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Patentability of Process Claims and Business Method Inventions with No "Machine or Transformation"

Introduction

Uncertainty existed regarding the future of patent eligibility of business method patents following the Supreme Court's decision in *Bilski v. Kappos*[1] in 2010. *Bilski* held that the "machine-or-transformation test"[2] is not the exclusive test for determining whether claims of business method patents constitute a "process" and therefore patent-eligible subject matter under 35 U.S.C. § 101.[3] According to § 101, patent-eligible subject matter includes "any new and useful process, machine, manufacture, or composition of matter."[4] Additionally, the Supreme Court reiterated that the three exceptions to patent-eligible subject matter are "laws of nature, physical phenomena, and abstract ideas" and applied these exceptions along with the "machine-or-transformation" test to invalidate a claim related to hedging risk for being directed to an abstract idea.[5]

Since the Supreme Court's decision, the Federal Circuit, the district courts, and the Board of Patent Appeals and Interferences (BPAI) have all applied the holding in *Bilski* to determine whether process claims constitute patent-eligible subject matter. A subset of these decisions focuses on the validity of process claims that do not implicate a machine or transformation, of which few claims have been found valid. This article focuses on patentability of claims that do not recite a machine or transformation and analyzes trends in the courts' and BPAI's decision making since *Bilski v. Kappos*[6] issued.

The Federal Circuit Applies an Abstract Exception Analysis to Claims that Do Not Implicate a Machine or Transformation

The first Federal Circuit decision to apply *Bilski*

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From Your Office to the Patent Office: Tips on Gathering and Identifying Patentable Employee Inventions

Obtaining patent protection for employee-generated inventions can be tricky for organizations large and small. Employee-inventors must first be able to recognize that they have a potentially patentable idea, and then they must disclose that idea to the organization. That disclosure typically takes place using an invention disclosure form. Once the invention has been disclosed to the organization by the inventor, the organization must then determine whether the idea should be the subject of a patent application. To complicate matters, it may be desirable for this process to proceed quickly, as recent changes to U.S. patent law may eliminate many of protections previously provided to patent applicants when there were delays in the filing of the patent application. This article discusses these issues and offers suggestions on how to turn ideas into patents.

Encouraging Employee-Inventors to Disclose Their Inventions

Employee-inventors may be resistant to requests to provide invention disclosures, either because they are unfamiliar with or uninterested in the patent process, or because they are simply too busy. In some cases, it may be the responsibility of in-house patent counsel or the technology transfer office to encourage invention disclosure by inventors.

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was *Research Corp. Technologies, Inc. v. Microsoft Corp.*[7] There, the claims recited a process for rendering digital halftone images, and the district court held certain of those claims invalid under § 101.[8] The Federal Circuit reversed, finding that the claims were not abstract and instead constituted patent-eligible subject matter.[9] A representative disputed claim from one of the patents stated:

> A method for the halftoning of gray scale images by utilizing a pixel-by-pixel comparison of the image against a blue noise mask in which the blue noise mask is comprised of a random non-deterministic, non-white noise signal valued function which is designed to produce visually pleasing dot profiles when threshold at any level of said gray scale images.[10]

The court then analyzed the validity of the claims solely under the abstract exception to patent-eligible subject matter without reference to the machine-or-transformation test.[11] The court reasoned that the claims were not abstract because "the invention presents functional and palpable applications in the field of computer technology."[12] Furthermore, the court found the invention was not abstract by noting that other claims from the same disputed patents required the use of tangible objects such as a "'high contrast film,' 'a film printer,' 'a memory,' and 'printer and display devices.'"[13] Finally, the court stated that "specific improvements to technologies in the marketplace are not likely to be so abstract that they override the statutory language and framework of the Patent Act."[14]

The next Federal Circuit decision in the wake of *Bilski* was *Ultramercial, LLC v. Hulu, LLC*, in which the district court found that the claims-in-suit did not recite patent-eligible subject matter.[15] Like *Research Corp. Technologies*, however, the Federal Circuit reversed, holding that the claims satisfied the "process" prong within the language and meaning of 35 U.S.C. § 101.[16] In *Ultramercial*, the patent claimed a multi-step method for distributing copyrighted products (*e.g.*, songs) over the internet where the consumer receives a copyrighted product for free in exchange for viewing an advertisement, and the advertiser pays for the copyrighted content.[17]

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The Federal Circuit has indicated a willingness to find claims that do not recite a machine or transformation valid under § 101 if the claims (i) present functional and palpable applications in the field of computer technology, (ii) require use of tangible objects, and/or (iii) relate to specific improvements to technologies in the marketplace.

The court noted that § 101 is no more than a "coarse eligibility filter," and that title 35 does not "list a single ineligible category, suggesting that any new, non-obvious, and fully disclosed technical advance is eligible for protection, subject to the following limited judicially created exceptions" of laws of nature, physical phenomena, and abstract ideas.[18] The court further acknowledged that the "machine-or-transformation logic served well as a tool to evaluate the subject matter of Industrial Age processes, [but] that test has far less application to the inventions of the Information Age."[19]

Using a broad and expansive interpretation of § 101, the court analyzed the claims under the abstract idea exception, and stated that "[a]lthough abstract principles are not eligible for patent protection, an application of an abstract idea may well be deserving of patent protection."[20] The court considered that "[i]nventions with specific applications or improvements to technologies in the marketplace are not likely to be so abstract that they override the statutory language and framework of the Patent Act."[21] The court found that the claimed invention purported to improve existing technology in the marketplace, and by its terms, the claimed invention invoked computers and applications of computer technology.[22]

Finding that the claim recited a practical application of the idea that advertising can serve as currency including a particular multi-step method for monetizing copyrighted products, and that many of the steps are likely to require intricate and complex computer programming and specific application to the internet and a cyber-market environment, the court viewed the subject matter as a whole to be patent-eligible under § 101.[23]

The third and last Federal Circuit decision to date involving the validity of claims that do not recite a machine or transformation is *CyberSource Corp. v. Retail Decisions, Inc.*[24] The district court found that the asserted claims did not satisfy § 101, and unlike *Research Corp. Technologies* and *Ultramercial*, the Federal Circuit affirmed.[25] In *CyberSource*, the patent claimed a

method for verifying that a customer who is purchasing goods over the internet using a credit card is actually the owner of the credit card:

> A method for verifying the validity of a credit card transaction over the internet comprising the steps of:
>
> a) obtaining information about other transactions that have utilized an Internet address that is identified with the [ ] credit card transaction;
>
> b) constructing a map of credit card numbers based upon the other transactions and;
>
> c) utilizing the map of credit card numbers to determine if the credit card transaction is valid.[26]

The patent also included a "computer readable medium" claim reciting program instructions for executing the claimed process.[27]

The court first addressed the method claim and determined that the claim does not meet the machine-or-transformation test despite the fact that the method "would not be necessary or possible without the Internet."[28] The court stated that regardless of whether "the Internet" can be viewed as a machine, the Internet is merely described as the source of the data and mere "[data-gathering] step[s] cannot make an otherwise nonstatutory claim statutory."[29]

The court continued to analyze the claim under the abstract idea test, and found that all the steps of the method can be performed in the human mind or by a human using a pen and paper.[30] The court also stated that the method claim is not limited in scope to any particular fraud detection algorithm and noted that no algorithms are disclosed in the patent specification.[31] The court held that a method that can be performed by human thought alone is merely an abstract idea and is not patent-eligible under § 101 because such methods embody the "basic tools of scientific and technological work" that are free to all men and reserved exclusively to none.[32]

The court next addressed the "computer readable medium" (CRM) or so-called "Beauregard claim" (*e.g.*, a claim to a computer readable medium (*e.g.*, a disk, hard drive, or other data storage device) containing program instructions for a computer to perform a particular process).[33] The court looked to the underlying invention recited in the claim for patent-eligibility purposes, which is a method for detecting credit card fraud, not a manufacture for storing computer-readable information. As was the case with the method claim, the court held the CRM claim invalid under section 101.[34]

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The district courts and BPAI seem to rely heavily on the machine-or-transformation test in reviewing the § 101 validity of claims, whether the claims lend themselves to this test or not.

Additionally, the BPAI takes a more varied approach to its analysis, applying a combination of the machine-or-transformation test and mental process test to determine whether a claim is abstract.

Thus, up to now the Federal Circuit has indicated a willingness to find claims that do not recite a machine or transformation valid under § 101 if the claims (i) present functional and palpable applications in the field of computer technology, (ii) require use of tangible objects, and/or (iii) relate to specific improvements to technologies in the marketplace. The more factors present, the more likely it is that the claims will satisfy § 101. However, the Federal Circuit has rigidly rejected claims that can be performed in the human mind as merely unpatentable abstract ideas.

District Courts Analyze Claims Under Both the Machine-or-Transformation Test and the Abstract Exception Analysis

Since the Supreme Court's ruling in *Bilski*, district courts have generally found all process claims that do not clearly recite a machine or transformation invalid under § 101. District courts look to the machine-or-transformation test as a guiding first step in the analysis of the validity of process patents under § 101.[35] If a process claim fails this test, the district court then determines whether the claim recites an abstract idea.[36] Even if claims are drafted in a way so as to not require the use of a specific computer, district courts have still applied the machine-to-transformation test against the claims.[37] Likewise, the mere mention of a computer or related system will not necessarily mean that the claim will be found to meet the "machine" prong.[38] Additionally, explicitly limiting the claims to a particular industry, though

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important for overcoming the abstract idea exception, does not guarantee that a district court will find the claims valid under § 101.[39]

For example, in *CLS Bank International v. Alice Corp. Pty. Ltd.*,[40] the district court first applied the machine-or-transformation test, then performed an analysis under the abstract idea exception before determining that the disputed claims were invalid under § 101.[41] Interestingly, the court noted that even if the claims had satisfied the machine-or-transformation test, the court would still apply the abstract idea exception.[42] A representative claim stated:

> A **method of exchanging obligations** as between parties, each party holding a credit record and a debit record with an exchange institution, the credit records and debit records for exchange of predetermined obligations, the method comprising the steps of:
>
> a) creating a **shadow credit record** and a **shadow debit record** for each stakeholder party to be held independently by a supervisory institution from the exchange institutions;
>
> b) obtaining from each exchange institution a start-of-day balance for each shadow credit record and shadow debit record;
>
> c) for every transaction resulting in an exchange obligation, the supervisory institution adjusting each respective party's shadow credit record or shadow debit record, allowing only these **transactions** that do not result in the value of the shadow debit record being less than the value of the shadow credit record at any time, each said adjustment taking place in chronological order; and
>
> d) at the end-of-day, the supervisory institution instructing ones of the exchange institutions to exchange credits or debits to the credit record and debit record of the respective parties in accordance with the adjustments of the said permitted transactions, the credits and debits being irrevocable, time invariant obligations placed on the exchange institutions.[43]

The *CLS Bank* court found that the claims did not recite a transformation for reasons including that the recited "exchange of obligations" is not a transformation since obligations are not physical objects.[44] Additionally, the court found that the invention was not tied to a particular machine, even assuming that the terms "transaction," "shadow credit record," and "shadow debit record" required the use of a computer system.[45] The possibility that the claims recited the use of a computer generally did "not tie the claim to a particular machine or apparatus or save the claim from being found unpatentable."[46] However, the court also determined that though a computer may expedite the claimed methods, a computer was certainly not required for their performance.[47]

Additionally, the court in *CLS Bank* also found that the method claim, among the other disputed claims, was abstract as being "a basic business or financial concept much like those struck down in *Bilski*."[48] The basic business function the court referred to was the claimed use of an intermediary to minimize risk through exchanging obligations. Furthermore, the court emphasized that the abstract exception analysis should focus on whether the application of the claim is specific and/or limited to a particular field.[49] Distinguishing *Research Corp. Technologies*, the court in *CLS Bank* found the claims preempted the use of an intermediary for exchanging obligations "across an incredible swath of the economic sector."[50] Likewise, the court found the claims were not sufficiently limited by the use of a computer.[51]

In view of the foregoing, the current approach among district courts is to rely heavily on the machine-or-transformation test.

The BPAI Applies a Combination of the Machine-or-Transformation Test and the Abstract Exception Analysis

The BPAI has issued the majority of the post-*Bilski* decisions regarding patent-eligible subject matter for business method patent claims. Generally, the BPAI has found valid very few claims that lack a specific recitation of a machine or transformation.

Valid Claims

For claims that do not recite a machine or transformation, the BPAI tends to hone in on a specific step or term of the claim to find validity under § 101. This approach is somewhat contrary to the proposition that courts should analyze the "claims as a whole" to determine whether a claim is an abstract idea.[52] However, although the BPAI seems to focus on specific terms and claim steps, the BPAI has noted that just because a claim uses the word "tangible" does not automatically make the claims patent-eligible.[53]

For example, in *Ex Parte Bush*, the BPAI focused on the "issuing" step to find that the disputed claim was not abstract but directed toward a process.[54] The claim stated in part "issuing a bill-on-redemption card account."[55] The BPAI, with little explanation, stated that the "issuing" step was "not an abstract idea or mere mental step" and therefore not an abstract idea.[56]

Likewise, in *Ex Parte Montocchio*, the BPAI found that the "establishing" step of the disputed claim required a physical product and was therefore not abstract.[57] The claim

recited in part "establishing the following components of a board game."[58] The board found the term "establishing" was used to mean "providing" the physical components of a board game, and therefore was not an abstract idea.[59] One administrative patent law judge dissented, arguing that the claim failed the machine-or-transformation test.[60] The dissenter also argued that the language of step (b), "to result in sales representation training," constituted an abstract concept.[61] Here, different judges honed in on different claim terms to reach contrary results regarding patent eligibility.

Only one decision from the BPAI seems to mirror the analysis established by the Federal Circuit in *Research Corp. Technologies*. In *Ex Parte Jack*, the Examiner rejected the following claim as not satisfying the machine-or-transformation test:[62]

> A method of classifying tissue in a magnetic resonance image, the method comprising:
> a) acquiring a magnetic resonance image of a region of interest;
> b) constructing a pixel intensity histogram of the magnetic resonance image; and
> c) applying a statistical regression analysis to the histogram to determine a pixel intensity threshold value for segmenting the histogram into at least two regions, wherein at least one of the regions is representative of a tissue of interest.[63]

The BPAI reversed and upheld the claim under § 101 for not being abstract.[64] In doing so, the BPAI cited *Bilski* and noted that the Supreme Court held that the machine-or-transformation test is not the sole test for determining whether a process constitutes patent eligible subject matter under § 101.[65] Furthermore, the BPAI looked to the Federal Circuit's recent decision in *Research Corporation Technologies, Inc.* for guidance in determining what constituted abstract subject matter which "should exhibit itself so manifestly as to override the broad statutory categories of eligible subject matter."[66] In this case, the BPAI seemed to consider the claims as a whole.

Invalid Claims

The BPAI has also issued decisions invalidating under § 101 claims that do not clearly recite a machine or transformation.

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The BPAI has found valid very few claims that lack a specific recitation of a machine or transformation. For claims that do not recite a machine or transformation, the BPAI tends to hone in on a specific step or term of the claim to find validity under § 101.

Generally for these claims, the BPAI considers relevant: 1) whether the claims recite a machine or transformation; and 2) whether the claimed subject matter relates to general concepts or can be performed by "mental steps."[67] The Federal Circuit has previously stated that "[m]ental processes – or processes of human thinking – standing alone are not patentable even if they have practical applications."[68]

The BPAI has not specified whether failing the machine-or-transformation test is a threshold determination for validity. However, in *Ex parte Baryshnikov*, the board noted "[t]he absence of a recitation dedicated to a transformation or a machine weighs heavily for a finding that the claimed subject matter is an abstract idea."[69] Likewise, in *Ex parte Estrada*, the board stated that a relevant consideration in its finding that the claims are invalid was the fact that the claims did not recite a machine or transformation.[70] Furthermore, the board has also found claims invalid under § 101 by relying solely on the machine-or-transformation test.[71] While the Supreme Court in *Bilski* noted that the machine-or-transformation test is still "a useful and important clue, an investigative tool, for determining whether some claimed inventions are processes under § 101,"[72] the Supreme Court did not indicate that failing this test should always be outcome determinative.

For example, in *Ex Parte Klein*, the BPAI rejected the following claim citing a method for searching for names in an employee database as failing the machine-or-transformation test:[73]

> A method for name searching within an employee records database comprising:
> - receiving a full name as a text string;
> - searching an employee records database for an exact match of the full name;
> - forming a first selection group of names from the employee records database using an exact searching algorithm which determines an extent to which portions of a first size of the names of the employee records database match portions of the first size of the text string;
> - forming a second selection group of names from the first selection group using a fuzzy searching algorithm which determines an extent to which portions of a second size of the names of the

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first selection group match portions of the second size of the text string, wherein the second size is smaller than the first size;
- displaying the second selection group as a ranked list of names; and
- allowing a selection of a name from the displayed ranked list of names.[74]

Although the board in *Klein* noted that the "machine-or-transformation test is one of the investigative tools . . . for determining when a method may qualify as a § 101 process,"[75] the board ended its analysis after applying the machine-or-transformation test.

Likewise, in *Ex Parte Warren*, the board cited only to the machine-or-transformation test as the relevant inquiry into patent eligibility of business method claims.[76] The claim stated:

A method for managing the assets of holders of rights in a property, comprising the steps of:
- acquiring shares of ownership in a property represented by a security and issued by a business enterprise, the shares of ownership being acquired by an administrator, wherein each of the shares constitutes a set of rights, wherein an individual one of the rights in the set of rights is a different kind of right from another one of the rights in the set of rights, there being at least two different kinds of rights in the set of rights, said individual right comprising at least one of an equity right, a non-equity right, a right to receive a dividend or portion of the dividend, a right to receive an interest payment or portion thereof, a right to receive rent, a right to real property, a right to a warrant, a right to a stock split, a right to conversion between classes of securities, a residual right, a voting right, a right to receive capital appreciation, and wherein one or more of said rights may have a time limitation;
- dividing the set of rights into portions by the administrator, each of the portions having at least one of the rights, wherein a kind of right that is present in a first of the portions is absent in a second of the portions; and
- establishing a market in the portions by the administrator, wherein in said market, there is a selling of the portions to investors and a repurchasing of the portions from the investors, said repurchasing enabling a holder of one of said portions to regain a divided-out right from one of said investors.[77]

The BPAI found that the disputed claim did not expressly or impliedly recite a machine or transformation.[78] The board seemed to conduct an analysis of whether the claim falls under the abstract exception to § 101 by noting that the claimed process is directed towards a concept and would cause preemption, but does not explicitly state that it analyzed this claim under any other test.[79]

However, the BPAI has also held claims invalid without applying the machine-or-transformation test.[80] For example, in *Ex parte Birle*, the board found the following claim invalid for being directed to an abstract idea:[81]

A financial instrument issued by a stock company and held by a holder, shares of stock of the company trading at a price, the instrument having a market price, the instrument comprising:
- a provision obligating the company to repay the principal according to a predetermined term;
- a provision making the instrument convertible into a predetermined number of shares of stock of the company at a predetermined conversion price;
- a provision obligating the company to make a payment to the holder with respect to passage of a time interval in the event the market price of the instrument is in a predetermined relationship to an accreted value thereof, the accreted value defined as the issue price of the instrument plus an economic accrual of a portion of a difference between the issue price and the principal amount at maturity.[82]

The BPAI cited to *Bilski* and analyzed the claims solely as to whether they constituted an abstract idea. Furthermore, the board mentioned that the claimed process could be achieved through a mental process, which is a factor the board commonly considers alongside the machine-or-transformation test.[83] However, in this decision, the board provided a general discussion of precedential case law en route to a determination of invalidity because the claim was drawn to an abstract idea.

Conclusion

Since the Supreme Court's decision in *Bilski v. Kappos*, the Federal Circuit, district courts, and the BPAI have applied the Court's holding to determine the validity of business method claims under § 101. For process claims that do not recite a machine or transformation, the Federal Circuit analyzes the claims under the abstract exception to patent-eligible subject matter. However, there are only two precedential decisions to date from the Federal Circuit which upheld the validity of a process claim not reciting a machine or transformation. The district courts and the BPAI seem to rely heavily on the machine-or-transformation test in reviewing the § 101 validity of claims, whether the claims lend themselves to this test or not. Additionally, the BPAI takes a more varied approach to its analysis, applying a combination of the machine-or-

transformation test and mental process test to determine whether a claim is abstract. In some decisions, however, the BPAI only applied the machine-or-transformation test, which conflicts with the Supreme Court's holding in *Bilski*. As more cases involving these unique sets of claims are appealed to the Federal Circuit, a better understanding will emerge as to the ways in which claims can be drafted to ensure validity in light of the Supreme Court's new standards.

Endnotes

1 130 S. Ct. 3218 (2010).
2 According to the Court of Appeals for the Federal Circuit, an invention constituted a "process" only if: "(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing." *In re Bilski*, 545 F.3d 943, 954 (Fed. Cir. 2008).
3 *Bilski*, 130 S. Ct. at 3227.
4 35 U.S.C. § 101 (2010).
5 *Bilski*, 130 S. Ct. at 3225 (quoting *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980)).
6 130 S. Ct. 3218 (2010).
7 627 F.3d 859 (Fed. Cir. 2010).
8 *Id.* at 862.
9 *Id.* at 869.
10 *Id.* at 865.
11 *Id.* at 868.
12 *Id.*
13 *Id.* at 869.
14 *Id.*
15 No. 2010-1544, 2011 U.S. App. LEXIS 19048 (Fed. Cir. Sept. 15, 2011).
16 2011 U.S. App. LEXIS 19048, at *1.
17 *Id.* at *1-2. Claim 1 of the patent reads: A method for distribution of products over the Internet via a facilitator, said method comprising the steps of:
- a first step of receiving, from a content provider, media products that are covered by intellectual property rights protection and are available for purchase, wherein each said media product being comprised of at least one of text data, music data, and video data;
- a second step of selecting a sponsor message to be associated with the media product, said sponsor message being selected from a plurality of sponsor messages, said second step including accessing an activity log to verify that the total number of times which the sponsor message has been previously presented is less than the number of transaction cycles contracted by the sponsor of the sponsor message;
- a third step of providing the media product for sale at an Internet website;
- a fourth step of restricting general public access to said media product;
- a fifth step of offering to a consumer access to the media product without charge to the consumer on the precondition that the consumer views the sponsor message;
- a sixth step of receiving from the consumer a request to view the sponsor message, wherein the consumer submits said request in response to being offered access to the media product;
- a seventh step of, in response to receiving the request from the consumer, facilitating the display of a sponsor message to the consumer;
- an eighth step of, if the sponsor message is not an interactive message, allowing said consumer access to said media product after said step of facilitating the display of said sponsor message;
- a ninth step of, if the sponsor message is an interactive message, presenting at least one query to the consumer and allowing said consumer access to said media product after receiving a response to said at least one query;
- a tenth step of recording the transaction event to the activity log, said tenth step including updating the total number of times the sponsor message has been presented; and
- an eleventh step of receiving payment from the sponsor of the sponsor message displayed.

Id. at *2-3.
18 *Id.* at *6-7.
19 *Id.* at *9.
20 *Id.* at *11.
21 *Id.* at *12.
22 *Id.*
23 *Id.* at *13-14.
24 No. 2009-1358, 2011 U.S. App. LEXIS 16871 (Fed. Cir. Aug. 16, 2011).
25 *Id.* at *1.
26 *Id.* at *2-3.
27 *Id.* at *3-4.
28 *Id.* at *10-11.
29 *Id.* at *11.
30 *Id.* at *17.
31 *Id.*
32 *Id.* at *19.
33 *Id.*
34 *Id.* at *23.
35 *See, e.g.*, *Bancorp Serv. v. Sun Life Assurance Co. of Can.*, No. 4:00–CV–1073 (CEJ), 2011 WL 665679 (E.D. Mo. Feb. 14, 2011) (applying both the machine-or-transformation test as well as an analysis of abstractness in finding the claims invalid).
36 *See id.*
37 *See id.* at *10 (holding claims which require the use of a general purpose computer are not sufficiently tied to a machine).
38 *Id.* at *9.
39 *See Accenture Global Serv., GmbH v. Guidewire Software, Inc.*, No. 07-826-SLR, 2011 WL 2148636, at *7 (D. Del. May 31, 2011) (finding the patents were "directed to concepts for organizing data rather than to specific devices or systems, and limiting the claims to the insurance industry [did] not specify the claims sufficiently to allow for their survival.").
40 No. 07-974 (RMC), 2011 WL 802079 (D.D.C. Mar. 9, 2011).
41 *Id.* at *12, *19.
42 *Id.* at *18.
43 *Id.* at *3 (emphasis added).
44 *Id.* at *13.
45 *Id.*
46 *Id.* at *11.
47 *Id.* at *18.
48 *Id.*at *19.
49 *Id.* at *21.
50 *Id.*
51 *Id.* at *22.
52 *See Accenture Global Serv.*, 2011 WL 2148636, at *7.
53 *See Ex parte Bash, et. al.*, Appeal 2009-007202, 2010 WL 5199590, at *2 (B.P.A.I. Dec. 20, 2010) (focusing on the term "computer readable storage medium" as opposed to the term "tangible" to find patent-eligible subject matter).
54 *Ex parte Bush*, Appeal 2009-008888, 2011 WL 901344, at *2 (B.P.A.I. Mar. 14, 2011).
55 *Id.* at *1. In full, the claim states: "A meth-

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od for administering insurance claims and monitoring claim-related data in a database, comprising the steps of:
(a) receiving a claim;
(b) determining a dollar value of the claim;
(c) issuing a bill-on-redemption card account funded with a point value corresponding to at least a portion of said dollar value of the claim;
(d) paying at least some portion of the dollar value of the claim when the card account is used by a card recipient;
(e) collecting purchase information from the card account; and
(f) entering the purchase information into the database."

56 *Id.* at *2.
57 *Ex parte Montocchio*, Appeal 2009-011763, 2011 WL 938730, at *3 (B.P.A.I. Mar. 16, 2011).
58 *Id.* In full, the claim states: "A method making use of play on a board game for training a sales representative to make a sales call on a selected type of prospective purchaser comprising the steps of:
(a) **establishing** the following components of a board game:
(i) means representing a pair of game pieces adapted t be placed on selected ones of a plurality of separate sequential spaces, one of said game pieces corresponding during play of the game to a player of said game acting in the role of a sales representative calling on a selected type of prospective purchaser and the other of said game pieces cor responding during play of the game to an opposing player of said game acting in the role of the selected type of prospective purchase being called on by the sales representative;
(ii) means forming a game board bearing a track dividded into a plurality of separate sequential spaces extending between a beginning space and an ending space and having certain of the spaces labeled in such a manner as to either reward or penalize a player landing on any of such selected spaces;
(iii) a random number generator for regulating motion of said game pieces along said track;
(iv) a timer for timing the amount of time allowed for playing one turn of the game;
(v) means providing a set of texts accessible to and sequentially selectable by the players of said game, each of said texts containing a role play for a sales representative selling to the selected type of prospective purchaser and a hidden skill by which the performance of a sales representative is to be judged when selling to such type of prospective purchaser; and
(b) playing the game by a set of rules governing play of the game which require display of said hidden skill for advancement on said track while utilizing said game pieces, board, random number generator, timer and set of texts where by **to result in sales representation training** of all the players of said game for selling to the selected type of prospective purchaser.
(emphasis added)

59 *Id.*
60 *Id.* at *6.
61 *Id.*
62 *Ex parte Jack*, Appeal 2009-015192, 2011 WL 486179, at *2 (B.P.A.I. Feb. 7, 2011).
63 *Id.* at *1.
64 *Id.* at *2.
65 *Id.* at *2.
66 *Id.* (quoting *Research Corp. Tech., Inc. v. Microsoft Corp.*, 627 F.3d 859, 868 (Fed. Cir. 2010)).
67 *See, e.g., Ex parte Blaker*, Appeal 2009-008840, 2011 WL 1345327, at *3 (B.P.A.I. Apr. 5, 2011) (finding a claim both failed the machine-or-transformation test and could be performed mentally).
68 *In re Comiskey*, 554 F.3d 967, 979 (Fed. Cir. 2009).
69 *Ex parte Baryshnikov*, Appeal 2009-009672, 2011 WL 396453, at *2 (B.P.A.I. Feb. 3, 2011).
70 Appeal 2009-012192, 2010 WL 3389278, at *3 (B.P.A.I. Aug. 26, 2010).
71 *See Ex parte Raikar*, Appeal 2009-009302, 2011 WL 2168566, at *2 (B.P.A.I. May 31, 2011) (invalidating a claim related to configuring network management systems under § 101 by only applying the machine-or-transformation test).
72 *Bilski*, 130 S. Ct. at 3227.
73 *Ex parte Klein*, Appeal 2009-006727, 2010 WL 5276908, at *5 (B.P.A.I. Dec. 23, 2010).
74 *Id.* at *1.
75 *Id.* at *4.
76 *Ex parte Warren*, Appeal 2010-000815, 2011 WL 891737, at *3 (B.P.A.I. Mar. 9, 2011).
77 *Id.* at *1.
78 *Id.* at *3.
79 *Id.* at *4.
80 *See Ex parte Zommers*, Appeal 2009-013434, 2011 WL 2062123, at *9 (B.P.A.I. May 18, 2011) (finding a claim for a personal information system invalid under § 101 as being an abstract idea because many of the claimed steps "can be performed through entirely abstract mental thought.").
81 *Ex parte Birle*, Appeal 2009-010659, 2010 WL 4366518, at *3 (B.P.A.I. Nov. 1, 2010).
82 *Id.* at *1.
83 *Id.* at *2.

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To this end, some organizations provide inventors with incentives, such as monetary incentives.[1] Incentives may be limited to those disclosures that do eventually become patents, or may be for any disclosure that the organization ultimately decides to pursue.

As another means of encouraging invention disclosures, some organizations aim to simplify the invention disclosure process. In some cases, this involves establishing an online (or otherwise readily accessible) invention disclosure submission process. The online process may provide inventors with, for example, an invention disclosure form along with frequently asked questions and contact information for in-house counsel or tech transfer personnel.[2]

In other cases, organizations may host periodic "invention harvests" as another means to simplify the invention disclosure process. While invention harvests may take a number of forms, the general idea is that inventors meet to brainstorm and discuss inventions, while in-house counsel, tech transfer personnel, and/or outside counsel (also at the meeting) take note of potential inventions mentioned during the discussion. Invention harvests offer a number of potential benefits. First, the invention harvest may eliminate the need for inventors to take the initiative in providing invention disclosures. During the harvest, the counsel or tech transfer personnel may collect from the inventor all of the relevant information, and may prepare the invention disclosure themselves. Second, some of the inventions that come up in the discussion at an invention harvest may be inventions that the inventors would not otherwise think to provide in an invention disclosure because the invention may be small or specific, or may not seem to the inventor to be patentable. Or, discussion among inventors may transform unpatentable inventions into patentable inventions. Often, the experience of the counsel or tech transfer personnel may allow for recognition and/or development of potentially patentable inventions, even where the inventors do not yet recognize them. Third, when a potentially patentable invention is mentioned in an invention harvest, counsel or tech transfer personnel may have the opportunity to immediately question the inventor for additional information, which may expedite a determination of whether the organization is interested in further pursuing the invention through the patent application process.

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One simple way to receive invention disclosures from inventors is through an invention disclosure form.

The Invention Disclosure Form

One simple way to receive invention disclosures from inventors is through an invention disclosure form. These forms may include any number of questions, and each organization may wish to receive different types of information from their inventors.[3] Here are some possible questions you may wish to include.

What problem is being addressed? This question, while simple, allows counsel and tech transfer personnel to easily and quickly understand the invention and evaluate its potential for patenting and licensing. It may also be useful to ask the inventors for background information regarding the problem. For example, how has this problem been addressed in the past? Have other solutions to the problem been proposed, either by others or by the inventors themselves?

What is the invention? In particular, how does the invention address the main problem? How does the invention differ from previously proposed solutions? What are the comparative advantages of the invention? Which features, in particular, enable these comparative advantages? A written summary of the invention is certainly useful, and equally (if not more) useful in many cases are figures. What form may the invention take (*e.g.*, method, system, device, apparatus, material composition, etc.)? Keep in mind that many inventions may take more than one form. For inventions that take the form of a device, system, or apparatus, block diagrams may provide a clear and simple explanation. For inventions that take the form of a method, flowcharts can be helpful. These figures, along with the written summary, may allow counsel and tech transfer personnel to easily and quickly understand the invention, and further may greatly aid in drafting a patent application directed to the invention. Some companies also find it useful to ask the inventor to categorize the invention. This may aid in, for example, evaluating the invention or selecting outside counsel to draft a patent application directed to the invention.

What are some possible alternatives, variations, or modifications of the invention? Put another way, how might a competitor design around a patent directed to this invention? These alternatives, variations, and modifications may be included in a patent application directed to the invention.

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From Your Office to the Patent Office: Tips on Gathering and Identifying Patentable Employee Inventions

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Has the invention been disclosed? It may be useful to spell out for the inventor the different types of disclosure that are possible, including, for example, publication in a journal, presentation at a conference, sale or offer for sale of the invention or a product that includes the invention, and grant applications. It is important to find out when and where any such disclosure occurred, and if confidentiality or non-disclosure agreements were used. It may also be helpful to ask the inventor if any future disclosure is planned, such as an upcoming product launch or a planned submission to a journal.

What are some references or publications related to the invention? Often, inventors are very familiar with the literature in their own disciplines and, as a result, may be able to quickly and easily identify publications and other patents that are closely related to the invention. These publications and patents often prove useful in evaluating whether the invention is patentable. It may also be helpful to ask the inventor for example search terms and/or sources that may be useful in searching for other publications and patents related to the invention.

In what stage is the invention? Is the invention just an idea? A working prototype? Has the inventor experimented with the invention? Is there proof-of-concept data? In evaluating whether to prepare a patent application to the invention, it may be valuable to know how much more time and/or money is required to develop the product. Has the inventor already secured the funds for developing the product? How long until the invention could be commercialized?

Who are potential licensees of this invention? Again, because inventors are often very familiar with their own fields, they may be able to quickly and easily identify parties that are doing work related to the invention. These parties (among others) may be potential licensees of a patent on the invention.

Who provided funding for the invention? Parties that funded any part of the invention may be entitled to partial ownership of the invention. This should be investigated prior to pursuing a patent on the invention. In particular, counsel and tech transfer personnel should carefully consider the provisions of the Bayh-Dole Act[4] for any federally funded inventions.

Additionally, it is useful to ask inventors to provide their full legal name, their home address, and their citizenship information on the invention disclosure form. This often saves counsel and tech transfer personnel the trouble of tracking this information down during any subsequent patent application process.

Turning an Invention Disclosure into a Patent

Most organizations do not have the resources to pursue patents for every invention disclosed by inventors. Rather, most organizations take the time to evaluate each invention disclosure to consider its potential value both as intellectual property and as a source of revenue.

Accordingly, organizations should consider establishing a set of criteria to be used to determine whether a patent should be pursued for an invention, as well as to assess the priority of obtaining protection for an invention in comparison with others. Example criteria include the novelty of the invention, the detectability of the invention, the value of the invention to the organization (as an intellectual property asset and/or as a revenue generator), the value of the invention to competitors of the organization, the ease of implementation of the invention, the ease of designing around the invention, the longevity of the invention (*e.g.*, as compared to patent life), any regulatory issues related to the invention, the breadth of claims for the invention (which may relate to prosecution time of an application), the royalty and licensing potential of the invention, the market size for the invention, the market need for the invention, competition for the invention, and the business impact of the invention.

Organizations should also consider conducting a prior art search prior to filing a patent application. The process of preparing a patent application can be a costly endeavor, and the fees charged by the Patent Office for filing an application are increasing. Though a prior art search may add additional cost to the preparation of a patent application, it can also alert counsel and tech transfer personnel to prior art that would make obtaining patent protection for the invention difficult or impossible. Armed with this knowledge, the organization may decide to forego the costly process of preparing a patent application after having spent only a fraction of that cost on a prior art search. Further, a prior art search may aid counsel or tech transfer personnel in determining what aspects of the invention are truly novel once the decision to file an application has been made. This, in turn, may inform how best to shape the claims and disclosure of a patent application directed to the invention.

Prior art searching may be performed by the organization itself, or by outside counsel or outside prior art searching companies. Outside counsel may have relationships with particular prior art searching companies, and may be able to request searches for organizations at a reduced cost.

Impact of the America Invents Act on Invention Disclosure

With the recent passage of the Leahy-Smith America Invents Act (AIA),[5] which will change the U.S. patent system from a first-to-invent system to a first-to-file system, inventors and organizations must be diligent in turning ideas and invention disclosures into patent applications. While the specific provisions of the AIA discussed below do not become effective until March 16, 2013,[6] organizations should plan ahead and be ready for these changes.

In light of the changes to U.S. patent law that will be coming due to the passage of the AIA, organizations must ensure, prior to the disclosure of any proprietary information, that the information has been evaluated for patentability, and if that information is deemed to be patent-worthy, that the information is the subject of a patent application. This is because the AIA will eliminate a patent applicant's ability to "swear behind" prior art.[7] After March 16, 2013, third parties could potentially use that proprietary information as the basis for their own patent application, and if a third party beats the organization in the race to file a patent application concerning that proprietary information, then the organization risks losing the right to a patent. While the AIA establishes a procedure to allow organizations to challenge the patents of third parties who used the organization's own information as the basis of a patent application,[8] this procedure will likely be costly and may have other challenges.

Moreover, the AIA increases the geographic scope of prior art, which should encourage organizations to file patent applications quickly. Specifically, the AIA removes territorial restrictions for certain classes of prior art, such that if the invention was in any way available to the public, anywhere in the world, prior to the filing date of the application, then that public knowledge or use is available as prior art against a patent application.[9] For example, prior to the enactment of the relevant provisions of the AIA (*i.e.*, before March 16, 2013), information disclosed may not, in many cases, be prior art against a patent application for an invention in the United States.[10] After March 16, 2013, this information may be available as prior art. This change in the law will make prior art searching more difficult, as the search may not identify information from the trade show as prior art, especially if the information was disclosed orally or was otherwise not published. Moreover, the removal of the territorial restriction increases the amount of potential prior art, making it that much more important that organizations file patent applications promptly, particularly in crowded technology areas, where a few weeks priority over other patent applications may be crucial.

Conclusion

Organizations should have a procedure in place to allow (and encourage) inventors to disclose potentially patentable ideas to the organization. Such a procedure, along with a useful invention disclosure form, will allow organizations to quickly determine whether these ideas should be the subject of a patent application and to put those patent-worthy ideas into patent applications. With the passage of the AIA, time is of the essence when turning ideas into patent applications.

Endnotes

1 See Gideon D. Markman, *Entrepreneurship from the Ivory Tower: Do Incentive Systems Matter?*, 29 J. Tech. Transfer 353, 355 (2004) (noting in the context of invention disclosures that "pay does seem to function as an important aligning mechanism in many industries and particularly in knowledge-based domains").

2 *E.g.*, Office of Cooperative Research, Yale University, Disclose an Invention, http://www.yale.edu/ocr/disclose.html (last visited Oct. 26, 2011).

3 A search on Google for "invention disclosure form" returns various examples of such forms. The best examples may be those from universities, which typically have substantial technology transfer programs.

4 *See* 35 U.S.C. §§ 201-212 (2006); 37 C.F.R. § 401 (2010).

5 Pub. L. No. 112–29, 125 Stat. 284.

6 *Id.* § 3.

7 *See id.*

8 *Id.*

9 *Id.* (stating that a person is entitled to a patent unless, *inter alia*, "the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention").

10 *See* 35 U.S.C. 102(b) (2006) (stating that a person is entitled to a patent unless, *inter alia*, "the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale *in this country*, more than one year prior to the date of the application for patent in the United States" (emphasis added)).

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Tips on Controlling Intellectual Property Protection Costs: What Business Owners Need to Know

Patents are important tools for protecting a business from its competitors and carving out markets worldwide. Because patents are often a key feature in many business models, many businesses are involved not only in developing intellectual property through their innovations but also in actively securing protection of their intellectual property rights in domestic and foreign markets. However, filing for and maintaining domestic and international patent protection can be expensive and unpredictable, and it can be difficult to accurately budget and control patent costs, particularly for international patents. By reducing direct costs as well as internal management costs, businesses can increase the profitability of their patent assets while simultaneously controlling their budgets. This article discusses some basic, often cost-effective steps that businesses may consider to minimize costs when securing protection of their intellectual property in domestic and foreign markets. Once patents are procured, a major cost concern relates to dispute resolution and enforcement of the patent rights; that topic will not be addressed in this article.

Develop an intellectual property protection strategy that is appropriate for your business

Businesses are routinely faced with the tough decision of whether an innovation should be protected through patents, kept as a trade secret, or abandoned in domestic and foreign markets. Therefore, it is important for a business to develop a focused intellectual property protection strategy that is in alignment with the business' strategic needs.

Unless a business has unlimited resources, it cannot afford to apply for and maintain patent protection of every new development. Some developments may not be patentable because of prior art or other issues, or may not be worth the expense of applying for patent protection. In such instances, these developments are better kept as a trade secret or published defensively to prevent third parties from patenting the development. While these two non-patenting options have little or no associated costs relative to the patenting process, there are certain risks and limitations associated with their use, such as difficulties with maintaining the development "secret" and risks associated with publishing too much information or creating prior art against the business' own future developments.[1]

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Business priorities may also change such that pursuing certain patent applications and/or maintaining patents in one or more countries becomes less relevant to the business. Therefore, it is important for companies to periodically review the business' patent portfolio.

Business priorities may also change such that pursuing certain patent applications and/or maintaining patents in one or more countries becomes less relevant to the business. Therefore, it is important for companies to periodically review the business' patent portfolio and consider whether it is prudent to drop one or more applications and/or patents in one or more countries in order to prevent a drain of company resources. Substantial cost savings can be realized by simply culling the portfolio to avoid the expenses associated with further prosecution of patent applications and maintenance of issued patents that have become irrelevant to the current business.

Have a basic understanding of the different patent stages and their costs

A patent application must go through multiple stages before a granted patent issues. Most countries, including the U.S., require some type of examination process with an examiner who will consider whether the patent claims are to be rejected for one or more reasons. Often, multiple rounds of rejection from the examiner, and responses to the examiner, are required before a final decision regarding the patentability of the claims is reached. Furthermore, some countries require payment of a separate examination fee (in addition to filing fees and further processing fees) once the patent application is granted in order for the granted patent to issue. In many countries, annuities or patent maintenance fees are assessed to maintain the pendency of a granted patent. For budgeting purposes, a worldwide cost estimation of patent (including design patents) application fees can be generated using a variety of patent cost estimators on a case-by-case basis or over a whole patent portfolio.[2]

Understanding the process and communicating with your patent attorney/agent will allow you to stay educated about the realistic costs associated with each step in the patenting process, which should allow you to avoid costly surprises in the future.

Conduct searches and draft the patent application with all the countries of interest and with costs in mind

Just because a product or service is not

yet commercially available, it does not follow that it is patentable. Keeping in mind the risks and costs of marketing new products, it is worthwhile for a business to conduct due diligence, *e.g.*, prior art and freedom-to-operate searches, to determine whether there are any issues with respect to patentability of the inventions and the existence of competitor or other third party patents. The due diligence should be performed before the patent application is drafted and filed, during the development stages, and just before product launch. To keep search costs down, a preliminary search of free patent and non-patent databases can be performed.[3] If that searching is not sufficient, a business should consider using commercial information service providers to perform a more comprehensive review of materials. Many of these service providers offer volume discounts depending on the number and size of the searches.

Foreign patents are expensive to acquire and maintain. Different countries have different application requirements and while it may be difficult to consider the requirements for all countries when drafting an application, it is important for businesses to communicate with their patent attorney/agent which countries are of particular interest, so that the application can be drafted with those countries in mind. For instance, for an international PCT application, the description of the invention and figures generally cannot be substantively changed after filing. Furthermore, depending on the technology, various countries require certain information to be present in the application in order to support the claims. For instance, the inclusion of *in vitro* or animal test data in a biotech or pharmaceutical patent applications can be important to establish enablement of the invention in China.[4] By keeping the requirements of desired countries in mind, the costs of prosecuting the application in foreign countries can be reduced.

Keeping the size of an application and the number of claims reasonable also helps in cost containment. Otherwise, costs of foreign language translations, fees for excess pages and excess claims, and foreign associate legal costs can be substantial. If a significant number of foreign language translations are needed or if the application is substantial in size, a business may want to investigate whether it is more economical to have translations handled by the foreign associates in each country or by domestic translation companies who may offer a volume discount, depending on the number and size of translations involved.

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It is worthwhile for a business to conduct due diligence, *e.g.*, prior art and freedom-to-operate searches, to determine whether there are any issues with respect to patentability of the inventions and the existence of competitor or other third party patents. The due diligence should be performed before the patent application is drafted and filed, during the development stages, and just before product launch.

While a business may wish to obtain broad claims in foreign countries, it is important to balance the desire for broad claims with a realistic understanding of the costs involved and likelihood of success in each country. Obtaining broad claims may require multiple rounds of communications with examiners, due in part to the existence of prior art or other issues, which in turn could drive up prosecution costs. Filing claims that are more reasonable in scope can facilitate the patenting process and reduce the overall costs.

Most foreign patents require yearly fees, known as annuities, to keep them in effect. These annuity payments are typically handled by commercial annuity companies, as directed by law firms and other agents. If a business has a substantial foreign patent portfolio, it may be cost effective for that business to deal directly with the commercial annuity service rather than rely on law firms or other entities to make these payments.

Conclusion

Many businesses rely on the development of new and innovative products for driving their competitive strategies and have become savvy users of the intellectual property systems in their domestic market and in foreign markets. However, as the costs of procuring and maintaining patent protection progressively increase, businesses should take adequate steps to manage and extract maximum value from their intellectual property assets while also controlling their budgets. These steps include developing an intellectual property protection strategy that aligns with business objectives, conducting due diligence with respect to their inventions, making an effort toward having a basic understanding of the different patenting stages and associated costs, and identifying major foreign markets

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Tips on Controlling Intellectual Property Protection Costs: What Business Owners Need to Know

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for sales, manufacture, and distribution of their products.

Endnotes

1 For a discussion regarding trade secret requirements and limitations, *see* K. Noonan, "While Not Right for Every Invention, Trade Secret Protection Has Its Appeal," *available at* http://www.mbhb.com/resources/documents/MBHB%20Snippets%20Volume%209%20Issue%201%20Online.pdf and E. Miao and A. Krantz, "Trade Secret Basics: What Every Business Owner Needs to Know," *available at* http://www.mbhb.com/resources/documents/Snippets%20Vol%208%20Issue%201%20Online.pdf (last visited Oct. 31, 2011). For a discussion regarding defensive publications, *see* B. Barrett, "Defensive use of publications in an intellectual property strategy," *available at* http://www.nature.com/bioent/2003/030101/full/nbt0202-191.html and the article "What is a Defensive Publication," *available at* http://defensivepublications.org/ (last visited Oct. 31, 2011).

2 There are many IP cost estimator programs available, including the Global IP estimator® and IP Forecaster® software.

3 For instance, U.S. patents and U.S. Patent publications can be readily searched and accessed through the U.S. Patent and Trademark Office website (http://www.uspto.gov/patents/process/search/index.jsp); published International PCT applications can be searched and accessed through the World International Patent Organization website (http://www.wipo.int/patentscope/search/en/search.jsf); technical literature and abstracts can be searched and accessed through Google Scholar (http://scholar.google.com/) and Scirus (http://www.scirius.com); and biomedical literature and abstracts can be accessed through PubMed (http://www.ncbi.nlm.nih.gov/pubmed/).

4 *See* A. Feng, "Why Test Data is Crucial," *available at* http://www.managingip.com/Article/1329568/Why-test-data-is-crucial.html (last visited Oct. 31, 2011).

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