that represents content of a first collection of ... presentations / data representing content of the second collection of presentations”

81. These terms are recited in claims 1 and 2 and should be construed the same way.

82. The term “presentation data” appears in U.S. Pat. App. No. 61/090,672, to which the '273 Patent claims priority. Ex. 1014[672_App] at 23; Ex. 1001 at 1:8-29. The '672 Application discloses tracking digital media presentations; as part of that process, “digital media presentation data” is streamed to the user’s computer. Ex.1014 at 23; *see also id.* at [0070] (viewer listens to and/or watches a streaming presentation). The '273 Patent itself describes “audio-visual presentations” as audio/visual content. Ex.1001 at 5:20-23 (downloading or streaming presentations); *id.* at 5:35-37. A POSA would have understood that data “representing” content

must constitute at least a portion of the actual content based on the '273 Patent's correlation of presentations to content. *See, e.g.*, Ex.1001 at 6:24-37:

In certain embodiments ... users may be permitted to directly upload and enter information regarding content, *e.g.*, to file server 36 (FIG. 1). In certain embodiments ... users may be permitted to link presentations housed elsewhere in memory so as to be accessible to a computer 20 (FIG. 1) via network 40 (FIG. 1) – essentially registering them with database server 32 (FIG. 1). In certain embodiments ... presentations may be created using computers 20, 30. And, in certain embodiments ... presentations housed elsewhere in memory so as to be accessible to a computer 20 (FIG. 1) via network 40 (FIG. 1) may be automatically linked to – essentially registering them with database server 32 (FIG. 1).

83. Moreover, it is my opinion that a POSA would have understood the term “digital media presentation data” claimed in the '672 Application to be merely descriptive of the type of presentation data being streamed, and thus functionally identical to the “presentation data” described in the '273 Patent.

84. Therefore, it is my opinion that the above terms mean “the data, or a portion of the data, of the audiovisual content itself within the first/second collection of presentations.”

2. “a first collection of one or more presentations”

85. Based on the prosecution file history, it appears that Uniloc, in order to overcome the Examiner's objection based on the Cooley reference, stated that the first collection cannot come from a feed. Ex.1007, November 17, 2015 Amendment at 5-6 (Uniloc argued that the claim “recite[d] aggregating presentations in a feed

[i.e., the second collection] and identifying presentations independent of any feed [i.e., the first collection].”).

86. Therefore, it is my opinion that this term should be construed to mean “a collection of one or more presentations identified independent of any feed.”

3. “data indicative of the first collection of presentations so as to be associated with the presentation data”

87. This term is recited in claims 1 and 2 and means “metadata describing or categorizing the audiovisual content of the first collection.” The specification uses the term “content *indicative*” (emphasis added) consistently with this construction. Ex.1001 at Fig. 4, 6:49-7:19.

III. UNPATENTABILITY OF THE '273 PATENT CLAIMS

A. Standards for Invalidity

1. Obviousness

88. I am informed and understand that a patent cannot be properly granted for subject matter that would have been obvious to a person of ordinary skill in the art at the time of the alleged invention, and that a patent claim directed to such obvious subject matter is invalid under 35 U.S.C. § 103. I understand that a patent claim is obvious if the differences between the claimed subject matter and the prior art reference are such that the claimed subject matter as a whole would have been obvious at the time the invention. It is also my understanding that in assessing the obviousness of claimed subject matter, one should evaluate obviousness in light of

the prior art from the perspective of a person having ordinary skill in the art at the time the alleged invention was made (and not from the perspective of either a layman or a genius in that art). It is my further understanding that the question of obviousness is to be determined based on:

- The scope and content of the prior art;
- The difference or differences between the subject matter of the claim and the prior art (whereby in assessing the possibility of obviousness one should consider the manner in which a patentee and/or a Court has construed the scope of a claim);
- The level of ordinary skill in the art at the time of the alleged invention of the subject matter of the claim; and
- Any relevant objective factors (the “secondary indicia”) indicating nonobviousness, including evidence of any of the following: commercial success of the products or methods covered by the patent claims; a long-felt need for the alleged invention; failed attempts by others to make the alleged invention; copying of the alleged invention by others in the field; unexpected results achieved by the alleged invention; praise of the alleged invention by the alleged infringer or others in the field; the taking of licenses under the patent by others and the nature of those licenses; expressions of surprise by experts and those skilled in the art at the subject matter of the claim; and whether the patentee proceeded contrary to accepted wisdom of the prior art.

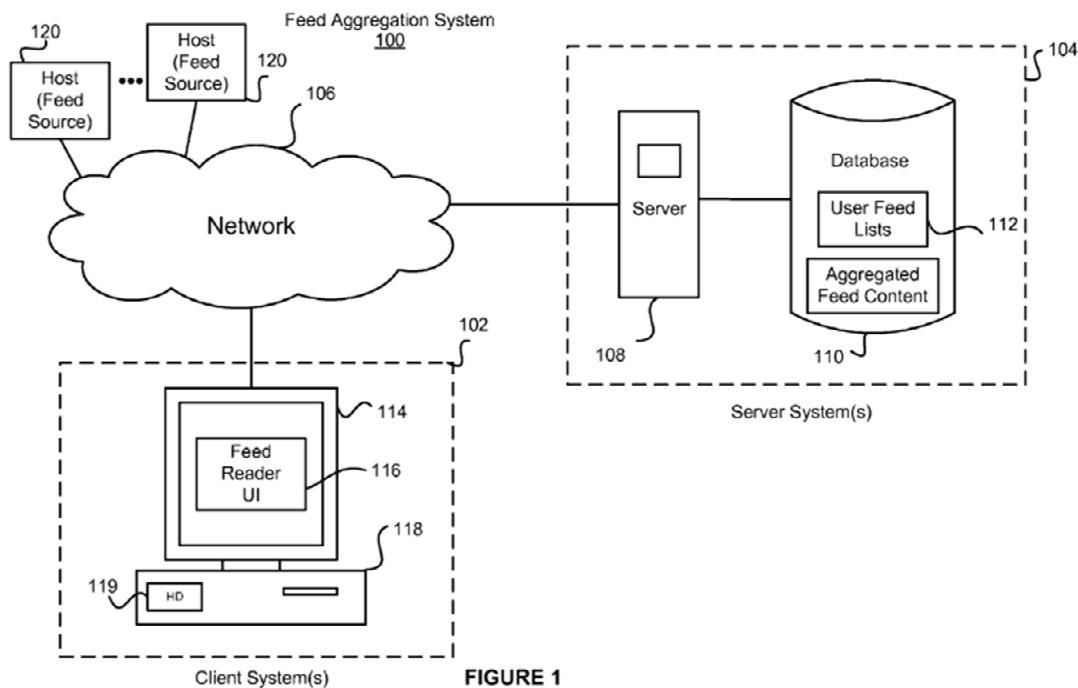
B. Ground I: Claims 1-3 were obvious in view of Darnell over Owens

1. The Darnell-Owens Combination

Darnell

89. Similar to the '273 Patent, Darnell, which indicated Google as the patent assignee, describes a method of aggregating presentations and delivering

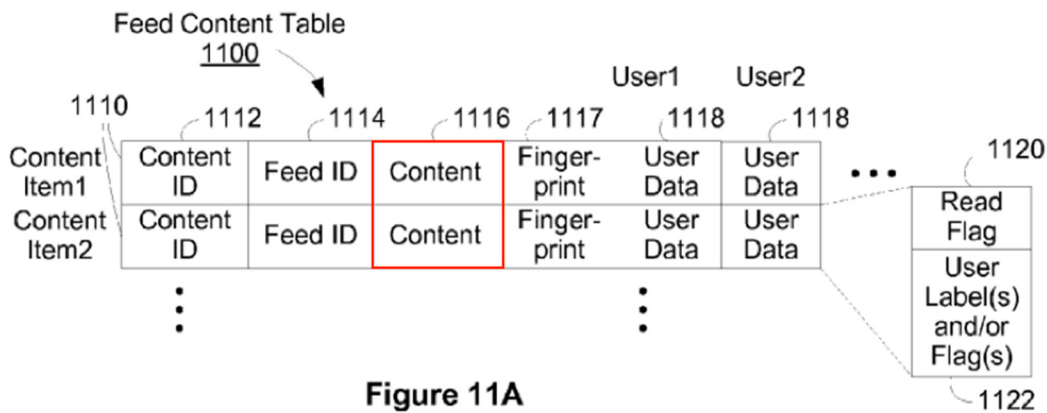
them through a webpage. Darnell connected a server to client systems, which displayed content, and hosts, which were sources of content feeds. *See, e.g.*, Ex.1003 at 2:56, 2:66-3:7, Fig. 1:



90. Darnell specifically enumerates RSS feeds within its definition of “feeds,” although unlike the ’273 Patent, Darnell also specifically mentions the Atom format. Ex.1003 at 3:62-4:11.

91. Darnell taught a number of ways to handle feed content. In particular, while the system always stored metadata from a feed item, a person implementing Darnell could choose whether to download the underlying content of a feed item (e.g., a linked audio/visual item). Ex.1003 at 3:17-23.

92. Darnell’s user subscriptions were tracked in a subscriptions database. For example, Darnell at 18:16-25 explained that “[a] user subscription information table 1150 stores feed identifications for feed streams known to the system and user data for those feed streams.” Data that Darnell obtained from feeds was also stored in tabular form in a database, with rows for each content item, as shown by Figure 11A below, now annotated to highlight the content portion of the entry:



See also id. at 17:39-46.

93. Consistent with my description of the POSA’s choice in implementing Darnell, the content item (highlighted above at 1116) “may include the metadata of the content item (*e.g.*, title, description, URL, date/time, and possibly other metadata), and may further include the actual content of the content item.” Ex.1003 at 17:53-56. The “Feed ID,” shown at 1114, “identifies the feed source of the content item.” *Id.* at 47-51.

Owens

94. Like the '273 Patent, Owens—a Yahoo patent application—was directed to the aggregation of RSS content with non-RSS content from the Internet, specifically to “systems and methods that provide for improved access to really simple syndication feeds in” network browsing-enabled applications. *See* Ex.1004 at [0003]. Owens taught that web-based services such as my.yahoo.com allowed aggregation of different types of content including “web pages, portions of web pages, *syndication feeds*, search boxes, and *other content from anywhere on the internet*” in a customized home page. Ex.1004 at [0017] (emphasis added).

95. As I discussed earlier in this declaration, a POSA would have been aware of numerous examples of aggregation of information from different sources, including feeds.

96. Annotated Figure 5 of Owens showed an example of such a customized home page aggregating feed-based content with non-feed-based content:

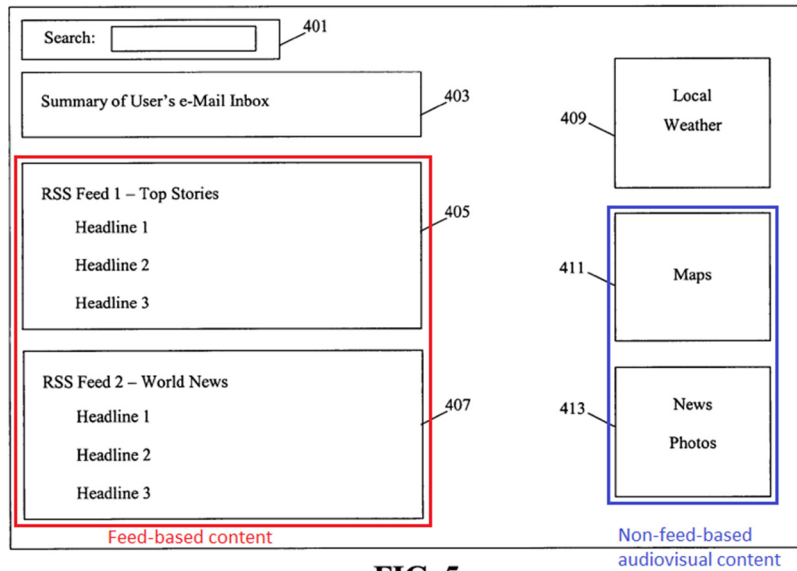


FIG. 5

Motivation To Combine

97. Darnell and Owens both focus on aggregating content on a webpage, and both include RSS feeds in their sources. Ex.1003 at 2:36-38, 3:62-63; Ex.1004 at [0004]. Owens makes explicit what a POSA would have already known – webpages can, and do, present content from a variety of sources. Combining data from multiple sources – *e.g.*, feeds and locally stored data – would have used known methods (*e.g.*, combining data obtained from a feed with data from other sources, such as a database) to yield predictable results – a webpage aggregating the data.

98. Owens teaches a customized home page that provides for aggregating feed-sourced content alongside non-feed-sourced content, such as “portions of web pages” and other online content (*e.g.*, email, weather, maps). Ex.1004 at [0017]-[0018]; Fig. 5. The benefits of such aggregation are clear, which is why, as I

discussed previously, it was a focus of academic and commercial interest. One of the goals of RSS was for users to “subscribe” to feeds with relevant content, which would reach them without any active work other than downloading the feed, rather than actively searching. Owens’ approach of aggregating feed-based content with other online content in the same webpage reduces users’ need to search or browse for such content (*e.g.*, weather, email).

99. A POSA considering Darnell and Owens would have recognized Owens’ teaching of a wide variety of content sources outside of feeds could be aggregated with Darnell’s feed-sourced content with a reasonable expectation of success. Both Darnell and Owens describe web-based RSS feed aggregation where the aggregated content is displayed in a browser window. However, as described above, the non-feed-based content described in Owens is still online content, and a POSA would have recognized, based on the state of the art and the ease of combining various sources of data on a webpage, that it could be easily aggregated into a webpage along with feed-based content described in Darnell.

100. In addition, the methods of Darnell and Owens are complementary. Where Darnell teaches an improved user interface to focus on unread/unviewed content (Ex.1003 at 1:6-8, 1:26-67), Owens teaches an improved method for accessing feeds (*i.e.*, discovering and subscribing to feeds). Ex.1004 at [0003], [0007]-[0008]. A POSA implementing Darnell would have been motivated to use

Owens in order to provide more feeds, and thus more content, that could then be used with Darnell's method.

101. The type of aggregation described in Owens would have been familiar to a POSA. "Mashups" and "web portals" had been a source of academic and commercial interest for several years prior to the time of the invention. Moreover, Owens itself teaches examples of such aggregated webpages, including customized Yahoo home pages which were extremely popular at the time of the alleged invention. And as I described earlier, Darnell is a Google patent, and a POSA would have known that Google similarly allowed users to customize their iGoogle homepages to include information from feeds as well as from other sources. App. B-17. Both Google and Yahoo were leaders in content delivery, and a POSA researching ways to aggregate and/or organize content would have utilized publications and systems relating to both Google and Yahoo to determine the state of the art.

102. Certainly it was well-known in the field that webpages can aggregate content without regard to where the content originated (assuming the web server has access to it) and how the server accesses it (e.g., through a uniform resource identifier or from a query. Many types of online content (e.g., email, weather, maps) use technologies such as dynamically generated webpages that incorporate data from

server-side applications and/or databases, and a POSA would have been aware of that fact.

103. Accordingly, a POSA would have been motivated to modify and combine Darnell's teachings regarding the aggregation of feed-based content with Owens' teachings regarding the aggregation of feed-based content along with other online content and would have done so with a reasonable expectation of success.

2. Claim 1

Claim 1. preamble: "A method for providing content via a computer network and computing system, the method comprising:"

104. Darnell "quantifies content items for a stream subscribed to by a user." Ex.1003 at Abstract. Its server system is connected via a computer network (of virtually any kind) to one or more client systems, which display the content to a user, and one or more hosts, which provide the feeds. Ex.1003 at 2:66-3:7, Fig. 1:

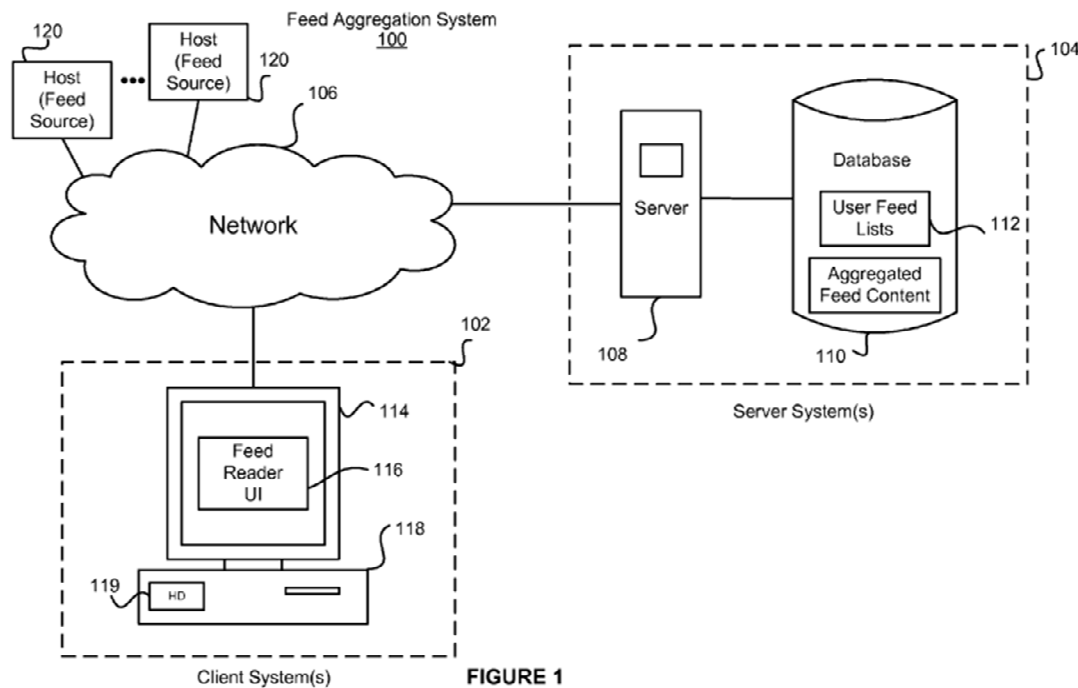


FIGURE 1

105. There is no question that Darnell can access content feeds. For example, Darnell at 3:8-16 states that its “server system 104 accesses content feeds from the feed sources 120 ... and also provides an interface between the server system 104 and the client systems 102.” *Id.* at 3:8-16. Darnell’s server system accesses and provides content feeds via a network; therefore, it teaches the claim 1 preamble.

Claim 1.a/2.a²: “storing presentation data that represents content of a first collection of one or more presentations using the computer system”;

106. As discussed earlier, “presentation data that represents content of a first collection” means “the data, or a portion of the data, of the audiovisual content itself within the first collection of presentations,” and the “first collection of one or more

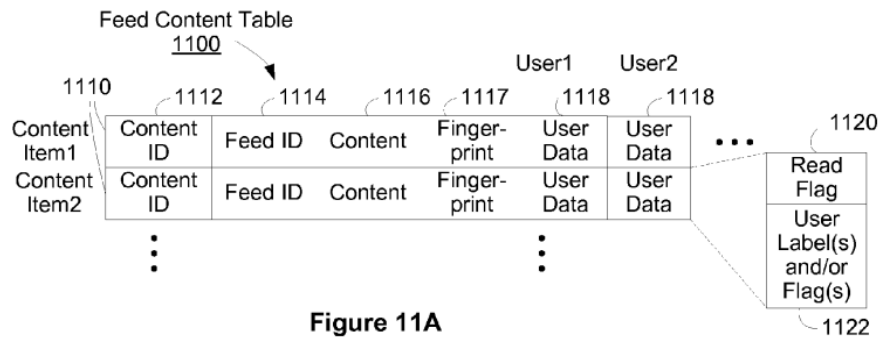
² The limitations of claims 1 and 2 are identical. Therefore, I have analyzed them together.

presentations” is “a collection of one or more presentations identified independent of any feed.”

Darnell-Owens Teaches This Limitation

107. Darnell teaches downloading and storing files using RSS feeds. For example, Ex.1003 at 3:17-21 teaches: “The server system 104 stores content items in the content feeds in the database 110.” Darnell at 3:42-49 also describes: “A content feed (or channel) is a resource or service that provides a list of content items that are present, recently added, or recently updated at a feed source 120.”

108. Darnell’s “content item” may include several components that are shown in Figure 11A, which nicely provides a depiction of the “Feed Content Table”:



109. Darnell explains that the “content” shown in 1116 in Figure 11A, above may include “the actual content of the content item.” Ex.1003 at 17:8-10. It reiterates this point later in the specification. *Id.* at 17:39-56. It is my opinion that a POSA would have recognized this aspect of content items (what Darnell calls “actual content”) as the “presentation data.”

110. Uniloc’s statement in the file history that the first collection cannot be the presentation data originating from an RSS feed does not change my analysis. Owens teaches aggregating data from both RSS and non-RSS sources, and it is my opinion that a POSA would have been motivated to combine Darnell and Owens.

111. Owens explicitly describes that syndication data – i.e., feed-based data – can be aggregated on a webpage with non-feed-based data. Owens specifically discusses aggregating “syndication feeds,” which a POSA would have known included RSS, with other sources such as “web pages, portions of web pages ... search boxes, and other *content from anywhere on the Internet.*” Ex.1004 at [0017] (emphasis added). As I discussed above, not only does Owens expressly state that content from anywhere on the Internet could be aggregated with feeds, but the concept of such aggregations was pervasive in the art prior to the ’273 Patent’s filing date, and a POSA would certainly have been aware of that fact.

112. This is further corroborated by the example of Figure 5 of Owens (annotated below) that shows aggregation of feed-based content (in the red box) with non-feed-based content (in the blue box) on the same page:

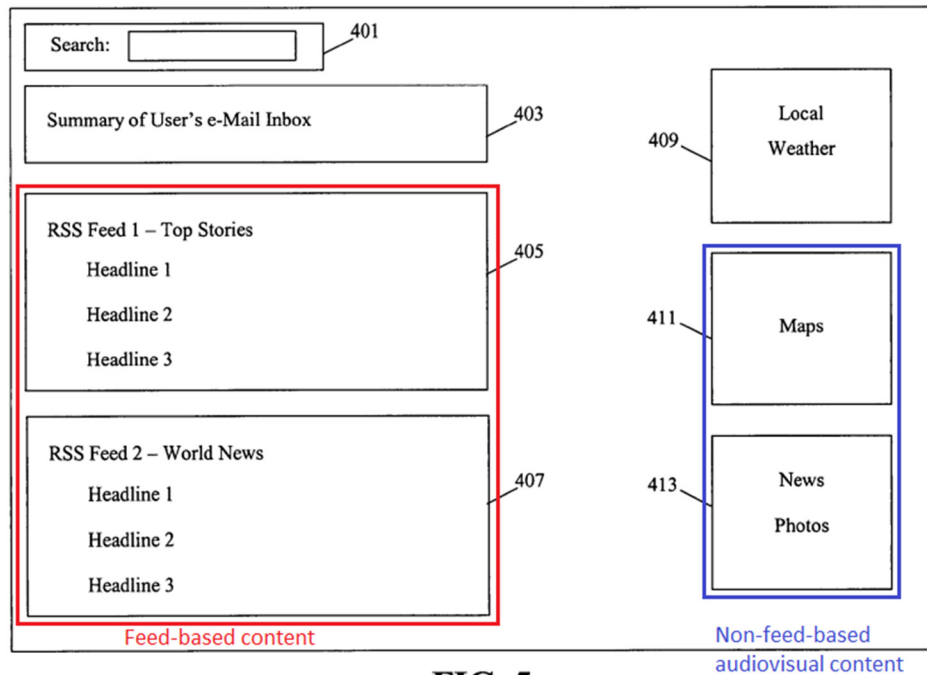


FIG. 5

113. There can be no question that a POSA would have recognized the RSS feeds as “feeds” within the meaning of the ’273 Patent. A POSA would have also considered the maps and news photos that were aggregated with the RSS-based content on Owens’ webpage to be “audiovisual content” that would have been obtained from non-feed sources. First, of course, Owens specifically designates RSS-sourced data on the left side of Figure 5, but does not do so for maps and news photos. The display of the maps and news photos is also inconsistent with the typical use of feeds, which as described above typically include some small snippet of information or metadata about linked content to allow a user to decide whether to click on a given hyperlink. Figure 5 does not show such an interactive display for maps and news photos. Second, as a POSA would have known, feeds are designed

for frequent updates, *see* Ex.1003 at 1:12-22, and maps and news photos would not have been updated as frequently as the feeds themselves. Maps are infrequently updated because creating them is time-consuming, making maps an atypical feed subject. News photos at the time would have been updated infrequently because of bandwidth issues and, significantly, Owens makes no suggestion that either maps or news photos would have been distributed via a feed, as opposed to the content in the blue box. A POSA would have known that news photos and maps (as with any audiovisual content) could be obtained through common file calls, web URL queries or many sources other than feeds, and that substituting these sources for feed-based sources would yield a predictable result, because the source of the data has no effect on its behavior in a digital system—that is, audiovisual data from non-feed sources is indistinguishable from audiovisual data obtained through feeds. Once data is in the system, any operation that the system performs (for example, labeling a presentation) will affect data the same way no matter its source.

114. Darnell allows identifying information, such as URLs, to be stored in multiple locations. *See, e.g.*, Ex.1003 at 17:39-61; *id.* at 19:32-48. In one embodiment of the combined Darnell-Owens system, the “Feed ID” illustrated in Darnell’s Figure 11A above would serve as a “Locator” and would indicate the origin of locally stored content just as the Feed ID of Darnell indicates the feed source of the content item. Ex.1003 at 17:46-49; *id.* at 19:44-48. A POSA would

have known that a URL is not restricted to the use of the http protocol; URLs can also identify locally stored files (e.g., with the “file:” protocol).

115. The combination of Darnell and Owens offers multiple “collections.” Darnell’s use of “tags” and “labels” to associate content items would have constituted a collection to a POSA. Ex.1003 at 17:66-18:11; *see also id.* at 7:12-16, Fig. 3A (showing five collections of News, Sports, Tech, Humor, and Movies). Darnell also teaches “virtual streams,” which are streams of data that the system selects from other content streams and identifies with information such as a particular user or label. Ex.1003 at 18:20-40; *see also id.* at 19:49-67. These virtual streams would also constitute a collection to a POSA. A POSA would also have considered each of Owens’ maps, news photos, and feeds to be a collection.

116. Because Darnell contains a list of content items, each of which is associated with the corresponding content to form a collection, and because the server stores these content items along with the underlying content, it is my opinion that Darnell teaches “storing presentation data that represents content of a first collection of one or more presentations using the computer system.” It is also my opinion that because Owens expressly discloses the aggregation of feed-sourced data with non-feed-sourced data, the combination of Darnell and Owens teaches this limitation for presentation data that does not come from a feed.

1. Claim 1.b/2.b: “storing data indicative of the

first collection of presentations so as to be associated with the presentation data”;

117. As discussed above, this term should be construed as “storing metadata describing or categorizing the audiovisual content of the first collection.” It is my opinion that Darnell meets this limitation under two separate disclosures, (i) content ID and metadata as well as (ii) labels.

a. Content ID and Metadata

118. As I discussed in limitation 1.a, Darnell’s “server system 104 stores content items in the content feeds in the database 110.” Ex.1003 at 3:17-18. In some of Darnell’s embodiments, “the database 110 stores both metadata (*e.g.*, title, description, URL, date/time, and possibly other metadata) and the content of each content item.” Ex.1003 at 3:18-21, 17:39-46. Each content item is stored in a row in a tabular data structure and Specifically, Darnell teaches a tabular data structure to store feed content items in a feed content database of a server computer, where the feed content table includes rows for each content item. Ex.1003 at Fig. 11A, 17:39-46:

Each row includes one or more fields (1112, 1114) that identify the content item, such as a content ID 1112 and a feed ID 1114 (which identifies the feed source of the content item) ... Each row 1110 may further include content 1116 The content 1116 may include the metadata of the content item (*e.g.*, title, description, URL, date/time, and possibly other metadata)...

119. Therefore, Darnell teaches storing a content ID or metadata (*e.g.*, title, description, URL, date/time) for the content item in a server. Darnell's content ID and enumerated metadata are considered stored "metadata describing or categorizing the audiovisual content of the first collection", and thus are "stored data indicative of the first collection of presentations so as to be associated with the presentation data".

b. Labels

120. Darnell teaches the use of "labels ...associated with content feeds to which a user has subscribed." (Ex.1003 at 7:12-16) which are then stored as "User Data" in item 1118 in Figure 11A. *See* Ex.1003 at 18:2-4. These stored labels, as I explained earlier, designate collections. It is thus my opinion that the labels constitute "metadata describing or categorizing the audiovisual content of the first collection," and because they are stored along with the presentation data and categorize it, they are "associated with the presentation data."

2. Claim 1.c/2.c:

- a. "storing feed data that represents a collection of one or more feeds using the computer system wherein each of the feeds identifies a corresponding second collection of one or more presentations"**

being accessible via the computer network”

121. It is my opinion that Darnell meets this limitation in two ways. First, Darnell teaches “feed identifications for feed streams known to the system.” Ex.1003 at 18:16-25. Second, Darnell teaches the storage of URLs. Ex.1003 at 3:18-21.

122. Even if Uniloc argues that the second collection may not be stored locally, Darnell still meets this limitation. Darnell teaches that in some embodiments content itself is stored, and in others only metadata is stored. Ex.1003 at 3:17-23. As discussed in limitations 1.a and 1.b, Darnell teaches that “[t]he server system 104 stores content items in the content feeds in the database 110.” Ex.1003 at 3:17-18. Darnell also teaches that the feed may provide metadata without providing content, in which case a POSA would have recognized that the content is available via the computer network. Ex.1003 at 3:44-56:

A content item in a content feed may include the content associated with the item itself.... Alternatively, a content item may include the title, description and locator, but not the article content. Thus, some content items may include the content associated with those items, while others contain links to the associated content but not the full content of the items.

123. Limitation 1.c does not depend on the prior limitations, and thus it is my opinion that nothing in that limitation would teach a POSA that the use of local storage to meet limitations 1.a. and 1.b is inconsistent with Darnell’s alternative embodiment in this limitation. On the contrary, a POSA would have recognized that

these embodiments are not contradictory, and in fact it would have been quite typical at the time of the '273 Patent that some items would be stored locally while others would not. Supporting this fact, Darnell itself recognizes that modifications to its exemplary embodiments could be adapted to a particular use. Ex.1003 at 20:26-36. It is my opinion that a POSA would have recognized that Darnell's alternative embodiments could have been combined, and that doing so would have been trivial.

124. At the time of the '273 Patent, a POSA would have been motivated to combine local and remote storage in a number of instances and would have known how to do so. For instance, capacity issues would have led a POSA to store only relatively small files locally while storing larger files on a network. Similarly, a POSA would have chosen to locally store frequently accessed files to avoid delays due to network latency issues. It would have been trivial for a POSA to design a system that implemented either of these choices, or any others, requiring only a few lines of code and the availability of local and remote memory storage.

125. Indeed, a major advantage of the introduction of the URL standard mechanism was that it subsumed local, file-based and remote, network-based access into a unified access mechanism. Using URLs, a POSA would typically need to distinguish between local and remote storage only when storing/uploading information, while for accessing/downloading information this could be hidden transparently behind the URL mechanism.

126. Given the extensive interest in combining data from different sources that existed in the field at the time of the alleged invention, a POSA would have been particularly motivated to combine both locally stored audiovisual content and remotely stored data from feeds. Accordingly, it is my opinion that Darnell teaches that the server can store feed data (*e.g.*, RSS feeds) without storing content.

**b. and includes no data representing content
of the second collection of presentations**

127. As I discussed earlier, the term “data representing content of the second collection of presentations” should be construed as “the data, or a portion of the data of the audiovisual content itself within the second collection of presentations.” A POSA would know that the feed (*e.g.*, RSS document) would generally not contain audiovisual content, but would instead contain links to audiovisual content that could be stored anywhere on the Internet, as well as to additional metadata. Ex.1003 at 1:14-17, 3:54-56.

128. Thus, Darnell also teaches that the feeds for which it stores feed data “identif[y] a corresponding second collection of one or more presentations being accessible via the computer network and include[] no data representing content of the second collection of presentations.”

**3. Claim 1.d/2.d: “automatically and periodically
accessing each of the feeds to identify each of the
corresponding second collection of presentations,**

using the computer system”;

129. As I discussed in limitation 1.c, Darnell’s server system stores content items from the content feed, and the content feed can be an RSS feed. *See* Ex.1003 at 3:17-18, 3:62-63. Darnell also teaches that “[w]hen the content feed is updated with new content items, the new content items are reflected in the user's reader.” *Id.* at 1:19-21. Darnell also explains that a feed content or channel “provides a list of content items that are present, recently added, or recently updated,” *id.* at 3:42-44, and describes “a feed tracker module 1016 for retrieving content items for storage periodically and/or as content feeds are updated.” *Id.* at 17:3-4. All these make clear that Darnell teaches updating feeds.

130. In addition, a POSA would have known that feeds require readers to reload the feed document to access the updates. A POSA would also have known that the publisher of a feed does not know who is reading it – generally, no permission or access control is required. A POSA would have considered it obvious that a user could “subscribe” to a feed to automatically and periodically access it for updates; that is how a POSA would have interpreted the concept of “subscribing” to a feed, by setting a reader to automatically and periodically access the feed for updates. The ’273 Patent admits that RSS readers, which were known in the art, typically “check[] the user’s subscribed feeds at predetermined intervals.” Ex.1001 at 11:10-13. The ’273 Patent also says periodically checking a feed for updated

content was conventional. Ex.1001 at 11:63-12:1. I agree with both of these characterizations.

131. In addition, Owens talks specifically about automatic and periodic downloads of feed documents. Ex.1004 at [0019] (“For load-balancing or other purposes, feed downloads can be limited to occurring only a certain number of times per day, hour, minute, or the like.”). A POSA would have considered Owens’ description of downloading “a certain number of times” to mean periodic downloading, and “limited to occurring ... a certain number of times per day, hour ...” would have signified automatic operation. This passage would have signified to a POSA that Owens taught “automatically and periodically accessing” an RSS feed.

4. Claim 1.e/2.e: “storing data associated with a third collection of one or more presentations; and”

132. The ’273 patent’s claim regarding a “third collection of presentations” is very broad, and nothing in the language of the claim or the ’273 Patent’s specification suggests whether the third collection must come from a feed or some other source.

133. As I discussed in my analysis of limitation 1.a, Darnell teaches that “[t]he server system 104 stores content items in the content feeds in the database 110.” Ex.1003 at 3:17-18. A POSA would have known that a content item in a

content feed constitutes “data associated with a ... collection” because the content item may contain the “actual content” (i.e., the presentation data); the title (also called a headline), a description, a network location, a network locator, or any combination of these content and metadata items. Ex.1003 at 3:44-49; *see also id.* at 3:18-21, 17:39-56, Fig. 11A.

134. A POSA would have understood Darnell’s teaching of a server system that stores content items in the content feeds in the database (Ex.1003 at 3:17-18) to teach one or more content feeds. Darnell’s figures illustrate the aggregation of five collections (News, Sports, Tech, Humor, and Movies), and its method is capable of storing data associated with all of those collections. *See, e.g.*, Ex.1003 at 3:17-21, Fig. 3A. Because Darnell teaches five collections, a POSA would have understood it to include a third collection.

135. A POSA would have understood this limitation’s requirement that data be “associated” with a third collection as similar to, but broader than, the earlier limitation in section 1.b of “storing data indicative of the first collection of presentations so as to be associated with the presentation data.”

136. Because, as discussed in limitation 1.b, Darnell teaches storing “data indicative of the first collection of presentations so as to be associated with the presentation data [of the first collection]”, and Darnell teaches multiple collections,

Darnell also teaches “storing data associated with a third collection of one or more presentations.”

5. Claim 1.f/2.f: “aggregating each of the first, identified second, and third collections of presentations for delivery via the computer network using a common web page.”

137. Darnell’s method expressly discusses “a content feed aggregation system,” in which “a user may subscribe to one or more content feeds and be presented with the content items included in those content feeds.” Ex.1003 at 2:36-38, 2:66-67.

138. Darnell further teaches that the server may present the content feeds to the user via “a web-based user interface” including “one or more web pages.” Ex.1003 at 2:36-40, 4:23-25, 4:44-46. “In other words, the server system 104, including the feed reader user interface 116, provides a web-based content aggregation service. The server system 104 aggregates and stores content items in accordance with the user’s content feed subscriptions.” Ex.1003 at 4:66-5:3, Fig. 3A.

139. It is my opinion that a POSA would have recognized that Darnell discloses five separate collections, as shown in Figure 3A, and particularly that Figure 3A illustrates the individual presentations in the “Sports” collection. Darnell also explains:

Some, but not necessarily all, content items displayed in expanded format include a link to the full content associated with those content items. The link may be activated by a user clicking on the headline in the content item, or by clicking on a link icon (not shown in FIGS. 3A-3D) displayed in the expanded format of a respective content item. Activation of the link typically causes the browser to open a new browser window or tab and to download and display the document (if any) located at the location (*e.g.*, URL) specified by the link.

Ex.1003 at 8:51-59.

140. Any POSA at the time of the '273 Patent would have been intimately familiar with HTML, and anyone with even a minimal level of HTML skill would have considered it trivial to display linked content in the same webpage, rather than a new window or tab.

141. Darnell also teaches that webpages can include frames, which are divisions of a single page that each appear as a distinct “miniature webpage” within a rectangular area of the enclosing page when rendered on a user’s screen. A POSA would have known that frames were a simple way to display multiple collections in a common webpage.

142. Figure 5 of Owens also shows multiple collections of maps, weather, and news photos on the same page as RSS items. Ex.1004 at Fig. 5. It is thus clear that the combination of Darnell and Owens teaches aggregating each of the first, identified second, and third collections of presentations for delivery via the computer network using a common web page, where at least the first collection is identified

independent of any feed. Darnell's aggregation system and web-based interface would have been obvious to combine with Owens' aggregation of RSS-sourced data and non-RSS sourced data on a webpage with Darnell's aggregation system and web-based interface; content that comes from a feed would be displayed indistinguishably from data that did not come from a feed. In addition, non-feed-sourced data could easily have been obtained through other sources, for instance, APIs. Because Darnell and Owens both teach aggregating and presenting content and feed data through a web-based interface, i.e., a webpage, the combination of Darnell and Owens teaches "aggregating each of the first, identified second, and third collections of presentations for delivery via the computer network using a common web page."

3. Claim 2

143. Darnell expressly teaches a "computer readable storage medium storing one or more programs" for its method, with "a computer readable storage medium and a computer program mechanism embedded therein" and "memory, one or more processors, and one or more programs stored in the memory and configured for execution by the one or more processors." Ex.1003 at 1:39-58, Cl. 14. Moreover, claims 2.a-2.f are identical to claims 1.a-1.f; it is thus my opinion that Darnell and Owens disclose them for the same reasons.

4. Claim 3: “the computer readable medium of claim 2, wherein the computer comprises at least one web server, at least one database server and at least one file server.”

144. A “server” as a POSA would have interpreted the term was not limited to one single hardware device; instead, a POSA would have known that “server” can refer to either software components that perform a particular function or the hardware on which that software runs. Darnell also recognizes that its server can be “implemented on a distributed system of multiple computers.” Ex.1003 at 3:36-41; *see also id.* at 17:29-38.

Web server

145. A POSA would have understood Darnell and Owens both to teach web servers. Darnell teaches a web server because it teaches interacting with web-based user interfaces. *See, e.g.*, Ex.1003 at 4:44-46. Owens also teaches a web server. Ex.1004 at Fig. 2 (disclosing “standard web server 16”).

Database server

146. Darnell teaches a database server as the '273 Patent uses that term. According to the '273 Patent, the “database server” contains information about which presentations to provide, as well as storing metadata. Ex.1001 at 5:44-48, 6:26-31, 7:32-56. Darnell teaches a database that contains information about the content used to populate pages and thus teaches a “database server.” Ex.1003 at 3:9-10, 4:30-36 (“The feed reader user interface transmits a list of content feed

subscriptions, or modifications to a list of content feed subscriptions, to the server system 104 for storage at the database 110. The feed reader user interface 116 presents content items stored at the database 110 to the user based on the user's list of content feed subscriptions.”), FIG. 1.

File server

147. Darnell teaches a file server as the '273 Patent uses that term. According to the '273 Patent, the file server contains data that can be transmitted to the user's computer. Ex.1001 at 5:28-32 (“[D]ownloading,” as used herein, generally refers to a technique for transmitting data (*e.g.*, an entire data file) between computers, such as between file server 36 (FIG. 1) and a computing device 22 (FIG. 1.”); *id.* at 6:1-6 (“In certain embodiments ... a user may select a populated presentation (*e.g.*, 265, 270 or 275, FIG. 2). In response thereto, server 34 may request file server 36 either stream or download the selected presentation to the requesting user's computer 20, such as via a web page 200 in a conventional manner.”).

148. Darnell teaches file servers because its “computing devices” that contain content (data) that can be transmitted to the user's computer, and thus teaches “file servers.” *See* Ex.1003 at 3:2-4 (“The server system 104 is coupled to one or more client systems 102 and to one or more hosts 120 (or “feed sources”) by a network.”); *id.* at 3:8-14 (“The server system 104 accesses content feeds from the

feed sources 120. The server system 104 includes a server 108 and a database 110. Server 108 serves as a front-end for the server system 104. Server 108, sometimes called a front-end server, retrieves the content feeds from the feed sources 120, and also provides an interface between the server system 104 and the client systems 102”). Darnell also explains that its server system can be divided or allocated between two or more servers. Ex.1003 at 3:36-41. Figure 2 illustrates that the database 110 contains both feeds and content; a POSA would have recognized that the ’273 Patent’s functional description of a file server is providing content to the client system, which Darnell discloses.

C. Ground II:

1. The Gossweiler-Hammersley Combination

a. Gossweiler

149. Gossweiler, another Google patent (as shown on its face), was directed to the same type of problem that the ’273 Patent purports to solve: locating desired content on the Internet. In fact, their descriptions of the problem to be solved are nearly identical. Gossweiler describes the problem of finding “good content” from the “enormous amount of content” online (Ex.1005 at 4:22-24), whereas the ’273 Patent notes the alleged difficulty of finding “content of a particular type and relating to a particular subject” in light of the “virtually unlimited content” on the Internet (Ex.1001 at 1:51-55). Figure 1 of Gossweiler depicts an aggregated webpage with

three separate collections, which it put into the context of “shelves.” Ex.1005 at 5:55-6:3, FIG.1:

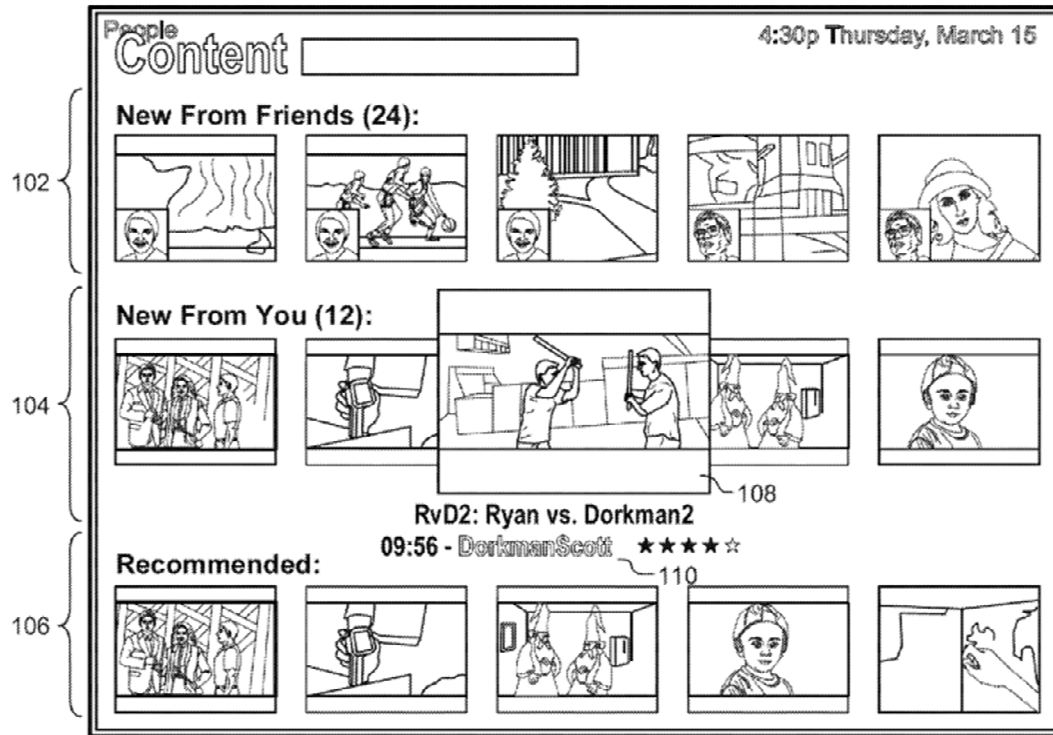
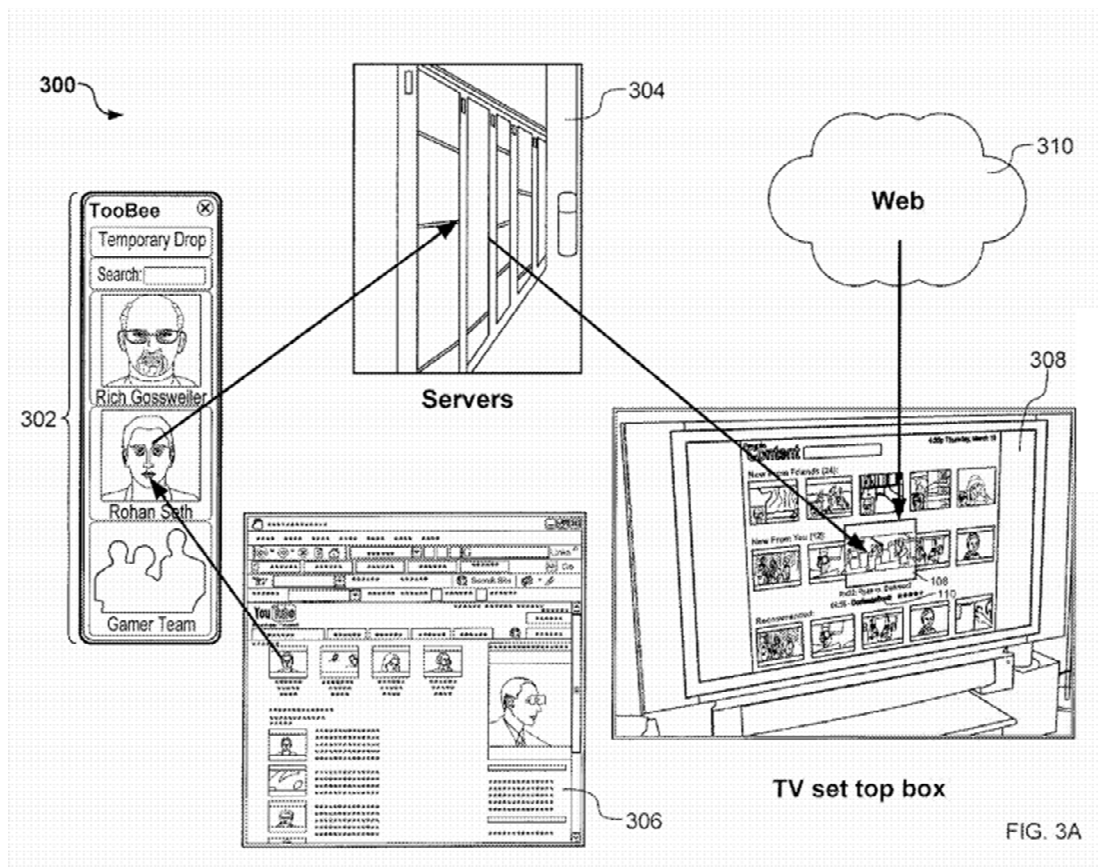


FIG. 1B

150. Gossweiler’s Figure 1B showed different content organized on different “shelves.” The “New From Friends” shelf, shown in row 102, listed content that was either provided from “friends that the user has identified as people who share good content” or obtained by comparing the user’s ratings of content with the friends’ ratings and determining shared tastes. *Id.* at 6:14-22. The listings in the “New From You” (row 104) designated content that came from the user directly, typically loaded into the system by the user while browsing. *Id.* at 6:23-32. The recommendations shelf (row 106) listed recommended programs that could be based

on system recommendations that could, *e.g.*, be based on the system's analysis of shared tastes with other users, or instead based on persistent searches that the user had entered into the system. *Id.*

151. Gossweiler's system (Fig. 3A, below) includes computer clients 306, television clients 308, and servers 304 "that can be accessed through standard Internet protocols." *Id.* at 13:38-14:28; *see also* Ex.1005 at 13:38-49 (teaching a "web repository that stores and organizes friends, shared links, and other similar information"); Fig. 3A:



152. Gossweiler explained that its servers (304 in Figure 3A) could store links but could also function with a storage system capable of storing media files, which a POSA would have recognized as “presentation data.” *Id.* at 14:29-31.

153. Gossweiler also described functionality wherein users could “subscribe” to shelves that allowed sharing of collections—for instance, a user could subscribe to celebrity’s feeds to see what videos the celebrity recommended. Ex.1005 at 8:18-22.

154. Gossweiler also had a “content manager” responsible for collecting and aggregating content. Ex.1005 at Fig. 3B.

155. The content that Gossweiler’s system collected for a user was displayed through a browser. Ex.1005 at 22:42-60.

b. Hammersley

156. Hammersley was published in 2005, after the RSS 2.0 specification discussed in the ’273 Patent was finalized. At the time of the ’273 Patent, O’Reilly Media was (and still is) a well-known and respected technical publisher with a focus on marketing to software developers. Hammersley says as much, explaining that it is for “developers who want to use the content other people are syndicating,” including “developers looking to incorporate news feeds into artificially intelligent systems or build data-sharing applications across platforms.” Ex.1006 at Preface.

157. Hammersley explains that, as I described earlier, RSS 2.0 feeds, like RSS 1.0 and Atom feeds, are written in Extensible Markup Language (“XML”). Ex.1006 at 1-3, 116, 130, 231. Consistent with my explanation earlier, Hammersley discusses the structure of XML as it is used in the RSS family of feeds and in Atom.

158. Hammersley explains that feed documents have lists, with optional subelements that can contain metadata. Ex.1006 30.

c. Motivation to Combine

159. Gossweiler’s use of the terms “subscriptions” and “channels” would have strongly suggested the use of a syndication tool such as RSS to a POSA. *See* Ex.1005 at 8:18-22 (subscriptions); *id.* at 11:62-64 (channels). The use of the term “subscribing” with respect to RSS feeds was well-known in the art, and specific RSS feeds were called “channels.” “Channel” is actually a required element in the RSS 2.0 format; feed authors use the element to communicate the title and description of the feed to subscribers. Ex.1006 at 26-30. As a result, a POSA would have read Gossweiler’s references to “subscriptions” and “channels” and considered them to suggest the use of RSS feeds.

160. Further, Gossweiler is a Google patent, and it was well-known by the time the ’273 patent was filed that Google had acquired YouTube. Ex.1005 at cover page. Gossweiler discusses the relevance of his invention to YouTube, which, as Gossweiler stated and as a POSA would have known, included a “vast and rapidly

growing library of user-generated, commercial-generated, informal, and professional-level of video content”. Ex.1005 at 4:29-38. As a POSA would have known, YouTube supported RSS feeds at least as of 2006, providing further motivation to use RSS feeds to share video content. App. B-16. Appendix B-16 is an archived version of the YouTube subscription center page from June 22, 2006, with an “RSS” subscription button in orange at the bottom of the page, confirming that YouTube supported RSS as of 2006.

161. Hammersley’s preface states that it was written for “developers looking to incorporate news feeds into artificially intelligent systems or build data-sharing applications across platforms.” Ex.1006 at Preface. Gossweiler is particularly focused on data sharing, which is not surprising given its connection to Google, a company which is famous for indexing information and making it available to as many users as possible. Ex.1005 at 1:18-20 (“This document discusses systems and methods for displaying and sharing media content and other objects for television viewing”) (emphasis added). A POSA who wanted to implement Gossweiler’s system would have been motivated to review references that relate to syndication feeds (such as Hammersley) to help facilitate the multimedia syndication Gossweiler describes, which Gossweiler does not provide step by step instructions for implementing, instead leaving it to a developer’s discretion. In addition, Hammersley’s status as an O’Reilly publication would have made it more likely to

be used by software developers, as O'Reilly programming books were very well-known to software developers at the time of the '273 Patent, and a POSA would naturally looked to O'Reilly books – such as Hammersley – for guidance in implementing software functionality, including content syndication. At the time of the invention, these O'Reilly books were surprisingly easy to come by; I personally recall purchasing several at various airport bookstores while waiting to board a plane.

162. Not only would it have been obvious to a POSA that RSS **could** be used to implement the features that Gossweiler describes, but in fact, RSS was particularly well-suited for Gossweiler's sharing functionality among friends. For instance, Gossweiler teaches sharing lists of recommended URLs, and states “[i]f the ‘friend’ is actually a device associated with the recommending user, the URL may be added to a list of programs for the device, and the device or a main system may initiate downloads to the device, such as at a prescribed time each day.” Ex.1005 at 26:66-27:15. This “automatic and periodic” download, which the '273 also acknowledges is a hallmark of RSS, is part of the essence of how RSS feeds work. As I discussed earlier, RSS is a “pull technology,” and a reader's device (or agent on a server, such as on the previously discussed Google and Yahoo pages) downloads a feed at regular intervals to determine what has changed. As a result, a POSA would have known that a proven, and dominant, technology such as RSS could be used to implement

the sharing functionality described in Gossweiler; it would have been a simple combination of known elements (the use of feeds and APIs to provide audiovisual data) according to known methods (RSS/Atom, XML, HTML, client-server architecture, scripting, and both local and remote storage) to produce a predictable result. Moreover, Hammersley itself describes the use of RSS to distribute recently updated media files among friends, which tracks one of Gossweiler's enumerated goals—sharing media content. Ex.1006 at 198-200; Ex.1005 at 1:18-20.

2. Claim 1

- a. Claim 1.preamble: “a method for providing content via a computer network and computing system, the method comprising:”**

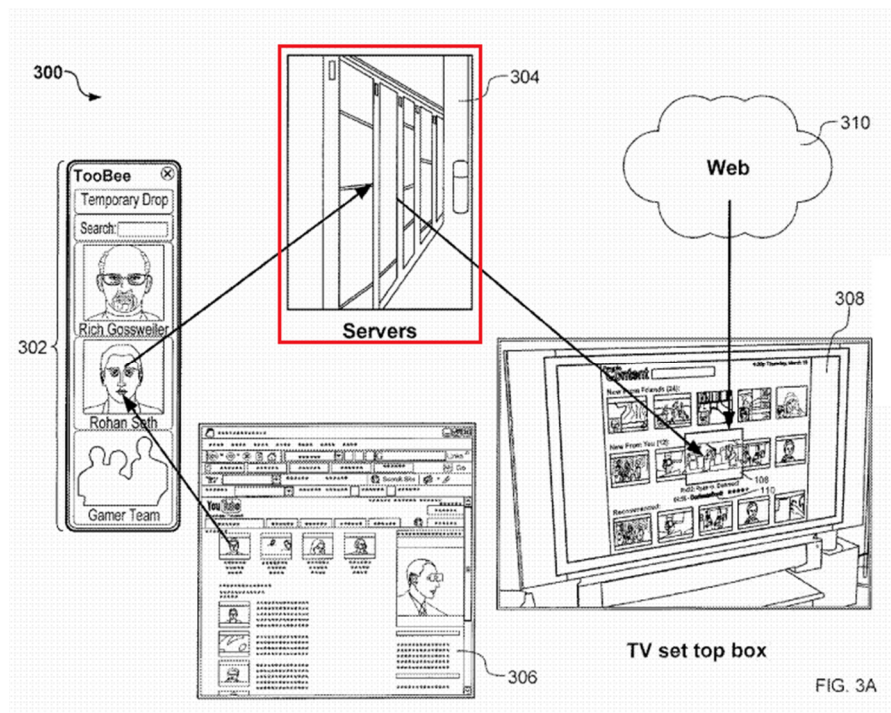
163. A POSA would have understood Gossweiler to meet this limitation. Gossweiler's self-described technical field is “displaying and sharing media content and other objects for viewing (Ex.1005 at 1:18-20), and its system consists of computer components, connected by “any form of digital data communication.” Ex.1005 at 33:37-49.

- b. Claim 1.a/2.a: “storing presentation data that represents content of a first collection of one or more presentations using the computer system”;**

164. As I discussed earlier, “presentation data that represents content of a first collection” means “the data, or a portion of the data, of the audiovisual content itself within the first collection of presentations,” and the “first collection of one or

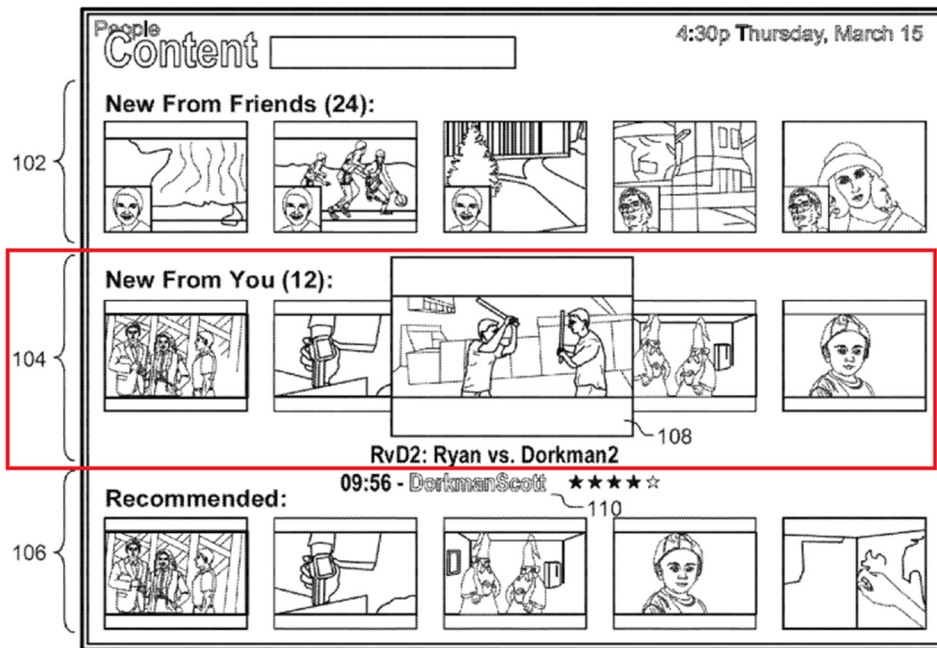
more presentations” is “a collection of one or more presentations identified independent of any feed.”

165. Gossweiler’s system has an “internet component” with a central server.
Ex.1005 at 13:38-49; *see also* Fig. 3A (annotated around the central server):



166. Gossweiler explains that the servers depicted in Figure 3A can work with a binary storage system to store “media files” (*id.* at 14:29-31), which a POSA would have recognized as “data that represents content.”

167. Gossweiler also teaches that media can be organized in the form of shelves. Annotated Figure 1B below shows three shelves. A POSA would have recognized each shelf as a collection.



168. Shelf 104 (highlighted above) depicts content that “the user himself provided,” which can come either from direct user uploads or from other sources, such as through direct web queries or through links that the user selects. Ex.1005 at 6:23-27 (“dragging” content onto device while surfing the web), 14:31-35 (describing files uploaded from client devices).

169. Because Gossweiler teaches storing a collection of user-uploaded presentations on a server, a POSA would have recognized that Gossweiler teaches “storing presentation data that represents content of a first collection of one or more presentations using the computer system.”

c. Claim 1.b/2.b: “storing data indicative of the first collection of presentations so as to be associated with the presentation data”;

170. This term should be construed as “storing metadata describing or categorizing the audiovisual content of the first collection.” Gossweiler teaches associating content with metadata, which as I discussed earlier is data that provides information about aspects of other data. Gossweiler provides example metadata such as “title, artist, and length (Ex.1005 at 6:12-13), rating levels, URLs, and tags (*id.* at 7:15-20) or targeted demographic groups (*id.* at 16:37-39). To the extent that the data “indicative of the first collection of presentations” describes the collection as a whole, Gossweiler’s “tags” and “metadata associating the program with a particular demographic group” both indicate information about the collection as a whole as well as indicating information about individual presentations.

d. Claim 1.c/2.c:

(i) “storing feed data that represents a collection of one or more feeds using the computer system, wherein each of the feeds identifies a corresponding second collection of one or more presentations being accessible via the computer network”

171. Gossweiler teaches that users can subscribe to other users’ “channels”, “users who like the style of [another] user may then subscribe to the first user’s ‘channel.’” Ex.1005 at 11:62-64.

172. It is my opinion, as I discussed above, that a POSA would have been motivated by the common goal of increasing sharing, as well as Gossweiler's references to "subscriptions" and "channels," to combine Gossweiler's system with RSS feeds as taught by Hammersley to implement Gossweiler's sharing system. Gossweiler expressly teaches sharing links from friends, and RSS is an excellent vehicle for link sharing (along with metadata describing the link target). Hammersley explains – as a POSA would have understood – RSS feeds typically do not contain audiovisual content³; they contain links to content, along with metadata describing the content. Ex.1006 at 30-33. In addition to describing data-sharing among friends, Gossweiler provides an option to present a user with "content as an option ... without the content having been previously downloaded to their device ... in such a situation, when sharing with a friend occurs, only links to the content may be created in a profile associated with the user ... accessed from a central system." Given Gossweiler's focus on sharing of media files, and its use of links, a POSA would have considered a feed an excellent way to implement sharing among friends.

³ RSS feeds can encode graphical content, but it would have been very atypical, and even contrary to the goal of minimizing wasted bandwidth, to include the entire audiovisual content file in the body of a feed that needs to be downloaded repeatedly. As a result, aggregators would not necessarily load encoded graphical content.

173. A POSA would also have understood how to implement the combination of Gossweiler and Hammersley to create and store subscriptions to feeds from friends. This combination would include identifying and storing feeds that designate presentations recommended by friends. One straightforward way to implement this combination would be with the use of common gateway interface scripts, known as “CGI.” CGI is a simple scripting system that runs on web servers, and a POSA at the time of the ’273 would have known about CGI. CGI scripts themselves can be written in several different scripting languages, including Perl and Python, and a POSA at the time would either already have known these languages, or would have been able to familiarize themselves with programming in such a language based on their existing programming expertise in no more than a few hours. A common programming strategy at the time would have been to take an existing script and modify it for a particular use. Conveniently, Hammersley provides sample CGI scripts for generating feeds for over a dozen scenarios, with the goal of using RSS for things “slightly more interesting and useful than simply transporting headlines and articles,” such as tracking machine-generated logfiles or cartoon postings. Ex.1006 at 179-217. One particular scenario Hammersley discusses is using RSS to provide recently updated media files, such as music and movie files, dropped in a shared drive. *Id.* at 198. It would have been obvious to a POSA how

to create a CGI script capable of capturing metadata about media files, whether that metadata was manually entered or automatically generated.

(ii) “and includes no data representing content of the second collection of presentations”

174. As discussed above, “data representing content of the second collection of presentations” should be construed as “the data, or a portion of the data of the audiovisual content itself within the second collection of presentations.” A POSA would have understood that feeds, including RSS 2.0 feeds – the only feed the ’273 Patent teaches – are simply documents with character data that generally contain links and text-based metadata without any audiovisual content.

175. There is a deep technical reason for this. A feed is fetched repeatedly from a server. So, for example, if one would include a “movie poster” directly inside of the feed, this voluminous image data would need to be transferred over and over to the same client. Alternatively, if the feed simply included a URL to a separate image file representing the “movie poster”, then the image would typically be transferred to the client only once and subsequently be cached on the client side. This can result in significant bandwidth savings, which notably is one of the benefits that the ’273 Patent itself ascribes to content acquisition through feeds. *See* Ex.1001 at 12:13-16. As a result, a POSA would have understood that it is generally

preferable to store voluminous data such as images as separately URL-addressable files on the web rather than including them inside of feeds.

- e. **Claim 1.d/2.d: “automatically and periodically accessing each of the feeds to identify each of the corresponding second collection of presentations, using the computer system”;**

176. A POSA at the time of the alleged invention of the '273 Patent would have known that feed formats such as RSS required the reader application (or browser, etc.) to reload the feed document in order to access the updates rather than providing the updates without any action from the user or the user's computer. As I described earlier, RSS is a “pull” technology, rather than a “push” technology. Even if a feed creator were to send a notification to subscribers to let them know that the feed had been updated, the subscriber would still have to download the updated feed in order to view the changed information. Thus, it is my opinion that a POSA would have understood that “subscribing” to a feed means automatically and periodically accessing it to check for updates. The '273 Patent acknowledges as much, by explaining that that RSS readers, which had been known in the art for nearly a decade, typically “check[] the user's subscribed feeds at predetermined intervals” Ex.1001 at 11:10-13.

177. Hammersley emphasizes this point. *See, e.g.*, Ex.1006 at 29-30 (providing information about RSS 2.0 elements that allow authors to set (1)

minimum times for a reader to wait before refreshing the feed and (2) days and times when the feed should not be refreshed at all (e.g., never on a Monday)), 152 (the section “How Often to Read the Feed” notes that users must request a new feed and cautions against wasting network resources by downloading too often), 166.

f. Claim 1.e/2.e: “storing data associated with a third collection of one or more presentations; and”

178. Gossweiler’s Figure 1B, annotated below, shows a display of three shelves: as discussed earlier in limitation 1.a, row 104 contains the first collection of presentations, and as discussed in limitation 1.c, row 102 contains the “second collection.” The third collection, which includes “recommended” presentations made automatically by the system (Ex.1005 at 6:33-34), is highlighted at row 106:

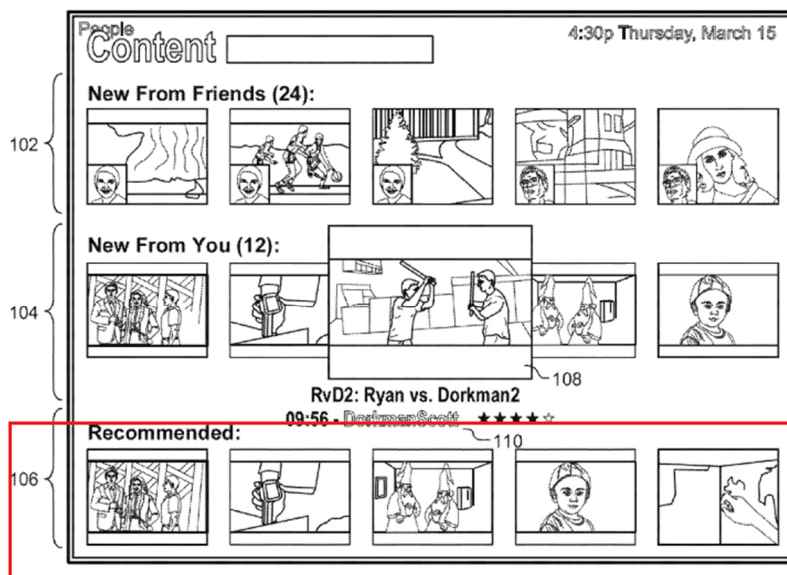


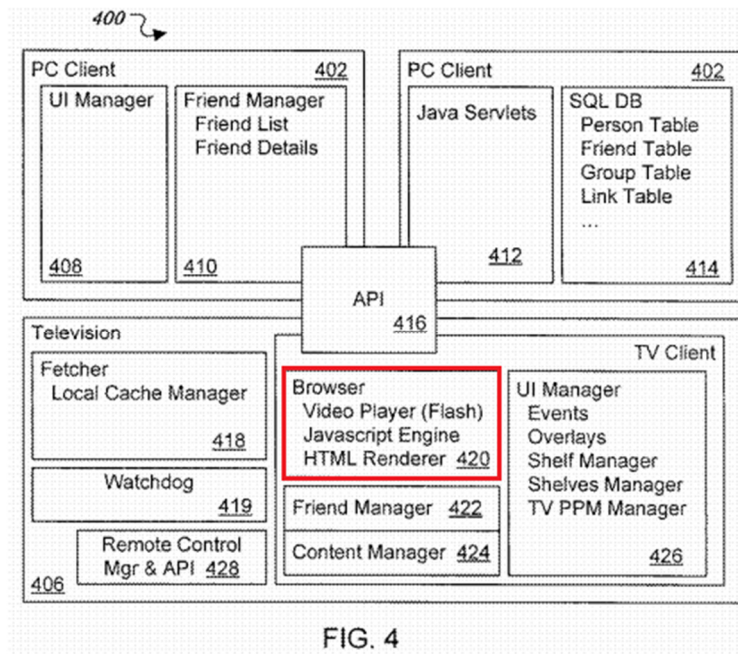
FIG. 1B

179. To provide recommendations, Gossweiler’s system can use data based on “content analysis,” such as through analyzing a user’s interests based on program

that the user watches and recommending programs that users with similar interests liked, or based on “persistent searches” involving a keyword (Gossweiler provides the example of “funny cat stunts”). Ex.1005 at 6:34-44. A POSA would have recognized data for recommendations based on either content analysis or on persistent searches as “data associated with the third collection.” Ex.1005 at 6:8-10. A POSA would thus have recognized that Gossweiler teaches “storing data associated with a third collection of one or more presentations.”

- g. Claim 1.f/2.f: “aggregating each of the first, identified second, and third collections of presentations for delivery via the computer network using a common web page.”**

180. Gossweiler meets this limitation, because it teaches aggregating on a web browser (which a POSA would have understood to display a webpage) the three collections of presentations discussed in limitations 1.a (presentations uploaded from users), 1.c (presentations obtained from friends), and 1.e (recommendations). *See* Ex.1005 at Fig. 1B, 6:9-14, 6:23-32, 6:33-48, 22:45-46, Fig. 4 (annotated below to highlight the browser):



3. Claim 2

- a. **Claim 2.preamble:** “A non-transitory computer readable medium useful in association with ... to provide content from a computer system via a computer network to a computer device by at least:”

181. Gossweiler expressly teaches the entire preamble of claim 2, including a computer-readable medium that includes instructions for its method, as well as computer components, including an interconnected processor and memory that can process the instructions in the medium. Ex.1005 at 30:63-31:3 (disclosing a computer program in a computer- or machine-readable medium), 30:15-41 (discussing memory and processor capable of executing instructions).

b. Claim 2.a-2.f:

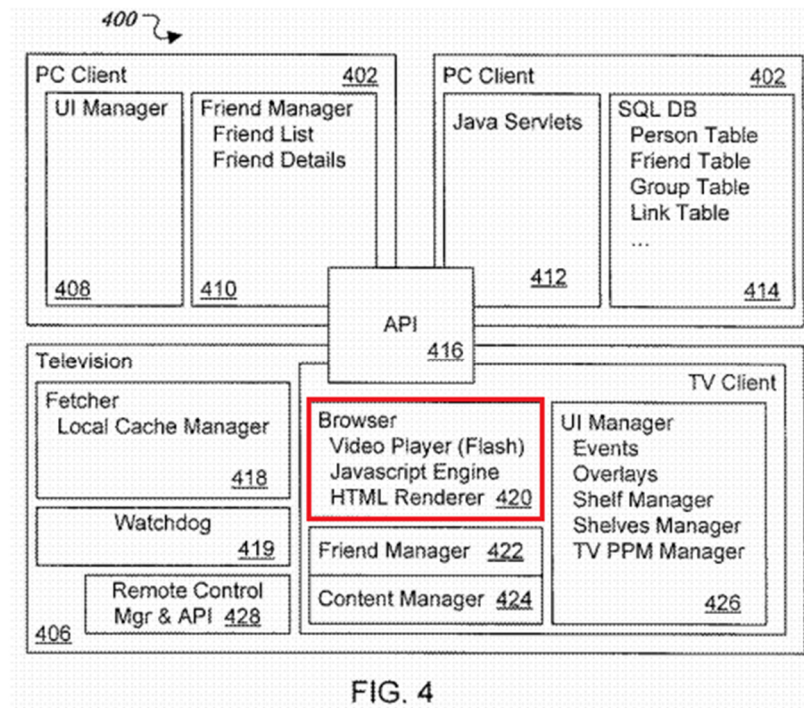
182. I have analyzed and discussed these above in connection with claim 1.

4. Claim 3: “The computer readable medium of claim 2, wherein the computer comprises at least one web server, at least one database server and at least one file server.”

a. Web server

183. A POSA would have interpreted a “web server” as taught in the ’273 by its plain and ordinary meaning, which is a server that distributes webpages to client systems and devices. The ’273 Patent also describes a “web server” as a “content server.” Ex.1001 at 4:59. According to the ’273 Patent, a “content server” both receives requests for pages from device users “in a conventional manner” and can “provide a populated page to the requesting user computer.” *Id.* at 5:38-43.

184. Gossweiler teaches a web server because its content may be navigated and presented through a “a player as part of a web browser 420.” *See* Ex.1005 at 22:45-46, Fig. 4 (annotated to show browser, with HTML renderer):



185. In order for the browser illustrated in Figure 4 to render HTML, a web server would need to provide HTML to the browser. As a result, a POSA would have considered it obvious that Gossweiler teaches a web server.

b. Database server

186. According to the '273 Patent's specification, the "database server" stores a variety of information, including (1) metadata—e.g., title, date, series information, and description (Ex.1001 at 7:32-56); (2) feed identifier or access information (*id.*); (3) locations for presentations that are housed "elsewhere in memory" (*id.* at 6:24-31).

187. Gossweiler's storage of metadata meets this limitation. Gossweiler can present still frames from relevant video content (Ex. 1005 at 5:63-67) and metadata

about audio files such as “title, artist, and length,” (*id.* at 6:9-14) as well as metadata associating programs with particular demographic groups (*id.* at 16:37-39). While in theory some of this data, such as still frames and length, could be generated from the content on the fly as needed, a POSA would have recognized that a much more practical and generally more efficient approach, typically leading to a more pleasant user experience, would be to store this data, and the storage site meets the ’273 Patent’s functional description of a “database server.”

c. File server

188. The ’273 Patent’s file server stores presentation data and transmits it to the user’s computer. Ex.1001 at 5:28-32 (“downloading,” as used herein, generally refers to a technique for transmitting data (*e.g.*, an entire data file) between computers, such as between file server 36 (FIG. 1) and a computing device 22 (FIG. 1).”); *id.* at 6:1-6 (“In certain embodiments of the present invention, a user may select a populated presentation ... In response thereto, server 34 may request file server 36 either stream or download the selected presentation to the requesting user's computer 20, such as via a web page 200 in a conventional manner.”).

189. Gossweiler teaches this limitation because it stores media files (presentation data) and sends them to the user for viewing. *See, e.g.*, Ex.1005 at 11:3-6 (streaming presentations), 14:29-35 (the “binary storage system” discussed

in limitation 1.a that stores media files), 16:3-8 (an “audio-visual content database from which the system can fetch “audio-visual content for programs”).

190. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001; and further that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Executed on October 11th, 2019 in Antwerp, Belgium.

A handwritten signature in black ink, appearing to read "Michael Franz", written over a horizontal line.

Michael Franz

Appendix B

B-1 Andy Mulholland, “The End of Business as Usual: Service-Oriented Business Transformation”, Proc. 4th Int’l Conf. on Service-Oriented Computing (ICSOC 2006), A. Dan and W. Lamersdorf (Eds.), (2006)

B-2 Díaz O., Pérez S., Paz I. (2007), “Providing Personalized Mashups Within the Context of Existing Web Applications,” Benatallah B., Casati F., Georgakopoulos D., Bartolini C., Sadiq W., Godart C. (eds); Web Information Systems Engineering – WISE 2007. WISE 2007. Lecture Notes in Computer Science, vol 4831.

B-3 Till Janner and Christopher Schroth, “Web 2.0 and SOA: Converging Concepts Enabling the Internet of Services”

B-4 Anant Jhingran, “Enterprise Information Mashups: Integrating Information, Simply”, Umeshwar Dayal et al. (eds.), Proceedings of the 32nd International Conference on Very Large Data Bases, Seoul, Korea, September 12-15, 2006.

B-5 U.S. Pat. App. No. 2002/0194305 A1

B-6 <https://web.archive.org/web/20080318194916/http://www.bloglines.com/>

B-7
web.archive.org/web/20061106233029/http://www.google.com/help/reader/tour.html

B-8 U.S. Pat. App. No. 2006/0074980

B-9 U.S. Pat. App. No. 2006/0173985A1

B-10 U.S. Pat. App. No. 20070/083536A1

B-11 U.S. Pat. App. No. 2004/0098451A1

B-12 U.S. Pat. App. No. 2009/0089380A1

B-13 U.S. Pat. App. No. 2006/0259462A1

B-14 U.S. Pat. No. 8,020,106B2

B-15 U.S. Pat. App. No. 2005/0097190A1

B-16 YouTube subscription page archived June 22, 2006

B-17 Google Blog page archived October 10, 2006