

--- Fed.Appx. ----, 2014 WL 3973501 (C.A.Fed. (Va.))
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United States Court of Appeals,
Federal Circuit.

I/P ENGINE, INC., Plaintiff–Cross Appellant,
v.

AOL INC., Google Inc., IAC Search & Media, Inc.,
Gannett Company, Inc., and Target Corporation,
Defendants–Appellants.

Nos. 2013–1307, 2013–1313.
Aug. 15, 2014.

Background: Owner of patents related to a method for filtering Internet search results that utilizes both content-based and collaborative filtering brought infringement action, and competitor counterclaimed for invalidity. Following jury trial, the United States District Court for the Eastern District of Virginia, [Raymond Alvin Jackson, J.](#), entered judgment in patent owner's favor. Cross-appeals were taken.

Holding: The Court of Appeals held that patents were invalid due to obviousness.

Reversed.

[Mayer](#), Circuit Judge, filed a concurring opinion.

[Chen](#), Circuit Judge, filed a dissenting opinion.

West Headnotes

Patents 291  **16.29**

291 Patents

291II Patentability

291III(A) Invention; Obviousness

291k16.29 k. Electricity, Electronics and Radio. [Most Cited Cases](#)

Patents 291  **328(2)**

291 Patents

291XIII Decisions on the Validity, Construction, and Infringement of Particular Patents

291k328 Patents Enumerated

291k328(2) k. Original Utility. [Most Cited Cases](#)

Patents 291  **328(2)**

291 Patents

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Patents 291  **328(2)**

291 Patents

291XIII Decisions on the Validity, Construction, and Infringement of Particular Patents

291k328 Patents Enumerated

291k328(2) k. Original Utility. [Most Cited Cases](#)

It would have been obvious to a person of ordinary skill in the art to filter items for relevance to a user's query using combined content and collaborative data at time of invention claimed in patents related to a method for filtering Internet search results that utilizes both content-based and collaborative filtering, and thus patents were invalid due to obviousness; search engines, content-based filtering, and collaborative filtering were all well known in the art at time of claimed invention, and record was replete with prior art references recognizing that content-based and collaborative filtering were complimentary techniques that could be effectively

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combined, and using an individual user's search query for filtering was technique widely applied in the prior art, and there was no evidence that results of patented system were unexpected. (Per curiam, with two circuit judges concurring in the result.)

5,867,799. Cited.

6,006,222, 6,202,058. Cited as Prior Art.

6,314,420, 6,775,664. Invalid.

Appeals from the United States District Court for the Eastern District of Virginia in No. 11–CV–0512, Judge [Raymond Alvin Jackson](#). [David A. Perlson](#), Quinn Emanuel Urquhart & Sullivan LLP, of San Francisco, CA, argued for defendants-appellants. With him on the brief were [Emily C. O'Brien](#), [Antonio R. Sistos](#), [Margaret P. Kammerud](#), and [Joshua L. Sohn](#); and [Dave Nelson](#), of Chicago, IL. Of counsel were [David L. Bilsker](#) and [Kevin Alexander Smith](#), of San Francisco, CA, and [Robert B. Wilson](#), of New York, NY. Of counsel on the brief for Google Inc. were [Daryl L. Joseffer](#), [King & Spalding LLP](#), of Washington, DC, and [Adam M. Conrad](#), of Charlotte, NC.

[Joseph R. Re](#), [Knobbe, Martens, Olson & Bear, LLP](#), of Irvine, CA, argued for plaintiff-cross appellant. With him on the brief was [Stephen W. Larson](#). Of Counsel on the brief were [Jeffrey K. Sherwood](#), [Frank C. Cimino, Jr.](#), [Kenneth W. Brothers](#), [Dawn Rudenko Albert](#), [Charles J. Monterio, Jr.](#), and [Jonathan L. Falkler](#), [Dickstein Shapiro LLP](#), of Washington, DC.

[Edward R. Reines](#) and [Jill J. Schmidt](#), [Weil, Gotshal & Manges LLP](#), of Redwood Shores, CA, for amici curiae [Newegg Inc.](#), et al.

Before [WALLACH](#), [MAYER](#), and [CHEN](#), Circuit Judges.

PER CURIAM.

*1 I/P Engine, Inc. (“I/P Engine”) brought an

action against [AOL Inc.](#), [Google Inc.](#) (“Google”), [IAC Search & Media, Inc.](#), [Gannett Company, Inc.](#), and [Target Corporation](#) (collectively, the “Google Defendants”) alleging infringement of [U.S. Patent Nos. 6,314,420](#) (the “420 patent”) and [6,775,664](#) (the “664 patent”). A jury returned a verdict finding that all asserted claims were infringed and not anticipated. J.A. 4163–73. The district court then determined that the asserted claims were not obvious and entered judgment in I/P Engine's favor. *See I/P Engine, Inc. v. AOL Inc.*, No. 11–CV–0512, 2012 U.S. Dist. LEXIS 166555 (E.D.Va. Nov. 20, 2012) (“*Non-Obviousness Order*”). Because the asserted claims of the '420 and '664 patents are invalid for obviousness, we reverse.

BACKGROUND

The '420 and '664 patents both claim priority to the same parent patent, [U.S. Patent No. 5,867,799](#). They relate to a method for filtering Internet search results that utilizes both content-based and collaborative filtering. *See* '420 patent col.1 ll.10–16, col.2 ll.20–26; '664 patent col.23 ll.29–44.^{FN1} Content-based filtering is a technique for determining relevance by extracting features such as text from an information item. '420 patent col.4 ll.22–26; *see also* J.A. 487. By contrast, collaborative filtering assesses relevance based on feedback from other users—it looks to what items “other users with similar interests or needs found to be relevant.” '420 patent col.4 ll.28–29; *see also* J.A. 487. The asserted patents describe a system “wherein a search engine operates with collaborative and content-based filtering to provide better search responses to user queries.” '420 patent col.1 ll.14–16. Specifically, the asserted claims describe a filter system that combines content and collaborative data in filtering each “informon”—or information item—for relevance to a user's query.^{FN2} Asserted claim 10 of the '420 patent recites:

A search engine system comprising: a system for scanning a network to make a demand search for informons relevant to a query from an individual user; a content-based filter system for re-

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ceiving 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 a feedback system for receiving collaborative feedback data from system users relative to informons considered by such users; 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.

Id. col.28 ll.1–15; see also *id.* col.29 ll.32–44.

Asserted claim 1 of the '664 patent provides:

A search system comprising: a scanning system for searching for information relevant to a query associated with a first user in a plurality of users; a feedback system for receiving information found to be relevant to the query by other users; and 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.

*2 '664 patent col.27 ll.27–37.

Claim 26 of the '664 patent is similar to claim 1, but cast as a method claim:

A method for obtaining information relevant to a first user comprising: searching for information relevant to a query associated with a first user in a plurality of users; receiving information found to be relevant to the query by other users; combining the information found to be relevant to the query by other users with the searched information; and content-based filtering the combined information for relevance to at least one of the query and the first user.

Id. col.28 ll.56–65.

On September 15, 2011, IP/Engine ^{FN3} filed a complaint in the United States District Court for the Eastern District of Virginia alleging that Google's

AdWords, AdSense for Search, and AdSense for Mobile Search systems, which display advertisements on web pages, infringed claims 10, 14, 15, 25, 27, and 28 of the '420 patent and claims 1, 5, 6, 21, 22, 26, 28, and 38 of the '664 patent. *See Claim Construction Order*, 874 F.Supp.2d at 514–15. On December 5, 2011, the Google Defendants filed counterclaims, seeking declaratory judgments of noninfringement and invalidity of both the '420 and '664 patents. *Id.* at 514.

Following a *Markman* hearing, the district court construed disputed claim terms. The court concluded that: (1) the term “collaborative feedback data” refers to “data from system users regarding what informons such users found to be relevant”; (2) the term “scanning a network” means “looking for or examining items in a network”; and (3) the term “demand search” refers to “a single search engine query performed upon a user request.” *Id.* at 525 (internal quotation marks omitted).

During a twelve-day trial, the Google Defendants pointed to numerous prior art references to support their contention that the claims of the '420 and '664 patents were invalid as anticipated and obvious. In particular, they argued that U.S. Patent No. 6,006,222 (“Culliss”) anticipated the asserted claims, and that those claims were obvious in view of: (1) U.S. Patent No. 6,202,058 (“Rose”); (2) Yezdezard Z. Lashkari, Feature Guided Automated Collaborative Filtering (July 25, 1995) (M.S. thesis, Massachusetts Institute of Technology) (“WebHound”); and (3) Marko Balabanovic & Yoav Shoham, *Content-Based, Collaborative Recommendation*, 40 Comms. of the ACM 66 (1997) (“Fab”).

The jury returned a verdict on November 6, 2012, finding that the Google Defendants had infringed all asserted claims and awarding damages of \$30,496,155. ^{FN4} J.A. 4173. The jury also found that the asserted claims were not anticipated, and answered a special verdict form on factual issues pertaining to the obviousness inquiry. J.A.

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4169–72. Specifically, the jury found that “Rose, [WebHound] and Fab[–] were profile systems that did not disclose a tightly integrated search system, and could not filter information relevant to the query.” J.A. 4170, 4171–72.

*3 On November 20, 2012, the district court ruled that the Google Defendants had “failed to prove, by clear and convincing evidence, that the '420 Patent or the '664 Patent [was] obvious.” *Non-Obviousness Order*, 2012 U.S. Dist. LEXIS 166555, at *9. The district court further determined that the equitable doctrine of laches barred I/P Engine from recovering damages for any infringement occurring prior to September 15, 2011, the date of its complaint. *I/P Engine, Inc. v. AOL Inc.*, 915 F.Supp.2d 736, 746–49 (E.D.Va.2012). The court explained that I/P Engine “had constructive notice that the Google Adwords system potentially infringed its patents as of July 2005 and [yet] failed to undertake any reasonable investigation to further determine if infringement was occurring.” *Id.* at 744. The court stated, moreover, that “[a]lthough Congress is best left to consider the merits of non-practicing patent entities in our patent system, the dilatory nature of [I/P Engine's] suit is precisely why the doctrine of laches has been applied to patent law.” *Id.* at 748.

On December 18, 2012, the Google Defendants filed motions for a new trial and for judgment as a matter of law on non-infringement, invalidity, and damages. J.A. 4252–381. I/P Engine also filed post-trial motions, arguing that the district court erred in applying the doctrine of laches to preclude recovery of damages for infringement in the period prior to September 15, 2011. J.A. 4433, 4550–56. All of these motions were denied by the district court. J.A. 59–67.

The Google Defendants then filed a timely appeal with this court. They argue that: (1) the infringement determination should be set aside because the accused systems do not meet claim limitations which require “combining” content data with feedback data and filtering “the combined informa-

tion”; (2) the accused systems do not meet the limitation contained in claim 10 of the '420 patent requiring a “demand search”; (3) I/P Engine improperly relied on marketing documents, rather than source code, in attempting to establish infringement and misled the jury by insinuating that Google had “copied” the system claimed in I/P Engine's patents; (4) the district court erred as a matter of law in finding the asserted claims non-obvious; (5) the asserted claims are invalid as anticipated because Culliss discloses filtering Internet articles based on scores that combine both content and collaborative feedback data; and (6) I/P Engine failed to introduce any credible evidence of damages in the period following the filing of its complaint. I/P Engine filed a cross-appeal in which it argues that the district court erred in applying the doctrine of laches to bar recovery for infringement occurring prior to September 15, 2011. I/P Engine further contends that even if laches does apply, it is entitled to damages of more than \$100 million for infringement occurring after the date it filed its complaint. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

I. Standard of Review

*4 “Whether the subject matter of a patent is obvious is a question of law and is reviewed de novo.” *Procter & Gamble Co. v. Teva Pharms. USA, Inc.*, 566 F.3d 989, 993 (Fed.Cir.2009); see *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1359 (Fed.Cir.2007). The factual findings underlying an obviousness determination include: (1) the scope and content of the prior art; (2) the differences between the claimed invention and the prior art; (3) the level of ordinary skill in the art; and (4) any objective indicia of non-obviousness. See *Graham v. John Deere Co.*, 383 U.S. 1, 17–18, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966).

I. The Obviousness Determination

The Google Defendants argue that I/P Engine's claimed invention is obvious as a matter of law because it simply combines content-based and collab-

orative filtering, two information filtering methods that were well-known in the art. They assert, moreover, that the prior art contained explicit statements describing the advantages of combining these two filtering techniques, and that it would have been obvious to include a user's query in the filtering process. *See* Br. of Defendants–Appellants at 35–38.

We agree and hold that no reasonable jury could conclude otherwise. The asserted claims describe a system that combines content and collaborative data in filtering each “informon”—or information item—for relevance to an individual user's search query. '420 patent col.28 ll.1–15; '664 patent col.27 ll.27–37. As the asserted patents themselves acknowledge, however, search engines, content-based filtering, and collaborative filtering were all well-known in the art at the time of the claimed invention. *See* '420 patent col.1 ll.20–45. The record is replete, moreover, with prior art references recognizing that content-based and collaborative filtering are complimentary techniques that can be effectively combined. The WebHound reference explains that “content-based and automated collaborative filtering are complementary techniques, and the combination of [automated collaborative filtering] with some easily extractable features of documents is a powerful information filtering technique for complex information spaces.” J.A. 5427. The Fab reference likewise notes that “[o]nline readers are in need of tools to help them cope with the mass of content available on the World–Wide Web,” and explains that “[b]y combining both collaborative and content-based filtering systems,” many of the weaknesses in each approach can be eliminated. J.A. 5511. Similarly, the Rose patent, which was filed in 1994 by engineers at Apple Computer, Inc., states that “[t]he prediction of relevance [to a user's interests] is carried out by combining data pertaining to the content of each item of information with other data regarding correlations of interests between users.” J.A. 5414. These references, individually and collectively, teach the clear advantages of combining content-based and collaborative

filtering.^{FN5}

*5 On appeal, I/P Engine does not dispute that the prior art disclosed hybrid content-based and collaborative filtering. It contends, however, that it would not have been obvious to a person of ordinary skill in the art to filter items for relevance to a user's query using combined content and collaborative data. In I/P Engine's view, the prior art simply took the results of content-based filtering and “threw them over a proverbial wall to a separate profile-based [filtering] system,” but did not also throw the search query “over the wall” for use in the filtering process. Br. of Plaintiff–Cross Appellant at 6–7; *see also id.* at 40–43; J.A. 3689–90, 3728–31.

The fundamental flaw in I/P Engine's argument is that using an individual user's search query for filtering was a technique widely applied in the prior art. Indeed, the shared specification of the '420 and '664 patents acknowledges that “conventional search engines” filtered search results using the original search query. *See* '420 patent col.2 ll.15–18 (explaining that “conventional search engines initiate a search in response to an individual user's query and use content-based filtering to compare the query to accessed network informons ” (emphasis added)). Given that its own patents acknowledge that using the original search query for filtering was a “conventional” technique, I/P Engine cannot now evade invalidity by arguing that integrating the query into the filtering process was a non-obvious departure from the prior art. *See PharmaStem*, 491 F.3d at 1362 (“Admissions in the specification regarding the prior art are binding on the patentee for purposes of a later inquiry into obviousness.”); *see also Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1570 (Fed.Cir.1988) (“A statement in a patent that something is in the prior art is binding on the applicant and patentee for determinations of anticipation and obviousness.”).

While I/P Engine acknowledges that the prior art disclosed “conventional ‘content-based filtering’

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in response to a query,” it contends that the prior art did “not show or suggest using content and collaborative data together in filtering items for relevance to a query.” Br. of Plaintiff–Cross Appellant at 43. This argument “tak[es] an overly cramped view of what the prior art teaches.” *Allergan, Inc. v. Apotex Inc.*, 754 F.3d 952, 963 (Fed.Cir.2014). The Culliss patent renders the asserted claims obvious because it plainly discloses using combined content and collaborative data when analyzing information for relevance to a user's search query. In the Culliss system, Internet articles are assigned a “key term score” for significant words or phrases. J.A. 5521. Culliss teaches content-based analysis because the key term score can initially be based on the number of times a particular term appears in an article.^{FN6}

J.A. 5526. Culliss also describes collaborative feedback analysis because the key term score will be increased when search engine users who query particular key terms select an article from the search results list. J.A. 5521. Significantly, moreover, Culliss presents articles to users based upon their key term scores for the terms that were used in a user's search query. J.A. 5521 (“As users enter search queries and select articles, the scores are altered. The scores are then used in subsequent searches to organize *the articles that match a search query.*” (emphasis added)). Culliss, therefore, squarely discloses using combined content and collaborative data in analyzing items for relevance to a query.

*6 I/P Engine contends that Culliss does not anticipate because it “describes a system for ranking items, not filtering them, as required by the asserted claims.” Br. of Plaintiff–Cross Appellant at 54. As Dr. Lyle Ungar, the Google Defendants' expert, explained at trial, however, “the standard way of filtering is to rank things and pick all items above a threshold.” J.A. 3366. Notably, moreover, Culliss discloses an embodiment in which articles that are given an “X-rated” score for adult content are filtered out and not displayed to persons who enter “Grated” queries. J.A. 5525. At trial, Carbonell asserted that Culliss was not enabled because it did not provide for a “workable” filtering system.

J.A. 3717. In support, he argued that a certain number of G-rated searchers might have to view an article before it would be labeled as X-rated and screened from subsequent G-rated searches. J.A. 3718–19. There is no credible evidence, however, that Culliss would not ultimately succeed in filtering X-rated articles from being viewed by G-rated searchers. See *Cephalon, Inc. v. Watson Pharms., Inc.*, 707 F.3d 1330, 1337 (Fed.Cir.2013) (emphasizing that a patent is presumptively enabled and that “the challenger bears the burden, throughout the litigation, of proving lack of enablement by clear and convincing evidence”). Even more importantly, while “a prior art reference cannot anticipate a claimed invention if the allegedly anticipatory disclosures cited as prior art are not enabled,” *In re Antor Media Corp.*, 689 F.3d 1282, 1289 (Fed.Cir.2012) (citations and internal quotation marks omitted), a nonenabling reference can potentially qualify as prior art for the purpose of determining obviousness, *Symbol Techs., Inc. v. Opticon, Inc.*, 935 F.2d 1569, 1578 (Fed.Cir.1991); see *Geo. M. Martin Co. v. Alliance Mach. Sys. Int'l LLC*, 618 F.3d 1294, 1302 (Fed.Cir.2010) (“Under an obviousness analysis, a reference need not work to qualify as prior art; it qualifies as prior art, regardless, for whatever is disclosed therein.” (citations and internal quotation marks omitted)); *Beckman Instruments, Inc. v. LKB Produkter AB*, 892 F.2d 1547, 1551 (Fed.Cir.1989) (“Even if a reference discloses an inoperative device, it is prior art for all that it teaches.”). Thus, even assuming *arguendo* that the Culliss filtering system was not fully functional, this does not mean that it does not qualify as prior art for purposes of the obviousness analysis.

Significantly, moreover, the obviousness inquiry “not only permits, but *requires*, consideration of common knowledge and common sense.” *DyStar Textilfarben GmbH & Co. v. C.H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed.Cir.2006); see *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421, 127 S.Ct. 1727, 167 L.Ed.2d 705 (2007) (eschewing “[r]igid preventative rules that deny factfinders recourse to

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common sense”); *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1329 (Fed.Cir.2009) (explaining that the obviousness analysis “may include recourse to logic, judgment, and common sense available to the person of ordinary skill that do not necessarily require explication in any reference or expert opinion”); *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed.Cir.2007) (emphasizing that “the common sense of those skilled in the art” can be sufficient to “demonstrate [] why some combinations would have been obvious where others would not”). Very basic logic dictates that a user's search query can provide highly pertinent information in evaluating the overall relevance of search results. *See, e.g.*, 420 patent col.1 ll.21–23 (explaining that a “query” is “a request for information relevant to ... a field of interest”); *id.* col.4 ll.5–6 (“The ‘relevance’ of a particular informon broadly describes how well it satisfies the user's information need.”). As Ungar explained, the query would be just “sitting there” with the results of a search, and it would have been obvious to one skilled in the art “to keep around the query and use that also for filtering.” J.A. 3173. FN7 “A person of ordinary skill is ... a person of ordinary creativity, not an automaton,” *KSR*, 550 U.S. at 421, 127 S.Ct. 1727, and the obviousness inquiry must take account of the “routine steps” that a person of ordinary skill in the art would employ, *Ball Aerosol & Specialty Container, Inc. v. Ltd. Brands, Inc.*, 555 F.3d 984, 993 (Fed.Cir.2009); *see Sovereign Software LLC v. Newegg Inc.*, 705 F.3d 1333, 1344, amended on reh'g, 728 F.3d 1332 (Fed.Cir.2013) (concluding that claims directed to an online shopping system were invalid as obvious given that the patentee “did not invent the Internet, or hypertext, or the URL” and using hypertext to communicate transaction information was no more than “a routine incorporation of Internet technology into existing processes”). Because the query was readily available and closely correlated to the overall relevance of search results—and the prior art unequivocally disclosed hybrid content-based/collaborative filtering—retaining the query for use in filtering combined content and collabor-

ative data was “entirely predictable and grounded in common sense.” *Ball Aerosol*, 555 F.3d at 993; *see W. Union Co. v. MoneyGram Payment Sys., Inc.*, 626 F.3d 1361, 1372 (Fed.Cir.2010) (concluding that the asserted dependent claims, which “add[ed] only trivial improvements that would have been a matter of common sense to one of ordinary skill in the art,” were obvious as a matter of law); *Perfect Web*, 587 F.3d at 1331 (concluding that a claimed method for sending e-mails was obvious because “simple logic suggests that sending messages to new addresses is more likely to produce successful deliveries than re-sending messages to addresses that have already failed”); *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1326–27 (Fed.Cir.2008) (concluding that claims which added a web browser to a prior art electronic system were obvious as a matter of law). While our conclusion that the asserted claims are invalid as obvious is grounded on the determination that the prior art, most notably Culliss, disclosed use of the search query when filtering combined content-based and collaborative data, the common sense of a skilled artisan would likewise have suggested retaining the query for use in the filtering process.

III. The Jury's Findings

*7 I/P Engine points to the fact that the jury found that there were differences between the prior art and the claimed invention, *see* J.A. 4170–72, and argues that on appeal “the only question is whether substantial evidence supports the jury's findings.” Br. of Plaintiff–Cross Appellant at 40. There are a number of reasons why we do not find this reasoning persuasive. First, not all of the jury's findings support non-obviousness. To the contrary, the jury found that the invention claimed in the '664 patent had been “independent[ly] invent[ed] ... by others before or at about the same time as the named inventor thought of it.” J.A. 4172. As we have previously made clear, near-simultaneous development of a claimed invention by others can, under certain circumstances, demonstrate obviousness. *See Geo. M. Martin*, 618 F.3d at 1305

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(“Independently made, simultaneous inventions, made within a comparatively short space of time, are persuasive evidence that the claimed apparatus was the product only of ordinary mechanical or engineering skill.” (citations and internal quotation marks omitted)). Thus, as the Google Defendants correctly note, the jury’s findings are a “mixed bag” on the obviousness question. Br. of Defendants–Appellants at 40.

Second, some of the jury’s findings appear internally inconsistent. In making their arguments on obviousness, neither I/P Engine nor the Google Defendants drew any distinction between the ‘420 patent and the ‘664 patent. Indeed, counsel for I/P Engine referred to the asserted patents simply as the “Lang and Kosak invention” when discussing differences between the prior art and the asserted claims. J.A. 3730. The jury found, however, that the invention claimed in the ‘664 patent had been independently invented by others, whereas the invention claimed in the ‘420 patent had not. J.A. 4171–72. Likewise, while the jury found that there had been unsuccessful attempts by others to develop the invention claimed in the ‘420 patent, it determined that there were no such attempts with respect to the invention disclosed in the ‘664 patent. J.A. 4170, 4172.

Finally, and most importantly, while the jury made underlying determinations as to the differences between the asserted claims and the prior art, it did not address the ultimate legal conclusion as to obviousness. Thus, while the jury found that the prior art did not disclose all of the elements of the asserted claims, J.A. 4170–71, it never determined whether it would have been obvious to one skilled in the art to bridge any differences between the prior art and the claimed invention. *See Bos. Scientific Scimed, Inc. v. Cordis Corp.*, 554 F.3d 982, 990 (Fed.Cir.2009) (“When we consider that, even in light of a jury’s findings of fact, the references demonstrate an invention to have been obvious, we may reverse its obviousness determination.”); *see also Sovereign*, 705 F.3d at 1337 (emphasizing that

“the question of obviousness as a matter of law receives *de novo* determination on appeal”); *Jeffries v. Harleston*, 52 F.3d 9, 14 (2d Cir.1995) (concluding that “hopelessly irreconcilable” jury findings did not require a retrial because “elementary principles” of law compelled one result).

IV. Objective Indicia of Non–Obviousness

*8 “This court has consistently pronounced that all evidence pertaining to the objective indicia of nonobviousness must be considered before reaching an obviousness conclusion.” *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1355 (Fed.Cir.2013). Here, however, I/P Engine introduced scant evidence on secondary considerations. *See Allergan, Inc. v. Sandoz Inc.*, 726 F.3d 1286, 1293 (Fed.Cir.2013) (concluding that secondary considerations did “not weigh heavily in the obviousness analysis”). Indeed, the district court did not even cite to the jury’s findings on secondary considerations when it concluded that the asserted claims were not invalid for obviousness. *See Non–Obviousness Order*, 2012 U.S. Dist. LEXIS 166555, at *7–9.

We find no merit in I/P Engine’s argument that the commercial success of Google’s accused advertising systems provides objective evidence of non-obviousness. “Evidence of commercial success, or other secondary considerations, is only significant if there is a nexus between the claimed invention and the commercial success.” *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1311–12 (Fed.Cir.2006). At trial, however, I/P Engine never established a nexus between the success of Google’s accused systems and the patented invention.^{FN8} Indeed, I/P Engine’s damages expert agreed that the accused technology encompassed numerous features not covered by the asserted patents, and acknowledged that he had not evaluated the issue of whether the patented technology drove consumer demand for Google’s advertising platform. J.A. 2772–73.

Under certain circumstances, the “copying” of an invention by a competitor may constitute evid-

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ence that an invention is not obvious. See *Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed.Cir.2004); *Vandenberg v. Dairy Equip. Co.*, 740 F.2d 1560, 1567 (Fed.Cir.1984). Contrary to I/P Engine's assertions, however, the fact that one of Google's patents cited to the '420 patent does not establish that Google copied the invention disclosed in that patent. Nor is the fact that Google did not provide evidence at trial as to how it developed its accused advertising system sufficient to establish that it copied the claimed invention. See *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed.Cir.2010) (“Our case law holds that copying requires evidence of efforts to replicate a specific product, which may be demonstrated through internal company documents, direct evidence such as disassembling a patented prototype, photographing its features, and using the photograph as a blueprint to build a replica, or access to the patented product combined with substantial similarity to the patented product.”).

The jury found “[a]cceptance by others of the claimed invention as shown by praise from others in the field or from the licensing of the claimed invention.” J.A. 4171–72. Carbonell acknowledged, however, that although he had been in the “search industry” for thirty years he was unaware of any “praise” that I/P Engine's purported invention had received. J.A. 3788. Likewise, although the jury found “unexpected and superior results from the claimed invention,” J.A. 4171–72, there was no evidence, other than conclusory testimony from Carbonell, see J.A. 3691–92, 3740, that the results of the patented system were unexpected. See *Skin-Medica, Inc. v. Histogen Inc.*, 727 F.3d 1187, 1210 (Fed.Cir.2013) (emphasizing that expert opinions that “are conclusory and incomplete” have little evidentiary value). Accordingly, secondary considerations cannot overcome the strong prima facie case of obviousness.^{FN9} See *Leapfrog*, 485 F.3d at 1162.

CONCLUSION

*9 Accordingly, the judgment of the United

States District Court for the Eastern District of Virginia is reversed.

REVERSED

Opinion for the court filed PER CURIAM. Concurring.

Opinion filed by Circuit Judge **MAYER**. Dissenting.

Opinion filed by Circuit Judge **CHEN**.

MAYER, Circuit Judge, concurring.

The Supreme Court in *Alice Corporation v. CLS Bank International*, 573 U.S. —, 134 S.Ct. 2347, 2359, 189 L.Ed.2d 296 (2014), for all intents and purposes, recited a “technological arts” test for patent eligibility. Because the claims asserted by I/P Engine, Inc. (“I/P Engine”) disclose no new technology, but instead simply recite the use of a generic computer to implement a well-known and widely-practiced technique for organizing information, they fall outside the ambit of 35 U.S.C. § 101. And if this determination had been made in the first instance as directed by the Supreme Court, unnecessary litigation, and nearly two weeks of trial and imposition on citizen jurors, could have been avoided.

I.

“[T]he patent system represents a carefully crafted bargain that encourages both the creation and the public disclosure of new and useful advances in technology, in return for an exclusive monopoly for a limited period of time.” *Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 63, 119 S.Ct. 304, 142 L.Ed.2d 261 (1998). A patentee does not uphold his end of this bargain if he seeks broad monopoly rights over a fundamental concept or basic idea without a concomitant contribution to the existing body of scientific and technological knowledge. *Alice* thus made clear that abstract ideas untethered to any significant advance in science and technology are ineligible for patent protection, concluding that a computer-implemented system for mitigating settlement risk fell outside section 101 because it did not “improve the functioning of the computer itself” or “effect an improvement in any

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other technology or technical field.” 134 S.Ct. at 2359; see also *id.* at 2358 (explaining that the claims in *Diamond v. Diehr*, 450 U.S. 175, 177–79, 101 S.Ct. 1048, 67 L.Ed.2d 155 (1981) (“*Diehr*”), were patent eligible because they disclosed an “improve[ment]” to a “technological process”).

Application of the technological arts test ^{FN1} for patent eligibility requires consideration of whether the claimed “inventive concept,” *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, — U.S. —, 132 S.Ct. 1289, 1294, 182 L.Ed.2d 321 (2012), is an application of scientific principles or natural laws. See *In re Bilski*, 545 F.3d 943, 1010 (Fed.Cir.2008) (en banc) (Mayer, J., dissenting), *aff’d on other grounds sub nom. Bilski v. Kappos*, 561 U.S. 593, 130 S.Ct. 3218, 177 L.Ed.2d 792 (2010) (“[A] process is non-technological where its inventive concept is the application of principles drawn not from the natural sciences but from disciplines such as business, law, sociology, or psychology.”). Importantly, claims do not meet the demands of section 101 simply because they recite the use of computers or other technology. Instead, the inventive concept *itself* must be new technology, a novel application of scientific principles and natural laws to solve problems once thought intractable. See *id.* at 1002 (“Although business method applications may use technology—such as computers—to accomplish desired results, the innovative aspect of the claimed method is an entrepreneurial rather than a technological one.”). The claims at issue in Alice may well have described a useful and innovative method of doing business, ^{FN2} but because they did not disclose any significant advance in science or technology, they fell outside section 101. See 134 S.Ct. at 2359 (noting that the claimed method simply “require[d] a generic computer to perform generic computer functions”).

*10 Section 101 mandates not only that claims disclose an advance in science or technology—as opposed to an innovation in a non-technological discipline such as business, law, sports, sociology, or psychology—but also that this advance be both

significant and well-defined. *Id.* at 2360 (“[T]he claims at issue amount to nothing *significantly more* than an instruction to apply the abstract idea of intermediated settlement using some unspecified, generic computer.” (citations and internal quotation marks omitted) (emphasis added)); see also *Mayo*, 132 S.Ct. at 1297 (“The question before us is whether the claims do *significantly more* than simply describe” a law of nature. (emphasis added)). Of course, if claims are drawn to the application of principles outside of the scientific realm—such as principles related to commercial or social interaction—no amount of specificity can save them from patent ineligibility. In *Bilski*, for example, a method was rejected under section 101 notwithstanding the fact that it described a very specific method of using historical weather-related data to hedge against price increases. 130 S.Ct. at 3223–24; see *Parker v. Flook*, 437 U.S. 584, 593, 98 S.Ct. 2522, 57 L.Ed.2d 451 (1978) (“*Flook*”) (rejecting the argument “that if a process application implements a principle in some specific fashion, it automatically falls within the patentable subject matter of § 101”). Meaningful, well-defined limits on the application of a principle or idea are thus a necessary, but not a sufficient, prerequisite for patent eligibility. Requiring carefully circumscribed bounds on the application of scientific principles and natural laws serves to ensure that “the basic tools of scientific and technological work,” *Gottschalk v. Benson*, 409 U.S. 63, 67, 93 S.Ct. 253, 34 L.Ed.2d 273, (1972), remain “free to all men and reserved exclusively to none,” *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130, 68 S.Ct. 440, 92 L.Ed. 588 (1948); see *Mayo*, 132 S.Ct. at 1293. ^{FN3}

In the more difficult cases—where it is uncertain whether claims are sufficiently “technological” to warrant patent protection—subject matter eligibility will often turn on whether the claims describe a narrow inventive application of a scientific principle, or instead simply recite steps that are necessarily part of the principle itself. See *Mayo*, 132 S.Ct. at 1297 (explaining that a process reciting a

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law of nature is not patent eligible unless it “has additional features that provide practical assurance that the process is more than a drafting effort designed to monopolize the law of nature itself”). In *Mayo*, for example, claims were rejected, in part, because they were “overly broad,” *id.* at 1301, and did “not confine their reach to particular applications,” *id.* at 1302. The need for specificity sufficient to cabin the scope of an invention is particularly acute in the software arena, where claims tend to be exceedingly broad, development proceeds at breakneck speed, and innovation often occurs despite the availability of patent protection rather than because of it.

*11 Finally, and most importantly, the technological arts test recognizes that there has to be some rough correlation between “the give and the get”—applicants who make little, if any, substantive contribution to the existing body of scientific and technological knowledge should not be afforded broad monopoly rights that potentially stifle future research and development. In assessing patent eligibility, “the underlying functional concern ... is a *relative* one: how much future innovation is foreclosed relative to the contribution of the inventor.” *Mayo*, 132 S.Ct. at 1303. At its core, section 101 prohibits claims which are “overly broad,” *id.* at 1301, in proportion to the technological dividends they yield.

II.

I/P Engine's claimed invention, which describes a system which filters information for relevance to a user's query using combined content and collaborative data, see U.S. Patent No. 6,314,420 col.28 ll.1–15; U.S. Patent No. 6,775,664 col.27 ll.27–37, does not pass muster under section 101. The asserted claims do not meet subject matter eligibility requirements because they do not “improve the functioning of the computer itself” or “effect an improvement in any other technology or technical field.” *Alice*, 134 S.Ct. at 2359. To the contrary, the use of search engines was well-established and the clear advantages of combining content-based and

collaborative filtering were widely recognized at the time of the claimed invention. See *ante* at ———.

The asserted claims simply describe the well-known and widely-applied concept that it is often helpful to have both content-based and collaborative information about a specific area of interest. FN4 A person planning to visit London, for example, might consult a guidebook that would provide information about particular museums in London (content data) as well as information about what other people thought of these museums (collaborative data). See J.A. 4255–56.

I/P Engine's claimed system is merely an Internet iteration of the basic concept of combining content and collaborative data, relying for implementation on “a generic computer to perform generic computer functions.” *Alice*, 134 S.Ct. at 2359; see also *id.* (explaining that using a computer to obtain data is “well-understood” and “routine” (citations and internal quotation marks omitted)); *Cyber-Source Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1370 (Fed.Cir.2011) (concluding that a claim which disclosed the “mere collection and organization of data regarding credit card numbers and Internet addresses” was patent ineligible).

Moreover, the scope of the claimed invention is staggering, potentially covering a significant portion of all online advertising. I/P Engine's asserted claims fall outside section 101 because their broad and sweeping reach is vastly disproportionate to their minimal technological disclosure.

III.

The Supreme Court has dictated that the subject matter eligibility analysis must precede the obviousness inquiry. *Flook*, 437 U.S. at 593, 98 S.Ct. 2522 (“The obligation to determine what type of discovery is sought to be patented” so as to determine whether it falls within the ambit of section 101 “must precede the determination of whether that discovery is, in fact, new or obvious.”); *Bilski*, 130 S.Ct. at 3225 (explaining that the issue of whether

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claims are directed to statutory subject matter is “a threshold test”); *see also In re Comiskey*, 554 F.3d 967, 973 (Fed.Cir.2009) (“Only if the requirements of § 101 are satisfied is the inventor allowed to pass through to the other requirements for patentability, such as novelty under § 102 and ... non-obviousness under § 103.” (citations and internal quotation marks omitted)). To fail to address at the very outset whether claims meet the strictures of [section 101](#) is to put the cart before the horse. Until it is determined that claimed subject matter is even *eligible* for patent protection, a court has no warrant to consider subordinate validity issues such as non-obviousness under [35 U.S.C. § 103](#) or adequate written description under [35 U.S.C. § 112](#).

*12 From a practical perspective, there are clear advantages to addressing [section 101](#)'s requirements at the outset of litigation. Patent eligibility issues can often be resolved without lengthy claim construction, and an early determination that the subject matter of asserted claims is patent ineligible can spare both litigants and courts years of needless litigation. To the extent that certain classes of claims—such as claims on methods of doing business—are deemed presumptively patent ineligible, moreover, the United States Patent and Trademark Office will have more resources to devote to expeditiously processing applications which disclose truly important advances in science and technology.

Even more fundamentally, the power to issue patents is not unbounded. To the contrary, the constitutional grant of authority “[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries,” U.S. Const. art. I, § 8, cl. 8, “is both a grant of power and a limitation,” *Graham v. John Deere Co.*, 383 U.S. 1, 5, 86 S.Ct. 684, 15 L.Ed.2d 545 (1966); *see Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141, 146, 109 S.Ct. 971, 103 L.Ed.2d 118 (1989). [Section 101](#)'s vital role—a role that [sections 103](#) and [112](#) “are not equipped” to

take on, *Mayo*, 132 S.Ct. at 1304—is to insure that patent protection promotes, rather than impedes, scientific progress and technological innovation. A robust application of [section 101](#) ensures that the nation's patent laws remain tethered to their constitutional moorings.

CHEN, Circuit Judge, dissenting.

After a twelve-day trial during which both sides presented evidence about the teachings of the prior art, the jury made detailed factual findings pertaining to the obviousness of the '420 and '664 patents. The jury found, among other findings, that elements of the asserted claims were not present in the prior art. Based on the jury's findings, the district court determined that the Defendants had failed to prove by clear and convincing evidence that the asserted claims were obvious. In reversing the district court's judgment, the majority finds that the prior art discloses a key claim limitation that the jury found was missing, and also concludes that the district court erred in failing to use “common sense” to bridge the differences between the prior art and the claims. In my view, the majority fails to accord sufficient deference to the jury's findings of fact. Moreover, I find that the majority's use of common sense to bridge the gap between the prior art and the claims is unsupported by sufficient evidence and reasoning. I respectfully dissent.

At the outset, it is worth noting that obviousness is a mixed question of law and fact. *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1356 (Fed.Cir.2012). Although we must examine the legal conclusion of obviousness de novo, we should tread lightly when reviewing a legal conclusion—reached by a trial court—that rests upon a jury's findings of fact. *See Polaroid Corp. v. Eastman Kodak Co.*, 789 F.2d 1556, 1558 (Fed.Cir.1986) (“Though it is well settled that the ultimate conclusion on obviousness is ... a legal conclusion, that does not mean ... that we may proceed on a paper record as though no trial had taken place. This court reviews judgments. Because we do not retry the case, [the appellant] must to prevail

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convince us that the judgment cannot stand on the record created at trial...."); *cf. Haebe v. DOJ*, 288 F.3d 1288, 1299 (Fed.Cir.2002) (“[G]reat deference must be granted to the trier of fact who has had the opportunity to observe the demeanor of the witnesses, whereas the reviewing body looks only at cold records.”) (internal quotation marks omitted). Where a jury's findings concerning the prior art are supported by substantial evidence, and where a trial court makes its obviousness determination based on those findings, I would exercise caution in wielding our own common sense as part of our review of the judgment.

*13 The asserted claims in this case are based, in part, on filtering techniques used in two types of information systems found in the prior art: content-based systems and profile-based (or “collaborative”) systems. Content-based systems filtered search results for relevance to a user's query, as reflected in “conventional search engines.” *See* Majority Op. at — (quoting '420 patent col.2 ll.15–18). Collaborative systems, meanwhile, filtered information for relevance based on “the user's long-term information desires or preferences,” and incorporated the information preferences of similar users. J.A. 3690.

As the majority explains, the prior art suggested that content-based and collaborative filtering could be combined. *See* Majority Op. at — —. The majority identifies prior art systems that passed content-based results (which were returned based on the user's query) over to a distinct collaborative filter. The query in these systems was used only to obtain the initial results; it played no role in subsequent filtering on the collaborative side. The asserted claims, however, require using the query itself—not just the results returned by the query—on the collaborative side, thus combining content-based and collaborative filtering. *See* '420 patent, col.28 ll.1–15; '664 patent, col.27 ll.27–37.

At trial, experts for both sides testified about whether a person of skill in the art would have found it obvious to supply the key claim limitation

missing from the prior art—the use of the query as part of a combined content-based and collaborative filter. I/P Engine's expert testified that a person of skill in the art in 1998 would not have “appreciated the advantages of tight integration” of search systems and profile systems, particularly with regard to the “relevance to the query.” J.A. 3739. In response, the Defendants' expert testified that the prior art did “feature a tight integration between the search system and the content collaborative system ... [b]ecause ... it would have been obvious to one of ordinary skill in the art that if you are filtering search results, it's obvious to keep around the query and use that also for filtering.” *Id.* at 3172–73.

With respect to both patents, the jury found that the prior art “did not disclose a tightly integrated search system, and could not filter information relevant to the query.” J.A. 4170, 4172. The majority downplays the significance of the jury's findings, explaining that the jury “never determined whether it would have been obvious to one skilled in the art to bridge any differences between the prior art and the claimed invention.” Majority Op. at —. Without such a determination, the majority suggests, we must resort to “common sense” to address the question left unanswered by the jury—that is, whether it would have been obvious to one of skill in the art to use the search query as part of the filtering of collaborative data.^{FN1}

*14 We have explained that “the mere recitation of the words ‘common sense’ without any support adds nothing to the obviousness equation. Thus, we have required that obviousness findings grounded in ‘common sense’ must contain explicit and clear reasoning providing some rational underpinning why common sense compels a finding of obviousness.” *Plantronics, Inc. v. Aliph, Inc.*, 724 F.3d 1343, 1354 (Fed.Cir.2013) (internal citations omitted). As the Supreme Court emphasized, “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does ... because inventions

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in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418, 127 S.Ct. 1727, 167 L.Ed.2d 705 (2007). We may not find a patent invalid for obviousness on the basis of “mere conclusory statements.” *In re Kahn*, 441 F.3d 977, 988 (Fed.Cir.2006).

Here, in support of its finding of a “strong prima facie case of obviousness,” the majority concludes that “retaining the query for use in filtering combined content and collaborative data was entirely predictable and grounded in common sense.” Majority Op. at —, — (internal quotations omitted).^{FN2} The use of the query is a matter of common sense, the majority explains, “[b]ecause the query was readily available and closely correlated to the overall relevance of search results.” *Id.* at ——. In support of its suggestion that one of skill in the art would find it obvious to use the readily available query, the majority cites the testimony of the Defendants' expert:

As [the Defendants' expert] explained, the query would be just “sitting there” with the results of a search, and it would have been obvious to one skilled in the art to “keep around the query and use that also for filtering.”

Id. (citing J.A. 3173).

I find this testimony inadequate to support the majority's conclusion. The expert's “sitting there” explanation tells us nothing about whether one of skill in the art in 1998 would have been struck by common sense to modify collaborative filtering systems so as to incorporate search queries. All prior art references are “just sitting there” in the metaphorical sense. What is needed—and what is missing from the cited testimony—is some explanation of why one would use the query as the asserted claims do. See *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1374 (Fed.Cir.2008) (“[S]ome kind of motivation must be shown from some source, so

that the jury can understand why a person of ordinary skill would have thought of either combining two or more references or modifying one to achieve the patented method.” (internal citations omitted)). Such evidence or reasoning is lacking here. The testimony of the Defendants' expert amounts to a “mere conclusory statement” that may not serve as a basis for finding the asserted claims obvious. See *In re Kahn*, 441 F.3d at 988; see also *InTouch Techs., Inc. v. VGO Commc'ns, Inc.*, 751 F.3d 1327, 1352 (Fed.Cir.2014) (holding that expert's testimony could not support a finding of obviousness where “testimony primarily consisted of conclusory references to [the expert's] belief that one of ordinary skill in the art *could* combine these references, not that they *would* have been motivated to do so”).

*15 As for the majority's observation that the query is “closely correlated to the overall relevance of search results,” no one disputes that the prior art taught that a query was relevant to a user's content-based search. What is disputed is whether the prior art taught the query's “overall relevance” to collaborative filtering. See J.A. 3172–73, 3739. To bridge the gap, we must identify a non-circular reason that would have prompted a person of skill in the art to appreciate the relevance of the query to collaborative data. See *KSR*, 550 U.S. at 418, 127 S.Ct. 1727.

The gap in the prior art references here is unlike gaps we have encountered in other cases—cited by the majority—where we have found patents obvious for merely adding “the Internet” or “a web browser” to a well-known prior art reference. See Majority Op. at ——— (citing *Soverain Software LLC v. Newegg Inc.*, 705 F.3d 1333, 1344, amended on reh'g (Fed.Cir.2013); *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318 (Fed.Cir.2008)). In those cases, we observed that skilled artisans had already performed the same type of combination with similar elements. See *Soverain*, 705 F.3d at 1344 (finding that the use of use of hypertext to perform the known process of transmitting documents “was a routine incorporation of Internet technology into existing processes”); *Mu-*

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ninauction, 532 F.3d at 1326–27 (concluding that “[t]he record in this case demonstrates that adapting existing electronic processes to incorporate modern internet and web browser technology was similarly commonplace at the time the '099 patent application was filed”).

In this case, the majority does not identify analogous “routine” combinations that would render obvious the patents' incorporation of the search query into a collaborative filtering system. The asserted patents did not merely combine information technology with “the Internet.” Rather, the patents combined elements from two known information filtering systems. The patents took the query data (input for a content system) and mixed it with collaborative data (input for a profile-based system). What was claimed was the combination of elements of two evolving systems in the field of information science, not a combination of a known process and a web browser.

Nor is this case like *Perfect Web Technologies, Inc. v. InfoUSA, Inc.*, 587 F.3d 1324 (Fed.Cir.2009), where we affirmed a district court's conclusion that a patent was obvious as a matter of common sense. In *Perfect Web*, the asserted patent claimed a four-step method for distributing bulk emails. It was undisputed that the first three steps of the method were disclosed in the prior art. *Id.* at 1330. The fourth step—which was not present in the prior art—recited repeating the first three steps over and over until all the emails were delivered. As we described the method, it “simply recites repetition of a known procedure until success is achieved.” *Id.* Moreover, we found that the “relevant art required only a high school education and limited marketing and computer experience,” and that no expert opinion was required to appreciate the value of repeating the three steps. *Id.*

*16 In affirming the district court's conclusion that the patented method was obvious, we observed that “simple logic suggests that sending messages to new addresses is more likely to produce successful deliveries than resending messages to addresses

that have already failed.” *Id.* at 1331. To put it another way, one of skill in the art would have been motivated to add the fourth step because it would increase success—more recipients would receive email messages. We identified a benefit that would have been readily apparent to one of skill in the art at the time of the invention.

Here, by contrast, the record does not suggest a benefit or rationale that would have caused a skilled artisan to use the query as part of collaborative filtering in 1998. Although we know that the query was “sitting there,” we do not know why one of skill in the art would have thought that mixing the query with the collaborative filter would produce, to use the language of *Perfect Web*, “successful” filtering. We need something beyond the invocation of the phrase “common sense” or “simple logic” to demonstrate the reason to combine the prior art references in this case. See *KSR*, 550 U.S. at 418, 127 S.Ct. 1727; *Innogenetics*, 512 F.3d at 1374.

For these reasons, I respectfully dissent from the majority's holding that the asserted claims of the '420 and '664 patents are invalid for obviousness.

FN1. The specifications of the '420 and '664 patents are substantively identical, but employ slightly dissimilar line numbering. Unless otherwise noted, citations to the specification refer to the line numbering used in the '420 patent.

FN2. The parties stipulated that the term “informon” referred to an “information entity of potential or actual interest to the [individual/first] user.” *I/P Engine, Inc. v. AOL Inc.*, 874 F.Supp.2d 510, 517 (E.D.Va.2012) (internal quotation marks omitted) (“*Claim Construction Order*”). The asserted patents explain that an “informon” can be all or part of a text, video, or audio file. '420 patent col.3 ll.30–35.

FN3. In 2012, I/P Engine became a subsidiary of Vringo, Inc. J.A.2046–47.

FN4. The jury also awarded I/P Engine a running royalty of 3.5%. J.A. 4173.

FN5. I/P Engine points to recent United States Patent and Trademark Office (“PTO”) reexamination proceedings which concluded that Rose and WebHound do not anticipate the asserted claims of the ['420 patent](#). J.A. 7899–902. Here, however, the question is not whether Rose and WebHound anticipate the asserted claims, but instead whether the prior art, viewed as a whole, renders the asserted claims obvious. See *Cohesive Techs., Inc. v. Waters Corp.*, [543 F.3d 1351, 1364 \(Fed.Cir.2008\)](#) (“Obviousness can be proven by combining existing prior art references, while anticipation requires all elements of a claim to be disclosed within a single reference.”); *Medichem, S.A. v. Rolabo, S.L.*, [437 F.3d 1157, 1166 \(Fed.Cir.2006\)](#) (explaining that in an obviousness analysis “the prior art must be considered *as a whole* for what it teaches”).

FN6. Dr. Jaime Carbonell, I/P Engine's expert, asserted that Culliss does not disclose content-based filtering as required by the asserted claims because Culliss' repeated feedback-based adjustments to a key term score will dilute or “swamp” the content portion of the score over time. J.A. 3714, 3787. Notably, however, while the asserted claims require content-based filtering, they do not mandate that content-based analysis play a dominant role in the filtering process. See ['420 patent col.28 ll.1–15](#); ['664 patent col.27 ll.27–37](#). Thus, the fact that in the Culliss system content data may play less and less of a role as more user feedback is obtained does not mean that Culliss does not disclose content-based filtering. To the contrary, Culliss explains that while

feedback can raise an article's key term score (when the article is clicked on by other users), it can also lower that score (when the article is not clicked on by other users). J.A. 5527 (“[I]f the user does not select the matched article, the key term score for that matched article under that key term can be assigned a negative score.”). Thus, the positive and negative feedback adjustments could potentially nearly “cancel each other out,” and content data could play a very significant role in setting an article's overall score.

FN7. The parties stipulated that, for purposes of both the ['420](#) and ['664 patents](#), a person of ordinary skill in the art was “an individual with a bachelor's degree in computer science with at least [two] years of experience.” J.A. 39.

FN8. Nor did I/P Engine present evidence that any owner of the asserted patents had ever used the claimed system commercially. See *Soverain*, [705 F.3d at 1346](#) (finding no commercial success where the claimed electronic commerce system “was abandoned by its developers and almost all of its original users”).

FN9. Because we conclude that the asserted claims are obvious as a matter of law, we need not reach issues related to infringement and damages.

FN1. One of our predecessor courts likewise applied a technological arts test for patent eligibility. It recognized that patentable processes must “be in the technological arts so as to be in consonance with the Constitutional purpose to promote the progress of ‘useful arts.’ ” *In re Musgrave*, [431 F.2d 882, 893 \(CCPA 1970\)](#) (quoting U.S. Const. art. I, § 8, cl. 8).

FN2. In *Alice*, the Supreme Court concluded that the concept of intermediated settlement was a patent-ineligible abstract idea. 134 S.Ct. at 2355–57. But whether the “concept” of intermediated settlement is an abstract idea is a wholly different question from whether the claimed invention provided a useful and innovative application of that concept. Significantly, in determining whether the asserted claims disclosed an inventive concept sufficient to make the claimed abstract idea patent eligible, the Court looked solely at the technology—asking only whether the recited computer elements were “well-understood, routine, [and] conventional.” *Id.* at 2359 (citations and internal quotation marks omitted). The issue of whether the claimed intermediated settlement technique represented an innovative method for improving commercial transactions was not addressed because advances in non-technological disciplines, such as business, are irrelevant for purposes of the section 101 inquiry.

FN3. There is, of course, some “overlap” between the eligibility analysis under section 101 and the obviousness inquiry under 35 U.S.C. § 103. *Mayo*, 132 S.Ct. at 1304. Section 103, however, asks the narrow question of whether particular claims are obvious in view of the prior art. By contrast, the section 101 inquiry is broader and more essential: it asks whether the claimed subject matter, stripped of any conventional elements, is “the kind of ‘discover[y]’ ” that the patent laws were intended to protect. *Flook*, 437 U.S. at 593, 98 S.Ct. 2522.

FN4. In its appeal brief, I/P Engine notes that the shared specification of the asserted patents describes “a variety of ways in which content and collaborative feedback data can be combined,” including through the use of a “complex neural network func-

tion.” Br. of Plaintiff–Cross Appellant at 10. As we recently made clear, however, “the important inquiry for a § 101 analysis is to look to the claim[s].” *Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1345 (Fed.Cir.2013). Accordingly, “the complexity of the implementing software or the level of detail in the specification does not transform a claim reciting only an abstract concept into a patent-eligible system or method.” *Id.*

FN1. The majority also concludes that this claim limitation is taught by the Culliss patent because that reference “squarely discloses using combined content and collaborative data in analyzing items for relevance to a query.” Majority Op. at ———. But the majority’s conclusion squarely conflicts with the jury’s express finding that Culliss “lack[s] any content analysis and filtering for relevance to the query.” J.A. 4170. Based on the record, I would defer to the jury’s fact finding. In the face of conflicting testimony about what Culliss disclosed, the jury was free to credit the opinion of I/P Engine’s expert. See *Power–One, Inc. v. Artesyn Technologies, Inc.*, 599 F.3d 1343, 1351 (Fed.Cir.2010) (explaining that the jury was free to either credit or disbelieve expert testimony about “the differences between the prior art and the invention claimed”).

FN2. The majority also takes issue with the jury’s findings on secondary considerations, noting that two of the findings with respect to the ‘420 patent and the ‘664 patent “appear internally inconsistent.” Majority Op. at ———. The majority generally characterizes the findings on secondary considerations as a “mixed bag.” *Id.* Even assuming, however, that the jury’s secondary consideration findings are as muddled

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as the majority describes, they are relevant only insofar as the majority is correct that its invocation of “common sense” may support a prima facie case of obviousness that must be overcome. See *Dow Chemical Co. v. Halliburton Oil Well Cementing Co.*, 324 U.S. 320, 330, 65 S.Ct. 647, 89 L.Ed. 973 (1945) (“[Secondary] considerations are relevant only in a close case where all other proof leaves the question of invention in doubt.”).

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