

**United States Department of
Commerce
Patent and Trademark Office**

Docket No.: 2003-P-020 37 CFR Parts 1 and 5
Changes To Support Implementation of the United States
Patent and Trademark Office 21st Century Strategic Plan;
Proposed Rule

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I. Introduction:

I realize this submission is late and will be received after the November 12, 2003, deadline. Please accept my apologies for the delay as well as my thanks for the opportunity to write.

I am currently a student at Villanova University School of Law. There are two perspectives from which I will write this comment: (1) I am hoping to work in the field of intellectual property and will take the Patent bar in the near future and (2) I have been, and remain, interested in obtaining a patent for an idea of mine. Therefore, my interest in the proposed rule comes from the perspective of both a prospective attorney and inventor.

Additionally, my undergraduate background is in economics with a degree from the University of Pennsylvania. This background will be helpful in shedding light on the importance of the United States Patent and Trademark Office ("USPTO") in helping the U.S. economy. Accordingly, I will address various aspects and concerns

with the proposed rules with this view in mind. Thank you for the opportunity to address the USPTO on this proposed rule and comment on the direction the USPTO will take as we continue into the 21st century.

II. Background:

The current process of applying for and obtaining a patent is a long and expensive one. As a result, the complexity and cost of applying for a patent stifles the entrepreneurial and inventive initiative of the public. The goal of patents is to give a financial incentive to encourage members of a society to invent and therefore contribute to society. However, the long time an application spends in pendency as well as the confusing and extremely expensive process to obtain a patent serves to stifle the creative urges of the public.

Specifically, the average patent application takes between two and one half to three years to issue. Moreover, the applications average a cost of up to \$10,000.00 or more. **See National Congress of Inventors Organization** and **Joseph T. Regard, Ltd.**¹ For the increasingly common and useful advances in software programming the monetary cost is even greater. **See www.tannedfeet.com** (with "[T]he patent attorney's time to prepare the software application: the cost of preparing the application can run from \$7,000 to \$100,000. Average cost is between \$10,000 to \$30,000").²

¹ They may be found at www.inventionconvention.com and www.patent1.com respectively.

² It is also important to note that the current system of paying fees to maintain a patent is one way of reducing the initial costs. Problems exist with that decision as well as:

[A]pproximately 83.5% of all patents issued in 1986 were maintained beyond the fourth year, approximately 61.9% of the patents were maintained beyond the eighth year and only approximately 42.5% of the patents were maintained beyond the twelfth year. In other words, all but about 42.5% of the original sample population were abandoned or allowed to expire before the full statutory patent term, corresponding to an overall average patent

For many inventors, the cost is simply too high to attempt to obtain or maintain a patent. The footnoted numbers regarding abandoned patents do not account for the large number of potential applicants who never file an initial document with the USPTO due to a realization that they cannot afford to follow through to the end of the patent process.³

Furthermore, the great time taken to, hopefully, obtain the patent costs the applicant in terms of: (1) opportunity cost of their time; (2) opportunity cost of their money; and (3) reducing the useful period of protection, and therefore incentive, as they await word on whether or not the patent will issue. That opportunity cost can be great in the ability of an applicant or potential applicant to work in some other capacity, spend time with their family, or otherwise use their time. Additionally, a potential applicant may feel that the money that is poured into investigating the potential patentability of an idea, as well as actually applying, may be better served by investing it into another area of society. Thus, a cost-benefit analysis must be performed by all potential applicants to decide if it is worth their time, money, and energy to apply for a patent. Although no way exists to completely eliminate the cost of applying for a patent, it is extremely important to reduce the initial

mortality (abandonment) rate of approximately 57.5%.

See http://www.patentratings.com/001/nacv_white_paper.sv (reporting a statistical analysis of over 70,000 patents issued in 1986).

Therefore, it is clear that part of the problem is the ongoing cost of maintaining a patent. However, this is a tangential interest to the one at hand as, in the case of abandoned patents, the information becomes publicly available and advances the technological wherewithal of society.

³ As anecdotal evidence, I have been approached by numerous friends and acquaintances about possible patents. After stating that the costs can be high (even if at the lower end of around \$2,000.00) and success cannot be guaranteed, most state that it is not worth their time, money, and the uncertainty.

cost barrier. With a lower initial cost more ideas would be placed into the public forum. This would encourage tangential or linear development as well as increase the productivity of society.

Most importantly, an often accepted theory in economic circles holds that the only way to increase the long-term output of a society is to increase the number of laborers or improve technology.⁴ In general, the accepted ratio of these two factors in relation to an increase of a unit of GDP is 1/3 Labor vs. 2/3 technology. See www.econ.ku.dk/zeuthen/test/mokyr.pdf (discussing Post-Malthusian economics); Oded Galor and David N. Weil, Population, Technology, and Growth: From the Malthusian Regime to the Demographic Transition and Beyond, *American Economic Review*, September 2000 (stating that technological progress raises the return to human capital).⁵ Thus, the USPTO plays a vital, and perhaps the largest, role in increasing the technological output and growth of the GDP of the United States. When potential inventors are discouraged by the time or cost of applications, society as a whole loses out on the benefits that their idea and its offspring would have brought.

This loss is not just limited to the public but includes the Federal Government. This harm is due to the loss in taxes, jobs, and other incomes created by new inventions vastly outweigh the costs to the USPTO.

The USPTO recognizes the need for change, but perhaps does not realize the significant role it plays in the long-term economic growth of the US economy. Instead, the USPTO

⁴ In other words, the Federal Government can attempt to affect the economy in the *short term* through, among other things: (1) tax breaks; (2) adjusting interest rates through the Federal Reserve; and (3) increasing or decreasing the money supply into society. However, these changes have little to no effect, and generally a negative one if at all, on the long-term output of a society.

⁵ In addition, technology contributes to the advancing of civilization in ways that are beyond standard economic measurements. See Schick, K.D. and N. Toth. 1993 *Making Silent Stones Speak: Human Evolution and the Dawn of Technology*. New York: Simon and Schuster.

seems concerned with reducing internal cost and updating the application process. The USPTO states that the proposed changes to the patent application and examination process are necessary for the USPTO to be able to process the long-term trend of increasing numbers of applications within a reasonable time frame. The USPTO endeavors to reduce the average pendency time, from date of application to the date of issuance, to 18 months. However, the USPTO does not feel this is an achievable goal in the near future and will attempt to reduce the time from filing to first office action to 18 months. The admission by the USPTO that this goal is not achievable in the near future serves to highlight the need for significant changes to the application process to reduce the cost and uncertainty involved in applying for a patent.

However, the reasons for these changes go beyond those stated in the proposed rule and extend to the benefits of not only the USPTO but to the US citizenry at large. Accordingly it is more important to reduce the time and cost than the USPTO perhaps realizes.

III. Focal Points of Discussion

The USPTO is concerned with establishing a 21st Century Strategic Plan to streamline, simplify, enhance productivity and response, and support a market-driven intellectual property system. Specifically, the USPTO is attempting to promote quality enhancement in the application process and reduce patent pendency.

The more notable changes being proposed by the USPTO to achieve this goal are: (1) permitting electronic signatures on a number of submissions; (2) allowing the USPTO to give documents in electronic form; and (3) reducing cost to reflect the actual cost to the USPTO.

The USPTO should be applauded for endeavoring to change the process, more could be done in all three areas listed above. Quite simply, these changes are a good first step to improving the patent process but they do not go far enough in simplifying the process and lowering the cost for potential applicants. Accordingly, I will address the three enumerated changes with suggestions on increasing the efficacy of each.

IV. ELECTRONIC SIGNATURES

The USPTO proposes to amend Section 1.4(d) to provide for filing correspondence with electronic signatures on electronically created correspondence documents that are filed by facsimile transmission, or hand-carried or mailed to the USPTO, for entry in a patent application, patent file, or reexamination proceeding.

As with federally passed legislation involving e-signatures, these e-signatures must: (1) be personally typed; (2) establish the chain of custody; and (3) be exactly the same each time. See the Uniform Computer Information Transactions Act ("UCITA"); Uniform Electronic Transactions Act ("UETA"). The method used to satisfy these concerns is often debated and no perfect solution exists. However, as discussed below, the USPTO has an advantage over other institutions utilizing e-signatures in the length and finality of its decision.

Paragraph 1.4(d)(1)(iv)(A) provides that electronic signatures may be utilized when the electronically signed document is: (1) facsimile transmitted from a computer in its electronic form; (2) printed and then facsimile transmitted; or (3) printed on paper and hand or mail delivered to the USPTO. This section would also provide for the use of electronic signatures for documents submitted via the USPTO's Electronic Filing System (EFS). However, the proposed rules make it clear that this is not an email system.

It is important to allow electronic signatures of some sort in order to reduce patent pendency. This reduction in patent pendency would be a result of the decrease in the number of days spent waiting for mail delivery that aggregate over the course of correspondence between practitioner or applicant and the USPTO. An added benefit would be the lower cost due to lack of paper, ink, and postage used by the applicant. However, the current proposal appears to be too much of a compromise, which does not go far enough towards meeting the twin goals of reducing cost and time.

a. Document Type

One problem with the proposed changes involving e-signatures is that the USPTO is attempting to limit which

documents will be accepted with e-signatures and which will require further proof (such as third party submissions). Set lines should be drawn for either accepting or refusing e-signatures with the document type being largely irrelevant.

The limiting of electronic signatures to faxed or mailed documents by 1.4(d)(1)(iv)(A) is relatively pointless. In cases where there is a printed copy with fax transmission or hand delivery it hardly reduces time or cost by alleviating the responsibility of an actual signature. If one is going to allow for documents to be submitted by fax directly from an electronic file then email should also be acceptable as a form of submission.⁶

b. Personal Insertion of Signature

The first requirement of the proposed rule is that the e-signature be personally inserted. Specifically, the requirement is met by the signer directly typing his or her electronic signature on a keyboard. This requirement is not met when a first person types the electronic signature of a second person, upon receiving only a general instruction from the second person to insert the second person's signature. A person physically unable to use a keyboard, however, may, while simultaneously reviewing the document for signature, direct another person to press the appropriate keys to form the signature.

As outlined above, much of the cost in applying for a patent involves lawyer fees. The requirement of personal submission and contact between a lawyer and applicant for e-signatures vitiates the purpose of e-signatures. If the client should so choose, the client should be able to grant his attorney the authority to submit documents on his or her behalf.

Allowing the attorney this privilege would reduce the cost and time in communications between the client and practitioner. As a practical matter, it may take days for an attorney to read, summarize, and pass on communication with the USPTO to an applicant. Then, it may be some additional days before the applicant responds to the attorney. At which point, additional days may go by before

⁶ The problems of formatting for emailed submissions will be discussed below.

the attorney is able to comply with the applicant's wishes. This cost in time and attorney fees adds up quickly over the course of an application. Therefore, allowing for quick responses by email of a seasoned practitioner addressing the concerns of the examining agent at the USPTO would greatly reduce time and cost to the applicant.

Any significant alterations made by the attorney without clearance may be disputed outside the USPTO. It would be within the interests of reducing the cost and time of patent pendency to allow a lawyer to sign for his or her client. Furthermore, an alternate system could exist to remove this barrier and verify the work as that of the applicant.

c. Alternative Solutions

I would propose an alternate system in which e-signatures are accepted throughout the application process on all documents, including email documents. This would reduce much of the cost and time and that adds up over the course of a patent application. Specifically, office actions could be responded to almost immediately without waiting for the delay of the postal system, the cost of having a patent agent forward mail to the applicant, etc. This would significantly reduce patent pendency and help in lowering costs to both the applicant and the USPTO itself.

However, as the concerns outlined above demonstrate, there is a need for verifying the applicant's work and ensuring the origin of each document.

i. Email with Simultaneous Verification by Postal Mail

A simple measure could be put into place to safeguard an e-signature system against all of the aforementioned concerns. For any controversial documents between the USPTO examining attorney and the applicant, a separate form could be mailed at the same time of e-mailing or faxing of the document which would contain the applicant's acknowledgement of the contents of the emailed document and the authenticity of its origin. This would enable the USPTO to respond to the document as soon as it is received

and any dispute would be later resolved by virtue of the signed verification.⁷

This system would have to be fine-tuned. Perhaps a trial period should be set up in which this system could be used. It may be that instead of a verification of the contents of the e-signed document, the actual document should be sent after e-submission. However, this may increase costs to the USPTO in verifying that the previously e-submitted document is exactly the same as the later submission. Perhaps a limitation to fax documents would help this by forcing an applicant to print and verify the document being submitted contains all changes, comments, graphs, etc. However, some of the reduction in cost would occur due to less paper, ink, etc. being produced in submitting documents. Therefore, a system in which the applicant bears the risk of any error in formatting would appear to be the more cost-effective option. Any disputes over previously submitted matter or alleged computer error could then be resolved at the discretion of the USPTO with the presumption that the applicant bears the burden of proving the error and its effect.

As a further method of protection, the applicant who chooses to submit filings electronically or with e-signatures could sign a document at the start of the application stating that he or she understands the risks of e-submissions. The form could then state the measures used in protecting the applicant, such as the signed description of materials submitted. Additionally, the applicant could be informed that he or she bears the burden of proving an error or tampering with the record due to a third-party or technological problems. Otherwise, the applicant's claim of a problem in the process will be resolved against him or her.

By allowing this method of submission to be optional, the USPTO would create an environment in which the applicant could choose to reduce cost or pay an increased fee by following the current process. However, the net result would be a decrease in the average cost to

⁷ Moreover, as provided by the proposed change to Section 1.4(h) the USPTO will be able to request ratification or confirmation of a signature in situations where reasonable doubt exists as to the authenticity of the signature.

applicants if some follow this proposed format as well as a reduced cost to the USPTO in postage fees, ink, paper, and time.

ii. Written Signature upon the Conclusion of an Application

An additional simple, but effective, measure would be to have the USPTO mail a copy of the complete application on record at the conclusion of the application (be it a rejection or granting of the patent). The applicant could then verify the contents of the application record and sign a form affirming that the applicant did submit all the documents in the form as they appear on the record. This would serve as full, indisputable proof of the application in case of any later dispute. Moreover, the concerns of the USPTO that track changes or the appearance of a document may be altered would be satisfied as the applicant could verify that the record is complete.

An additional concern noted by the proposed rule:

An issue with electronically created documents is that they may have embedded comments and track changes in the electronic document that are not always visible when a document is rendered using a different computer system or a different software version, or when printed to paper. Variations in how much of the embedded comments and track changes are rendered on a given computer may cause the document signer to see different document content than the contents of the document that is submitted to the Office. Additionally, establishing a chain of custody may involve proving that a document viewed by the Office is, in fact, the same document executed by the signer.

In other words, the USPTO is concerned with unauthorized alterations or electronic errors resulting in undesired alteration to the applications. These concerns exist no matter what the form of submission but are increased by e-submissions.

However, verification of the complete application at the end would eliminate some of these concerns. An applicant would be able to review the complete file before receiving a final judgment granting or rejecting their application. At this point, an applicant facing a rejection would thoroughly comb the materials to make sure that all submissions were received and proper. An applicant about to receive a patent would take equal care in ensuring the authenticity of the application in case of future disputes regarding infringement. Requiring a physical signature on each document as it is submitted is a time-consuming and costly process that adds only marginally more protection for the applicant than this proposed method.

iii. Standard Formatting for E-Submissions

Any remaining problems could be satisfied by a requirement that all documents being submitted are either printed and submitted as currently stands, or to set a format for all documents submitted. This format could be in simpletext, pdf, Word, WordPad, or any other readily accessible and widely used format available to the public.

As technology advances, some of the concerns regarding email may be eliminated. The use of locked-documents with track changes would be helpful in allowing the USPTO examiner to reduce his or her time on communications. This reduction would be accomplished as the examiner would be able to see what changes had been made and if they satisfied his or her concerns with the application. Additionally, other technologies may develop which would allow for the applicant to verify their signature or submission of documents through electronic format via fingerprint recognition, voice recognition, or retinal scan. Although these technologies are still in the future, it can be hoped that whatever minor problems may exist in currently allowing e-signatures and submissions will be eliminated in the future.

c. Clear Demarcation of E-signature

A last concern of the USPTO is with clear marking by the applicant of intent to have used an e-signature. The specific proposal requires that any e-signature be between two forward slashes ("/"). It seems that this is an unnecessarily complex and potentially confusing solution to

clearly denoting an e-signature. For example, suppose an applicant uses a forward and a backward slash by mistake, hold a shift key while hitting the button, includes double slashes, etc. I can see no flaw in requiring e-signatures to be marked by a line stating something along the lines of:

THE FOLLOWING IS A SIGNATURE PROVIDED IN ELECTRONIC FORM CONSISTENT WITH THE USPTO'S GUIDELINES: (signature inserted here) .

This would reduce any confusion and ensure the knowing entering of an electronic signature by an applicant. It is possible that the language could be reduced to a capital bold line reading: **E-SIGNATURE:** Both of these suggestions would seem simpler and less prone to error or interpretation than the requirement of two forward slashes.⁸ Moreover, such a bold and conspicuous marking of an e-signature would be consistent with general contract law in requiring a clear signing in any contract.

An applicant would have difficulty arguing the validity of a signature, or the intent to sign, in any future disputes. Thus, the potential for fraudulent claims by applicants dissatisfied by the denial of their application would be eliminated or greatly reduced.

V. Copies in E-form Provided by the USPTO

The USPTO proposes to amend Section 1.19 to clarify that copies of documents may be provided in whole, or in part, in electronic image form at the Office's option.

A large problem might arise due to a transfer to an all electronic storage system. An issue arises if the USPTO destroys the original documents, or renders the original documents unreadable, during transfer to an electronic image system it is possible that later disputes

⁸ Should the USPTO deem it necessary to bracket the name with two forward slashes, a hybrid system could be used comprising a warning as listed above as well as the two forward slashes.

could be affected by the lack of original documents.⁹ It is probable that some patent applications will be altered during transfer due to the many fine details in drawings and the technological problems with computers and scanners. Therefore, at opposition hearings, challenges to the validity of patents, and other actions involving the patent it is possible that the record will be incomplete and a judge will have no way of knowing what was contained in the original record. The result would be an inability to trust the applicant or patent holder. Should the courts be persuaded that the file was altered in transfer to e-storage, it would encourage others to defend their patents by arguing that the application was altered in transfer.

A secondary problem exists with allowing the USPTO to provide documents in e-form. Specifically, many applicants do not have much in the way of computer knowledge or may not possess a computer.¹⁰ As a result, it is possible that when requesting former documents that a potential applicant will be unable to view the file. Such inability may be due to a lack of computer, lack of computer knowledge, or software incompatibility.¹¹

Concededly, it is expensive, and quickly becoming more so, for the USPTO to store all of the applications that it receives. A better system may be to have a trial period with some applications being converted to e-form with the original documents kept. A trial period would enable the USPTO to determine if there will be problems in conversion, if the originals are needed, what sort of litigation might arise, and any additional problems or concerns.

⁹ The proposed rule does not make it clear how such documents might be destroyed, but seems to imply that it will happen to some documents.

¹⁰ A 2002 article stated that approximately fifty percent of U.S. homes currently own a PC. See Lisa Gill New Computers: Who Will Buy in 2002; NewsFactor Network; January 7, 2002. This leaves a significant amount of homes that still have no access, not to mention many older generations in our society having little to no computer knowledge.

¹¹ A question exists as to whether the e-forms will be readable by all operating systems; e.g. Windows, Macintosh, Linux, or any other.

Furthermore, if the USPTO begins to accept more documents in electronic form, on CD, or in some other digital medium then the cost of maintaining the patents will be reduced. The incoming applications in the imaging or digital form desired by the USPTO would eliminate the cost of maintaining a warehouse and staff to file and move the massive quantities of papers. Moreover, as patents are only valid for twenty years from the date of application, expired patents could be transferred as the cost of losing or damaging the original is far smaller.¹² Accordingly, all, or most, applications in the future could be accepted in digital form and past expired applications converted. As the number of people choosing to apply in paper form dwindled due to the increased cost and hassle of paper filing versus e-filing, less documents would need to be stored. The resulting phase out of the maintenance of expired and new patents will eventually nearly eliminate this substantial cost to the USPTO. However, such a cost reduction could only be accomplished by immediately accepting documents in e-form.

VI. Changing of Fees

Currently, unbeknownst to many, some of the funds received by the USPTO are being used for other federal programs. Although President Bush has just cut the level of these funds, this funneling of funds results in an effective tax on inventors. The increased costs hinder the USPTO in carrying out its mission of encouraging the public to submit inventions and contribute to society. Furthermore, the costs of the USPTO are increasing with both time and the greater number of applications they receive. Therefore, the USPTO is already struggling to keep costs stable and will face an uphill battle in the future. Accordingly, the USPTO is in less of a position to

¹² The only issue that may arise from a damaged application after twenty years is whether or not it qualifies as prior art for a future applicant. However, as the information becomes part of the public domain after expiration, if it has any commercial value, it would have been used and other records of the method or invention would exist. Therefore, although slightly inconvenient for a potential applicant *if* the expired patent application were destroyed, it could be easily overcome.

charge beyond their actual cost and further hinder the imagination and entrepreneurial nature of the public.

The federal government may deem it necessary for the USPTO to be a supplier of additional funds. However, any diversion of fees should be more transparent to the public. Transparency would allow for the public to debate and petition the legislature for change if they feel that it is necessary. Due to the fact that any increase in cost to patent applications reduces the incentive to apply for patents, this practice would likely result in public outcry if it were better known.

One potential solution to this problem would be in some sort of tax system. This tax could take the form of either (1) a tax on profits derived from patented materials or (2) an additional fee at the time of final issuance of a patent.

However, a tax on the profits derived from patented materials contains certain problems including: (1) showing what profit is derived from a patent and (2) the potential for a patent to be challenged at any point until its expiration. The second tax solution also may be problematic in that it may force abandonment just before the issuance of a patent due to uncertainty on the part of an applicant as to the commercial applicability of a patent.

Unfortunately, I am not well-schooled in tax law, and for the first solution to work, some detailed tax code would need to be drafted. Congress and the IRS may or may not be able to derive a workable taxation on patent-derived profits. However, problems may exist with processes or parts that are not directly licensed to another but used by the patent holder or assignee. Accordingly, there would be no profit to tax and this loophole may be exploited companies.¹³

¹³ For example, a company which wishes to license a patented process from an inventor may instead hire the inventor onto its staff and pay a high salary in consulting fees, but only a nominal fee for the process. As such, both the company and the inventor would save money in avoiding this tax.

The second solution is, at least facially, the more productive one. By charging an increased fee at the time of grant of a patent, the public would be encouraged to attempt to obtain the patent. If the applicant were to discover that the granting of the patent were imminent, it would become easier for him or her to obtain funding through another source. Accordingly, the applicant will be able to determine at that point if it is economically viable to proceed. However, two goals will be accomplished: (1) the public will be encouraged to apply for a patent and (2) knowledge will be contributed to society, as abandoned applications enter the public domain.

A study would be needed to determine the additional cost to the USPTO due to an increase in applications resulting from lower initial fees. The size of the final, larger fee would depend on the results of such a study. However, it seems likely that more applicants would be willing to pay the fee once it was determined they were granted a commercially viable patent application. Even if the applicant chooses to abandon the application at the point of this final payment, it would still contribute to public knowledge and encourage others to attempt to obtain patents.

VII. Conclusion

The USPTO plays a vital role in stimulating long-term growth in the US economy. That role should be realized and encouraged as we continue into the 21st century. The proposed rules are a good start to updating the process of applying for and maintaining a patent. However, more needs to be done to encourage the imaginative and entrepreneurial side of the American public.

The USPTO should be applauded for undertaking this enormous task. The public will ultimately be better served by the revised USPTO. However, I hope that e-submissions and e-signatures become accepted beyond the level described in the current proposed rule, the USPTO does not move too hastily in transferring documents to digital form, and that the hidden tax on patent applicants is removed.

Thank you again for the opportunity to express my opinion to the USPTO.