# Exhibit 4

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UNITED STATES DISTRICT COURT

EASTERN DISTRICT OF VIRGINIA

ALEXANDRIA DIVISION

I/P Engine, Inc.,

Plaintiff,

vs.

AOL, Inc. et al.,

Defendants.

CASE NO. 2:11-cv-512

**DEFENDANTS' PRELIMINARY INVALIDITY CONTENTIONS**

Trial Date: None set

## I. INTRODUCTION

Defendants Google Inc., IAC Search & Media, Inc., Target Corporation, and Gannett Company, Inc. ("Defendants") hereby submit the following Preliminary Invalidity Contentions to Plaintiff I/P Engine, Inc. ("Plaintiff").

## II. RESERVATIONS

The information and documents that Defendants produce are provisional and subject to further revision as follows. Defendants expressly reserve the right to amend the disclosures herein should Plaintiff provide any information that it failed to provide in its Infringement Contentions or should Plaintiff amend its infringement contentions in any way. Further, because Defendants have not yet completed their search for and analysis of relevant prior art, Defendants reserve the right to revise, amend, and/or supplement the information provided herein, including identifying and relying on additional references, should Defendants' further search and analysis yield additional information or references, consistent with the Federal Rules of Civil Procedure. Moreover, Defendants reserve the right to revise its ultimate contentions concerning the invalidity of the claims of the Asserted Patents, which may change depending upon the Court's construction of the claims of the Asserted Patents, any findings as to the priority date of the Asserted Patents, and/or positions that Plaintiff or its expert witness(es) may take concerning claim interpretation, infringement, and/or invalidity issues.

Prior art not included in this disclosure, whether known or not known to Defendants, may become relevant. In particular, Defendants are currently unaware of the extent, if any, to which Plaintiff will contend that limitations of the asserted claims are not disclosed in the prior art identified by Defendants. To the extent that such an issue arises, Defendants reserve the right to

identify other references that would have made the addition of the allegedly missing limitation to the disclosed device or method obvious.

Defendants' claim charts cite to particular teachings and disclosures of the prior art as applied to features of the asserted claims. However, persons having ordinary skill in the art generally may view an item of prior art in the context of other publications, literature, products, and understanding. As such, the cited portions are only examples, and Defendants reserve the right to rely on uncited portions of the prior art references and on other publications and expert testimony as aids in understanding and interpreting the cited portions, as providing context thereto, and as additional evidence that the prior art discloses a claim limitation. Defendants further reserve the right to rely on uncited portions of the prior art references, other publications, and testimony to establish bases for combinations of certain cited references that render the asserted claims obvious.

The references discussed in the claim charts may disclose the elements of the asserted claims explicitly and/or inherently, and/or they may be relied upon to show the state of the art in the relevant time frame. The suggested obviousness combinations are provided in the alternative to Defendants' anticipation contentions and are not meant to suggest that any reference included in the combinations is not by itself anticipatory.

For purposes of these Preliminary Invalidity Contentions, Defendants identify prior art references and provide element-by-element claim charts based in part on the apparent constructions of the asserted claims advanced by Plaintiff in its Infringement Contentions. Nothing stated herein shall be treated as an admission or suggestion that Defendants agree with Plaintiff regarding either the scope of any of the asserted claims or the claim constructions advanced by it in its Infringement Contentions or anywhere else. Moreover, nothing in these

Invalidity Contentions shall be treated as an admission that Defendants' accused technologies meet any limitations of the claims.

Depending on the Court's construction of the claims of the Asserted Patents, and/or positions that Plaintiff or its expert witness(es) may take concerning claim interpretation, infringement, and/or invalidity issues, different charted prior art references may be of greater or lesser relevance and different combinations of these references may be implicated. Given this uncertainty, the charts may reflect alternative applications of the prior art against the asserted claims.

Defendants hereby provide disclosures and related documents pertaining only to the asserted claims as identified by Plaintiff in its Infringement Contentions. Defendants reserve the right to modify, amend, or supplement these Preliminary Invalidity Contentions to show the invalidity of any additional claims that the Court may allow Plaintiff to later assert.

## III. PRELIMINARY INVALIDITY CONTENTIONS

The asserted claims of the Asserted Patents are invalid under 35 U.S.C. § 102 and/or § 103 because at least the following prior art references anticipate the claims or render them obvious, alone or in combination:

*Patents or Patent Applications:*

U.S. Patent No. 5,835,087 to Herz et al. ("Herz")

U.S. Patent No. 6,202,058 to Rose et al. ("Rose")

*Publications:*

Yezdezard Lashkari, *Feature Guided Automated Collaborative Filtering*, MIT Masters Thesis (1995) ("Lashkari")

David Goldberg et al., *Using Collaborative Filtering to Weave an Information Tapestry*, Communications of the ACM (December 1992) ("Goldberg" or "Tapestry")

Marko Balabanovic et al., *Fab: Content-Based, Collaborative Recommendation*, Communications of the ACM (March 1997) ("Balabanovic")

Paul Resnick et al., *GroupLens: An Open Architecture for Collaborative filtering of NetNews*, Proceedings of the ACM (1994) ("Resnick" or "GroupLens")

Shoshana Loeb, "Architecting Personalized Delivery of Multimedia Information," *Communications of the ACM*, December 1992, Vol. 35, No. 12, pp. 39-48 ("Loeb")

Exemplary claim charts for the claims asserted by Plaintiff are attached as Attachments A-1 to A-6, and incorporated here. Defendants reserve the right to supplement these contentions with additional references and charts as Defendants' investigation continues. Discovery is ongoing, and Defendants' prior art investigation and third party discovery is therefore not yet complete. Defendants reserve the right to present additional items of prior art under 35 U.S.C. § 102(a), (b), (e), (f) and/or (g), and/or § 103 located during the course of discovery or further investigation. For example, Defendants expect to issue subpoenas to third parties believed to have knowledge, documentation and/or corroborating evidence concerning some of the prior art listed in the Interrogatory response and/or additional prior art. These third parties include without limitation the authors, inventors, or assignees of the references listed in the Interrogatory response. In addition, Defendants reserve the right to assert invalidity under 35 U.S.C. § 102(c) or (d) to the extent that discovery or further investigation yield information forming the basis for such claims.

Based on Defendants' present understanding of the asserted claims of the Asserted Patents and the constructions that Defendants believe I/P Engine to be asserting based on I/P Engine's proposed constructions and its infringement contentions, Defendants believe that the charted references anticipate the claims of the Asserted Patents as shown in the references' respective charts. However, if the finder of fact determines that some element of a given claim was not disclosed by an anticipation reference, that reference in combination with the knowledge

and skill of a person of ordinary skill in the art at the time of the alleged invention and/or other prior art disclosing the allegedly missing limitations would have rendered each of the asserted claims obvious.

The Supreme Court has held that the combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results. *KSR Intl Co. v. Teleflex Inc.,* 550 U.S. 398, 127 S. Ct. 1727, 1739 (2007). When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. *Id.* at 1740. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Id.*

In order to determine whether there is an apparent reason to combine the known elements in the fashion claimed by the patent at issue, a court can look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art. *Id.* at 1740-41. For example, obviousness can be demonstrated by showing there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims. *Id.* at 1743. Any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed. *Id.* Common sense also teaches that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle. *Id.*

Thus, the motivation to combine the teachings of the prior art references disclosed herein is found in the references themselves and/or: (1) the nature of the problem being solved, (2) the express, implied and inherent teachings of the prior art, (3) the knowledge of persons of ordinary skill in the art, (4) the fact that the prior art is generally directed towards filtering information using content-based and collaborative filters, and/or (5) the predictable results obtained in combining the different elements of the prior art.

Based on Defendants' present understanding of the asserted claims of the Asserted Patents and the constructions that Defendants believe I/P Engine to be asserting based on I/P Engine's proposed constructions and its infringement contentions, the asserted claims of the Asserted Patents are obvious in light of the combinations outlined below. Each of these combinations yields predictable results.

Any reference or combination of references that anticipates or makes obvious an asserted independent claim also makes obvious any asserted claim dependent on that independent claim because every element of each dependent claim was known by a person of ordinary skill at the time of the alleged invention, and it would have been obvious to combine those known elements with the independent claims at least as a matter of common sense and routine innovation. For example, the fact that advertisements can be filtered like any other type of information was well-known in the art. Also, the fact that passive as well as active feedback data may be used to gauge user interest in information was well-known in the art. Accordingly, Defendants contend that each asserted dependent claim is rendered obvious not only by the combinations explicitly identified in these contentions as rendering a given dependent claim obvious, but also by any combination of references that renders obvious a claim on which a dependent claim depends.

Additionally, there are no secondary considerations that might rebut the obviousness of the Asserted Patents. For instance, the invention(s) disclosed in the Asserted Patents did not achieve commercial success, as evidenced by the fact that neither the named inventors nor any other companies that owned the Asserted Patents were able to derive significant revenue through commercializing these patents. There also was no failure of others to achieve the invention(s) in the Asserted Patents – to the contrary, as discussed below, numerous prior art systems combined collaborative and content-based filtering and used these techniques to filter search results delivered in response to a query. For the same reason, there was no long-felt or unmet need for the invention(s) in the asserted patents. Additionally, no individual expressed skepticism about the invention(s) disclosed in the Asserted Patents, nor did these invention(s) garner industry praise or awards. Finally, neither Defendants nor any other third-party copied the invention(s) disclosed in the Asserted Patents.

The Asserted Patents (which share a substantially identical specification) explain that it was well-known in the art how to enter a query into an Internet search engine, obtain search results through a scanning system, and filter the search results using a content-based filter. *See, e.g.,* '420 Patent at 1:17-26:

> In the operation of the internet, a countless number of information [sic] are available for downloading from any of at least thousands of sites for consideration by a user at the user's location. A user typically connects to a portal or other web site having a search capability, and thereafter enters a particular query, i.e., a request for information relevant to a topic, a field of interest, etc. Thereafter, the search site typically employs a "spider" scanning system and a content-based filter in a search engine to search the internet and find information which match [sic] the query. (emphasis added).

The Asserted Patents purportedly teach how to add a collaborative filter to the scanning system and content-based filter found in traditional search engines:

> In the patent application which is parent to this continuation-in-part application, i.e. Ser. No. 08/627,436, filed by the present inventors on Apr. 4, 1996, now U.S. Patent No. 5,867,799 and hereby incorporated by reference, an advanced

> collaborative/content-based information filter system is employed to provide superior filtering in the process of finding and rating informons which match a user's query. The information filter structure in this system integrates content-based filtering and collaborative filtering to determine relevancy of informons received from various sites in the Internet or other network. ('420 Patent at 1:46-56) (emphasis added).
>
> The present invention is directed to an information processing system especially adapted for use at internet portal or other web sites to make network searches for information entities relevant to user queries, with collaborative feedback data and content-based data and adaptive filter structuring, being used in filtering operations to produce significantly improved search results. ('420 Patent at 2:20:27) (emphasis added).

However, the concept of combining collaborative and content-based filters was well-known in the prior art.[1] For instance, Balabanovic describes the "Fab" system, a "Content-Based, Collaborative Recommendation" system. *See* Balabanovic at 66. "By combining both collaborative and content-based filtering systems, Fab may eliminate many of the weaknesses found in each approach." *Id.* Similarly, Rose teaches that "[i]nformation presented to a user via an information access system is ranked according to a prediction of the likely degree of relevance to the user's interests . . . The prediction of relevance is carried out by combining data pertaining to the content of each item of information with other data regarding correlations of interests between users." Rose at Abstract. Lashkari discloses "a novel technique for information filtering that attempts to address the problems faced by both ACF [automated collaborative filtering] and content-based approaches by combining the two to make use of their complementary strengths." Lashkari at 15-16. Herz describes a method under which "[t]he interest that a given target object X holds for a user U is assumed to be a sum of two quantities:

[1] As a threshold matter, the Asserted Patents are entitled to a priority date no earlier than December 3, 1998 – the filing date of the application that matured into the '420 patent. While both Asserted Patents claim to be continuations-in-part of U.S. Patent No. 5,867,799 ("the '799 Patent"), they are not entitled to the '799 Patent's earlier priority date. This is because the '799 Patent does not support the claims of the Asserted Patents, at least because the '799 Patent does not teach searching for or filtering information in response to user queries.

q(U, X), the intrinsic 'quality' of X plus f(U, X), the 'topical interest' that users like U have in target objects like X." Herz at 18:39-43. And Goldberg describes the "Tapestry" system as follows: "In addition to content-based filtering, the Tapestry system was designed and built to support *collaborative filtering*." Goldberg at 61 (emphasis in original).

As discussed more specifically below, the elements of each of the asserted claims existed in the prior art:

**A Scanning System for Searching for Information Relevant to a User Query ('664 Claim 1[a], 38; '420 Patent Claim 10[a], 25[a])**

As discussed above, the Asserted Patents themselves acknowledge that this element was found in prior art search engines. In describing typical search engines, the Asserted Patents state that "[a] user typically connects to a portal or other web site having a search capability, and thereafter enters a particular query, i.e., a request for information relevant to a topic, a field of interest, etc. Thereafter, the search site typically employs a 'spider' scanning system and a content-based filter in a search engine to search the internet and find information which match the query." '420 Patent at 1:20-26 (emphasis added).

Moreover, several of the prior art references that combine content-based and collaborative filtering apply these filtering methods to search results of a typical search engine that has already scanned for information relevant to a user query. For instance, Rose states that its content-based/collaborative filtering method "is applicable to all different types of information access systems. For example, it can be employed to filter messages provided to a user in an electronic mail system and search results obtained through an online text retrieval service." Rose at 2:51-55 (emphasis added). Lashkari states that its content-based/collaborative filter (known as WEBHOUND) can be applied to the results of existing search engines like Lycos and Yahoo! *See* Lashkari at 78 ("WEBHOUND is primarily an information filtering

service. Popular WWW search engines such as Lycos [24], WebCrawler [29], Yahoo [44], etc. are primarily information retrieval engines (as opposed to information filtering systems). The two are complementary – a WEBHOUND like front-end to a popular search engine such as Lycos, could enable users with WEBHOUND accounts to filter the results of their searches on the extensive databases compiled by these search engines in a personalized fashion.")

**A Feedback System for Receiving Collaborative Feedback Data ('664 Claim 1[b], 26[b]; '420 Claim 10[c], 25[c])**

The concept of receiving collaborative feedback data to help filter information was well-known in the prior art. As Resnick explains, with respect the "GroupLens" system, "[c]ollaborative filters help people make choices based on the opinions of other people. GroupLens is a system for collaborative filtering of netnews, to help people find articles they will like in the huge stream of available articles." Resnick at Abstract. Moreover, as explained above, numerous other prior art references made use of collaborative feedback in conjunction with content-based filtering to filter information. *See, e.g.,* Rose at Abstract, Lashkari at 15-16, Balabanovic at 66, Herz at 18:39-43, Goldberg at 61.

**A Content-Based Filter System ("664 Claim 1[c], 26[d]; '420 Claim 10[b], 25[b])**

As explained immediately above, numerous prior art references employed content-based filters in conjunction with collaborative filters. *See, e.g.,* Rose at Abstract, Lashkari at 15-16, Balabanovic at 66, Herz at 18:39-43, Goldberg at 61. Furthermore, the Asserted Patents themselves acknowledge that content-based filters were commonly used in conjunction with scanning search engines in the prior art. *See* '420 Patent at 1:20-26 ("A user typically connects to a portal or other web site having a search capability, and thereafter enters a particular query, i.e., a request for information relevant to a topic, a field of interest, etc. Thereafter, the search

site typically employs a 'spider' scanning system and a content-based filter in a search engine to search the internet and find information which match the query.") (emphasis added).

**Extracting Features from Information ('664 Claim 21)**

The prior art also teaches that the content-based filters may operate by extracting features from the information to be filtered. *See, e.g.,* Rose at 6:10-25 ("To derive the content-based data, certain elements of the message, e.g., each word in a document, can be assigned a weight, based on its statistical importance . . . For non-document types of information, the content data can be based upon other attributes that are relevant to a user's interest in that information. For example, in the movie database, the content vector might take into account the type of movie, such as action or drama, the actors, its viewer category rating, and the like."); Lashkari at 16 ("The technique we present, *Feature Guided Automated Collaborative Filtering* (FGACF), uses easily extractable features of items to dynamically partition the domain and so allow ACF [automated collaborative filtering] to be applied relative to a set of features."); Herz at 6:18-29 ("The individual data that describe a target object and constitute the target object's profile are herein termed 'attributes' of the target object. Attributes may include, but are not limited to, the following: (1) long pieces of text (a newspaper story, a movie review, a product description or an advertisement), (2) short pieces of text (name of a movie's director, name of town from which an advertisement was placed, name of the language in which an article was written), (3) numeric representations (price of a product, rating given to a movie, reading level of a book), (4) associations with other types of objects (list of actors in a movie, list of persons who have read a document).")

**Obtaining Collaborative Feedback Data that is Passive ('420 Claim 14, 15, 27, 28)**

The prior art also discloses that the collaborative feedback data may be passive. In other words, rather than having users actively indicate their interest in certain information, the prior art teaches how to infer user interest from how the users interact with that information. For instance, under Herz's disclosed method, a movie will be deemed more relevant to a given user if other similar users have implicitly endorsed that movie by renting it. *See* Herz at 10:44-47. A purchase that results from an advertisement also leads to an inference of positive relevance feedback. *See id.* at 61:4–18. Or under Goldberg's disclosed method, documents will be deemed more relevant if they receive replies. *See* Goldberg at 63. Similarly, Loeb classifies user feedback as being either "explicit" or "implicit." *See* Loeb at 40. Loeb further classifies users as either "proactive" or "casual," and notes that implicit or passive means of gathering feedback are preferable for casual users:

> Not all users of information-filtering systems have the same needs and expectations, and, therefore, they can be classified by the nature of their information needs and by the way they want to address them. In the two extremes along this dimension we can distinguish between two types of users, *proactive* and *casual*. The information needs of proactive users are very well defined and are usually formulated as a query or a profile....In contrast, casual users have drawn much less attention from information-filtering and retrieval system designers. Unlike the proactive users, the casual users are not likely to be willing to engage in lengthy interactions with the system in order to articulate current information needs and provide explicit feedback. Therefore, automating the personalized delivery of information to this class of users requires mechanisms that can cope with this fact. In particular, issues related to mechanisms for the creation of profiles for new users (e.g., by either using initial profiles based on stereotypes for users' groups or by building profiles directly from usage data) and to the detection of implicit feedback (e.g., skipped and revisited items) need further research.

(Loeb at 41.)

**Filtering Advertisement Information ('664 Claim 5)**

It was well-known in the prior art that one specific type of information that may be presented to users is advertisements. Indeed, advertisements have been presented to consumers

of information since at least the 19th century. *See generally* Mark Tungate, AdLand: A Global History of Advertising at 11-13 (Kogan Page 2007) (describing the use of mass advertising in Victorian-era newspapers and periodicals). Unsurprisingly, therefore, some of the prior art that combines content-based and collaborative filtering also explicitly states that these techniques can be used to filter advertisements. *See, e.g.,* Herz at 61:4-18 ("A consumer who buys a product is deemed to have provided positive relevance feedback on advertisements for that product, and a consumer who buys a product apparently because of a particular advertisement (for example, by using a coupon clipped from that advertisement) is deemed to have provided particularly high relevance feedback on that advertisement . . . Given a database of such relevance feedback, the disclosed technology is then used to match advertisements with those users who are most interested in them . . .")

* * * * *

Table 1 identifies the claims anticipated by each reference and the attached chart that identifies specific examples of where each limitation of the anticipated claims is found in that reference.

**Table 1: Prior Art References Anticipating Asserted Claims of the '664 and/or '420 Patents**

| **Exhibit A Chart** | **Prior Art** | **Anticipated Claims** |
|---|---|---|
| A-1 | Rose '058 | '664 Patent: 1, 6, 21, 22, 26, 28, 38<br><br>'420 Patent: 10, 25 |
| A-2 | Herz '087 | '664 Patent: 1, 5, 6, 21, 22, 26, 28, 38<br><br>'420 Patent: 10, 14, 15, 25, 27, 28 |

| | | |
|---|---|---|
| A-3 | Lashkari, *Feature Guided Automated Collaborative Filtering* | '664 Patent: 1, 6, 21, 22, 26, 28, 38<br><br>'420 Patent: 10, 25 |
| A-4 | Goldberg et al., *Using Collaborative Filtering to Weave an Information Tapestry* | '664 Patent: 1, 6, 21, 26, 28, 38<br><br>'420 Patent: 10, 14, 15, 25, 27, 28 |
| A-5 | Balabanovic et al., *Fab: Content-Based, Collaborative Recommendation* | '664 Patent: 1, 5, 6, 21, 22, 26, 28, 38<br><br>'420 Patent: 10, 25 |
| A-6 | Resnick et al., *GroupLens: An Open Architecture for Collaborative Filtering of NetNews* | '664 Patent: 1, 6, 26, 28, 38<br><br>'420 Patent: 10, 25 |

The claim charts found in Exhibits A-1 through A-6 also list the combinations of references that render each claim obvious.

The asserted claims are also invalid under 35 U.S.C. § 112 for non-enablement and inadequate written description. For example, the Asserted Patents' specifications describe a search engine system that uses collaborative and content-based filtering on a set of "wire" or persistent search results. If there is no "wire" available for a particular query, the described system issues a "demand" search to a regular search engine. ('420 Patent, 23:39-53.) The specification does not describe or disclose using collaborative and content-based filtering with a "demand" search, however. Plaintiff has apparently interpreted the asserted claims as not requiring a "wire search." As the specification does not disclose performing the content-based and collaborative filtering on the "demand search" rather than the "wire search," Plaintiff's interpretation of the asserted claims would render them invalid for lack of written description.

Further, the specification does not enable performing collaborative filtering on a demand search—that is, a search for which users may view *different* search results rather than the same, consistent set of search results. Accordingly, Plaintiff's interpretation of the asserted claims would also render those claims invalid for lack of enablement.

Each of the asserted claims requires scanning a network for information or depends on such a claim. '420 Patent cl. 10 ("system for scanning a network"); cl. 25 ("scanning a network"); '664 Patent cl. 1 ("scanning system for searching for information"); cl. 26 ("searching for information"). These claims are invalid under 35 U.S.C. § 112 for non-enablement, inadequate written description, and indefiniteness. The Asserted Patents' specifications' sole recitation of a scanning system in connection with a user query is that "A spider system 46C scans a network for a current demand search." The specifications fail to disclose a spider system, nor does the specification teach how to build a spider system. "Spider system" was not a term commonly understood in the art at the time of the purported inventions, nor is "spider system" defined anywhere in the specifications. The specifications also fail to disclose how to operate a spider system in connection with a user query.

Additionally, each asserted claim requires "combining" one category of information with another. The claims are invalid for indefiniteness because one of ordinary skill would not understand what it means to "combine" information in the context of the claims. Finally, '420 Claim 25 and '664 Claim 26 recite "receiving collaborative feedback data" or "receiving information found to be relevant to the query by other users," but no collaborative feedback system is recited or disclosed in these claims. Therefore, these claims (and their dependants) are invalid for indefiniteness.

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# Exhibit A-1

**U.S. Patent Claim Charts for the asserted '664 and '420 patents against U.S. Patent No. 6,202,058 to Rose et al. ("Rose '058")**

To the extent that either I/P Engine argues or the Court finds that this reference does not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious. This invalidity chart is based in whole or in part on Defendants' present understanding of the asserted claims, and I/P Engine's apparent construction of the claims in their Infringement Contentions. Defendants are not adopting I/P Engine's claim construction, nor admitting to the accuracy of any particular claim construction. To the extent that I/P Engine's apparent claim construction or applications thereof are reflected in this invalidity chart, nothing herein should be construed as an admission that Defendants agree with I/P Engine's apparent claim construction or I/P Engine's application of that claim construction in its Infringement Contentions.

Defendants identification of this publication as prior art herein under 35 U.S.C. §§102(a), (b), (e), and/or (g) and §103 includes the publication itself as well as the use of the products and systems described therein. Although Defendants' investigation continues, information available to date indicates that such products and systems were (1) known or used in the country before the alleged invention of the claimed subject matter of the asserted claims, (2) were in public use and/or on sale in this country more than one year before the filing date of the patent, and/or (3) were invented by another who did not abandon, suppress, or conceal, before the alleged invention of the claimed subject matter of the asserted claim. Upon information and belief, these prior art products and systems and their associated references anticipate and/or render obvious each of the asserted claims.

Defendants reserve all rights to amend their Invalidity Contentions after the Court issues its claim construction ruling, or if I/P Engine amends its Infringement Contentions.

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Rose '058 Reference** |
|---|---|
| **1.** [preamble] A search system comprising: | *See* Rose '058 at 2:51-55 ("The relevance predicting technique of the present invention is applicable to all different types of information access systems. For example, it can be employed to filter messages provided to a user in an electronic mail system *and search results obtained through an online text retrieval service*") (emphasis added); Claim 26 ("The system of claim 14, wherein said information access system comprises an electronic search and retrieval system.") |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Rose '058 Reference** |
|---|---|
| | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 6:42-58.<br><br>Lashkari at 59.<br><br>Tapestry at 63.<br><br>Balabanovic at 69-70.<br><br>GroupLens at 2. |
| [a] a scanning system for searching for information relevant to a query associated with a first user in a plurality of users; | *See* chart for claim 1 [preamble], *supra*. |
| [b] a feedback system for receiving information found to be relevant to the query by other users; and | *See* Rose '058 at 6:59-7:10 ("A second factor in the prediction of a user's interest in information is based upon a correlation with the indications provided by other users. Referring to Fig. 6, each time a user retrieves a document and subsequently provides an indication of interest, the result can be stored in a table. From this table, a correlation matrix R can be generated, whose entries indicate the degree of correlation between the various users' interests in commonly retrieved messages. . . Subsequently, when a user accesses the system, the feedback table and the correlation matrix are used as another factor in the prediction of the likelihood that the user will be interested in any given document.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.: |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Rose '058 Reference** |
|---|---|
| | Herz at 6:13-18, 10:44-47, 19:9-14; 23:45-24:13.<br><br>Lashkari at 59-60, 18.<br><br>Tapestry at 63.<br><br>GroupLens at 1, 2, 5-10. |
| [c] a content-based filter system for combining the information from the feedback system with the information from the scanning system and for filtering the combined information for relevance to at least one of the query and the first user. | *See* Rose '058 at Abstract ("Items of information to be presented to a user are ranked according to their likely degree of relevance to that user and displayed in order of ranking. The prediction of relevance is carried out by combining data pertaining to the content of each item of information with other data regarding correlations of interests between users. A value indicative of the content of a document can be added to another value which defines user correlation, to produce a ranking score for a document."); 6:5-11 ("In accordance with the present invention[], the ranking of messages is carried out by combining data based upon an attribute of the message, for example its content, with other data relating to correlations of indications provided by other users who have retrieved the message.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 18:39-43.<br><br>Lashkari at 15-16, 60.<br><br>Tapestry at 61, 63. |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Rose '058 Reference** |
|---|---|
| | Balabanovic at 69, 66.<br><br>GroupLens at 2, 3. |
| **5.** The search system of claim **1** wherein the filtered information is an advertisement. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*, Herz at 61:4-18. |
| **6.** The search system of claim **1** further comprising an information delivery system for delivering the filtered information to the first user. | *See* Rose '058 at Abstract ("Information presented to a user via an information access system is ranked according to a prediction of the likely degree of relevance to the user's interests.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 6:13-18, Fig. 10 at 1106.<br><br>GroupLens at 10, 11. |
| **21.** The search system of claim **1** wherein the content-based filter system filters by extracting features from the information. | *See* Rose '058 at 2:35-38 ("The prediction of relevance is carried out by combining data pertaining to one or more attributes of each item of information with other data regarding correlations of interest between users."); 6:10-25 ("To derive the content-based data, certain elements of the message, e.g., each word in a document, can be assigned a weight, based on its statistical importance . . . For non-document types of information, the content data can be based upon other attributes that are relevant to a user's interest in that information. For example, in the movie database, the content vector might take into account the type of movie, such as action or drama, the actors, its viewer category rating, and the like.")<br><br>To the extent this reference does not teach this claim element, this reference in |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Rose '058 Reference** |
|---|---|
| | combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 6:18-29.<br><br>Lashkari at 15-16, 60.<br><br>Tapestry at 67.<br><br>Balabanovic at 69.<br><br>GroupLens at 3. |
| **22.** The search system of claim **21** wherein the extracted features comprise content data indicative of the relevance to the at least one of the query and the user. | *See* chart for Claim 21, *supra*. |
| **26.** A method for obtaining information relevant to a first user comprising: | *See* chart for Claim 1 (preamble). |
| searching for information relevant to a query associated with a first user in a plurality of users; | *See* chart for Claim 1(a) |
| receiving information found to be relevant to the query by other users; | *See* chart for Claim 1(b). |
| combining the information found to be relevant to the query by other users with the searched information; and | *See* chart for Claim 1(b). |
| content-based filtering the combined information for relevance to at least one of the query and the first user. | *See* chart for Claim 1(c). |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Rose '058 Reference** |
|---|---|
| **28.** The method of claim 26 further comprising the step of delivering the filtered information to the first user. | *See* chart for Claim 6, *supra*. |
| **38.** The method of claim 26 wherein the searching step comprises scanning a network in response to a demand search for the information relevant to the query associated with the first user. | *See* chart for Claim 1 [preamble], *supra*. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Rose '058 Reference** |
|---|---|
| **10.** [preamble] A search engine system comprising: | *See* Rose '058 at 2:51-55 ("The relevance predicting technique of the present invention is applicable to all different types of information access systems. For example, it can be employed to filter messages provided to a user in an electronic mail system *and search results obtained through an online text retrieval service*") (emphasis added); Claim 26 ("The system of claim 14, wherein said information access system comprises an electronic search and retrieval system.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 6:42-58.<br><br>Lashkari at 59.<br><br>Tapestry at 63.<br><br>Balabanovic at 69.<br><br>GroupLens at 2. |
| [a] a system for scanning a network to make a demand search for informons relevant to a query from an individual user; | *See* chart for '664 Patent, Claim 1 [preamble], *supra*. |
| [b] a content-based filter system for receiving the informons from the scanning system and for filtering the informons on the basis of applicable content profile data for relevance to the query; and | *See* Rose '058 at 6:50-58 ("One factor in the prediction of a user's likely interest in a particular piece of information can be based on the similarity between the document's vector and the user's profile vector. For example, as shown in Fig. 5B, a score of a document's relevance can be indicated by the cosine of the angle between the document's vector and the user's profile |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Rose '058 Reference** |
|---|---|
| | vector. A document having a vector which is close to that of the user's profile will be highly ranked, whereas those which are significantly different will have a lower ranking.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at Abstract.<br><br>Lashkari at 15-16, 60.<br><br>Tapestry at 63.<br><br>Balabanovic at 69.<br><br>GroupLens at 2, 3. |
| [c] a feedback system for receiving collaborative feedback data from system users relative to informons considered by such users; | *See* Rose '058 at 6:59 ("A second factor in the prediction of a user's interest in information is based upon a correlation with the indications provided by other users. Referring to Fig. 6, each time a user retrieves a document and subsequently provides an indication of interest, the result can be stored in a table. From this table, a correlation matrix R can be generated, whose entries indicate the degree of correlation between the various users' interests in commonly retrieved messages. . . Subsequently, when a user accesses the system, the feedback table and the correlation matrix are used as another factor in the prediction of the likelihood that the user will be interested in any given document.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Rose '058 Reference** |
|---|---|
| | claim element obvious. See, e.g.:<br><br>Herz at 6:13-18, 10:44-47, 19:9-14.<br><br>Lashkari at 59-60.<br><br>Tapestry at 63.<br><br>Balabanovic at 69.<br><br>GroupLens at 1, 2, 5-10. |
| [d] the filter system combining pertaining feedback data from the feedback system with the content profile data in filtering each informon for relevance to the query. | *See* Rose '058 at Abstract ("Items of information to be presented to a user are ranked according to their likely degree of relevance to that user and displayed in order of ranking. The prediction of relevance is carried out by combining data pertaining to the content of each item of information with other data regarding correlations of interests between users. A value indicative of the content of a document can be added to another value which defines user correlation, to produce a ranking score for a document."); 6:5-11 ("In accordance with the present invention[], the ranking of messages is carried out by combining data based upon an attribute of the message, for example its content, with other data relating to correlations of indications provided by other users who have retrieved the message.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 18:39-43.<br><br>Lashkari at 15-16, 60. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Rose '058 Reference** |
|---|---|
| | Tapestry at 63.<br><br>Balabanovic at 69, 66.<br><br>GroupLens at 2, 3. |
| **14.** The system of claim **10** wherein the collaborative feedback data comprises passive feedback data. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 10:44-47.<br><br>Tapestry at 62.<br><br>GroupLens at 6, 10.<br><br>Loeb at 41. |
| **15.** The system of claim **14** wherein the passive feedback data is obtained by passively monitoring the actual response to a proposed informon. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 10:44-47.<br><br>Tapestry at 62.<br><br>GroupLens at 6, 10.<br><br>Loeb at 41. |
| **25.** A method for operating a search engine system comprising: | *See* chart for Claim 10 (preamble). |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Rose '058 Reference** |
|---|---|
| scanning a network to make a demand search for informons relevant to a query from an individual user; | *See* chart for Claim 10(a). |
| receiving the informons in a content-based filter system from the scanning system and filtering the informons on the basis of applicable content profile data for relevance to the query; | *See* chart for Claim 10(b). |
| receiving collaborative feedback data from system users relative to informons considered by such users; and | *See* chart for Claim 10(c). |
| combining pertaining feedback data with the content profile data in filtering each informon for relevance to the query. | *See* chart for Claim 10(d). |
| **27.** The method of claim **25** wherein the collaborative feedback data provides passive feedback data. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 10:44-47.<br><br>Tapestry at 62.<br><br>GroupLens at 6, 10.<br><br>Loeb at 41. |
| **28.** The method of claim **27** wherein the passive feedback data is obtained by passively monitoring the actual response to a proposed informon. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 10:44-47. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Rose '058 Reference** |
|---|---|
| | Tapestry at 62.<br><br>GroupLens at 6, 10.<br><br>Loeb at 41. |

# Exhibit A-2

## U.S. Patent Claim Charts for the asserted '664 and '420 patents against U.S. Patent No. 5,835,087 to Herz et al. ("Herz")

To the extent that either I/P Engine argues or the Court finds that this reference does not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious. This invalidity chart is based in whole or in part on Defendants' present understanding of the asserted claims, and I/P Engine's apparent construction of the claims in their Infringement Contentions. Defendants are not adopting I/P Engine's claim construction, nor admitting to the accuracy of any particular claim construction. To the extent that I/P Engine's apparent claim construction or applications thereof are reflected in this invalidity chart, nothing herein should be construed as an admission that Defendants agree with I/P Engine's apparent claim construction or I/P Engine's application of that claim construction in its Infringement Contentions.

Defendants identification of this publication as prior art herein under 35 U.S.C. §§102(a), (b), (e), and/or (g) and §103 includes the publication itself as well as the use of the products and systems described therein. Although Defendants' investigation continues, information available to date indicates that such products and systems were (1) known or used in the country before the alleged invention of the claimed subject matter of the asserted claims, (2) were in public use and/or on sale in this country more than one year before the filing date of the patent, and/or (3) were invented by another who did not abandon, suppress, or conceal, before the alleged invention of the claimed subject matter of the asserted claim. Upon information and belief, these prior art products and systems and their associated references anticipate and/or render obvious each of the asserted claims.

Defendants reserve all rights to amend their Invalidity Contentions after the Court issues its claim construction ruling, or if I/P Engine amends its Infringement Contentions.

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Herz Reference** |
|---|---|
| **1.** [preamble] A search system comprising: | *See* Herz at 6:42-58 ("The specific embodiment of this system . . . uses interest feedback from users to construct a 'target profile interest summary' for each user, for example in the form of a 'search profile set' consisting of a plurality of search profiles, each of which corresponds to a single topic of high interest for the user. The system further includes a profile processing module which estimates each user's interest in various target objects . . . and generates for each user a customized rank-ordered listing of target objects most likely to be of interest to that user.") |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Herz Reference** |
|---|---|
| | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 2:51-55, Claim 26.<br><br>Lashkari at 59.<br><br>Tapestry at 63.<br><br>Balabanovic at 69-70.<br><br>GroupLens at 2. |
| [a] a scanning system for searching for information relevant to a query associated with a first user in a plurality of users; | *See* Herz at 26:20-37 ("One use of these searching techniques is to search for target objects that match a search profile from the user's search profile set . . . In one method, a 'webcrawler' program running on a central computer periodically scans all servers in search of new target objects . . .")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 2:51-55.<br><br>Lashkari at 78.<br><br>Tapestry at 63.<br><br>Balabanovic at 69. |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Herz Reference** |
|---|---|
| | GroupLens at 2. |
| [b] a feedback system for receiving information found to be relevant to the query by other users; and | *See* Herz at 6:13-18 ("In all these cases, the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (*or a similar user*) has provided positive feedback in the past") (emphasis added); 10:44-47 ("For example, if the user has often liked movies that Customer $C_{17}$ and Customer $C_{190}$ have rented, then the user may like other such movies, which have similar values for attribute i."); 19:9-14 ("The method of determining a user's interest relies on the following heuristic: when X and Y are similar target objects (have similar attributes), and U and V are similar users (have similar attributes), then topical interest f(U, X) is predicated to have a similar value to the value of topical interest f(V, Y)."); 23:45-24:13.<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 6:59.<br><br>Lashkari at 59-60, 18.<br><br>Tapestry at 63.<br><br>Balabanovic at 69, 66.<br><br>GroupLens at 1, 2, 5-10. |
| [c] a content-based filter system for combining the information from the feedback system with the | *See* Herz at 18:39-43 ("The interest that a given target object X holds for a user U is assumed to be a sum of two quantities: q(U, X), the intrinsic 'quality' |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Herz Reference** |
|---|---|
| information from the scanning system and for filtering the combined information for relevance to at least one of the query and the first user. | of X plus f(U, X), the 'topical interest' that users like U have in target objects like X.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at Abstract, 6:5-11.<br><br>Lashkari at 15-16, 60.<br><br>Tapestry at 61, 63.<br><br>Balabanovic at 69, 66.<br><br>GroupLens at 2, 3. |
| **5.** The search system of claim **1** wherein the filtered information is an advertisement. | *See* Herz at 61:4-18 ("A consumer who buys a product is deemed to have provided positive relevance feedback on advertisements for that product, and a consumer who buys a product apparently because of a particular advertisement (for example, by using a coupon clipped from that advertisement) is deemed to have provided particularly high relevance feedback on that advertisement . . . Given a database of such relevance feedback, the disclosed technology is then used to match advertisements with those users who are most interested in them . . .")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. |
| **6.** The search system of claim **1** further comprising an information delivery system for | *See* Herz at 6:13-18 ("the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Herz Reference** |
|---|---|
| delivering the filtered information to the first user. | target object and the profiles of target objects for which the user (or a similar user) has provided positive feedback in the past"); Fig. 10 at 1106 ("Server Delivers Article to User").<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>GroupLens at 10, 11.<br><br>Rose '058 at Abstract. |
| **21.** The search system of claim **1** wherein the content-based filter system filters by extracting features from the information. | *See* Herz at 6:18-29 ("The individual data that describe a target object and constitute the target object's profile are herein termed 'attributes' of the target object. Attributes may include, but are not limited to, the following: (1) long pieces of text (a newspaper story, a movie review, a product description or an advertisement), (2) short pieces of text (name of a movie's director, name of town from which an advertisement was placed, name of the language in which an article was written), (3) numeric representations (price of a product, rating given to a movie, reading level of a book), (4) associations with other types of objects (list of actors in a movie, list of persons who have read a document).")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 2:35-38, 6:10-25.<br><br>Lashkari at 15-16, 60.<br><br>Tapestry at 67. |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Herz Reference** |
|---|---|
| | Balabanovic at 69.<br><br>GroupLens at 3. |
| **22.** The search system of claim **21** wherein the extracted features comprise content data indicative of the relevance to the at least one of the query and the user. | *See* Herz at 6:29-33 ("Any of these attributes, but especially the numeric ones, may correlate with the quality of the target object, such as measures of its popularity (how often it is accessed) or of user satisfaction (number of complaints received).")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 2:35-38, 6:10-25.<br><br>Lashkari at 35.<br><br>Tapestry at 67, 63.<br><br>Balabanovic at 69.<br><br>GroupLens at 3. |
| **26.** A method for obtaining information relevant to a first user comprising: | *See* chart for Claim 1 [preamble]. |
| searching for information relevant to a query associated with a first user in a plurality of users; | *See* chart for Claim 1[a]. |
| receiving information found to be relevant to the query by other users; | *See* chart for Claim 1[b]. |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Herz Reference** |
|---|---|
| combining the information found to be relevant to the query by other users with the searched information; and | *See* chart for Claim 1[b]. |
| content-based filtering the combined information for relevance to at least one of the query and the first user. | *See* chart for Claim 1[c]. |
| **28.** The method of claim **26** further comprising the step of delivering the filtered information to the first user. | *See* Herz at 6:13-18 ("In all these cases, the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (or a similar user) has provided positive feedback in the past")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at Abstract.<br><br>Lashkari at 78.<br><br>Tapestry at 63.<br><br>Balabanovic at 69, 66.<br><br>GroupLens at 10, 11. |
| **38.** The method of claim **26** wherein the searching step comprises scanning a network in response to a demand search for the information relevant to the query associated with the first user. | *See* chart for Claim 1[a]. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Herz Reference** |
|---|---|
| **10.** [preamble] A search engine system comprising: | *See* Herz at 6:42-58 ("The specific embodiment of this system . . . uses interest feedback from users to construct a 'target profile interest summary' for each user, for example in the form of a 'search profile set' consisting of a plurality of search profiles, each of which corresponds to a single topic of high interest for the user. The system further includes a profile processing module which estimates each user's interest in various target objects . . . and generates for each user a customized rank-ordered listing of target objects most likely to be of interest to that user.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 2:51-55, Claim 26.<br><br>Lashkari at 59.<br><br>Tapestry at 63.<br><br>Balabanovic at 69.<br><br>GroupLens at 2. |
| [a] a system for scanning a network to make a demand search for informons relevant to a query from an individual user; | *See* Herz at 26:20-37 ("One use of these searching techniques is to search for target objects that match a search profile from the user's search profile set . . . In one method, a 'webcrawler' program running on a central computer periodically scans all servers in search of new target objects . . .")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Herz Reference** |
|---|---|
| | claim element obvious. See, e.g.:<br><br>Rose '058 at 2:51-55, Claim 26.<br><br>Lashkari at 78.<br><br>Tapestry at 63.<br><br>Balabanovic at 69-70.<br><br>GroupLens at 2. |
| [b] a content-based filter system for receiving the informons from the scanning system and for filtering the informons on the basis of applicable content profile data for relevance to the query; and | *See* Herz at Abstract (disclosing "a system that automatically constructs both a 'target profile' for each target object in the electronic media based, for example, on the frequency with which each word appears in an article relative to its overall frequency of use in all articles, as well as a 'target profile interest summary' for each user . . . The system then evaluates the target profiles against the users' target profile interest summaries to generate a user-customized rank ordered listing of target objects most likely to be of interest to each user . . .")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 6:50-58.<br><br>Lashkari at 15-16, 60.<br><br>Tapestry at 63. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Herz Reference** |
|---|---|
| | Balabanovic at 69.<br><br>GroupLens at 2, 3. |
| [c] a feedback system for receiving collaborative feedback data from system users relative to informons considered by such users; | *See* Herz at 6:13-18 ("In all these cases, the information delivery process in the preferred embodiment is based on determining the similarity between a profile for the target object and the profiles of target objects for which the user (*or a similar user*) has provided positive feedback in the past") (emphasis added); 10:44-47 ("For example, if the user has often liked movies that Customer $C_{17}$ and Customer $C_{190}$ have rented, then the user may like other such movies, which have similar values for attribute i."); 19:9-14 ("The method of determining a user's interest relies on the following heuristic: when X and Y are similar target objects (have similar attributes), and U and V are similar users (have similar attributes), then topical interest f(U, X) is predicated to have a similar value to the value of topical interest f(V, Y)."); 23:45-24:13.<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 6:59.<br><br>Lashkari at 59-60, 18.<br><br>Tapestry at 63.<br><br>Balabanovic at 69.<br><br>GroupLens at 1, 2, 5-10. |
| [d] the filter system combining pertaining | *See* Herz at 18:39-43 ("The interest that a given target object X holds for a |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Herz Reference** |
|---|---|
| feedback data from the feedback system with the content profile data in filtering each informon for relevance to the query. | user U is assumed to be a sum of two quantities: q(U, X), the intrinsic 'quality' of X plus f(U, X), the 'topical interest' that users like U have in target objects like X.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at Abstract, 6:5-11.<br><br>Lashkari at 15-16, 60.<br><br>Tapestry at 63.<br><br>Balabanovic at 69, 66.<br><br>GroupLens at 2, 3. |
| **14.** The system of claim **10** wherein the collaborative feedback data comprises passive feedback data. | *See* Herz at 10:44-47 ("For example, if the user has often liked movies that Customer $C_{17}$ and Customer $C_{190}$ have rented, then the user may like other such movies, which have similar values for attribute i.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Tapestry at 62.<br><br>GroupLens at 6, 10.<br><br>Loeb at 41. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Herz Reference** |
|---|---|
| **15.** The system of claim **14** wherein the passive feedback data is obtained by passively monitoring the actual response to a proposed informon. | *See* chart for Claim 14, *supra*. |
| **25.** A method for operating a search engine system comprising: | *See* chart for Claim 10 [preamble]. |
| scanning a network to make a demand search for informons relevant to a query from an individual user; | *See* chart for Claim 10[a]. |
| receiving the informons in a content-based filter system from the scanning system and filtering the informons on the basis of applicable content profile data for relevance to the query; | *See* chart for Claim 10[b]. |
| receiving collaborative feedback data from system users relative to informons considered by such users; and | *See* chart for Claim 10[c]. |
| combining pertaining feedback data with the content profile data in filtering each informon for relevance to the query. | *See* chart for Claim 10[d]. |
| **27.** The method of claim **25** wherein the collaborative feedback data provides passive feedback data. | *See* chart for Claim 14, *supra*. |
| **28.** The method of claim **27** wherein the passive feedback data is obtained by passively monitoring the actual response to a proposed informon. | *See* chart for Claim 14, *supra*. |

## Exhibit A-3

**U.S. Patent Claim Charts for the asserted '664 and '420 patents against Lashkari, "Feature Guided Automated Collaboraive Filtering," MIT Masters Thesis (September 1995) ("Lashkari")**

To the extent that either I/P Engine argues or the Court finds that this reference does not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious. This invalidity chart is based in whole or in part on Defendants' present understanding of the asserted claims, and I/P Engine's apparent construction of the claims in their Infringement Contentions. Defendants are not adopting I/P Engine's claim construction, nor admitting to the accuracy of any particular claim construction. To the extent that I/P Engine's apparent claim construction or applications thereof are reflected in this invalidity chart, nothing herein should be construed as an admission that Defendants agree with I/P Engine's apparent claim construction or I/P Engine's application of that claim construction in its Infringement Contentions.

Defendants identification of this publication as prior art herein under 35 U.S.C. §§102(a), (b), (e), and/or (g) and §103 includes the publication itself as well as the use of the products and systems described therein. Although Defendants' investigation continues, information available to date indicates that such products and systems were (1) known or used in the country before the alleged invention of the claimed subject matter of the asserted claims, (2) were in public use and/or on sale in this country more than one year before the filing date of the patent, and/or (3) were invented by another who did not abandon, suppress, or conceal, before the alleged invention of the claimed subject matter of the asserted claim. Upon information and belief, these prior art products and systems and their associated references anticipate and/or render obvious each of the asserted claims.

Defendants reserve all rights to amend their Invalidity Contentions after the Court issues its claim construction ruling, or if I/P Engine amends its Infringement Contentions.

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Lashkari Reference** |
|---|---|
| **1.** [preamble] A search system comprising: | *See* Lashkari at 59 ("Users can search the WEBHOUND database for documents containing a particular URL fragment . . . or by keywords in the title . . .")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Lashkari Reference** |
|---|---|
| | claim element obvious. See, e.g.:<br><br>Rose '058 at 2:51-55, Claim 26.<br><br>Herz at 6:42-58.<br><br>Tapestry at 63.<br><br>Balabanovic at 69-70.<br><br>GroupLens at 2. |
| [a] a scanning system for searching for information relevant to a query associated with a first user in a plurality of users; | *See* Lashkari at 78 ("WEBHOUND is primarily an information filtering service. Popular WWW search engines such as Lycos [24], WebCrawler [29], Yahoo [44], etc. are primarily information retrieval engines (as opposed to information filtering systems). The two are complementary – a WEBHOUND like front-end to a popular search engine such as Lycos, could enable users with WEBHOUND accounts to filter the results of their searches on the extensive databases compiled by these search engines in a personalized fashion. As a concrete example, let's say a user is searching for documents on *Indian Cooking*. He types the keywords *Indian Cooking* into the Lycos search form. The number of documents matching both keywords numbers in the hundreds. Even though any good search engine will order the matches in descending order of match, there are still too many documents for the average user to go through. However, if the user had a WEBHOUND account, the resulting matches could be filtered through WEBHOUND and only the top ranked ones (in terms of predicted rating) need be returned.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.: |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Lashkari Reference** |
|---|---|
| | Rose '058 at 2:51-55.<br><br>Herz at 26:20-37.<br><br>Tapestry at 63.<br><br>Balabanovic at 69.<br><br>GroupLens at 2. |
| [b] a feedback system for receiving information found to be relevant to the query by other users; and | *See* Lashkari at 59-60 ("Users can ask WEBHOUND to recommend documents using simple ACF . . . Users can ask WEBHOUND to recommend documents using FGACF"); 18 ("Automated Collaborative Filtering (ACF) [] refers to the system automatically determining correlations amongst users in their evaluation of items, and using these correlations to recommend interesting items.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 6:59-7:10.<br><br>Herz at 6:13-18, 10:44-47, 19:9-14; 23:45-24:13.<br><br>Tapestry at 63.<br><br>Balabanovic at 69, 66.<br><br>GroupLens at 1, 2, 5-10. |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Lashkari Reference** |
|---|---|
| [c] a content-based filter system for combining the information from the feedback system with the information from the scanning system and for filtering the combined information for relevance to at least one of the query and the first user. | *See* Lashkari at 15-16 ("This thesis presents a novel technique for information filtering that attempts to address the problems faced by both ACF and content-based approaches by combining the two to make use of their complementary strengths. The technique we present, *Feature Guided Automated Collaborative Filtering* (FGACF), uses easily extractable features of items to dynamically partition the domain and so allow ACF to be applied relative to a set of features."); 60 ("Users can ask WEBHOUND to recommend documents using FGACF.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at Abstract, 6:5-11.<br><br>Herz at 18:39-43.<br><br>Tapestry at 61, 63.<br><br>Balabanovic at 69, 66.<br><br>GroupLens at 2. |
| **5.** The search system of claim **1** wherein the filtered information is an advertisement. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*:<br><br>Herz at 61:4-18. |
| **6.** The search system of claim **1** further comprising an information delivery system for delivering the filtered information to the first | *See* Chart for Claim 1[a]. |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Lashkari Reference** |
|---|---|
| user. | |
| **21.** The search system of claim **1** wherein the content-based filter system filters by extracting features from the information. | *See* Chart for Claim 1[c]. |
| **22.** The search system of claim **21** wherein the extracted features comprise content data indicative of the relevance to the at least one of the query and the user. | *See* Lashkari at 35 ("The idea behind the FGACF algorithm is that users don't necessarily correlate on the item level but rather for certain combinations of values of features of these items. Thus the FGACF algorithm treats each item as consisting of a set of *feature values* for a set of *features* defined in the domain.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 2:35-38, 6:10-25.<br><br>Herz at 6:29-33.<br><br>Tapestry at 67, 63.<br><br>Balabanovic at 69.<br><br>GroupLens at 3. |
| **26.** A method for obtaining information relevant to a first user comprising: | *See* chart for Claim 1[preamble]. |
| searching for information relevant to a query associated with a first user in a plurality of users; | *See* chart for Claim 1[a] |
| receiving information found to be relevant to the | *See* chart for Claim 1[b]. |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Lashkari Reference** |
|---|---|
| query by other users; | |
| combining the information found to be relevant to the query by other users with the searched information; and | *See* chart for Claim 1[b]. |
| content-based filtering the combined information for relevance to at least one of the query and the first user. | *See* chart for Claim 1[c]. |
| **28.** The method of claim **26** further comprising the step of delivering the filtered information to the first user. | *See* chart for Claim 1[a]. |
| **38.** The method of claim **26** wherein the searching step comprises scanning a network in response to a demand search for the information relevant to the query associated with the first user. | *See* chart for Claim 1[a]. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Lashkari Reference** |
|---|---|
| **10.** [preamble] A search engine system comprising: | *See* Lashkari at 59 ("Users can search the WEBHOUND database for documents containing a particular URL fragment . . . or by keywords in the title . . .")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 2:51-55, Claim 26.<br><br>Herz at 6:42-58.<br><br>Tapestry at 63.<br><br>Balabanovic at 69.<br><br>GroupLens at 2. |
| [a] a system for scanning a network to make a demand search for informons relevant to a query from an individual user; | *See* Lashkari at 78 ("WEBHOUND is primarily an information filtering service. Popular WWW search engines such as Lycos [24], WebCrawler [29], Yahoo [44], etc. are primarily information retrieval engines (as opposed to information filtering systems). The two are complementary – a WEBHOUND like front-end to a popular search engine such as Lycos, could enable users with WEBHOUND accounts to filter the results of their searches on the extensive databases compiled by these search engines in a personalized fashion. As a concrete example, let's say a user is searching for documents on *Indian Cooking*. He types the keywords *Indian Cooking* into the Lycos search form. The number of documents matching both keywords numbers in the hundreds. Even though any good search engine will order the matches in descending order of match, there are still too many documents for the average |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Lashkari Reference** |
|---|---|
| | user to go through. However, if the user had a WEBHOUND account, the resulting matches could be filtered through WEBHOUND and only the top ranked ones (in terms of predicted rating) need be returned.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 2:51-55, Claim 26.<br><br>Herz at 26:20-37.<br><br>Tapestry at 63.<br><br>Balabanovic at 69-70.<br><br>GroupLens at 2. |
| [b] a content-based filter system for receiving the informons from the scanning system and for filtering the informons on the basis of applicable content profile data for relevance to the query; and | *See* Lashkari at 15-16 ("This thesis presents a novel technique for information filtering that attempts to address the problems faced by both ACF and content-based approaches by combining the two to make use of their complementary strengths. The technique we present, *Feature Guided Automated Collaborative Filtering* (FGACF), uses easily extractable features of items to dynamically partition the domain and so allow ACF to be applied relative to a set of features."); 60 ("Users can ask WEBHOUND to recommend documents using FGACF.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.: |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Lashkari Reference** |
|---|---|
| | Rose '058 at 6:50-58.<br><br>Herz at Abstract.<br><br>Tapestry at 63.<br><br>Balabanovic at 69.<br><br>GroupLens at 2, 3. |
| [c] a feedback system for receiving collaborative feedback data from system users relative to informons considered by such users; | *See* Lashkari at 59-60 ("Users can ask WEBHOUND to recommend documents using simple ACF . . . Users can ask WEBHOUND to recommend documents using FGACF"); 18 ("Automated Collaborative Filtering (ACF) [] refers to the system automatically determining correlations amongst users in their evaluation of items, and using these correlations to recommend interesting items.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 6:59.<br><br>Herz at 6:13-18, 10:44-47, 19:9-14.<br><br>Tapestry at 63.<br><br>Balabanovic at 69.<br><br>GroupLens at 1, 2, 5-10. |
| [d] the filter system combining pertaining | *See* Chart for Claim 10[b], *supra*. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Lashkari Reference** |
|---|---|
| feedback data from the feedback system with the content profile data in filtering each informon for relevance to the query. | |
| **14.** The system of claim **10** wherein the collaborative feedback data comprises passive feedback data. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 10:44-47.<br><br>Tapestry at 62.<br><br>GroupLens at 6, 10.<br><br>Loeb at 41. |
| **15.** The system of claim **14** wherein the passive feedback data is obtained by passively monitoring the actual response to a proposed informon. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 10:44-47.<br><br>Tapestry at 62.<br><br>GroupLens at 6, 10.<br><br>Loeb at 41. |
| **25.** A method for operating a search engine system comprising: | *See* chart for Claim 10[preamble]. |
| scanning a network to make a demand search for informons relevant to a query from an individual | *See* chart for Claim 10[a]. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Lashkari Reference** |
|---|---|
| user; | |
| receiving the informons in a content-based filter system from the scanning system and filtering the informons on the basis of applicable content profile data for relevance to the query; | *See* chart for Claim 10[b]. |
| receiving collaborative feedback data from system users relative to informons considered by such users; and | *See* chart for Claim 10[c]. |
| combining pertaining feedback data with the content profile data in filtering each informon for relevance to the query. | *See* chart for Claim 10[d]. |
| **27.** The method of claim **25** wherein the collaborative feedback data provides passive feedback data. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 10:44-47.<br><br>Tapestry at 62.<br><br>GroupLens at 6, 10.<br><br>Loeb at 41. |
| **28.** The method of claim **27** wherein the passive feedback data is obtained by passively monitoring the actual response to a proposed informon. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 10:44-47.<br><br>Tapestry at 62. |

| **Claim language of U.S. Patent No. 6,314,420 (“the '420 Patent”)** | **Disclosure in Lashkari Reference** |
|---|---|
| | GroupLens at 6, 10.<br><br>Loeb at 41. |

# Exhibit A-4

**U.S. Patent Claim Charts for the asserted '664 and '420 patents against Goldberg et al., "Using Collaborative Filtering to Weave an Information Tapestry (1992) ("Tapestry")**

To the extent that either I/P Engine argues or the Court finds that this reference does not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious. This invalidity chart is based in whole or in part on Defendants' present understanding of the asserted claims, and I/P Engine's apparent construction of the claims in their Infringement Contentions. Defendants are not adopting I/P Engine's claim construction, nor admitting to the accuracy of any particular claim construction. To the extent that I/P Engine's apparent claim construction or applications thereof are reflected in this invalidity chart, nothing herein should be construed as an admission that Defendants agree with I/P Engine's apparent claim construction or I/P Engine's application of that claim construction in its Infringement Contentions.

Defendants identification of this publication as prior art herein under 35 U.S.C. §§102(a), (b), (e), and/or (g) and §103 includes the publication itself as well as the use of the products and systems described therein. Although Defendants' investigation continues, information available to date indicates that such products and systems were (1) known or used in the country before the alleged invention of the claimed subject matter of the asserted claims, (2) were in public use and/or on sale in this country more than one year before the filing date of the patent, and/or (3) were invented by another who did not abandon, suppress, or conceal, before the alleged invention of the claimed subject matter of the asserted claim. Upon information and belief, these prior art products and systems and their associated references anticipate and/or render obvious each of the asserted claims.

Defendants reserve all rights to amend their Invalidity Contentions after the Court issues its claim construction ruling, or if I/P Engine amends its Infringement Contentions.

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Tapestry Reference** |
|---|---|
| **1.** [preamble] A search system comprising: | *See* Tapestry at 63 ("A typical scenario of Tapestry system usage is as follows . . . . this search is installed as a query filter, and from now on, all new documents satisfying this filter will be delivered to the user's mailbox.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Tapestry Reference** |
|---|---|
| | claim element obvious. *See, e.g.*:<br><br>GroupLens at 2.<br><br>Lashkari at 59.<br><br>Rose '058 at 2:51-55.<br><br>Balabanovic at 69-70.<br><br>Herz at 6:42-58. |
| [a] a scanning system for searching for information relevant to a query associated with a first user in a plurality of users; | *See* Tapestry at 63 ("•*Filterer*. Repeatedly runs a batch of user-provided queries over the set of documents. Those documents matching a query are placed in the little box of the query's owner.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*:<br><br>GroupLens at 2.<br><br>Lashkari at 78.<br><br>Rose '058 at 2:51-55.<br><br>Balabanovic at 69-70.<br><br>Herz at 26:20-37. |
| [b] a feedback system for receiving information found to be relevant to the query by other users; | *See* Tapestry at 63 ("The user eventually discovers that searching, either for documents containing both 'information' and 'filtering', or for documents |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Tapestry Reference** |
|---|---|
| and | containing 'filtering' that received at least three endorsements [from other users], works much better. Having tested this, this search is installed as a query filter, and from now on, all new documents satisfying this filter will be delivered to the user's mailbox.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*:<br><br>GroupLens at 1, 2, 5, 6, 7, 8, 9, 10.<br><br>Lashkari at 59-60.<br><br>Rose '058 at 6:59-7:10.<br><br>Balabanovic at 66, 69.<br><br>Herz at 6:13-18, 19:9-14, 23:45-24:13. |
| [c] a content-based filter system for combining the information from the feedback system with the information from the scanning system and for filtering the combined information for relevance to at least one of the query and the first user. | *See* Tapestry at 61 ("In addition to content-based filtering, the Tapestry system was designed and built to support *collaborative filtering*") (emphasis in original); 63 ("•*Appraiser*. Applies personalized classification to a user's documents (i.e., to those documents in the user's little box). This function can automatically prioritize and categorize documents.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*:<br><br>GroupLens at 2, 3. |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Tapestry Reference** |
|---|---|
| | Lashkari at 15-16.<br><br>Rose '058 at Abstract, 6:5-11.<br><br>Balabanovic at 66, 69.<br><br>Herz at 18:39-43. |
| **5.** The search system of claim **1** wherein the filtered information is an advertisement. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*:<br><br>Herz at 61:4-18. |
| **6.** The search system of claim **1** further comprising an information delivery system for delivering the filtered information to the first user. | *See* Tapestry at 63 ("A typical scenario of Tapestry system usage is as follows . . . . this search is installed as a query filter, and from now on, all new documents satisfying this filter will be delivered to the user's mailbox.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*:<br><br>GroupLens at 10, 11.<br><br>Lashkari at 78.<br><br>Rose '058 at Abstract.<br><br>Balabanovic at 66, 69.<br><br>Herz at 6:13-18, Fig. 10 at 1106. |
| **21.** The search system of claim **1** wherein the | *See* Tapestry at 67 ("The indexing program is responsible for understanding a |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Tapestry Reference** |
|---|---|
| content-based filter system filters by extracting features from the information. | given document format, extracting attributes from the document, and storing these in the database.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*:<br><br>GroupLens at 3.<br><br>Lashkari at 15-16.<br><br>Rose '058 at 2:35-38, 6:10-25.<br><br>Balabanovic at 69.<br><br>Herz at 6:18-29. |
| **22.** The search system of claim **21** wherein the extracted features comprise content data indicative of the relevance to the at least one of the query and the user. | *See* chart for claim 21, *supra*; *see also* Tapestry at 63 (describing queries for keywords extracted from documents).<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*:<br><br>GroupLens at 3.<br><br>Lashkari at 35.<br><br>Rose '058 at 2:35-38, 6:10-25.<br><br>Balabanovic at 69. |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Tapestry Reference** |
|---|---|
| | Herz at 6:29-33. |
| **26.** A method for obtaining information relevant to a first user comprising: | *See* chart for Claim 1 [preamble]. |
| searching for information relevant to a query associated with a first user in a plurality of users; | *See* chart for Claim 1[a] |
| receiving information found to be relevant to the query by other users; | *See* chart for Claim 1[b]. |
| combining the information found to be relevant to the query by other users with the searched information; and | *See* chart for Claim 1[b]. |
| content-based filtering the combined information for relevance to at least one of the query and the first user. | *See* chart for Claim 1[c]. |
| **28.** The method of claim **26** further comprising the step of delivering the filtered information to the first user. | *See* chart for Claim 1 [preamble] |
| **38.** The method of claim **26** wherein the searching step comprises scanning a network in response to a demand search for the information relevant to the query associated with the first user. | *See* chart for claim 1 [a]. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Tapestry Reference** |
|---|---|
| **10.** [preamble] A search engine system comprising: | *See* Tapestry at 63 ("A typical scenario of Tapestry system usage is as follows . . . . this search is installed as a query filter, and from now on, all new documents satisfying this filter will be delivered to the user's mailbox.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*:<br><br>GroupLens at 2.<br><br>Lashkari at 59.<br><br>Rose '058 at 2:51-55.<br><br>Balabanovic at 69.<br><br>Herz at 6:42-58. |
| [a] a system for scanning a network to make a demand search for informons relevant to a query from an individual user; | *See* Tapestry at 63 ("•*Filterer*. Repeatedly runs a batch of user-provided queries over the set of documents. Those documents matching a query are placed in the little box of the query's owner.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*:<br><br>GroupLens at 2.<br><br>Lashkari at 78. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Tapestry Reference** |
|---|---|
| | Rose '058 at 2:51-55.<br><br>Balabanovic at 69.<br><br>Herz at 26:20-37. |
| [b] a content-based filter system for receiving the informons from the scanning system and for filtering the informons on the basis of applicable content profile data for relevance to the query; and | *See* Tapestry at 63 ("•*Appraiser*. Applies personalized classification to a user's documents (i.e., to those documents in the user's little box). This function can automatically prioritize and categorize documents.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*:<br><br>GroupLens at 2, 3.<br><br>Lashkari at 15-16.<br><br>Rose '058 at 6:50-58.<br><br>Balabanovic at 69.<br><br>Herz at Abstract. |
| [c] a feedback system for receiving collaborative feedback data from system users relative to informons considered by such users; | *See* Tapestry at 63 ("The user eventually discovers that searching, either for documents containing both 'information' and 'filtering', or for documents containing 'filtering' that received at least three endorsements [from other users], works much better. Having tested this, this search is installed as a query filter, and from now on, all new documents satisfying this filter will be delivered to the user's mailbox.")<br><br>To the extent this reference does not teach this claim element, this reference in |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Tapestry Reference** |
|---|---|
| | combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*:<br><br>GroupLens at 1, 2, 5, 6, 7, 8, 9, 10.<br><br>Lashkari at 59-60.<br><br>Rose '058 at 6:59-7:10.<br><br>Balabanovic at 69.<br><br>Herz at 6:13-18, 19:9-14, 23:45-24:13. |
| [d] the filter system combining pertaining feedback data from the feedback system with the content profile data in filtering each informon for relevance to the query. | *See* Tapestry at 61 ("In addition to content-based filtering, the Tapestry system was designed and built to support *collaborative filtering*") (emphasis in original); 63 (disclosing that feedback data is used to determine which documents are placed in the user's little box, and content profile data is then used by the appraiser to prioritize and categorize documents in the little box).<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*:<br><br>GroupLens at 2, 3.<br><br>Lashkari at 15-16.<br><br>Rose '058 at Abstract, 6:5-11.<br><br>Balabanovic at 66, 69. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Tapestry Reference** |
|---|---|
| | Herz at 18:39-43. |
| **14.** The system of claim **10** wherein the collaborative feedback data comprises passive feedback data. | *See* Tapestry at 62 ("Implicit feedback from users (e.g., some user sent a reply to a document) can also be utilized in the filtering process. For example, suppose you would like to receive "interesting" documents from the NetNews newsgroup comp.unix-wizards in the mail, but you don't know how to write a search expression that characterizes them, and you don't have time to read them all yourself. However, you know that Smith, Jones and O'Brien read all of comp.unix-wizards newsgroup material, and reply to the more interesting documents. Tapestry allows you to filter on 'documents replied to by Smith, Jones, or O'Brien.'")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*:<br><br>GroupLens at 6, 10.<br><br>Loeb at 41.<br><br>Herz at 10:44-47. |
| **15.** The system of claim **14** wherein the passive feedback data is obtained by passively monitoring the actual response to a proposed informon. | *See* Chart for Claim 14, *supra*. |
| **25.** A method for operating a search engine system comprising: | *See* chart for Claim 10 [preamble]. |
| scanning a network to make a demand search for informons relevant to a query from an individual user; | *See* chart for Claim 10[a]. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Tapestry Reference** |
|---|---|
| receiving the informons in a content-based filter system from the scanning system and filtering the informons on the basis of applicable content profile data for relevance to the query; | *See* chart for Claim 10[b]. |
| receiving collaborative feedback data from system users relative to informons considered by such users; and | *See* chart for Claim 10[c]. |
| combining pertaining feedback data with the content profile data in filtering each informon for relevance to the query. | *See* chart for Claim 10[d]. |
| **27.** The method of claim **25** wherein the collaborative feedback data provides passive feedback data. | *See* Chart for Claim 14, *supra*. |
| **28.** The method of claim **27** wherein the passive feedback data is obtained by passively monitoring the actual response to a proposed informon. | *See* Chart for Claim 14, *supra*. |

## Exhibit A-5

**U.S. Patent Claim Charts for the asserted '664 and '420 patents against Balabanovic et al., "Fab: Content-Based, Collaborative Recommendation," Communications of the ACM (March 1997) ("Balabanovic")**

To the extent that either I/P Engine argues or the Court finds that this reference does not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious. This invalidity chart is based in whole or in part on Defendants' present understanding of the asserted claims, and I/P Engine's apparent construction of the claims in their Infringement Contentions. Defendants are not adopting I/P Engine's claim construction, nor admitting to the accuracy of any particular claim construction. To the extent that I/P Engine's apparent claim construction or applications thereof are reflected in this invalidity chart, nothing herein should be construed as an admission that Defendants agree with I/P Engine's apparent claim construction or I/P Engine's application of that claim construction in its Infringement Contentions.

Defendants identification of this publication as prior art herein under 35 U.S.C. §§102(a), (b), (e), and/or (g) and §103 includes the publication itself as well as the use of the products and systems described therein. Although Defendants' investigation continues, information available to date indicates that such products and systems were (1) known or used in the country before the alleged invention of the claimed subject matter of the asserted claims, (2) were in public use and/or on sale in this country more than one year before the filing date of the patent, and/or (3) were invented by another who did not abandon, suppress, or conceal, before the alleged invention of the claimed subject matter of the asserted claim. Upon information and belief, these prior art products and systems and their associated references anticipate and/or render obvious each of the asserted claims.

Defendants reserve all rights to amend their Invalidity Contentions after the Court issues its claim construction ruling, or if I/P Engine amends its Infringement Contentions.

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Balabanovic Reference** |
|---|---|
| **1.** [preamble] A search system comprising: | *See* Balabanovic at 69 ("The collection stage gathers pages relevant to a small number of topics, computer-generated clusters of interests which track the changing tastes of the user population"); 69-70 ("We have implemented several different kinds of collection agents . . . *Index agents* construct queries to pass to various commercial Web search engines that have already performed exhaustive indexing.") |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Balabanovic Reference** |
|---|---|
| | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 2:51-55, Claim 26.<br><br>Herz at 6:42-58.<br><br>Lashkari at 59.<br><br>Tapestry at 63.<br><br>GroupLens at 2. |
| [a] a scanning system for searching for information relevant to a query associated with a first user in a plurality of users; | *See* Chart for Claim 1 [preamble]. |
| [b] a feedback system for receiving information found to be relevant to the query by other users; and | *See* Balabanovic at 69 ("Pages found by the collection agents are sent to the central router, which forwards them on to those users whose profiles they match above some threshold . . . When the user has requested, received, and looked over their recommendations, they are required to assign appropriate ratings from a 7-point scale. The user's ratings are used to update their personal selection agent's profile, and are also forwarded back to the originating collection agents, which will use them to adapt their profiles. Additionally, any highly rated pages are passed directly to the user's nearest neighbors – other people with similar profiles. These collaborative recommendations are processed by the receiving user's selection agent in the same way as the pages from the central router."); *see also id.* at 66 ("By combining both collaborative and content-based filtering systems, Fab may eliminate many of the weaknesses found in each approach . . . here we describe the two approaches for content-based and collaborative |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Balabanovic Reference** |
|---|---|
| | recommendation, explain how a hybrid system can be created, and then describe Fab, an implementation of such a system.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 6:59-7:10.<br><br>Herz at 6:13-18, 10:44-47, 19:9-14; 23:45-24:13.<br><br>Lashkari at 59-60, 18.<br><br>Tapestry at 63.<br><br>GroupLens at 1, 2, 5-10. |
| [c] a content-based filter system for combining the information from the feedback system with the information from the scanning system and for filtering the combined information for relevance to at least one of the query and the first user. | *See* Chart for Claim 1[b]. |
| **5.** The search system of claim **1** wherein the filtered information is an advertisement. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*, Herz at 61:4-18. |
| **6.** The search system of claim **1** further comprising an information delivery system for delivering the filtered information to the first user. | *See* Chart for Claim 1[b]. |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Balabanovic Reference** |
|---|---|
| **21.** The search system of claim **1** wherein the content-based filter system filters by extracting features from the information. | *See* Balabanovic at 69 ("Every agent maintains a profile, based on words contained in Web pages which have been rated.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 2:35-38, 6:10-25.<br><br>Herz at 6:18-29.<br><br>Lashkari at 15-16, 60.<br><br>Tapestry at 67.<br><br>GroupLens at 3. |
| **22.** The search system of claim **21** wherein the extracted features comprise content data indicative of the relevance to the at least one of the query and the user. | *See* Balabanovic at 69 ("Every agent maintains a profile, based on words contained in Web pages which have been rated. A collection agent's profile represents its current topic, whereas a selection agent's profile represents a single user's interests. Pages found by the collection agents are sent to the central router, which forwards them on to those users whose profiles they match above some threshold.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 2:35-38, 6:10-25.<br><br>Herz at 6:29-33. |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in Balabanovic Reference** |
|---|---|
| | Lashkari at 35.<br><br>Tapestry at 67, 63.<br><br>GroupLens at 3. |
| **26.** A method for obtaining information relevant to a first user comprising: | *See* chart for Claim 1[preamble]. |
| searching for information relevant to a query associated with a first user in a plurality of users; | *See* chart for Claim 1[a]. |
| receiving information found to be relevant to the query by other users; | *See* chart for Claim 1[b]. |
| combining the information found to be relevant to the query by other users with the searched information; and | *See* chart for Claim 1[b]. |
| content-based filtering the combined information for relevance to at least one of the query and the first user. | *See* chart for Claim 1[c]. |
| **28.** The method of claim **26** further comprising the step of delivering the filtered information to the first user. | *See* chart for Claim 1[b]. |
| **38.** The method of claim **26** wherein the searching step comprises scanning a network in response to a demand search for the information relevant to the query associated with the first user. | *See* chart for Claim 1[preamble]. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Balabanovic Reference** |
|---|---|
| **10.** [preamble] A search engine system comprising: | *See* Balabanovic at 69 ("The collection stage gathers pages relevant to a small number of topics, computer-generated clusters of interests which track the changing tastes of the user population"); 69-70 ("We have implemented several different kinds of collection agents . . . *Index agents* construct queries to pass to various commercial Web search engines that have already performed exhaustive indexing.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 2:51-55.<br><br>Herz at 6:42-58.<br><br>Lashkari at 59.<br><br>Tapestry at 63.<br><br>GroupLens at 2. |
| [a] a system for scanning a network to make a demand search for informons relevant to a query from an individual user; | *See* Chart for Claim 10 [preamble]. |
| [b] a content-based filter system for receiving the informons from the scanning system and for filtering the informons on the basis of applicable content profile data for relevance to the query; and | *See* Balabanovic at 69 ("Pages found by the collection agents are sent to the central router, which forwards them on to those users whose profiles they match above some threshold . . . When the user has requested, received, and looked over their recommendations, they are required to assign appropriate ratings from a 7-point scale. The user's ratings are used to update their personal selection agent's profile, and are also forwarded back to the |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Balabanovic Reference** |
|---|---|
| | originating collection agents, which will use them to adapt their profiles. Additionally, any highly rated pages are passed directly to the user's nearest neighbors – other people with similar profiles. These collaborative recommendations are processed by the receiving user's selection agent in the same way as the pages from the central router.")<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 6:50-58.<br><br>Herz at Abstract.<br><br>Lashkari at 15-16, 60.<br><br>Tapestry at 63.<br><br>GroupLens at 2, 3. |
| [c] a feedback system for receiving collaborative feedback data from system users relative to informons considered by such users; | *See* Chart for Claim 10[b]. |
| [d] the filter system combining pertaining feedback data from the feedback system with the content profile data in filtering each informon for relevance to the query. | *See* Chart for Claim 10[b]; *See also* Balabanovic at 66 ("By combining both collaborative and content-based filtering systems, Fab may eliminate many of the weaknesses found in each approach . . . here we describe the two approaches for content-based and collaborative recommendation, explain how a hybrid system can be created, and then describe Fab, an implementation of such a system.")<br><br>To the extent this reference does not teach this claim element, this reference in |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Balabanovic Reference** |
|---|---|
| | combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at Abstract, 6:5-11.<br><br>Herz at 18:39-43.<br><br>Lashkari at 15-16, 60.<br><br>Tapestry at 63.<br><br>GroupLens at 2, 3. |
| **14.** The system of claim **10** wherein the collaborative feedback data comprises passive feedback data. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 10:44-47.<br><br>Tapestry at 62.<br><br>GroupLens at 6, 10.<br><br>Loeb at 41. |
| **15.** The system of claim **14** wherein the passive feedback data is obtained by passively monitoring the actual response to a proposed informon. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 10:44-47.<br><br>Tapestry at 62. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Balabanovic Reference** |
|---|---|
| | GroupLens at 6, 10.<br><br>Loeb at 41. |
| **25.** A method for operating a search engine system comprising: | *See* chart for Claim 10 (preamble). |
| scanning a network to make a demand search for informons relevant to a query from an individual user; | *See* chart for Claim 10(a). |
| receiving the informons in a content-based filter system from the scanning system and filtering the informons on the basis of applicable content profile data for relevance to the query; | *See* chart for Claim 10(b). |
| receiving collaborative feedback data from system users relative to informons considered by such users; and | *See* chart for Claim 10(c). |
| combining pertaining feedback data with the content profile data in filtering each informon for relevance to the query. | *See* chart for Claim 10(d). |
| **27.** The method of claim **25** wherein the collaborative feedback data provides passive feedback data. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 10:44-47.<br><br>Tapestry at 62.<br><br>GroupLens at 6, 10. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in Balabanovic Reference** |
|---|---|
| | Loeb at 41. |
| **28.** The method of claim **27** wherein the passive feedback data is obtained by passively monitoring the actual response to a proposed informon. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Herz at 10:44-47.<br><br>Tapestry at 62.<br><br>GroupLens at 6, 10.<br><br>Loeb at 41. |

**Exhibit A-6**

**U.S. Patent Claim Charts for the asserted '664 and '420 patents against Paul Resnick et al., "GroupLens: An Open Architecture for Collaborative Filtering of NetNews", *Proceedings of ACM 1994 Conference on Computer Supported Cooperative Work*, Chapel Hill, NC: Pages 175-186[1] ("GroupLens")**

To the extent that either I/P Engine argues or the Court finds that this reference does not explicitly teach certain limitations in the asserted claims, such limitations would have been inherent and/or obvious. This invalidity chart is based in whole or in part on Defendants' present understanding of the asserted claims, and I/P Engine's apparent construction of the claims in their Infringement Contentions. Defendants are not adopting I/P Engine's claim construction, nor admitting to the accuracy of any particular claim construction. To the extent that I/P Engine's apparent claim construction or applications thereof are reflected in this invalidity chart, nothing herein should be construed as an admission that Defendants agree with I/P Engine's apparent claim construction or I/P Engine's application of that claim construction in its Infringement Contentions.

Defendants identification of this publication as prior art herein under 35 U.S.C. §§102(a), (b), (e), and/or (g) and §103 includes the publication itself as well as the use of the products and systems described therein. Although Defendants' investigation continues, information available to date indicates that such products and systems were (1) known or used in the country before the alleged invention of the claimed subject matter of the asserted claims, (2) were in public use and/or on sale in this country more than one year before the filing date of the patent, and/or (3) were invented by another who did not abandon, suppress, or conceal, before the alleged invention of the claimed subject matter of the asserted claim. Upon information and belief, these prior art products and systems and their associated references anticipate and/or render obvious each of the asserted claims.

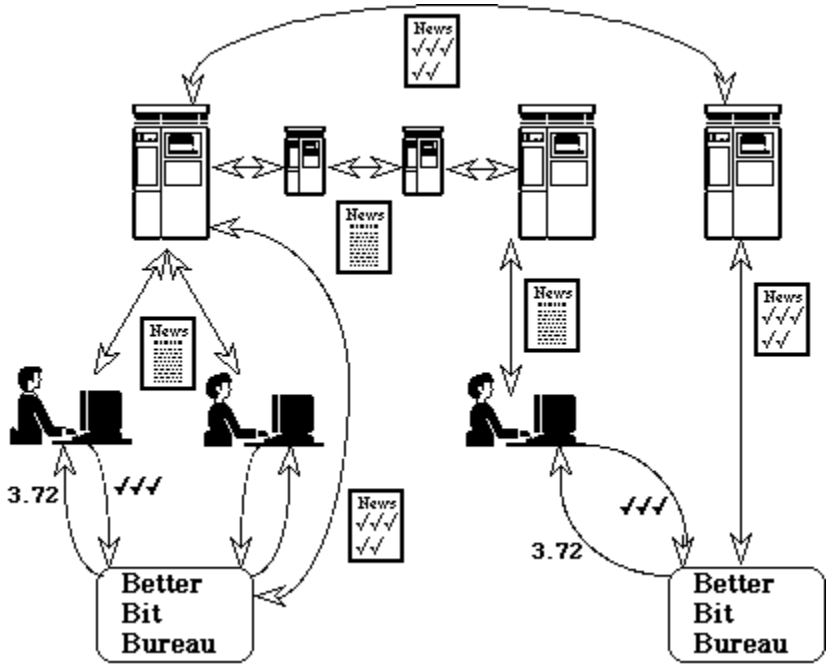
Defendants reserve all rights to amend their Invalidity Contentions after the Court issues its claim construction ruling, or if I/P Engine amends its Infringement Contentions.

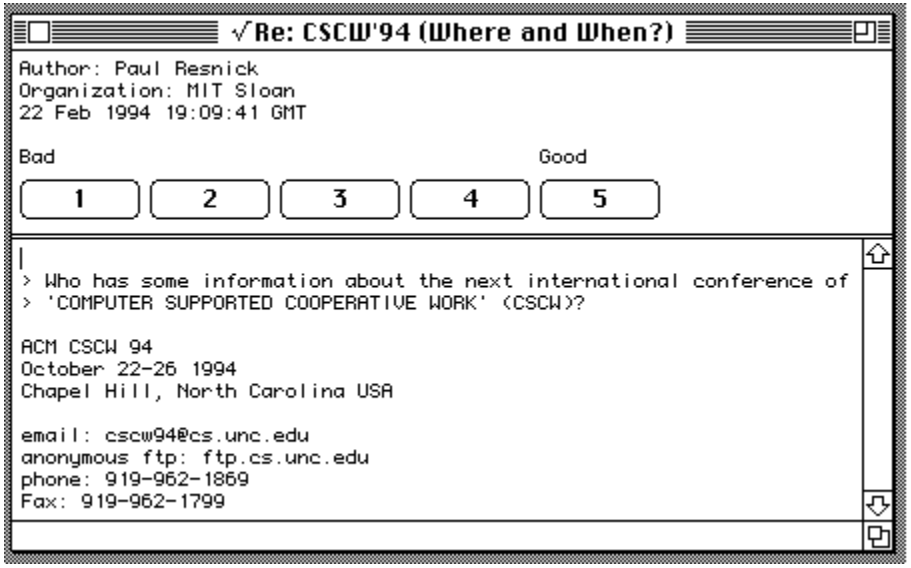
| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in GroupLens** |
|---|---|
| **1.** [preamble] A search system comprising: | GroupLens at 2: "In addition, software packages for reading netnews (hereafter referred to as news clients) provide other mechanisms that ease |

[1] Page citations are taken from the HTML version of the article, available at http://ccs.mit.edu/papers/CCSWP165.html

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in GroupLens** |
|---|---|
| | readers' burdens…. A kill file identifies text strings that are not interesting to a particular user. If a user puts the subject line of an article into the kill file, no further articles on that subject will be displayed. If a user puts the author's name into a kill file, no further articles from that author will be displayed. Finally, some news readers provide string search facilities. If the user is particularly interested in articles that mention 'collaborative filtering,' the news client can find them."<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 2:51-55, Claim 26.<br><br>Herz at 6:42-58.<br><br>Lashkari at 59.<br><br>Tapestry at 63.<br><br>Balabanovic at 69-70. |
| [a] a scanning system for searching for information relevant to a query associated with a first user in a plurality of users; | GroupLens at 2: "In addition, software packages for reading netnews (hereafter referred to as news clients) provide other mechanisms that ease readers' burdens…. Finally, some news readers provide string search facilities. If the user is particularly interested in articles that mention 'collaborative filtering,' the news client can find them."<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.: |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in GroupLens** |
|---|---|
| | Rose '058 at 2:51-55.<br><br>Herz at 26:20-37.<br><br>Lashkari at 78.<br><br>Tapestry at 63.<br><br>Balabanovic at 69. |
| [b] a feedback system for receiving information found to be relevant to the query by other users; and | GroupLens at 1: "GroupLens is a system for collaborative filtering of netnews, to help people find articles they will like in the huge stream of available articles. News reader clients display predicted scores and make it easy for users to rate articles after they read them. Rating servers, called Better Bit Bureaus, gather and disseminate the ratings. The rating servers predict scores based on the heuristic that people who agreed in the past will probably agree again."<br><br>*Id*. at 2: "GroupLens provides a new mechanism to help focus attention on interesting articles. It draws on a deceptively simple idea: people who agreed in their subjective evaluation of past articles are likely to agree again in the future. After reading articles, users assign them numeric ratings. GroupLens uses the ratings in two ways. First, it correlates the ratings in order to determine which users' ratings are most similar to each other. Second, it predicts how well users will like new articles, based on ratings from similar users."<br><br>*Id*. at 5: "GroupLens adds one new type of entity to the netnews architecture, Better Bit Bureaus, as shown in Figure 2. The Better Bit Bureaus provide scores that predict how much the user will like articles, and gather ratings from news clients after the user reads the articles. The Better Bit Bureaus also |

| Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent") | Disclosure in GroupLens |
|---|---|
| | use special newsgroups to share ratings with each other, to allow collaborative filtering among users at different sites."<br><br>  <br><br><br>*Id*. at 6: "In GroupLens, a rating is a number from 1 to 5, optionally supplemented by the number of seconds which the user spent reading the article. Users are encouraged to assign ratings based on how much they liked the article, with 5 highest and 1 lowest."<br><br>*Id.* at 7: "The pilot test also reinforced the importance of making it as easy as possible to enter endorsements. To make an endorsement, a user had to select from a pull-down menu, wait for a window to open up, optionally enter text in the window, and then close it. While the whole process took only a matter of |

| Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent") | Disclosure in GroupLens |
|---|---|
| | seconds if the user entered no text, it was still significantly longer than it normally takes to go on to the next article. We have taken care in the GroupLens system to make entry of ratings as easy as possible."<br><br>  <br><br><br>*Id*. at 8: "When predictions are on the same scale as ratings, prediction can be modeled as matrix filling, where the columns are people, the rows are articles, and the cells contain the ratings that people have posted, as shown in Figure 5."<br><br>message # Ken Lee Meg Nan<br>1 1 4 2 2<br>2 5 2 4 4<br>3 3<br>4 2 5 5<br>5 4 1 1<br>6 7 2 5 7 |

| Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent") | Disclosure in GroupLens |
|---|---|
| | *Id*. at 9: "All the scoring methods we have implemented are based on the heuristic that people who agreed in the past are likely to agree again, at least on articles in the same newsgroup…. To implement this heuristic, our BBBs first correlate ratings on previous articles to determine weights to assign to each of the other people when making predictions for one of them. Then, they use the weights to combine the ratings that are available for the current article."<br><br>*Id.* at 9: "We illustrate one of the correlation and prediction techniques by computing Ken's predicted score on article 6, the last row of the matrix. First, we compute correlation coefficients [15], weights between -1 and 1 that indicate how much Ken tended to agree with each of the others on those articles that they both rated…. To predict Ken's score on the last article in the matrix, take a weighted average of all the ratings on article 6."<br><br>*Id*. at 10: "It may also be helpful to take into account the time people spent reading articles before rating them."<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 6:59-7:10.<br><br>Herz at 6:13-18, 10:44-47, 19:9-14; 23:45-24:13.<br><br>Lashkari at 59-60, 18.<br><br>Tapestry at 63. |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in GroupLens** |
|---|---|
| | Balabanovic at 69, 66. |
| [c] a content-based filter system for combining the information from the feedback system with the information from the scanning system and for filtering the combined information for relevance to at least one of the query and the first user. | GroupLens at 2: "In addition, software packages for reading netnews (hereafter referred to as news clients) provide other mechanisms that ease readers' burdens…. A kill file identifies text strings that are not interesting to a particular user. If a user puts the subject line of an article into the kill file, no further articles on that subject will be displayed. If a user puts the author's name into a kill file, no further articles from that author will be displayed. Finally, some news readers provide string search facilities. If the user is particularly interested in articles that mention 'collaborative filtering,' the news client can find them."<br><br>*Id*. at 3: "Cognitive, or content-based filtering techniques select documents based on the text in them. For example, the kill files and string search features provided by news clients perform content filtering…. other content-based filtering techniques could potentially be used as well. The profile of which texts to include or kill could be more complex than a collection of character strings. For example, strings could be combined with the Boolean operators AND, OR, and NOT. Alternatively, the profile could consist of weight vectors, with the weights expressing the relative importance of each of a set of terms. Some content filtering techniques update the profiles automatically based on feedback about whether the user likes the articles that the current profile selects. Information retrieval research refers to this process as relevance feedback."<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at Abstract, 6:5-11. |

| **Claim language of U.S. Patent No. 6,775,664 ("the '664 Patent")** | **Disclosure in GroupLens** |
|---|---|
| | Herz at 18:39-43.<br><br>Lashkari at 15-16, 60.<br><br>Tapestry at 61, 63.<br><br>Balabanovic at 69, 66. |
| **5.** The search system of claim **1** wherein the filtered information is an advertisement. | To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. *See, e.g.*:<br><br>Herz at 61:4-18. |
| **6.** The search system of claim **1** further comprising an information delivery system for delivering the filtered information to the first user. | GroupLens at 10: "It is up to the news client how best to use the scores generated by a BBB. Some may filter out those articles with scores below a threshold. Some may sort the articles based on the scores. Others may simply display the scores, numerically or graphically."<br><br>*Id*. at 10: "The three modified clients we implemented make slightly different uses of the scores in the summary display. The modified NN client displays articles in the same order a regular NN client does, namely the order in which the articles arrived at the news server. It merely adds an additional column containing the predicted scores. In the first version of this client, the scores were displayed numerically. The modified Gnus client uses the predicted scores to alter the order of presentation of articles in the summary."<br><br>*Id*. at 11: "Several users, however, noticed that it was somewhat difficult to visually scan the predictions to find the high ones. A revised version of the NN client (Figure 6) rounds off to the nearest integer and reports that as a letter grade (A-E), a scale familiar to students at U.S. Universities. The modified NewsWatcher client displays the predicted scores as bar graphs rather than |

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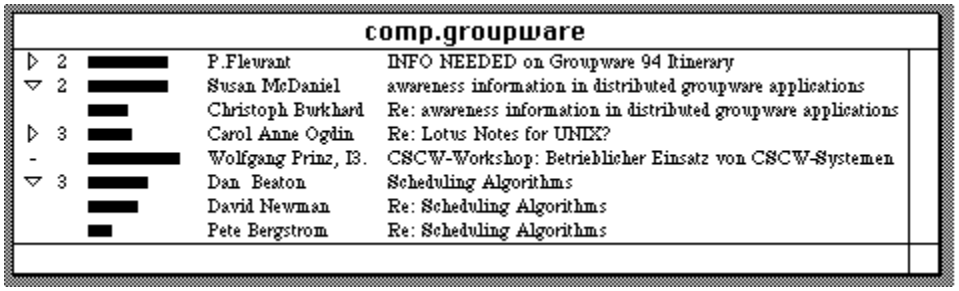
| | numbers (Figure 7), making it easier to visually scan for articles with high scores (longer bars). Otherwise, it follows the conventions of the original NewsWatcher client."<br><br>Newsgroup: comp.multimedia Articles: 266 of 7228/151 READ *NO*UPDATE*<br>a.Alois Bock 11 >*** 7 RASH STATEMENTS ***<br>b.Bernhard Schwall 9 Driver for ATI Graphics Ultra Pro/Plus<br>c.Kuny Terry 20 Question: Video Input Boards<br>d.Francois Zarroca 8 C SB16 mod-editor ???<br>e.Patrick Corbett 9 B REALLY good encyclopedia on CD_ROM?<br>f.Lesley Davidow 26 A ><br>g.Isa Helderman 9 A >><br>h.Dave Skwarczek 32 Cyberfest.594<br>i.hkaplan@woods 9 Hypercard????<br>j.eruffing@bcrvm1 5 B FTP Sites for JPG, GIF, TIF, BMP, PCX, TGA<br>k.Aarts ing. R.M. 22 B MM-standard what is the latest?<br>l.Kees de Groot 31 B Manipulating Spatial Objects and Relations<br>m.Steven Koster 24 A Line Audio in to Quadra 700?<br>n.Isa Helderman 19 Need help with MM Director QuickTime Lingo commands<br>-- 15:36 -- SELECT -- help:? -----95%-----<level 2>--<br><br>  <br><br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at Abstract. |

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| | Herz at 6:13-18, Fig. 10 at 1106.<br><br>Lashkari at 78.<br><br>Tapestry at 63.<br><br>Balabanovic at 69, 66. |
| **21.** The search system of claim **1** wherein the content-based filter system filters by extracting features from the information. | GroupLens at 3: "Cognitive, or content-based filtering techniques select documents based on the text in them. For example, the kill files and string search features provided by news clients perform content filtering…. other content-based filtering techniques could potentially be used as well. The profile of which texts to include or kill could be more complex than a collection of character strings. For example, strings could be combined with the Boolean operators AND, OR, and NOT. Alternatively, the profile could consist of weight vectors, with the weights expressing the relative importance of each of a set of terms.<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.:<br><br>Rose '058 at 2:35-38, 6:10-25.<br><br>Herz at 6:18-29.<br><br>Lashkari at 15-16, 60.<br><br>Tapestry at 67.<br><br>Balabanovic at 69. |

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| **22.** The search system of claim **21** wherein the extracted features comprise content data indicative of the relevance to the at least one of the query and the user. | *See* chart for Claim 21, *supra*. |
| **26.** A method for obtaining information relevant to a first user comprising: | *See* chart for Claim 1 (preamble). |
| searching for information relevant to a query associated with a first user in a plurality of users; | *See* chart for Claim 1(a) |
| receiving information found to be relevant to the query by other users; | *See* chart for Claim 1(b). |
| combining the information found to be relevant to the query by other users with the searched information; and | *See* chart for Claim 1(b). |
| content-based filtering the combined information for relevance to at least one of the query and the first user. | *See* chart for Claim 1(c). |
| **28.** The method of claim 26 further comprising the step of delivering the filtered information to the first user. | *See* chart for Claim 6, *supra*. |
| **38.** The method of claim 26 wherein the searching step comprises scanning a network in response to a demand search for the information relevant to the query associated with the first user. | *See* chart for Claim 1 [preamble], *supra*. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in GroupLens Reference** |
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| **10.** [preamble] A search engine system comprising: | *See* chart for '664 Patent, Claim 1 [preamble], *supra*. |
| [a] a system for scanning a network to make a demand search for informons relevant to a query from an individual user; | *See* chart for '664 Patent, Claim 1 [a], *supra*. |
| [b] a content-based filter system for receiving the informons from the scanning system and for filtering the informons on the basis of applicable content profile data for relevance to the query; and | *See* chart for '664 Patent, Claim 1 [c], *supra*. |
| [c] a feedback system for receiving collaborative feedback data from system users relative to informons considered by such users; | *See* chart for '664 Patent, Claim 1 [b], *supra*. |
| [d] the filter system combining pertaining feedback data from the feedback system with the content profile data in filtering each informon for relevance to the query. | *See* chart for '664 Patent, Claim 1 [c], *supra*. |
| **14.** The system of claim **10** wherein the collaborative feedback data comprises passive feedback data. | GroupLens at 6: "In GroupLens, a rating is a number from 1 to 5, optionally supplemented by the number of seconds which the user spent reading the article. Users are encouraged to assign ratings based on how much they liked the article, with 5 highest and 1 lowest."<br><br>*Id*. at 10: "It may also be helpful to take into account the time people spent reading articles before rating them."<br><br>To the extent this reference does not teach this claim element, this reference in combination with the knowledge of one of ordinary skill in the art renders this claim element obvious. See, e.g.: |

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| | Herz at 10:44-47.<br><br>Tapestry at 62.<br><br>Loeb at 41. |
| **15.** The system of claim **14** wherein the passive feedback data is obtained by passively monitoring the actual response to a proposed informon. | *See* chart for Claim 14. |
| **25.** A method for operating a search engine system comprising: | *See* chart for Claim 10 (preamble). |
| scanning a network to make a demand search for informons relevant to a query from an individual user; | *See* chart for Claim 10(a). |
| receiving the informons in a content-based filter system from the scanning system and filtering the informons on the basis of applicable content profile data for relevance to the query; | *See* chart for Claim 10(b). |
| receiving collaborative feedback data from system users relative to informons considered by such users; and | *See* chart for Claim 10(c). |
| combining pertaining feedback data with the content profile data in filtering each informon for relevance to the query. | *See* chart for Claim 10(d). |
| **27.** The method of claim **25** wherein the collaborative feedback data provides passive feedback data. | *See* chart for Claim 14. |

| **Claim language of U.S. Patent No. 6,314,420 ("the '420 Patent")** | **Disclosure in GroupLens Reference** |
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| **28.** The method of claim **27** wherein the passive feedback data is obtained by passively monitoring the actual response to a proposed informon. | *See* chart for Claim 15. |