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# ALICE WAS NO RABBIT HOLE: WHY SOFTWARE INVENTORS SHOULD BE NEITHER SURPRISED NOR ALARMED

Sherman Helenese\*

## I. INTRODUCTION

After a litany of decisions regarding the patentability of software-related processes dating back to the 1970s and 1980s, with *Gottschalk v. Benson*<sup>1</sup> and *Diamond v. Diehr*<sup>2</sup> as prime examples, the U.S. Supreme Court in *Alice Corp v. CLS Bank International*<sup>3</sup> reaffirmed basic principles of patent eligibility. Thus, some would argue that the writing was on the wall and no one in the know should have been surprised at the holding in *Alice*. But surprise or no surprise, the U.S. Patent and Trademark Office patent issuance rate for process-related<sup>4</sup> patent claims dropped to 3.6% from 47% after the *Alice* decision.<sup>5</sup> The inability to protect innovation does not negate the value and utility of one's innovation; so naturally innovators have turned to other means of protecting the value and secrecy of their inventions without the blessing of the U.S. Patent and Trademark Office (PTO). This Article provides an overview of the regulatory landscape before and since *Alice* as it relates to the patentability of software process/method claims by: (i) analyzing key court decisions like *Benson* and *Diehr* as a foundation for *Alice*, and how the *Alice* decision went on to play a role in the denial of other similar process claims related to software solutions, such as the claim at issue in *Tenon & Groove, LLC v. Plusgrade S.E.C.*;<sup>6</sup> (ii) highlighting perils of practicing patents and measures being taken to reform the business model employed by non-practicing entities (also known as patent trolls); (iii) exploring intellectual property strategies that are associated with trade secrets, including proposed national legislation, and the means by which trade secrets can be protected on an international basis; and (iv) exploring the use of trade secrets as a means to protect innovations in the post-*Alice* IP landscape (particularly for patent-ineligible software processes).

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<sup>1</sup> 409 U.S. 63 (1972).

<sup>2</sup> 450 U.S. 175 (1981).

<sup>3</sup> 134 S. Ct. 2347 (2014).

<sup>4</sup> Process means “process, art or method, and includes a new use of known process, machine, manufacture, composition of matter, or material.” 35 U.S.C. § 100(b) (2012).

<sup>5</sup> Robert Sachs, *A Survey of Patent Invalidations Since Alice*, LAW360 (Jan. 13, 2015, 10:25 AM), <http://www.law360.com/articles/604235/a-survey-of-patent-invalidations-since-alice> [<https://perma.cc/CY4U-7V4M>].

<sup>6</sup> No. 1:12-cv-01118-GMS-SRF, 2015 U.S. Dist. LEXIS 29455 (D. Del. Mar. 11, 2015).

*A. Gottschalk v. Benson*

The genesis of *Gottschalk* was a decision by the U.S. Patent and Trademark Office (“Patent Office”) to reject a patent application for a computer program that converted binary-coded decimal numerals into binary numerals.<sup>7</sup> On appeal to the U.S. Court of Customs and Patent Appeals (“Patent Appeals Court”), the court reversed the Patent Office rejection, and the U.S. Supreme Court thereafter granted the Patent Office’s petition for a writ of certiorari.<sup>8</sup> In the Court’s words, the claimant sought to patent “the ordinary arithmetic steps a human would use by changing the order of the steps, changing the symbolism for writing the multiplier used in some steps, and by taking subtotals after each successive operation.”<sup>9</sup> The question before the Court was whether the patent claim fell within the meaning of 35 U.S.C. § 100(b), which the Court cited, defining “process” as “art or method, and whether this includes a new use of a known process, machine, manufacture, composition of matter, or material.”<sup>10</sup> In overturning the Patent Appeals Court and rejecting the respondents’ claim, the Court relied upon the long-standing rule that a novel and useful structure created with the aid of knowledge of scientific truth may be a patentable invention, but a scientific truth, or the mathematical expression of it, is not.<sup>11</sup> Thus, “[p]henomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work.”<sup>12</sup>

In this case the Court held that the “process” claim was “so abstract and sweeping” that it would “cover both known and unknown uses of . . . binary conversion,”<sup>13</sup> pointing out that the “clue to the patentability of a process claim that does not include particular machines” is the “[t]ransformation and reduction of an article ‘to a different state or thing.’”<sup>14</sup> The Court reasoned that granting a patent in this case “would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself,” and therefore the claimed process was not patentable.<sup>15</sup>

*B. Diamond v. Diehr*

In *Diamond v. Diehr*,<sup>16</sup> the respondents sought to patent a mathematical computer-executed equation used in the curing process of synthetic rubber.<sup>17</sup>

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<sup>7</sup> *Gottschalk v. Benson*, 409 U.S. 63, 64 (1972).

<sup>8</sup> *In re Benson*, 441 F.2d 682, 688 (C.C.P.A. 1971), *rev’d, sub nom. Gottschalk v. Benson*, 409 U.S. 63 (1972).

<sup>9</sup> *Gottschalk*, 409 U.S. at 67.

<sup>10</sup> *Id.* at 64 n.2.

<sup>11</sup> *Id.* at 67 (quoting *Mackay Co. v. Radio Corp.*, 306 U.S. 86, 94 (1939)).

<sup>12</sup> *Id.* at 67.

<sup>13</sup> *Id.* at 68.

<sup>14</sup> *Id.* at 70 (quoting *Cochrane v. Deener*, 94 U.S. 780, 787–88 (1876)).

<sup>15</sup> *Id.* at 72.

<sup>16</sup> *Diamond v. Diehr*, 450 U.S. 175, 176 (1981).

Relying upon *Gottschalk*, both the Patent Office and Patent Appeals Court rejected respondents' claim as nonstatutory subject matter under 35 U.S.C. § 101, which provides for the issuance of patents to whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.<sup>18</sup>

The mathematical equation involved in the *Diamond* patent claim dated to the 1800s and was based on the work of Swedish scientist Svante Arrhenius.<sup>19</sup> The computer program used the mathematical equation to:

constantly measur[e] the actual temperature inside [a] mold. These temperature measurements [were] then automatically fed into a computer which repeatedly recalculates the cure time by use of the Arrhenius equation. When the recalculated time equals the actual time that has elapsed since the press was closed, the computer signals a device to open the press. According to the respondents, the continuous measuring of the temperature inside the mold cavity, the feeding of this information to a digital computer which constantly recalculates the cure time, and the signaling by the computer to open the press, are all new in the art.<sup>20</sup>

In its analysis, the Court relied upon prior holdings defining the nature of a patentable process, pointing out that it was undisputable that “a process may be patentable, irrespective of the particular form of the instrumentalities used”:

A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing. If new and useful, it is just as patentable as is a piece of machinery. In the language of the patent law, it is an art. The machinery pointed out as suitable to perform the process may or may not be new or patentable; whilst the process itself may be altogether new, and produce an entirely new result. The process requires that certain things should be done with certain substances, and in a certain order; but the tools to be used in doing this may be of secondary consequence.<sup>21</sup>

Because respondents did not seek to “pre-empt the use of [the Arrhenius] equation,” but “[r]ather [sought] only to foreclose from others the use of that equation in conjunction with all of the other steps . . . claimed [in the] process,” the Court reversed the decisions below.<sup>22</sup> Moreover, in distinguishing the result from

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<sup>17</sup> *Id.* at 178–79.

<sup>18</sup> *Id.* at 179–81.

<sup>19</sup> *See id.* at 177–78.

<sup>20</sup> *Id.* at 178–79.

<sup>21</sup> *Id.* at 183–84 (quoting *Cochrane v. Deener*, 94 U.S. 780, 787–88 (1876)).

<sup>22</sup> *Id.* at 187.

*Gottschalk*, the Court was careful to emphasize how use of the algorithm in conjunction with other processes transformed into something new.<sup>23</sup> “Obviously, one does not need a ‘computer’ to cure natural or synthetic rubber, but if the computer use incorporated in the process patent significantly lessens the possibility of ‘overcuring’ or ‘undercuring,’ the process as a whole does not thereby become unpatentable subject matter.”<sup>24</sup> Additionally, the “process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts performed upon the subject-matter to be transformed and reduced to a different state or thing. . . . is just as patentable as is a piece of [new] machinery.”<sup>25</sup>

### C. *Alice v. CLS Bank*

In *Alice Corp. v. CLS Bank International*,<sup>26</sup> the U.S. Supreme Court unanimously ruled that a generic computer program could not transform a business method into a patent-eligible invention.<sup>27</sup> Specifically, the Court held that computer-implemented inventions consisting of “[1] a method for exchanging financial obligations, [2] a computer system configured to carry out the method for exchanging obligations, and [3] a computer-readable medium containing program code for performing the method of exchange obligations” are not patent-eligible under 35 U.S.C. § 101.<sup>28</sup>

The Court applied a two-part test established by an earlier case, *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*,<sup>29</sup> under which it (1) identified whether the claims involve “patent-ineligible concepts,” and (2) if so, determined if the same is an “inventive concept.”<sup>30</sup> The number and prestige of companies that filed amicus briefs in the *Alice* case—Microsoft, Adobe, Hewlett-Packard, Google, and Amazon were among those that submitted briefing—indicates the importance of the issues at play.<sup>31</sup> The majority of the amici argued that the patents should be invalidated, but they disagreed as to the reasoning.<sup>32</sup> Ultimately, the Court held that the processes associated with the software program were determined to be patent

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<sup>23</sup> *Id.* at 183, 216.

<sup>24</sup> *Id.* at 187.

<sup>25</sup> *Id.* at 183.

<sup>26</sup> 134 S. Ct. 2347 (2014).

<sup>27</sup> *Id.* at 2360.

<sup>28</sup> *Id.* at 2349.

<sup>29</sup> 132 S. Ct. 1289 (2012).

<sup>30</sup> *Alice*, 134 S. Ct. at 2355.

<sup>31</sup> See generally S. Ct. Docket, No. 13-289 (May 10, 2013) (listing briefs filed by numerous companies and organizations).

<sup>32</sup> See Patrick J. Hughes, *Diverse Groups Agree on High Court Review of Computer-Implemented Patents*, 2013 WL 5629598, WESTLAW INTELLECTUAL PROP. DAILY BRIEFING (“While a slew of amici curiae want resolution to what the Intellectual Property Law Association of Chicago called ‘conflicting tests’ for patent eligibility under Section 101 of the Patent Act, 35 U.S.C.A. § 101, their briefs express varying reasons for doing so.”).

ineligible and not inventive,<sup>33</sup> reasoning that method patent claims that “merely require generic computer implementation fail[] to transform that abstract idea into a patent-eligible invention”<sup>34</sup> and that “the computer components of [the patent’s] method ad[ded] nothing . . . that [was] not already present when the steps [were] considered separately.”<sup>35</sup>

Under the ruling in *Alice*, patent claims that simply take an abstract idea and use a computer to implement that idea will be considered ineligible for patent protection.<sup>36</sup> Of note, the Court did not make a statement as to what kinds of software can be patented, and did not even use the word “software” in its ruling.<sup>37</sup>

#### D. Tenon v. Plusgrade

In *Tenon v. Plusgrade*,<sup>38</sup> Tenon brought a patent infringement action to defend and protect its concurrent optimization software solution that was used in the airline industry.<sup>39</sup> The district court described Tenon’s software as:

- [a] computer-implemented method for concurrent optimization of value in a transaction between at least two entities, comprising:
- a. providing a data store containing data representing, with respect to at least one product, at least one option offered by a first of said entities;
  - b. operating a server with which a second of said entities may interact for at least said option;
  - c. operating a server to receive inputs for at least said option and to search the data store for eligibility of products for at least said option;
  - d. displaying the search results;
  - e. receiving at least one decision of the second entity about the acceptance of at least one of said search results comprising acceptance of an option offered by said first entity; and
  - f. operating an event optimizer system to receive data at least pertaining to said acceptance, and in response to the occurrence of at least one event selected from a set of multiple predetermined potential events, execute a corresponding event specific response algorithm;

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<sup>33</sup> *Alice*, 134 S. Ct. at 2347–48.

<sup>34</sup> *Id.* at 2352.

<sup>35</sup> *Id.* at 2359 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1298 (2012)).

<sup>36</sup> *Id.* at 2360.

<sup>37</sup> *Id.*

<sup>38</sup> No. 1:12-cv-01118-GMS-SRF, 2015 U.S. Dist. LEXIS 29455 (D. Del. Mar. 11, 2015).

<sup>39</sup> *Id.* at \*3.

wherein at least one of the servers or the event optimizer system concurrently optimizes a value for at least two entities and determines how the first party will satisfy the accepted option.<sup>40</sup>

The software included the customer product upgrade function, described as [a] computer-implemented method to provide options on products, comprising:

- a. operating a computer system to receive at least [one] input from a customer defining a request for an option for an upgrade for a product;
- b. operating a computer system to provide to a customer an option for a product upgrade upon occurrence of specified conditions accepted by the customer and further on condition that the customer relinquish at least one right and a company has the right to enforce said relinquishment upon occurrence of the specified conditions and to provide the upgrade;
- c. recording in a computer readable data store the option, the specified conditions and relinquishment terms;
- d. operating a computer system to process the information in the computer readable data store and automatically provide the upgrade to the customer when conditions on the upgrade opportunity are satisfied; and
- e. recording the provision of the upgrade in a computer readable data store.<sup>41</sup>

In ruling that Tenon's software was an abstract idea and thus patent ineligible, the district court applied not only the two-prong test in *Alice* (which was first used in *Mayo*<sup>42</sup>) but also the machine-or-transformation test.<sup>43</sup> Under the latter test, a process is patent eligible if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different thing.<sup>44</sup> As for Tenon and its software, the court concluded that "claiming a software implementation of a purely mental process that could otherwise be performed without the use of a computer does not satisfy the machine prong of the machine-or-transformation test."<sup>45</sup>

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<sup>40</sup> *Id.* at \*5–6.

<sup>41</sup> *Id.* at \*6–7.

<sup>42</sup> *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012).

<sup>43</sup> *Tenon*, at \*12.

<sup>44</sup> *Id.* at \*11–12.

<sup>45</sup> *Id.* at \*12 (quoting *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1375 (Fed. Cir. 2011)).

## II. OVERVIEW OF RECENT LEGISLATIVE INITIATIVES AIMED AT CURBING THE PERILS OF THE PATENT ECOSYSTEM

The software solutions from *Gottschalk* to *Tenon* are ubiquitous and play a useful role in making ordinary things in our daily lives and in business much easier. But software code is a combination of mathematical algorithms that compute to some end process of function, and mathematical algorithms, unless they are associated with a process that is transformative and new, are an inherent law of nature and consequently patent ineligible under 35 U.S.C. § 101. Transformation itself occurs only when something is “reduced to a different state or thing,”<sup>46</sup> and in many cases, despite the utility and value of many software solutions, they are not associated with a “transformative” process. Accordingly, software itself, like the mathematical algorithms underlying it, is generally patent ineligible.

But this ineligibility is not the dire portent it might first seem. While patent protection offers certain perks, like the ability to seek relief if another independently developed a similar innovation, the patent ecosystem is arguably poisoned by the reality of constant policing, safeguarding and defending patent portfolios. Indeed, many would argue that these aspects of the patent protection structure outweigh its benefits. The most notorious threat comes from claims lodged by non-practicing entities (“NPEs”), pejoratively known as patent trolls. Generally, an NPE: (i) own patents, but does not produce products or invent patentable ideas on its own; (ii) licenses the patents it owns to other entities; and (iii) has a business practice of enforcing its patents against individuals or companies via what are perceived as aggressive means. Patent troll litigation has become so severe that several reform initiatives have come about to address the same; namely (i) the White House Council Report and the White House Legislative Priorities and Executive Action documents (the “White House Initiatives”);<sup>47</sup> (ii) the Saving High-Tech Innovators from Egregious Legal Disputes Act of 2013 (“SHIELD”);<sup>48</sup> (iii) the Patent Abuse Reduction Act of 2013;<sup>49</sup> and (iv) the Patent Quality Improvement Act of 2013.<sup>50</sup>

The White House Report indicates that patent infringement lawsuits filed by NPEs have tripled in the last few years and make up a whopping 62% of the patent infringement lawsuits,<sup>51</sup> which is a 23% increase in these types of actions in the

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<sup>46</sup> *Cochrane v. Deener*, 94 U.S. 780, 787–88 (1876).

<sup>47</sup> See generally OFFICE OF THE PRESS SEC’Y, FACT SHEET: WHITE HOUSE TASK FORCE ON HIGH-TECH PATENT ISSUES (2013), <http://www.whitehouse.gov/the-press-office/2013/06/04/fact-sheet-white-house-task-force-high-tech-patent-issues> [https://perma.cc/A5TW-LVNA] [hereinafter WHITE HOUSE FACT SHEET] (recognizing a White House initiative to prevent frivolous patent litigation).

<sup>48</sup> 35 U.S.C. § 285(a) (2015).

<sup>49</sup> Patent Abuse Reduction Act of 2013, S. 1013, 113th Cong. (1st Sess. 2013).

<sup>50</sup> Patent Quality Improvement Act of 2013, S. 866, 113th Cong. (2013).

<sup>51</sup> EXEC. OFFICE OF THE PRESIDENT, PATENT ASSERTION AND U.S. INNOVATION 1 (June 2013).



last few years.<sup>52</sup> NPEs do not generally sell or provide patentable services, so they have little risk and little exposure to counterclaims for patent infringement. They can also file patent lawsuits with much less risk than traditional businesses. According to the report, the average legal costs for patent infringement cases are approximately \$650,000 for small cases and \$5,000,000 for large cases.<sup>53</sup> These and other opportunity costs associated with defending trivial patent troll litigation suits are alleged to stifle innovation and economic growth of impacted industries. Under the auspices of creating a healthier patent ecosystem that champions innovation, businesses and consumers, the U.S. executive and legislative branches have both recently proposed measures to curb the above dangers.

### III. KEY INITIATIVES

On June 4, 2013, the White House published the White House Council Report and White House Legislative Priorities and Executive Action documents (“White House Initiatives”). The White House Initiatives proposed protecting consumers from potential liability associated with patent troll litigation; required more plaintiff transparency; and gave judges with more discretion with awarding attorneys’ fees to the prevailing party (under 35 U.S.C 285 as a sanction for abusive court filings and investing), for example.<sup>54</sup>

On February 27, 2013, U.S. Representatives Peter DeFazio (D-OR) and Jason Chaffetz (R-UT) proposed SHIELD. Like the White House Initiatives, SHIELD similarly called for the non-prevailing litigant in a patent infringement lawsuit liable for the legal fees and costs of the prevailing party.<sup>55</sup>

On May 22, 2013, Senator John Cornyn (R-TX) introduced the Patent Abuse Reduction Act of 2013.<sup>56</sup> The Patent Abuse Reduction Act proposed: (i) attorneys’ fees to the prevailing party in an infringement lawsuit; (ii) required disclosure of plaintiffs with financial interest in an infringement action; and (iii) shifting the onerous costs of discovery to the requesting party.<sup>57</sup>

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<sup>52</sup> *Id.*

<sup>53</sup> *Id.*

<sup>54</sup> WHITE HOUSE FACT SHEET, *supra* note 47, at 3–4.

<sup>55</sup> Press Release, Congressman Peter Defazio, Defazio Introduces SHIELD Act to Protect American Innovations, Jobs (Aug. 21, 2012), <http://defazio.house.gov/media-center/press-releases/defazio-introduces-shield-act-to-protect-american-innovation-jobs> [<https://perma.cc/6B9P-PFYK>].

<sup>56</sup> Patent Abuse Reduction Act of 2013, S. 1013, 113th Cong. (1st Sess. 2013).

<sup>57</sup> Dennis Crouch, *Patent Abuse Reduction Act of 2013 (S. 1013)*, PATENTLYO (May 23, 2013), <http://www.patentlyo.com/patent/2013/05/patent-abuse-reduction-act-of-2013-s1013.html> [<https://perma.cc/CNX7-8N6D>]; *see also* Press Release, Congressman John Cornyn, Senators Aim to End Patent Abuses That Cost U.S. Economy Billions of Dollars Every Year (Apr. 28, 2015), <https://www.cornyn.senate.gov/content/senators-aim-end-patent-abuses-cost-us-economy-billions-dollars-every-year> [<https://perma.cc/9DHU-LEF9>] (discussing provisions included in the Patent Act, including discovery limitations) and Patent Quality Improvement Act of 2013, S. 866, 113th Cong. (1st Sess. 2013).

On May 6, 2013, U.S. Senator Charles Schumer (D-NY) introduced the Patent Quality Improvement Act of 2013.<sup>58</sup> This bill proposes to expand on the protections incorporated in the AIA with respect to post-grant review of first-to-file-covered business method patents in the financial products and services field at the Patent Trial and Appeal Board.<sup>59</sup> Specifically, the Patent Quality Improvement Act of 2013 would amend the AIA: (i) to apply the post-patent-grant review process/program to all covered business method patents; and (ii) to expand the term “cover business method patent” to include a patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of any enterprise, product, or service, except technological inventions.<sup>60</sup>

NPEs do not discriminate: both solo entrepreneurs and Fortune 500 companies are targets. The proposed NPE reform initiatives generally promise more transparency, the reduction of frivolous patent infringement suits, and the protection of businesses and consumers by reallocating the costs and risks of litigation. As such, on its face, legislation that would tend to curb abusive behavior of NPEs should be welcomed by patent owners. Certain corporate entities like Expedia and SAS have openly endorsed patent troll reform.<sup>61</sup> Although the current legislation is presented as a means to address abuses by NPEs, it clearly is not limited to such abuses, as it has many provisions that are more broadly aimed. For example, the various initiatives include proposals to address the following issues, none of which are limited to the NPE context:

1. Expanding the PTO’s transitional program to cover computer-enabled business method patents;
2. Changing the ITC standard for obtaining an injunction;
3. Tightening functional claiming in the context of software patents;
4. Discovery reform; and applying the post-patent-grant review process/program to cover more business method patents.<sup>62</sup>

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<sup>58</sup> S. 866, 113th Cong. (1st Sess. 2013).

<sup>59</sup> See generally 157 CONG. REC. S5319, 2011 WL 3902927 (daily ed. Sept. 6, 2011) (discussing the financial benefits of allowing for covered business method patents).

<sup>60</sup> See generally *Legislation*, CHARLES E. SCHUMER, U.S. SENATOR FOR NEW YORK, <http://www.schumer.senate.gov/legislation.cfm> [<https://perma.cc/9UC9-AUPD>] (noting Senator Schumer’s support for the Patent Quality Improvement Act of 2013).

<sup>61</sup> *SAS Supports White House Efforts to Curtail Patent Trolls*, SAS (Feb. 20, 2012) [http://www.sas.com/en\\_us/news/press-releases/2014/february/patent-trolls.html](http://www.sas.com/en_us/news/press-releases/2014/february/patent-trolls.html) [<https://perma.cc/LL66-4L3U>].

<sup>62</sup> See, e.g., WHITE HOUSE FACT SHEET, *supra* note 47 (discussing expanding PTO’s role, changing the ITC standard and tightening functional claiming); see also Adi Kamidar, *The Patent Reform We Need to See from the Senate*, ELEC. FRONTIER FOUND. (Mar. 31, 2014) <https://www.eff.org/deeplinks/2014/03/patent-reform-we-need-see-senate> [<https://perma.cc/2ZTJ-SS3F>] (elaborating on the many ways legislature is limiting patent troll abuse including discovery reform and fee shifting).

Between the rulings in *Alice* and *Tenon*, the threat of patent troll litigation, and the evolving patent policy landscape surrounding patent protection, it is clear that practicing patents is a risky business, and may be a game best played by entities with deep pockets that can afford the often enormous costs associated with patent protection. Notwithstanding the legislative deaths of SHIELD, the Patent Abuse Reduction Act, and the Patent Quality Improvement Act, these initiatives undoubtedly mark the first of forthcoming legislative remedies aimed at cleaning the patent law ecosystem—trade secrets.

Trade secrets may offer a safer method by which to protect the kinds of software solutions at issue in *Alice* and *Tenon*. Protection of trade secrets is effective immediately and does not require publication, which avoids the risks associated with protecting, defending and enforcing a patent.<sup>63</sup> Rather than treading the waters of the patent law ecosystem, individuals and corporate entities alike may protect their innovations via trade secrets. All but two states (New York and Massachusetts) have adopted the Uniform Trade Secrets Act<sup>64</sup> (with some variation) and define the basic elements of a trade secret as follows: (i) some proprietary process, formula or method that is not readily ascertainable; (ii) which has economic value; and (iii) the owners of the trade secret take reasonable steps to protect it.<sup>65</sup>

Misappropriation of a trade secret is generally applicable when: (1) a trade secret was acquired by a third party by improper or unlawful means such as theft, bribery, misrepresentation, espionage and/or breach of a duty to maintain the confidentiality of a trade secret; and (2) a trade secret is misappropriated by an individual who:

knows or has reason to know that the trade secret was acquired by improper means; or . . . [d]isclosure or use of a trade secret of another without express or implied consent by a person who: (i) [u]sed improper means to acquire knowledge of the trade secret; or (ii) [a]t the time of disclosure or use, knew or had reason to know that his or her knowledge of the trade secret was (A) derived from or through a person who had utilized improper means to acquire it, (B) acquired under circumstances giving rise to a duty to maintain its secrecy or limit its use, or (C) derived from or through a person who owed a duty to the person seeking relief to maintain its secrecy or limit its use; or (iii) [b]efore a material change of

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<sup>63</sup> See *QR Spex, Inc. v. Motorola, Inc.*, No. CV 03-6284-JFW (FMOx), 2004 U.S. Dist. LEXIS 27378, at \*15 (C.D. Cal. Oct. 28, 2004) (holding that trade secret protection was available until the patent was actually filed).

<sup>64</sup> UNIF. TRADE SECRETS ACT, UNIF. LAW COMM'N (1985).

<sup>65</sup> See WASH. REV. CODE ANN. § 19.108 (West 2013); UTAH CODE ANN. § 13-24-1 (2015).

his or her position, knew or had reason to know that it was a trade secret and that knowledge of it had been acquired by accident or mistake.<sup>66</sup>

“‘Improper means’ includes theft, bribery, misrepresentation, breach or inducement of a breach of a duty to maintain secrecy, or espionage through electronic or other means . . . .”<sup>67</sup> Remedies for trade secret misappropriation include injunctions to prevent current or future harm; a claim for unjust enrichment resulting from the misappropriation, and, in the event the misappropriation is determined to be malicious, punitive damages that are twice the unjust enrichment amount.<sup>68</sup>

The determination of whether trade secret requirements have been met is a question of fact and varies from jurisdiction to jurisdiction. In some jurisdictions, courts have held that advising employees of the existence of a trade secret, limiting access to a trade secret on a “need to know” basis, and controlling access to the trade secret are sufficient.<sup>69</sup> But in other jurisdictions, employee exit interviews are a necessary measure to meet the “reasonable efforts to maintain its secrecy” requirement.<sup>70</sup> In determining whether a trade secret has independent economic value, courts have considered the effort and expense involved in developing the information to be a critical factor.<sup>71</sup> Additionally courts have held that public disclosure of the potential trade secret through display, publication, advertising, or mention in open court can preclude trade secret protection.<sup>72</sup>

Trade secrets at the federal level are protected by the Economic Espionage Act (“EEA”). The EEA criminalizes misappropriation of trade secrets by foreign governments. The EEA defines trade secrets as:

all forms and types of financial, business, scientific, technical, economic, or engineering information, including patterns, plans, compilations, program devices, formulas, designs, prototypes, methods, techniques,

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<sup>66</sup> WASH. REV. CODE ANN. § 19.108.010 (defining misappropriation of a trade secret); *see also* UTAH CODE ANN. § 13-24-2(1) (2015) (describing the definition of improper means).

<sup>67</sup> UTAH CODE ANN. § 13-24-2 (2015).

<sup>68</sup> *See generally* WASH. REV. CODE ANN. § 19.108 (defining misappropriation of a trade secret); UTAH CODE ANN. §13-24-1 (2015) (titling the section “Uniform Trade Secret Act”).

<sup>69</sup> *See Metro Traffic Control, Inc. v. Shadow Traffic Network, Inc.*, 22 Cal. App. 4th 853, 863 (Cal. Ct. App. 1994); 27 Cal. Rptr. 2d 573, 579 (Cal. Ct. App. 1994); *see also* Leatt Corp. v. Innovation Safety Tech, LLC, No. 09-CV-1301-IEG (POR), 2010 U.S. Dist. Lexis 37382, at \*18 (2010) (applying alter ego and agency theories in a trade secret misappropriation claim).

<sup>70</sup> *Gillis Assoc. Indus., Inc. v. Cari-All, Inc.*, 564 N.E.2d 881, 884–86 (Ill. App. Ct. 1990).

<sup>71</sup> *Ed Nowogroski Ins., Inc. v. Rucker*, 971 P.2d 936, 942 (Wash. 1999).

<sup>72</sup> *Woo, D.D.S. v. Fireman’s Fund Ins. Co.*, 154 P.3d 236, 240–42 (2007) (quoting *Machen Inc. v. Aircraft Design, Inc.*, 828 P.2d 73 (1992)).

processes, procedures, programs, or codes, whether tangible or intangible, and whether or how stored, compiled, or memorialized physically, electronically, graphically, photographically, or in writing if—

(A) the owner thereof has taken reasonable measures to keep such information secret; and (B) the information derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable through proper means by, the public; and (4) the term “owner,” with respect to a trade secret, means the person or entity in whom or in which rightful legal or equitable title to, or license in, the trade secret is reposed.<sup>73</sup>

Like the patent arena, trade secrets legislation and policy are also in the midst of development, and national legislation has been proposed to create a national approach to trade secrets. To assist with creating national standards for trade secrets, Representative George Holding (R-NC) introduced the Trade Secrets Protection Act of 2014 (“TSPA”) to the House of Representatives in July 2014.<sup>74</sup> TSPA would amend the EEA to allow private-party trade secret misappropriation claims in federal district court.<sup>75</sup> Private-party plaintiffs would be able to petition a federal district court for an injunction to prevent actual or potential damage for loss or disclosure of their trade secrets.<sup>76</sup> In the event an injunction is insufficient, the court would be generally empowered to take such action “determined appropriate” to “protect the trade secret.”<sup>77</sup> TSPA also permits civil seizure of property, and requires an expedited hearing—no later than seven days after an order.<sup>78</sup>

Depending on the extent of the misappropriation, courts under the TSPA may also impose payment of a reasonable royalty for the duration the trade secret continues to be misappropriated: (i) damages based on actual loss caused, or (ii) unjust enrichment.<sup>79</sup> For willful and malicious acts of misappropriation, punitive damages three times the award amount and recovery of reasonable attorney’s fees (for the prevailing party) would also be available.<sup>80</sup>

In April 2014, U.S. Senators Christopher Coons (D-DE) and Orrin Hatch (R-UT) introduced the Defend Trade Secrets Act (“DTSA”).<sup>81</sup> The DTSA substantially aligns with the TSPA and Uniform Trade Secrets Act (“UTSA”), and would also amend the EEA to permit civil actions in federal court for trade secret

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<sup>73</sup> 18 U.S.C. § 1839(3) (2012); *see also* 18 U.S.C. § 1832 (defining theft of a trade secret and providing fines and imprisonment for theft of a trade secret).

<sup>74</sup> H.R. 5233, 113th Cong. (2d Sess. 2014).

<sup>75</sup> *See generally id.* (providing “[f]ederal jurisdiction for the theft of trade secrets, and for other purposes”).

<sup>76</sup> *Id.* at § 3(A).

<sup>77</sup> *Id.* at § 3(A)(iii).

<sup>78</sup> *Id.* at § 2 (A)–(B).

<sup>79</sup> *Id.* at § 3(A)(iii)–(B)(i).

<sup>80</sup> *Id.* at § 3(C)–(D).

<sup>81</sup> S. 2267, 113th Cong. (2014).

misappropriation. Both DTSA and TSPA have a five-year statute of limitations, while the UTSA and most state laws have a three-year statute of limitations.

Internationally, trade secrets are protected under the Trade-Related Aspects of Intellectual Property Rights (“TRIPS”) Agreement of 1995, which established international standards for trade secret protection.<sup>82</sup> The international standards closely resemble the approach of the Uniform Trade Secrets Act followed by most states in the United States. Article 39 of the TRIPS Agreement provides as follows:

Natural and legal persons shall have the possibility of preventing information lawfully within their control from being disclosed to, acquired by, or used by others without their consent in a manner contrary to honest commercial practices so long as such information:

- (a) is secret in the sense that it is not, as a body or in the precise configuration and assembly of its components, generally known among or readily accessible to persons within the circles that normally deal with the kind of information in question;
- (b) has commercial value because it is secret; and
- (c) has been subject to reasonable steps under the circumstances, by the person lawfully in control of the information, to keep it secret.<sup>83</sup>

Thus, as compared to individual state trade secrets acts, the basic elements are the same: (1) the trade secret must not be generally known/readily accessible or ascertainable; (2) the trade secret must have commercial/independent economic value; and (3) reasonable steps must be taken to protect the secrecy of the information.<sup>84</sup>

#### IV. TRADE SECRETS DISCUSSION

Trade secrets encompass customer lists, technical data, pricing information, business and marketing strategies, product drawings, reports, manufacturing processes, formulas, general know-how, and, of course, patent-ineligible software. So long as a trade secret is not generally known or readily accessible or ascertainable, it has independent economic value and is reasonably protected, and courts will permit equitable relief for trade secret misappropriations.<sup>85</sup> Case law shows that certain factors are paramount: (i) limiting employee access to trade secrets and employee execution; (ii) employee exit interviews and separation agreements; (iii) marking trade secret materials as “confidential” or “restricted”; (iv) using industry-standard safeguarding technologies and protocols (such as

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<sup>82</sup> *Agreement on Trade-Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods*, 33 I.L.M. 83, 98 (1994).

<sup>83</sup> *Id.*

<sup>84</sup> *Id.*

<sup>85</sup> 59 A.L.R. 4TH 641 (1988); *see, e.g.*, UTAH CODE ANN. § 13-24-2 (2015).

restricted encryption, administrative log-ins and facility key cards); (v) restricting the mobility of trade secrets; (vi) and other steps reasonable necessary to maintain the secrecy of a trade secret.<sup>86</sup> Although protecting trade secrets generally shields one from the issues associated with practicing patents, it also comes with a certain degree of risk associated with managing individuals within an organization and preventing disclosure of trade secrets.

## V. CONCLUSION

*Gottschalk, Diehr, Alice*, and *Tenon* all held that computer programs that do not transform a business method or process are patent ineligible if the applicable method or process is not transformed into a new, inventive concept. Although patent protection provides a limited monopoly on the applicable invention, the business practices of NPEs and legislation purposed to mitigate the perils of practicing patents have created an ecosystem of uncertainty and risk that many are not willing or able to expose themselves to.

Fortunately, patents are not the only game in town. Trade secrets offer an alternative to patent-ineligible innovations and to the problems and perils of protecting, defending and enforcing patents. Although there is currently limited trade secret legislation on the national level, nearly all states have adopted, with little substantive variation, the Uniform Trade Secrets Act. Unlike patent-eligibility requirements that precluded software in *Gottschalk, Diehr, Alice*, and *Tenon* from patent protection, no trade secret is automatically deemed out of scope. Trade secrets encompass anything of value, so long as it is not generally known and reasonable steps are taken, such as the use of employment agreements that include confidentiality and non-compete clauses, to preserve the secrecy of the invention. Moreover, there are active efforts to put into place a more robust federal system of trademark protection, including the Defend Trade Secrets Act and the Trade Secret Protection Act, which both seek to create benchmark standards for civil trade secret misappropriations in federal courts by amending the Economic Espionage Act.

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<sup>86</sup> *Gillis Assoc. Indus. Inc.*, 564 N.E.2d at 886; see also William M. Corrigan & Jeffrey L. Schultz, *Trade Secret Litigation — An Updated Overview*, 71 J. MO. B. 18, 23 (2015) (summarizing trade secret litigation).