GETTING BEYOND ABSTRACT CONFUSION: HOW THE UNITED KINGDOM’S JURISPRUDENCE CAN AID IN DEVELOPING AN ANALYTIC FRAMEWORK FOR PATENT-ELIGIBILITY IN LIGHT OF ALICE V. CLS BANK

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ABSTRACT

This Article advocates consideration of the United Kingdom’s jurisprudence as persuasive authority for implementation of a new framework for analysis of subject matter eligibility of computer-implemented inventions in light of the United States Supreme Court’s ruling in Alice Corp. v. CLS Bank International. The U.K.’s patent jurisprudence provides a more developed and clear analytic framework that conforms to the policy objectives of Alice, while also avoiding the conceptual problem of determining what is “abstract.” The result is a more useful and concrete analytic framework that also reduces conflicts of laws, and thus can help spur innovation across the Atlantic.

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INTRODUCTION

The United States Supreme Court’s ruling in Alice Corp. v. CLS Bank International\footnote{Alice Corp. v. CLS Bank Int’l, 134 S. Ct. 2347 (2014).} places patentability analysis of computer-implemented inventions on a parallel path with that of the United Kingdom (U.K.) and the European Union. Both the bench and bar can benefit from reviewing the U.K.’s jurisprudence as persuasive authority when considering implementation of a new framework for analysis of computer-implemented inventions in light of Alice.

The U.K.’s patent jurisprudence provides a more developed analytic framework that conforms to Alice. More importantly, use of the U.K.’s analytic approach would avoid the pitfall of inviting
formulaic application and claim drafting to circumvent Alice’s requirements.

This Article first briefly reviews subject-matter patentability of computer-implemented inventions in the United States. Next, this Article outlines the framework of patent eligibility in the U.K., contrasting that approach with the requirements set forth in Alice. Finally, this Article discusses both practical and policy benefits of considering the European jurisprudence as persuasive authority in developing a more concrete analytic framework in light of Alice’s holding.

I. PATENT ELIGIBILITY IN THE UNITED STATES

The law relative to patentable subject matter in the United States starts with defining patentable subject matter; exceptions are then carved out. This procedure has presented certain challenges, specifically with respect to computer-implemented inventions.

A. Statutory Basis

The statute defining patentable subject matter has remained relatively unchanged since 1793. \(^2\) Over 220 years ago, the prevailing statute provided that a patent may be issued for “any new and useful art, machine, manufacture or composition of matter and any new and useful improvement on any art, machine, manufacture or composition of matter.” \(^3\)

Today, the prevailing statute provides that a patent may be issued for “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” \(^4\) Clearly, the legislature in the beginning of the industrial age did not conceive a world of programmable digital computers. The task of shaping the law to fit evolving times has been accomplished by judicial construct.

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\(^3\) Id. at 319.

B. Down the Rabbit Hole

Judicial exceptions to patentability include natural organisms, methods of employing laws of nature, legal contracts and entities, printed matter, transmitted signals, and software per se. Relative to methods, the Supreme Court held in *Bilski v. Kappos* that methods directed to “abstract ideas” are not patentable. What is deemed to be an “abstract idea” has yet to be precisely defined.

C. Bilski and the Pool of Tears

After the *Bilski* ruling, the United States Patent and Trademark Office (U.S.P.T.O.) established guidance for weighing various factors for and against patentability of process claims. However, the complicated analysis could be rendered moot by formulistic claim drafting, especially with computer-implemented methods. Establishing patent eligibility under this analysis merely required adequate reference to a “processor” and “memory.” Although their value as disclosure was at best questionable, applications often included figures and descriptions of generic computers to implement methods. Moreover, though the distinction would not produce a difference to a person of rudimentary familiarity with the art relative to computing technology, applications have routinely directed separate and mirror claims to the method, system and media implementing the same invention—with each section

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7 In re Ferguson, 558 F.3d 1359, 1364 (Fed. Cir. 2009); see also Manual of Patent Examining Procedure (M.P.E.P.) § 2106 (2014).
8 In re Miller, 418 F.2d 1392, 1396 (C.C.P.A. 1969).
9 In re Nuijten, 500 F.3d 1346, 1357 (Fed. Cir. 2007).
accorded a different analysis for subject matter eligibility by the U.S.P.T.O.

D. “Abstract Ideas,” the Caucus Race, and a Long Tale

The lack of clarity as to what exactly constitutes an “abstract idea” has caused much confusion. The United States Court of Appeals for the Federal Circuit, sitting en banc on appeal in CLS Bank International v. Alice Corp., aptly illustrated the problem by producing seven different opinions by ten judges on the issue with no opinion supported by a majority.

On review, the United States Supreme Court took a great stride in applying the analysis set forth in Mayo v. Prometheus, holding that mere recitation of a generic computer does not, in itself, make a method patent-eligible. Furthermore, the Court clarified that patent-eligibility does not depend on formulaic drafting of claims; the method, system, and medium claims of an invention stand and fall together. Unfortunately, the Court also declared “we need not labor to delimit the precise contours of the ‘abstract ideas’ category in this case.”

E. The Rabbit Sends a Little Bill

Similar to what it did after Bilski, the U.S.P.T.O. released guidance faithfully outlining the general application of the analysis the Supreme Court outlined in Alice. The analysis follows two steps: first, determine if the claim is directed to “an abstract

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13 717 F.3d 1269 (Fed. Cir. 2013), aff’d, 134 S. Ct. 2347 (2014).
14 132 S. Ct. 1289 (2012). Prior to the holding in Alice, the analysis set forth in Mayo was applied only in biotechnology or related arts. In applying the analysis to computer-implemented arts, the Court extended application of the Mayo analysis to all art areas.
15 Alice, 134 S. Ct. 2347 at 2359.
16 Id. at 2362–63.
17 Id. at 2356.
idea.”\textsuperscript{19} Non-limiting examples of “abstract ideas,” such as “[a]n idea of itself” are provided.\textsuperscript{20} Next, if the claim is found to include an “abstract idea,” then there is a requirement for “something significantly more,” such as improvements to another technology or to the functioning of the computer itself, in order to receive patent protection.\textsuperscript{21} In this regard, “any element, or combination of elements, in the claim” may be sufficient.\textsuperscript{22}

While the results are not yet apparent, it is likely that the new analytic framework will simply result in routine drafting manipulations aimed at overcoming the Alice hurdle. As with the Bilski analysis, where the complicated weighing of factors became a moot issue by simply drafting a claim to reference a generic processor, the current framework invites making the discovery of “abstract ideas” moot by simply drafting a claim to reference generic steps that “improve[e] . . . the functioning of the computer itself.”\textsuperscript{23}

For example, software applications universally function by reserving memory space in a computer. Best practices in computer programming require that reserved memory space be released after use. Arguably, releasing reserved memory space in a computer “improves” the computer by allowing the memory to be used for other purposes. Similarly, most software applications are installed using an installation package that readies the generic computer for installation of said software by checking for incompatibilities and making required changes. Thus, the steps undertaken in the installation process and other computer processes “improve” the computer by ensuring that it can execute the installed software or other procedure. Database-driven processes routinely require manipulation and configuration of resources to ensure better performance which, if claimed, can be argued to “improve” the computer’s performance in interacting with the database. Defragmenting a disk drive can be viewed to “improve” the

\begin{itemize}
  \item \textsuperscript{19} Id. at 2.
  \item \textsuperscript{20} Id. at 3. No definition is provided as to what is or is not, exactly, “an idea of itself.”
  \item \textsuperscript{21} Id. Examples of what constitutes “something more” are non-limiting.
  \item \textsuperscript{22} Id. (emphasis added).
  \item \textsuperscript{23} Id.
\end{itemize}
computer by improving the disk drive, and thereby the computer’s performance.

Recitation of such steps (which may represent little more than technical best practices) and incorporation of such generic material into specifications, while providing little value as a disclosure, may well be able to provide enough to pass the new subject-matter eligibility requirements as put forth by the Alice guidance. The result might not be significantly different from the bare claim reference to a generic processor and memory, which was employed to overcome the requirements under Bilski.24

F. Advice from a Caterpillar

Patent practitioners in the U.K. may notice some familiar concepts in the United States Supreme Court’s analysis in Alice. While there is much discussion of “abstract ideas” in Alice, the key teaching, as it relates to computer-implemented inventions, is more subtly stated.

First, the Court in Alice provides an approving nod to Gottschalk v. Benson.25 Gottschalk establishes that a computer program, in itself, is not patent-eligible.26 We know that computer-implemented inventions function by programming or software. As Alice now clarifies, that implementation by a generic computer, in itself, does not make the invention patent-eligible; it naturally follows that an invention implemented by programming or software inherently involves an abstract idea. Therefore, for any computer-implemented invention where the computer is generic, the first step of the Alice analysis is complete—i.e., the abstract idea is identified. The software is the “abstract idea” that fulfills the first step of the analysis. Thus, with the first step of the analysis summarily completed, one can turn to the second step of the Alice analysis to identify “something significantly more.”

The second step necessitates “a search for an ‘inventive

24 See Memorandum from Bahr, supra note 12. Recitation of a machine provides a factor weighing towards subject matter eligibility.
concept.”  

It is here that evaluating the European and, more specifically, the U.K.’s approach to the question of patent-eligibility can be informative as to developing a more concrete framework of analysis to meet the requirement put forth by *Alice*.

II. EUROPE AND THE U.K.’S APPROACH

In contrast to the approach in the United States, which defines eligible subject matter and then provides exceptions, the European approach initially excludes items that should not be patentable subject matter.  

Despite the different starting points, the two approaches have now substantially converged.

A. Statutory Basis

In compliance with the European Patent Convention, and specifically in relation to computer-implemented inventions, the prevailing statute governing patentable subject matter in the U.K. provides:

> It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of –

> (c) a scheme, rule or method of performing a mental act, playing a game or doing business, or

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27 *Alice*, 134 S. Ct. at 2353 (“We have described step two of this analysis as a search for an ‘inventive concept’—i.e., an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’”).

28 European Patent Convention art. 52(2), Oct. 5, 1973, E.P.C. 110 (2013) (“The following in particular shall not be regarded as inventions . . .: (a) discoveries, scientific theories and mathematical methods; (b) aesthetic creations; (c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers; (d) presentations of information”), available at http://www.epo.org/law-practice/legal-texts/html/epc/2013/e/ar52.html. Other policy exclusions, such as medical methods, are also provided in Art. 53; however, detailed discussion of such lies outside of the current scope of this Article.
a program for a computer;

... but the foregoing provision shall prevent anything from being treated as an invention for the purposes of this Act only to the extent that a patent or application for a patent relates to that thing as such.  

B. The Analytic Framework

Determination of subject-matter eligibility requires a four-step analysis, as clarified by the England and Wales Court of Appeals in Aerotel Ltd. v. Telco Holdings Ltd. (the Aerotel approach):

1. Properly construe the claims;
2. Identify the actual (or alleged) contribution;
3. Ask whether it falls solely within the excluded subject matter; and
4. Check whether the actual or alleged contribution is actually technical in nature.

In this light, when interpreting whether a computer program makes a “contribution that is actually technical in nature,” one must consider five aspects:

1. Whether the claimed technical effect has a technical effect on a process which is carried on outside of the computer;
2. Whether the claimed technical effect operates at the level of the architecture of the computer—that is to say, whether the effect is produced irrespective of the data being processed or the application being...
3. Whether the claimed technical effect results in
the computer being made to operate in a new way;

4. Whether the program made the computer a better
computer in the sense of running more efficiently
and effectively as a computer; and

5. Whether the perceived problem is overcome by
the claimed invention as opposed to merely being
circumvented.\textsuperscript{31}

The United Kingdom Intellectual Property Office further explains
the underlying policy as follows:

Some computer-implemented inventions are
patentable whilst others are not. This is because
software straddles the technological and business
worlds. It uses technology, that is, computers, but
often for non-technical purposes. Whether a
computer-implemented invention is patentable
depends on the contribution the invention makes.
For example, if it provides improved control of a
car braking system, it is likely to be patentable, but
if it merely provides an improved accounting
system, it is probably not patentable.\textsuperscript{32}

It may be readily noticed that the policy objectives and analytical
framework employed in the U.K. seems to echo the United States
Supreme Court’s ruling in \textit{Alice}. The concurrence invites a deeper
analysis.

\textsuperscript{31} HTC Europe Co. Ltd. v. Apple Inc., [2013] EWCA (Civ) 451, [50]
(Eng.).

Notice on Patentability of Computer Programs and Business Methods (Dec. 23,
2006), \textit{available at} http://webarchive.nationalarchives.gov.uk/20140603093549/
20061103.htm.
C. Concurrency with Alice

The two steps of the *Alice* analysis are strikingly similar to the last two steps of the *Aerotel* approach. Specifically, in the third step, the *Aerotel* approach asks “whether the claims fall within excluded subject matter (i.e., are ‘abstract’),” and in the fourth step inquires into whether the alleged contribution is “actually technical in nature.”

Here, the factors that *Alice* considers as “significantly more” in the second step of the analysis (i.e., improvements to another technology or technical field, or improvements to the functioning of the computer itself) are echoed in the *Aerotel* approach considerations as outlined in *HTC Europe* (i.e., “technical effect on a process which is carried on outside of the computer,” or “results in the computer being made to operate in a new way . . . made the computer a better computer in the sense of running more efficiently and effectively as a computer.”).

D. The Conflict with U.S.P.T.O. Guidance

A key distinction is that, whereas the *Aerotel* approach requires that the “technical effect” relate to “the actual or alleged contribution” of the disclosed invention, the current guidance put forth by the U.S.P.T.O. states that “any element, or combination of elements, in the claim” may be sufficient to provide subject matter eligibility. As such, the U.S.P.T.O. guidance also misconstrues *Alice*.

Specifically, the Court in *Alice* clarified that the second step necessitates “a search for an ‘inventive concept.’” By then

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33 *Aerotel*, [2006] EWCA (Civ) 1371 at [40].
34 *Id.*
35 *HTC Europe*, [2013] EWCA (Civ) 451 at [50].
36 See Memorandum from Andrew H. Hirshfeld to the Patent Examining Corps, supra note 18, at 3 (emphasis added).
37 *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2353 (2014) (“We have described step two of this analysis as a search for an ‘inventive concept’—i.e., an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’”).
allowing “any element,” irrespective of whether the element directly relates to the “inventive concept,” to be sufficient in the *Alice* analysis, the “search for the inventive concept” is rendered moot and irrelevant. Moreover, as discussed above, consideration of “any element” also invites the sort of formulaic and ancillary claim drafting derided by the Court in *Alice* “Such a result would make the determination of patent eligibility ‘depend simply on the draftsman’s art.’”

III. DEVELOPING A CONCRETE *ALICE* FRAMEWORK

The similarity in both analytic framework and policy objectives of the well-developed *Aerotol* approach to the *Alice* analysis provides an opportunity to look to the U.K.’s jurisprudence as persuasive authority. Doing so would also advance the laudable goal of reducing international inconsistencies relative to patent subject-matter eligibility.

A. Identification of the Actual (or Alleged) Contribution

The Court in *Alice* mandated looking beyond the claims of the patent and evaluating the “inventive concept” in making a determination as to subject matter eligibility.39 In this light, identification of the “inventive concept” should be included in a properly applied *Alice* analytic framework. The *Aerotol* approach could be instructive in this regard.

As to the identification of the inventive contribution, Lord Justice Jacob provided in *Aerotol*: “[I]t is an exercise in judgment probably involving the problem said to be solved, how the invention works, what its advantages are. What has the inventor really added to human knowledge perhaps best sums up the exercise. The formulation involves looking at substance not form.”40 The statement fits well into the discussion provided in

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38 Id. at 2359 (quoting Parker v. Flook, 437 U.S. 584, 593 (1978)); see also id. at 2349, 2357, 2364.
39 Id. at 2353, 2357–58.
40 Aerotel Ltd. v. Telco Holdings Ltd., [2006] EWCA (Civ) 1371, [40] (Eng.).
Alice. Moreover, in the United States patent practitioners and examiners have the tools at hand to assist in the identification of the inventive concept because applicants are required to provide an abstract as a part of their disclosure.\textsuperscript{41} The abstract should provide “the nature and gist of the technical disclosure and should include that which is new in the art.”\textsuperscript{42} This correlates directly to the determination of what the inventor “really added to human knowledge.”\textsuperscript{43}

Applicants should also provide a background and summary of the invention.\textsuperscript{44} The background should include “the problems involved in the prior art or other information disclosed which are solved by the applicant’s invention,”\textsuperscript{45} and the summary should “set out the exact nature, operation, and purpose of the invention.”\textsuperscript{46} These correlate directly to the determination of “the problem said to be solved, how the invention works, and what its advantages are.”\textsuperscript{47}

A regretfully common practice among patent practitioners in the United States is regurgitating claim language in the abstract and summary. Such practice not only subverts the requirements set forth in the Manual of Patent Examining Procedure (M.P.E.P.)\textsuperscript{48} and adds mere surplusage, but also devalues the disclosure and makes proper identification of the “inventive concept” unduly burdensome. As such, encouraging more frequent issuance and maintenance of objections to improper abstract and summary should be considered.

\textsuperscript{41} 37 C.F.R. § 1.72 (2014); M.P.E.P. § 608.01(b) (2014).
\textsuperscript{42} M.P.E.P. § 608.01(b) (2014).
\textsuperscript{43} Aerotel, [2006] EWCA (Civ) 1371 at [43].
\textsuperscript{44} 37 C.F.R. 1.73 (2014); M.P.E.P. § 608.01(c), (d) (2014).
\textsuperscript{45} M.P.E.P. § 608.01(c) (2014).
\textsuperscript{46} Id. § 608.01(d).
\textsuperscript{47} See Aerotel Ltd. v. Telco Holdings Ltd., [2006] EWCA (Civ) 1371, [43] (Eng.).
\textsuperscript{48} The M.P.E.P. is published by the U.S.P.T.O. and outlines the laws and regulations that must be followed in the examination of patent applications in the United States. A current copy of the M.P.E.P. may be accessed at: http://www.uspto.gov/web/offices/pac/mpep/.
B. Direct Connection of “Significantly More” with “Inventive Concept”

The Court in *Alice* noted that the second step of the analysis involves identification of the “inventive concept.” The requirement of connecting the “inventive concept” to the “something more” is illustrated in the Court’s discussion of *Diehr*. In the discussion, the Court points out the “inventive concept”—in this case, “to record constant temperature measurements inside the rubber mold—something ‘the industry ha[d] not been able to obtain.’” The steps of recalculating the cure time by computer—i.e., the formula—were transformed in connection with “something more” that “the industry had not been able to obtain”—i.e., the “inventive concept.” Thus, *Alice* requires a direct connection of the “significantly more” to the “inventive concept.”

C. Consideration Provides Both Practical and Policy Advantages

In consideration of the analysis, results, and policy objectives of the *Aerotiel* approach and those outlined or inferred by the Court in *Alice*, review of the jurisprudence of U.K. as a persuasive authority may be useful. Doing so would yield several notable advantages.

As noted by the Intellectual Property Office, there is extensive

49 *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2354 (2014) (“We have described step two of this analysis as a search for an ‘inventive concept’—i.e., an element or combination of elements that is ‘sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.’”).

50 See id. at 2358–59.

51 *Id.* (quoting *Diamond v. Diehr*, 450 U.S. 175, 178 & n.3 (1981)).

52 See id. at 2359.

53 Note the similarity in the narrative provided by the U.K. Patent Office: “Whether a computer-implemented invention is patentable depends on the contribution the invention makes. For example, if it provides improved control of a car braking system, it is likely to be patentable.” Press Release, U.K. Patent Office, *supra* note 32.
case law about computer-implemented inventions in the U.K.\textsuperscript{54} The \textit{Aerotel} approach has been used and developed in that jurisdiction since 2006.\textsuperscript{55} This provides an extensive source of information relative to a very similar standard to that required by \textit{Alice}.

Additionally, the analytic approach in the U.K. is more concrete in structure, while fitting into the framework of \textit{Alice}. This allows the advantage of considering the approaches of U.K. jurisprudence as potentially instructive where the U.S. law is still less evolved. Doing so would allow the findings to be tested and tried in the course of development of U.S. authority.

Finally, although individual countries in the European Union may have slightly varying interpretations on the law as it relates to subject matter patentability of computer-implemented inventions, they are generally in conformance with each other.\textsuperscript{56} Therefore, using the opportunity presented by \textit{Alice} to further develop the law in the United States by considering the parallel approach in the U.K. would reduce the conflict of laws as it relates to patent-eligibility of computer-implemented inventions. Both invention and utilization of computer-implemented technologies are global in nature. Reduction of the conflict in laws governing patent-eligibility of such transatlantic innovation will likely reduce costs and spur innovation.

\textbf{CONCLUSION}

The U.K.’s law and jurisprudence relative to patent eligibility of computer-implemented innovation is strikingly similar to and fits within the framework of analysis mandated by the United States Supreme Court’s ruling in \textit{Alice Corp. v. CLS Bank International}. Both the bench and bar in the United States would benefit from looking to the U.K. as a source of persuasive authority. Doing so would yield benefits of faster development of law in the United States by employing and testing best practices developed in the U.K. since 2006. Additionally, moving towards

greater uniformity of laws across the Atlantic, as is now possible with *Alice*, would reduce conflict of laws and thus spur innovation.