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Steven M. Greenberg

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THE INCONSISTENT TREATMENT OF COMPUTER SOFTWARE AS PATENTABLE SUBJECT MATTER

Steven M. Greenberg[*]

I. INTRODUCTION

Computer software relates to the tangible embodiment of operational logic defined for a computing platform. Originally viewed in the form of a sequence of instructions, computer software has evolved from program code reduced to punch card form, to program code in electronic source code form, able to be compiled or interpreted within a host computing platform. Modern variants of computer software stretch the commonly understood meaning of the term to include markup language specified

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    * Steven Greenberg is a founding partner of the Intellectual Property boutique law firm of Carey, Rodriguez, Greenberg & Paul, LLP and an Adjunct Faculty Member of the University of Florida, Levin College of Law.

logic often embodied in "server pages." The advent of the Java programming environment (and Java-like comparables such as C#) has further blurred the definition of computer software.

Though often confused in the context of intellectual property law, computer software refers both to a computer program in its inert, source code form, and also to a computer program in its operational object code form. Source code is the human-readable assembly of instructions conforming to a particular programming language or specification. Popular examples include the procedurally oriented PASCAL programming language and the object oriented C++ programming language. In most cases, however, source code must be processed by another computer program in order to be transformed into program instructions that can be understood by the processing unit of a computing device. The result of this transformation is referred to as the object code, which is seldom described as "human-readable."

At its core, computer software reflects an algorithm or a nested arrangement of algorithms. Defined broadly as most commonly understood in the field of computer science, an algorithm is "a well-ordered collection of unambiguous and effectively computable operations that, when executed, produces a result and halts in a finite amount of time."[1] To wit, computer programs implemented according to a procedural programming language universally can be described by way of a flow chart, demonstrating an algorithm or a nested set of algorithms. Even object-oriented computer programs at some level incorporate sequential logic able to be modeled according to a flow chart.

The algorithmic nature of computer software can inherently conflict with the letter of U.S. patent law. In this regard, black letter patent law explicitly excludes "abstract ideas" from consideration as patentable subject matter.[2] In layman's terms, technologies that reflect mere implementations of a computable algorithm are not to be considered patentable under United States law.[3] From the standpoint of the U.S. Patent and Trademark Office (USPTO),[4] at least a "practical application" of the algorithm or a "useful, concrete and tangible result" must follow from the implementation of the computable algorithm in order to achieve patentability.

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1. M. SCHNEIDER & J. GERSTING, AN INVITATION TO COMPUTER SCIENCE 9 (2000).

2. *See* 35 U.S.C. § 101 (2005).

3. Patent and Trademark Office, Manual of Patent Examination Procedure § 2106(IV)(B)(1) (Oct. 2005) [hereinafter MPEP].

4. *Id.* § 2106(II)(A) (citing State Street Bank & Trust Co. v. Signature Fin. Group, 149 F.3d 1368, 1373 (Fed. Cir. 1998)).

Over the past two decades, the U.S. Supreme Court as well as the U.S. Court of Appeals for the Federal Circuit has not provided specific direction in relation to the patentability of computer software. The Supreme Court has only stated that "anything under the sun that is made by man" is patentable subject matter[5] and that process claims performed by a computer program, and particularly, process claims recited as part of a "business method," are to be examined for patentability in no different fashion than any other process claim.[6] Notwithstanding, the Examining Corps of the USPTO continues to struggle with this interpretation, and oftentimes wholly ignores the clear directive of the Supreme Court and the Federal Circuit, resulting in the inconsistent treatment of computer software within the USPTO and within the judicial branch of our United States government.

II. GENERAL PATENT LAW OVERVIEW

The grant of letters patent has been part and parcel of American jurisprudence since our nation's birth. Article I, Section 8, Clause 8 of the U.S. Constitution states, "The Congress shall have Power . . . [t]o promote the Progress of Science and useful Arts, by securing for limited [t]imes to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." The United States Patent Act derives its authority from the Constitution and has been codified at title 35 of the U.S. Code. As provided by the Patent Act, a twenty-year term of exclusivity to an invention will be awarded to an inventor who seeks the award for inventing a "new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof."[7]

Generally, one seeking patent protection for an invention prepares and files a patent application with the USPTO and expects that an Examiner assigned to examine the patent application will determine whether the patent application describes and claims an invention satisfying the statutory requirements of patentability. The statutory requirements of patentability include a determination of whether the claimed invention is new or has attained novelty in view of prior art publications, existing technologies, and public knowledge.[8] The statutory requirements of patentability further include a determination of whether the claimed

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5. Diamond v. Chakrabarty, 447 U.S. 303, 309 (1980).

6. *State Street Bank*, 149 F.3d at 1375.

7. 35 U.S.C. § 101 (2005).

8. *See* 35 U.S.C. § 102 (2002).

invention is not a mere obvious variation of what already is known in the art.[9] Finally, the statutory requirements of patentability also include a determination of whether the claimed invention has a utility that is not excluded as a mere law of nature or abstract idea.[10]

To achieve a proper examination, the Manual of Patent Examining Procedure (MPEP), a text produced by the USPTO for the benefit of the Examining Corps as a guideline for examining patent applications, requires a particular format of the patent application. The format is intended to facilitate an Examiner's review of the patent application in order to ascertain the state of the art, the nature of the claimed invention, and the scope of the claimed invention. Generally, a patent application begins with a "background section" describing the state of the art, and continues with a "detailed description" of an embodiment of the invention, including companion figures and illustrations. Finally, the patent application culminates with a set of "claims" which provide a textual description of the boundaries of the claimed invention.[11]

It is the claims themselves that determine the scope of protection sought for an invention, and not the content of the remaining portions of a patent application. For example, hypothetical apparatus and process claims can include:

An apparatus comprising: (A) a first widget; (B) a second widget; and, (C) a third widget.	A method comprising the steps of: (A) doing a first step; (B) doing a second step; and, (C) doing a third step.

In both cases, a USPTO Examiner will search a limited, albeit voluminous, selection of publications (including issued and published domestic and international patent applications) in order to locate elements A, B, and C, either wholly within one publication, or across multiple publications. If successful, in the former circumstance, the Examiner will reject the claim as lacking novelty, whereas in the latter circumstance, the Examiner will reject the claim as a mere obvious variation of the known art.

Other patentability criteria exist aside from novelty and non-obviousness, although the battle fought and occasionally won in the

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9. 35 U.S.C. § 103(a) (2004).

10. *See* 35 U.S.C. § 101 (2005).

11. *See generally* 35 U.S.C. § 111 (2002); 35 U.S.C. § 112 (2005).

USPTO usually relates to one of novelty and non-obviousness. The additional criteria include that of written description, enablement, and utility.[12] To determine the satisfaction of the written description and enablement requirements, the Examiner usually refers to the detailed description portion of the patent application to ensure that "one of ordinary skill in the art" could make and use the claimed invention based upon a study of the detailed description without engaging in undue experimentation.

The latter determination, however, has proven squirrelly at best,when applied to patent claims directed to computer-implemented inventions and has varied over time according to the changing jurisprudence of the Supreme Court and the Federal Circuit. To compound matters, few Examiners in the Examining Corps of the USPTO are attorneys. Consequently, most lack the most basic legal training necessary to digest the complex logic of the Federal Circuit and Supreme Court in decisions pertaining to the patentability of computer software, in the way that most experienced attorneys also lack the requisite training to digest those same decisions.

III. THE JURISPRUDENCE OF SOFTWARE PATENTS

A. *Initial Jurisprudence*

The U.S. Supreme Court first expounded upon the patentability of computer software in *Gottschalk v. Benson*, a mainframe-era decision by Justice Douglas.[13] In *Gottschalk*, the Acting Commissioner of Patents petitioned on behalf of the USPTO on writ of certiorari to determine whether an invention directed to the conversion of a binary coded decimal (BCD) into a pure binary number could satisfy the utility requirement of 35 U.S.C. § 101.[14] Justice Douglas, writing for the Court, equated the conversion from BCD to Binary to that of a mathematical algorithm. Accordingly, Justice Douglas found the invention to fail as patentable subject matter, as a contrary finding "would wholly preempt the mathematical formula and in practical effect would be a patent on the algorithm itself."[15]

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12. 35 U.S.C. § 112, ¶¶ 1 & 2 (2005).
13. Gottschalk v. Benson, 93 S. Ct. 253 (1972).
14. *Id.* at 254.
15. *Id.* at 257.

Six years following *Gottschalk*, the U.S. Supreme Court again addressed the patentability of computer software in *Parker v. Flook.*[16] In *Parker*, the Acting Commissioner for Patents, Lutrelle F. Parker, filed a petition for writ of certiorari to the Supreme Court seeking a determination of whether a computer program computing an alarm when detecting an upper limit in a catalytic conversion process qualifies as statutory subject matter under the Patent Act.[17] Justice Stevens, writing for the Court, and following the precedent of *Gottschalk*, concluded that it does not. Specifically, Justice Stevens wrote, "[A] claim for an improved method of calculation, even when tied to a specific end use, is unpatentable subject matter under § 101."[18]

Three Court of Customs and Patent Appeals (CCPA) decisions reflect the restrictive jurisprudence built upon the *Gottschalk* and *Parker* holdings. In 1972, the CCPA held in *In re Freeman* that a typesetting system adapted for retrieving mathematical characters or symbols from a font library memory, and spatially orienting the characters and symbols with respect to one another in order to display and print the characters and symbols, failed to qualify as statutory subject matter under 35 U.S.C. § 101.[19] Of note, the court in *Freeman* proposed a two-step test for determining whether a claim preempts nonstatutory subject matter as a whole in light of *Gottschalk.*[20] The first prong of the test required a determination of "whether the claim directly or indirectly recit[ed] an 'algorithm.'"[21] If so, the second prong of the test required a determination of whether the claim in its entirety preempted the algorithm.[22] Importantly, the *Freeman* court particularly distinguished a garden variety "algorithm" from a "mathematical algorithm" recognizing that "every process may be characterized as 'a step-by-step procedure for accomplishing some end.'"[23]

The CCPA subsequently modified the *Freeman* test in *In re Walter*[24] and *In re Abele.*[25] In 1980, the CCPA in *Walter* determined that the second prong of the *Freeman* test should consider whether the mathematical algorithm had been implemented in a certain manner so as either to define structural relationships between the physical elements of the claim, or to

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16. 98 S. Ct. 2522 (1978).
17. *Id.* at 2524.
18. *Id.* at 2525.
19. *In re* Freeman, 573 F.2d 1237, 1238 (C.C.P.A. 1978).
20. *Id.* at 1245-46.
21. *Id.*
22. *Id.*
23. *Id.* at 1246.
24. 618 F.2d 758 (C.C.P.A. 1980).
25. 684 F.2d 902 (C.C.P.A. 1982).

refine or limit claim steps in a process.[26] If such a mathematical algorithm were implemented, under *Walter*, the claim passed muster in accordance with 35 U.S.C. § 101.[27] *Abele* further expanded the scope of computer-related inventions deemed patentable under 35 U.S.C. § 101 by requiring of the second prong of the *Freeman* test that "the algorithm be 'applied in any manner to physical elements or process steps,' provided that its application is circumscribed by more than a field of use limitation or non-essential post-solution activity."[28]

B. *Changing Views of Software as Technology*

The two-prong test introduced by *Freeman* and modified by *Walter* and *Abele* became known as the Freeman-Walter-Abele test for the patentability of computer software. Given the concrete requirement of a "technical effect" of an algorithm in order to qualify for patentability, the standard for patentability appeared to be mechanically applicable within the USPTO and became the de facto standard for examining software-related inventions for patentability by the Examining Corps. In so much as the "technical effect" aspect of the two-prong test can be viewed as more expansive than the near blanket prohibition on the patentability of computer software, modern scholars consider *Parker* the high-water mark for the unpatentability of computer software.

In 1980, the trend of *Gottschalk* within the U.S. Supreme Court abruptly reversed course with the holding in *Diamond v. Diehr*.[29] In *Diehr*, the invention at issue related to a computer program enabled to compute the "Arrhenius equation" for curing synthetic rubber.[30] Utilizing data collected from a series of sensors, the computer program determined when the rubber had cured such that a mold press could be opened by an operator.[31] Thus, a technical step could be found in "determining when to open the mold press." Justice Rehnquist, writing for the majority, concluded that the claimed invention indeed qualified as patentable subject matter, while heavily relying upon the holding in *Chakrabarty*, in which the Court proclaimed "anything under the sun that is made by man" is statutory subject matter under 35 U.S.C. § 101.[32]

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26. *Walter*, 618 F.2d at 767.
27. *Id.*
28. *Abele*, 684 F.2d at 907.
29. 450 U.S. 175 (1981).
30. *Id.* at 177 n.2.
31. *Id.* at 178-79.
32. Diamond v. Chakrabarty, 447 U.S. 303, 309 (1980); *see Diehr*, 450 U.S. at 191-93.

The Freeman-Walter-Abele test remained the gold standard within the USPTO for analyzing computer-related claims for patentability until the 1994 decision of *In re Alappat*.[33] In an *en banc* decision of the Federal Circuit, the court retreated from the prior jurisprudence of the CCPA and pledged allegiance to the primary authority of *Gottschalk*, *Parker*, and *Diehr*.[34] In this regard, Judge Rich, writing for the majority, observed that *Diehr* recited only three categories of subject matter for which one may not obtain patent protection: laws of nature, natural phenomena, and abstract ideas.[35] As such, Judge Rich wrote that the court should not expand the prohibition to include a fourth category for mathematical algorithms.[36]

Importantly, *Alappat* did not expressly limit the Freeman-Walter-Abele test, as the *Alappat* court drew its inspiration from *Diehr* and *Chakrabarty* and not prior decisions of the CCPA. Nevertheless, *Alappat* demoted the importance of the Freeman-Walter-Abele test because the court affirmed the requirement that the Examining Corps of the USPTO pay attention not only to the claims of a patent application in determining a concrete, tangible result under 35 U.S.C. § 101, but also that the Examining Corps particularly consider the specification of the patent application to determine exactly what had been invented as disclosed in the patent application.[37]

C. *Modern Jurisprudence and the Practical Application of an Abstract Idea*

In 1998, the Federal Circuit dramatically departed from the well-worn Freeman-Walter-Abele test in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*[38] There, Judge Rich abandoned the reliance upon presence or absence of physicality, the concrete, tangible result of *Diehr*, and instead found patentability for a computer-implemented invention for administering mutual funds in a hub-and-spoke arrangement.[39] In particular, Judge Rich found patentability simply by finding a practical utility for an abstract idea.[40] Even though the embodiment of the invention at issue in *State Street* was nothing more than a computer program

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33. 33 F.3d 1526 (Fed. Cir. 1994).
34. *Id.* at 1542-43.
35. *Id.*
36. *Id.* at 1543 n.20.
37. *See id.* at 1540.
38. 149 F.3d 1368 (Fed. Cir. 1998).
39. *Id.* at 1373.
40. *Id.*

executing within a personal computer, Judge Rich found practical application of a mathematical algorithm in the transformation of data representing discrete dollar amounts through a series of mathematical calculations into a final share price.[41]

Importantly, *State Street*, unlike *Alappat*, directly addressed the importance of the Freeman-Walter-Abele test. Specifically, Judge Rich wrote, "After *Diehr* and *Chakrabarty*, the Freeman-Walter-Abele test has little, if any, applicability to determining the presence of statutory subject matter."[42] Judge Rich continued,

> As we pointed out in *Alappat* . . . application of the test could be misleading, because a process, machine, manufacture, or composition of matter employing a law of nature, natural phenomenon, or abstract idea is patentable subject matter even though a law of nature, natural phenomenon, or abstract idea would not, by itself, be entitled to such protection.[43]

Notably, the sole claim at issue in *State Street* related to a structural machine configured to perform the business method of administering a mutual fund. As such, some question remained after *State Street* as to whether the analysis under 35 U.S.C. § 101 should apply equally to process claims recited in the form of "a method comprising the steps of . . . ." The Federal Circuit quickly set aside any doubts in *AT&T Corp. v. Excel Communications, Inc.*[44] when it expanded the holding in *State Street* to include any form of statutory preamble. Specifically, Judge Plager, writing for the majority wrote, "Whether stated implicitly or explicitly, we consider the scope of § 101 to be the same regardless of the form — machine or process — in which a particular claim is drafted."[45] Thus, *AT&T* and *State Street* exemplify the current jurisprudence for the Federal Circuit: a patent claim directed to a software related invention, whether stated in the form of a machine, article of manufacture, or process, is patentable subject matter so long as the invention achieves a practical application of an abstract idea, or produces a useful, tangible, and concrete result.[46]

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41. *Id.*
42. *Id.* at 1374.
43. *Id.*
44. 172 F.3d 1352 (Fed. Cir. 1999).
45. *Id.* at 1357.
46. *But cf.* Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings, 370 F.3d 1354 (Fed. Cir. 2004), *cert. granted*, 73 U.S.L.W. 3298 (U.S. Oct. 31, 2005) (No. 04-607) (granting certiorari

IV. DIVERGENCE OF THE MODERN JURISPRUDENCE AND THE USPTO

A. *Published USPTO Guidelines for Examining Computer-Related Inventions*

In 1996, in response to the flurry of Federal Circuit holdings arising from *Alappat* that addressed the patentability of computer software, the USPTO issued Examination Guidelines for Computer-Related Inventions (Examination Guidelines).[47] Additionally, training materials for the Examination Guidelines included a flow chart and a matrix to be used by Examiners within the Examining Corps in determining whether a claimed invention directed to computer software could be viewed as statutory subject matter under 35 U.S.C. § 101.[48] Two important questions were included in the flow chart and matrix of the Examination Guidelines.[49] The first question asked the Examiner whether the invention has a "practical application."[50] More importantly, the second question asked the Examiner whether the invention belongs in the "technological arts."[51] Interestingly, *Alappat* provided no instruction as to the latter question, and the Examination Guidelines appear to have incorporated this critical question without clear legal support.

Subsequent to the holding in *State Street*, the USPTO published a modified section of the MPEP — section 2106 — relating to the examination of computer-related inventions for patentability.[52] Within section 2106, the USPTO stated, "Only when the claim is devoid of any limitation to a practical application in the *technological arts* should it be rejected under 35 U.S.C. [§] 101."[53] Unlike the Examination Guidelines, however, in section 2106 of the MPEP, the USPTO provided no direct legal support to account for the "technological arts" requirement. However, it would be nearly five years before the USPTO would correct

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solely on the question of whether a method patent setting forth an indefinite, un-described and non-enabling step directing a party simply to correlate test results can claim a monopoly over a basic scientific relationship used in medical treatment such that any doctor necessarily infringes the patent merely by thinking about the relationship after looking at a test result).

47. 61 Fed. Reg. 7478 (Feb. 28, 1996).

48. *See* Examination Guidelines for Computer-Related Inventions, *available at* http://www.uspto.gov/web/offices/pac/compexam/examcomp.htm (last visited Feb. 28, 2006).

49. *Id.*

50. *Id.*

51. *Id.*

52. MPEP, *supra* note 3, § 2106.

53. *Id.* § 2106(II)(A)(emphasis added).

its error. In the interim, countless patent claims were rejected in the USPTO for lack of patentability due to the phantom "technological arts" test.

B. *Empirical Constriction of Software Patents*

Empirically, in 2005, practitioners prosecuting claims in applications assigned to USPTO Technology Center 2100 (TC2100) experienced a substantial increase in claim rejections under 35 U.S.C. § 101, reporting section 101 rejection increases of more than two-hundred percent over 2004 levels.[54] Speculation as to the cause of the rapid and unexpected increase in section 101 rejections for software patent claims generally points to two main factors. First, inexperience levels among Examiners in the pertinent group art units has been measured to be at an all-time high of nearly forty percent.[55] That is to say, more than forty percent of all Examiners in TC2100 have less than one year's experience. For many, the position within the USPTO is a first job held after graduating college. Moreover, attrition rates among experienced Examiners in TC2100 now approaches twenty-five percent.[56] Given the complexity of determining statutory subject matter, it is not reasonable to expect a junior examiner without any legal training to properly find a rejection under 35 U.S.C. § 101 in most cases.

Speculation as to the cause of the rapid increase in section 101 rejections also points to a secretive group of highly experienced Examiners who have alone interpreted the modern jurisprudence of statutory subject matter and who maintain responsibility for supervising the issuance of non-utility rejections for computer-related inventions under 35 U.S.C. § 101.[57] Referred to as Special Program Examiners (SPREEs), Junior Examiners and even Primary Examiners in TC2100 and Technology Center 2700 (TC2700) exclusively turn to the SPREEs for guidance when determining the presence of non-statutory subject matter for a computer-related invention.[58] Other Examiners in the Examining Corps concede to

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54. Search of TC2100 patent applications in prosecution having at least one rejection under 35 U.S.C. § 101 rejection for FY 2004 and FY 2005. The USPTO divides patent subject matter into separate technology centers for different fields of science and technology. *See* http://www.uspto.gov/web/info/pat-tech.htm (last visited Apr. 30, 2006).

55. Mark T. Skoog (moderator), The Year in Review, American Intellectual Property Law Association Annual Meeting (Oct. 29, 2005).

56. *Id.*

57. *Id.*

58. Private conversation with Patent Examiner Robert Stevens in Technology Center 2100 (Oct. 12, 2005).

the existence of "Quality Assurance Specialists" (QUAS) who review Office Actions issued by Examiners and impose perceived rejections under 35 U.S.C. § 101, even where the Principal Examiner has chosen not to issue a rejection under section 101.

Predominantly, the section 101 rejections issued by the USPTO for computer-related inventions in 2005 related to one of two separate misconceptions among the Examining Corps with respect to the modern jurisprudence of statutory subject matter. The first misconception involves the "technological arts" requirement of the MPEP section 2106. Under the technological arts requirement, an Examiner will fail to find statutory subject matter if the claim, as a whole, does not relate to the technical arts. Examiners often cite *Alappat* in support, however, the portion of *Alappat* recited merely refers to the text of *Diehr* that makes no mention of a "technological arts" requirement.[59]

The second misconception involves the "paper and pencil test" or "mental steps test." Under the paper and pencil test, Examiners determine whether the steps of a method claim can be practiced in the absence of a computer and with the assistance of only the human mind or a pencil and paper. If so, the claim is to be rejected under 35 U.S.C. § 101. Often, if not always, no support is recited in support of the assertion that the pencil and paper test forms part of the modern jurisprudence.[60] In fact, a careful reading of the entirety of the MPEP section 2106 will fail to reveal the mention of a paper and pencil test. In both cases, however, Junior Examiners are quick to point to internal guidelines provided by the SPREEs and QUAS which require these rejections.

The identity of the SPREEs and QUAS remains a closely held secret within the ranks of the Examining Corps. On multiple occasions, Junior Examiners have refused to reveal the identities of the QUAS or the SPREEs, though all concede the existence of both groups of Examiners.[61] Notwithstanding, given the dearth of trained attorneys among the ranks of the Examining Corps, it is more than likely that none have the requisite legal background sufficient to understand the holding in *State Street* or *AT&T*, let alone *Alappat*. Consequently, it should come as no surprise that the expansive view of patentability of computer software expressed by the

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59. *See In re* Alappat, 33 F.3d 1526, 1543 (Fed. Cir. 1994).

60. In some limited circumstances, Examiners refer to *In re* Musgrave, in which the court stated, "[T]hese claims . . . are directed to non-statutory processes merely because some or all the steps therein can also be carried out in or with the aid of the human mind or because it may be necessary for one performing the processes to think." 431 F.2d 882, 893 (C.C.P.A. 1970).

61. Two separate private conversations with Patent Examiners Naeen U. Haq and Backhean Tiv of Technology Center 2100 (Oct. 11, 2005).

Federal Circuit and U.S. Supreme Court has fallen on deaf ears among the rank and file in the USPTO.

V. RECONVERGENCE

A. In re Lundgren

In late 2004, in a highly unusual precedential opinion, the USPTO Board of Patent Appeals and Interferences (BPAI) considered and trounced both the technological arts test, mental steps test, and the paper and pencil test as advanced by members of the Examining Corps in *Ex parte Carl A. Lundgren.*[62] In *Lundgren*, the claimed invention related to

> [a] method of compensating a manager who exercises administrative control over operations of a privately owned primary firm for the purpose of reducing the degree to which prices exceed marginal costs in an industry, reducing incentives for industry collusion between the primary firm and a set of comparison firms in [the] industry, or reducing incentives for coordinated special interest industry lobbying.[63]

During the prosecution of the patent application, the Primary Examiner rejected several of the claims under 35 U.S.C. § 101 for failing to meet the "technological arts" requirement.[64]

On appeal, the Primary Examiner found "both the invention and the practical application to which it is directed to be outside the technological arts, namely an economic theory expressed as a mathematical algorithm without the disclosure or suggestion of computer, automated means, apparatus of any kind."[65] In support, the Examiner cited the pre-*Diehr* case, *In re Musgrave*, in which the court stated,

> All that is necessary, in our view, to make a sequence of operational steps a statutory "process" within 35 U.S.C. § 101 is that it be in the technological arts so as to be in consonance with the Constitutional

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62. *Ex parte* Carl A. Lundgren, Appeal No. 2003-2088, Application S/N 08/093,516, at 3 n.59 (B.P.A.I. 2004).

63. *Id.* at 1.

64. *Id.* at 2-5.

65. *Id.* at 2 (internal quotation omitted).

purpose to promote the progress of "useful arts." Const. Art. 1, sec. 8.[66]

The BPAI, however, did not view the Examiner's arguments as persuasive. Rather, the BPAI found the holding in *Musgrave* not "to have created a separate 'technological arts' test in determining whether a process is statutory subject matter."[67] In fact, citing *AT&T*, the BPAI in *Lundgren* went on to comment,

> Since the Federal Circuit has held that a process claim that applies a mathematical algorithm to "produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle, on its face comfortably falls within the scope of [§] 101," one would think there would be no more issues to be resolved under 35 U.S.C. [§] 101.[68]

The BPAI further rejected the existence of a paper and pencil test relating to "mental steps."[69] Thereafter, the BPAI concluded, "Our determination is that there is currently no judicially recognized separate 'technological arts' test to determine patent eligible subject matter under [§] 101."[70]

B. *Proposed 2005 Guidelines for the Patentability of Software*

At the same time as *Lundgren*, the Deputy Commissioner for Patent Examination Policy produced the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility (Interim Guidelines).[71] In the Interim Guidelines, the USPTO dropped the "technological arts" requirement of the previous Guidelines and of the MPEP section 2106. Rather, a new flow chart incorporated into the Interim Guidelines as Annex I only requires that the Examiner determine whether a claimed invention embodies a practical application of a section 101 judicial exception to the prohibition on the patentability of laws of nature, natural phenomena, or abstract ideas.[72] Exemplary circumstances

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66. *In re* Musgrave, 431 F.2d 882, 893 (C.C.P.A. 1970).

67. Lundgren, Appeal No. 2003-2088, *supra* note 62, at 4.

68. *Id.* at 3 (internal citations omitted).

69. *See id.* at 4.

70. *Id.* at 5.

71. Patent and Trademark Office Notice, Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, *available at* http://www.uspto.gov/web/patents/patog/week47/OG/TOC.htm#ref13 (last visited Apr. 26, 2006).

72. *Id.*

enumerated in the Interim Guidelines include a practical application by physical transformation of data, or a practical application that produces a useful, tangible, and concrete result.[73] Most importantly, the Interim Guidelines explicitly prohibit the recitation by an Examiner of any of the technological arts, Freeman-Walter-Abele, mental steps, or human steps tests in the formulation of a section 101 rejection.[74]

VI. CONCLUSION

Despite the clear guidance provided by the Interim Guidelines and the holding in *Lundgren*, the Examining Corps of the USPTO continues to render inappropriate section 101 rejections with impunity. As recently as January 2006, one Examiner posited, while asserting a section 101 rejection for failing the technological arts test, that without such controversy, patent attorneys and patent examiners would be without purpose.[75]

Additionally, in February 2006, another Examiner stated that computer programs are not patentable subject matter.[76] Recently, Examiners have recognized the existence of the Interim Guidelines, yet have managed to misinterpret the directives of the Interim Guidelines so as to arrive at the same, misunderstood Pre-Interim Guidelines results.[77] Mostly, the disconnect between the modern jurisprudence of statutory subject matter for computer-related inventions and the practice of patent examination can be attributed to the inexperienced and undertrained nature of the Examining Corps for TC2100 and TC2700. Adequate supervision of the Examining Corps by trained legal professionals has proven ineffective and possibly cost prohibitive. Some might refer to the well-publicized problem of congressional fee diversion and the resulting under-funding of the USPTO as a root cause. In any event, patentees are likely to continue to bear the cost of divergence.

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73. *Id.*

74. *Id.*

75. Private conversation with Primary Examiner Etierre LeRoux and Junior Examiner Sheree Brown of Technology Center 2100 (Jan. 31, 2006).

76. Private conversation with Examiner Steelman in Technology Center 2100 (Feb. 16, 2006).

77. *See, e.g.*, U.S. Patent Application S/N 10/612,613, Non-Final Office Action of April 3, 2006, at 3 (holding processors configured or logic programmed as software arrangements to be non-statutory).