

**Electronic Prior Art:
Chasing the White Rabbit of Legislative Intent**

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“Alice ... ran across the field after [the white rabbit], and fortunately was just in time to see it pop down a large rabbit-hole under the hedge. In another moment down went Alice after it, never once considering how in the world she was to get out again.”¹

The Internet is outdated concepts of what constitutes a printed publication for prior art purposes, much as the typewriter and microfilm did before it. Like Alice, chasing the white rabbit through a labyrinth filled with disappearing cats, mad tea-parties and insane royalty, the courts are forced to try to interpret the meaning of a statute that has been largely inapplicable for over a century.

Part I of this paper will give some background on what prior art is, why it is important, and why there is uncertainty as to its definition when applied to electronic documents and the Internet. Part II will explain what the Internet is and why the Internet is so difficult to categorize. Part III summarizes the current U.S. approach to dealing with electronic prior art and distribution of documents over the Internet. Part IV looks at how other countries treat prior art on the Internet, focusing mainly on the Japanese Patent Office (JPO) as the only body to have specifically addressed the issue. Part V discusses issues with the U.S. and Japanese models and suggests that Congress should revise the Patent Act to update the “printed publication” language to reflect current and future publication and distribution methods.

I. Prior Art

In the United States, the Patent and Trademark Office (USPTO) is required to issue a patent to an applicant unless the application falls under one of the exceptions specified in the Patent Act. The purpose of issuing patents is “[t]o promote the Progress

1. LEWIS CARROLL, ALICE’S ADVENTURES IN WONDERLAND 2 (Duffield & Co. 1908) (1906) [hereinafter *Alice in Wonderland*].

of Science and useful Arts”² by inducing inventors to disclose their inventions to the public rather than relying on tradeseecret protection. In return, the inventor (or her assignee) is given the right to exclude others from practicing the invention for twenty years from when she files the patent application. In order to prevent people from patenting inventions that have already been disclosed to the public, the Patent Act requires that the USPTO reject a patent application if the invention was “described in any *printed publication* in this or a foreign country.”³

The phrase “prior art” is used to describe previously disclosed inventions. Prior art is knowledge that was available to the public, specifically to those with ordinary skill in the particular art that comprises the new invention, prior to the filing of a patent application.⁴ If information that enables one with ordinary skill in the art to practice the invention is released, rather than kept as a tradeseecret, the patent system’s goal of giving the public the benefit of new inventions is already satisfied and issuing a patent has the opposite of the intended effect. Instead of increasing knowledge in the public domain, it restricts access, for 20 years, to information that is already available to the public.

The meaning of the term “printed publication” has changed over time. When wide distribution of an idea required a printing press and movable type, a statute denying a patent if the invention had been described in a “printed publication”⁵ was basically

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2. U.S. CONST art. I, § 8, cl. 8.
 3. 35 U.S.C. § 102 (a) (1994) (emphasis added).
 4. *See* 35 U.S.C. § 102 (a) (1994) (stating that patent shall not be issued if “the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country”); 35 U.S.C. § 102 (b) (1994) (stating that patent shall not be issued if “the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country”). This paper will focus on the language “printed publication” and does not deal with other uses that would constitute prior art.
 5. Act of July 4, 1836, ch. 357, 5 Stat. 117 (1836) (amended 1870; repealed 1952) (denying patent if invention was “described in any printed publication in this or a foreign country”).

redundant.⁶ In effect, all printings were synonymous with publication and all publications were printed. The printing technology of the time was geared toward making numerous copies, not just a single document. One did not go to the trouble and expensive of having something printed unless one sought wide distribution.⁷ At the time, the only other way to make a physical copy of something was to hand write it. Hand-written documents were not normally distributed widely because of the variations in style, the effort associated with creating multiple copies and the low quality of most ink.⁸

As printing technologies improved over the last 150 years, the differences between ‘printed’ and ‘published’ have emerged. With the advent of the typewriter, almost anyone could print a document without actually publishing it. With the advent of microfilm, people could publish documents without actually printing them.

The question now is whether the current incarnation of the “prior art” statute⁹ requires that prior art be "printed," "published," "printed and published" or something

6. Both terms were probably used in order to differentiate the process of creating a large number of copies from the actual dissemination of those copies. The statute required invalidation of a patent only if the document had been printed and then published prior to the filing date. Therefore, if the document was copied on May 1 and published to the world on June 1, June 1 would be the date, for prior art purposes, that the document was printed *and* published. See *In re Tenney* 254 F.2d 619, 626 (C.C.P.A. 1958):

Printing alone, of course, would be insufficient to reasonably assure that the public would have access to the work, for the possibility always exists that the printed matter may be suppressed and might never reach the public. Then too, there are time lapses between the printing and the publishing of a given work, and the public is not to be charged with knowledge of a subject until such time as it is available to it. For this reason, it is required that the description not only be printed but be published as well.

7. See *Id.* (stating that “Congress no doubt reasoned that one would not go to the trouble of printing a given description of a thing unless it was desired to print a number of copies of it”).

8. See *Gulliksen v. Halberg*, 75 U.S.P.Q. (BNA) 252, 253 (Pat. Off. Bd. App. 1937) (stating that other than printing “the only way in which a permanent record could be made was ... by writing out ... in longhand by means of a pencil or pen. Longhand records were often difficult to decipher by reason of eccentricities in penmanship, and often the ink used was of poor quality”).

9. 35 U.S.C. § 102 (1994).

else. This becomes an important distinction when dealing with the Internet and other new communication technologies. It is difficult to apply traditional legal definitions to the Internet because its paradoxical nature makes the Internet simultaneously fit and not fit into traditional ideas of how things work.

II. The Internet

The Internet is the most popular distribution method for electronic documents. In order to determine whether or not an electronic document was distributed to the public, it is helpful to know if the document was made available on the Internet. This requires a definition of what the Internet is and the different forms of publication on the Internet.

A. Definition of the Internet

Trying to define the Internet is like trying to define an ocean. All of the oceans, seas and gulfs on Earth contain salt water and are connected to each other. How do you define the exact point at which the Atlantic Ocean ends and the Gulf of Mexico begins? Any definition of the Internet must similarly differentiate the Internet from private networks (intranets) and separate access to the Internet from being a part of the Internet.

It has been posited that the Internet is a "global information system that is logically linked together by a globally unique address space based on the Internet

Protocol¹⁰ (IP)."¹¹ Like the ocean analogy, this definition has two elements, IP addresses¹² and connectivity. Under this definition, all computers that are connected and have unique IP addresses are part of the Internet, while any computer that does not run IP, or that is not connected to other computers in the IP address space, is not on the Internet. This definition fails, however, because computers that do not run IP have access to the Internet and are accessible from the Internet. In addition, many computers that run IP, have unique IP addresses, and can access the Internet, are nevertheless not accessible from the Internet and are therefore generally not considered to be part of the Internet.

Mainframe computers and their users are good examples of how traditional definitions of the Internet fail to account for its complexities. Many corporate mainframe computers run an IBM protocol called System Network Architecture (SNA), instead of IP. This protocol predates personal computers (PCs) and the Internet and is very hierarchical in structure because all of the processing in the mainframe world is done on the mainframe; often the terminals that connect to the mainframe are simply a keyboard and a monitor (input device and output device). These mainframes perform their function well and store data that is valuable to the customers of the corporations that run them.

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10. IP is one of a number of protocols that computers use to communicate with one another. A protocol is a framework of commands and responses that have predefined meanings. A computer sends a specified command when it attempts to establish a connection with another computer. The receiving computer knows what that command means and responds accordingly. It is similar to calling someone on the phone. It is expected that a person will say "Hello" or state their name, business name or department when answering the phone. Once this greeting has been made the caller states their name, the purpose of the call, or offers a greeting. If someone answers the phone without speaking, the caller will often be confused and try to start a conversation by saying "Hello?" Computers do the same thing. If a computer gets a response that it does not expect, it sends an "acknowledge" (ack) message, in order to restart the conversation from a known point. Because computers do not have the same capacity to improvise that humans do, they need to have structured rules that explain what to do in any situation. Protocols provide those structured rules.
 11. http://www.itrd.gov/fnc/Internet_res.html
 12. Installing IP on a computer requires that the computer be assigned a unique IP address. That address, similar to a postal address or telephone number, identifies the computer and allows it to communicate with other computers. IP addresses are written in dotted decimal notation (actually dotted hexa-decimal, as each number is an 8-bit number - 0 to 255) with four numbers separated by periods (e.g. 10.115.7.212).

There has been a drive to allow access to that data from the Internet. In order to accomplish this task without giving direct, unrestricted access to third parties, companies install ‘gateway’ computers, often referred to as ‘protocol converters,’ that translate the SNA protocol into IP. Gateways can also restrict what information third parties can access and what functions they can use. Users of the mainframes can also access the Internet through the mainframe, even though neither their machine nor the mainframe is actually running IP. In a case where a mainframe has access to, and is accessible from, computers on the Internet that run IP, it seems odd not to consider the mainframe a part of the Internet.

Similar to the mainframe example, there are examples of machines that do not have globally unique addresses, but are nonetheless attached to the Internet. Because the number of IP addresses is limited, many companies do not have globally unique IP addresses. In order not to conflict with anyone else, they set up a router, firewall or proxy server that NATs (Network Address Translation) the non-unique internal addresses to a unique external address.¹³ This allows a company to use only a couple of valid IP addresses for hundreds, or even thousands, of users. Technically, none of the internal users are connected using a “globally unique address space,” but they could still be on the Internet. Other companies have literally millions of IP addresses assigned to them and

13. Certain IP address ranges were not issued to organizations, among these are the 16.5 million addresses starting with “10.” that are reserved for public use. These addresses are not supposed to be visible (broadcast to) the Internet. This allows any organization to use these addresses internally so that their internal computers all have unique addresses within the organization. When these internal machines attempt to access the Internet they must pass through a firewall. The firewall will generally span two network segments, an internal segment with a 10.X.X.X address and an external segment with a globally unique address. The firewall provides NAT by accepting out-bound packets and relaying them to external machines using its own, unique address. External machines respond to the firewall and the firewall then translates the address back to the internal originating computer. This allows the organization to use a small number of unique addresses in order to connect a large number of internal computers to the Internet.

their internal networks have access to the Internet, so they would seem to meet both parts of the definition. However, those internal computers are not themselves accessible from the Internet and are not generally considered to be part of the Internet.

A better definition of the Internet would be a worldwide collection of networks that allow unrestricted, bi-directional access. This means that organizational and corporate firewalls separate intranets from the Internet.¹⁴ The fact that you can access the Internet from your Palm pilot or cell phone does not mean that those devices are technically part of the Internet. On the other hand, if your Internet Service Provider (ISP) allows unrestricted access between your computer and the Internet, you would be a part of the Internet whenever you were online.

Another aspect of the definition of the Internet is differentiating it from the World Wide Web (Web). There is a great deal of confusion about the difference between the Internet and the Web. Some people seem to think that the two are the same, others think that the Web is a subnetwork within the Internet, still others think that they are two different networks. In reality, the Internet is a network of computers and other networks

14. This conceptualization makes more sense in light of the Open System Interconnection (OSI) reference model. The OSI model was created as a means of standardizing interfaces between different hardware, software and protocols. The OSI model is a 7-tiered system, used to identify the properties of different hardware, software and protocols. At the bottom is the Physical layer, which defines the properties of cables and wiring used to connect different pieces of hardware together. The second layer, Data Link, defines connections between multiple computers on a hub. The next layer, Network, defines protocols, like IP, and Local Area Network (LAN) bridges, which allow multiple hubs to communicate with each other and form a network. The fourth layer, Transport, encompasses protocols, like TCP (Transmission Control Protocol), and routers, which allow networks to communicate with each other in a reliable fashion. IP alone allows computers to communicate, but the addition of TCP or User Datagram Protocol (UDP) allows for error-checking and the reordering of packets that arrive out of order. What people refer to as IP is really either TCP/IP or UDP/IP, a multi-layer protocol that provides layer 3 (Network) and layer 4 (Transport) functionality. Layers 3 and 4 define the Internet. Layer 5, Session, deals with the interfaces between applications (the seventh layer) on different computers. The sixth layer, Presentation, is where something like the World Wide Web would function. Presentation concerns how things look to the end user, the type of interface (e.g. GUI), etc. Finally, at the top is the Application layer, which defines the properties of the actual software programs, like ftp, that run on the computers.

and the Web is an application that makes it easier to find data on the various computers that are accessible from the Internet. In essence, the Web is a Graphical User Interface (GUI) for the Internet. Before the Web, users typed in long strings of commands every time they wanted to go from one document or site to another and they only got text displays.¹⁵ The Web allows users to point their mouse, click to go to other sites, and simultaneously display images, sounds, movies, graphics and text.

B. *Types of Internet Communications*

The Web is part of one of the four major categories of communication on the Internet. Those forms are electronic publishing (e.g. websites, ftp servers,¹⁶ etc.), news groups (e.g. usenet news groups, listservs and mailing lists), chat (e.g. IRC and bulletin boards) and E-mail.

Electronic publishing requires that a user post a document or file onto a website or ftp server. Users who wish to access this file either need to know its address, or they have to search for the file on a Web search engine, or through indexes like Archie and Gopher.¹⁷ Due to the huge number of Web and ftp servers, without a known address users will only find files that are published on well-known sites or ones that have registered with search engines.

News groups encompass two technologies that many people separate: usenet news, and mailing lists or listservs. Usenet news is a method for posting text and files by

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15. See ED KROL & PAULA FERGUSON, *THE WHOLE INTERNET FOR WINDOWS* 95 315 (O'Reilly & Assoc., Inc. 1995) (explaining that “[i]n most cases, they were command-line utilities: they placed the onus on you, the user, to understand the commands needed...and to know where the data you want resides”).
 16. ftp - File transport protocol is a method for transferring files between two computers that are physically connected (by serial cable or communication line) and running IP.
 17. Archie and Gopher are two indexing models that use different methods to index large numbers of files and documents. They are similar in function to Web search engines and portal sites like Yahoo. See Krol, *supra* note 15, at 315-44 (discussing Gopher); *Id.* at 261-84 (explaining Archie).

interest group.¹⁸ Using a news reader or web browser, the user contacts a news server that contains as many 50,000 different news groups. Each group has a specific area of interest. Some are moderated and others are not. Users can read the posted information, reply to it, or start new threads.¹⁹ Similarly, users can sign up for a mailing list or listserv that caters to a specific area of interest and has an E-mail address that forwards to everyone on the list.²⁰ Similar to news groups, these can be moderated or unmoderated. Users have the option of reading or ignoring the messages, replying to a message individually or to the entire group, or starting a new thread. News messages can take the form of text or files and can take a few minutes or a few days to get to everyone.

Chat encompasses real-time communication technologies like Internet Relay Chat (IRC),²¹ bulletin boards and discussion groups. Most forms of chat require an ftp client, web browser or IRC client in order to attach to the chat server. All messages are instantly broadcast to all currently logged-on users and some chat servers are set up to archive old conversations. These groups are similar to news groups except that the messages appear instantly. This makes chat much more conversational than E-mail or news groups as people type quickly, and use a lot of abbreviations²² and emoticons,²³ and generally trying to keep the turn-around time as quick as possible. Like news groups, chat often allows you to attach files as well as simply ‘talking.’

18. *See id.* at 173-207 (discussing usenet news groups).

19. A thread is a topic of conversation. Threads can be started with questions of statements and all replies to the original statement or question, or to other replies, is usually a part of the same thread of conversation.

20. *See* Krol, *supra* note 15, at 100-08 (discussing list servers).

21. *See id.* at 376-81 (discussing IRC).

22. Internet abbreviations are frequently acronyms for common phrases, for example: BRB for “be right back,” BTW for “by the way” or TTYL for “talk to you later.”

23. Emoticons, also known as smilies, are representations of faces using various special characters. They are viewed sideways, and are used to show emphasis or emotion. E.g. :-) is happy, while :-(is unhappy.

E-mail is, as the name Electronic Mail would imply, similar to postal mail (snail mail). Of course it is electronic instead of physical, and it is generally much faster than snail mail – in some cases being almost as fast as chat. E-mail allows users to send and receive text and files and to send to groups or individuals.

C. *Paradoxical Nature of the Internet*

There are a couple of paradoxes about the Internet that are relevant to prior art, and that make the Internet difficult to regulate and consistently manage. The first paradox is that, while the majority of information on the Internet is accessible to the public, the lack of order and structure on the Internet makes it nearly impossible to find any but the most popular and well known sites. The second paradox is that, while everything that occurs is time-stamped to provide users information about when a document was created, those time-stamps are so easy to manipulate that they are not in any way reliable.

While literally millions of sites are available, it is hard to find all but a very few of them unless you know exactly where to look because the Internet is not organized in any traditional sense. Internet users find information through a combination of means, including: 1) search engines; 2) links from other sites; 3) guessing Domain Names; 4) and being told the address of the site. This is relevant to a discussion on prior art because it is not enough that a document is available to the public; the public must also be able to find the document.²⁴ In addition, the content on the Internet is constantly changing and a document that is on a site one day may be gone the next without even a trace. This means that an examiner may not be able to find prior art that was formerly available.

24. *In re Hall*, 781 F.2d 897 (Fed. Cir. 1986) (stating that single copy of doctoral thesis was sufficient publication because it was available in university library and was appropriately indexed).

Another issue with the Internet that concerns prior art is that, while everything is time and date stamped, by simply changing the date on a computer you can create files with any time or date that you want. A simple example of this is that many software programs create files with time stamps that indicate the version of the program. For instance, all of the program files for Paint Shop Pro version 5.01²⁵ were ‘created’ at 05:01:00 a.m. on May 28, 1998. This illustrates that you cannot completely trust the date and time information on a file because it is so easy to manipulate. Part of the question when determining if there was prior art to invalidate a patent is determining when a given document was published.²⁶ If there is no reliable way to determine when the document was published, then there is no way of knowing for certain if the public had access to the material.²⁷

III. State of the Law in the United States

While the Internet has revolutionized the way the world operates, The United States Patent Act has not been updated in almost fifty years and is thus silent on how to treat electronic publications or dissemination of information over the Internet. All of the existing precedent is in the form of case law. The only other documentation relating to electronic prior art is the Manual of Patent Examining Procedure²⁸ (MPEP). The MPEP provides guidelines to patent examiners based on rulings in various cases but does not create any independent guidance concerning how to deal with electronic documents.

25. Version 5.01 usually indicates the fourth major release (1.0 was the original, 2.0 was the first major release, etc.), which included new features, etc. and the first minor release (5.0 was the major release, so 5.01 would be the first update to it), which usually consists only of fixes to bugs in the 5.0 release.

26. *See* 35 U.S.C. § 102 (a)-(b) (1994) (requiring that reference be published before specific date).

27. *See Hall*, 781 F.2d at 899 (discussing necessity that dissertation was indexed and catalogued and thus available to public).

28. PATENT & TRADEMARK OFFICE, U.S. DEP'T OF COMMERCE, MANUAL OF PATENT EXAMINING PROCEDURE, (7th ed. rev. 1 2000) [hereinafter MPEP].

Furthermore, courts neither refer to the MPEP, nor are they bound by it. The MPEP is only used by the patent examiners, who determining whether or not to grant the initial patent.

A. Case Law Discussing Electronic Documents and the Internet

“Alice felt dreadfully puzzled. The Hatter’s remark seemed to have no sort of meaning in it, and yet it was certainly English. ‘I don’t quite understand you,’ she said, as politely as she could.”²⁹

Because the statutes do not provide any really useful information about which electronic documents should be considered as prior art, the courts have been forced to interpret the original legislative intent. This exercise makes as much sense as a conversation with the Mad Hatter or March Hare. While speaking properly and with great precision, the Mad Hatter and March Hare make very little sense. And so it is with a statute that was designed around a printing process that is no longer feasible.³⁰ The prior art terms were precise and made a great deal of sense in their own context, but when applied to the results of a century of technology improvements they leave the courts feeling as “dreadfully puzzled” as Alice.

The courts have written very few decisions concerning whether or not electronic files are considered prior art. One case of note is *Amazon.com v. Barnesandnoble.com*,³¹ which allowed the use of pages from a website describing an electronic ordering system to be used as prior art. However, the pages were evidence of a public use and not of a printed publication. The question in *Amazon.com* was whether a business process (one-click or “single-step” checkout) was novel. The admissibility of the pages does not

29. *Alice in Wonderland* at 85.

30. *See supra* note 6 and accompanying text (discussing original congressional intent).

31. 73 F. Supp. 2d 1228 (W.D. Wash. 1999) *rev’d*, 239 F.3d 1343 (Fed. Cir. 2001).

appear to have been challenged, and the opinion discusses neither the dates of publication or retrieval of those pages nor the validity of those pages as prior art. The court stated that the information on those pages was insufficient to invalidate the patent.³² This decision does not assist us in determining the status of electronic documents as prior art.

Other cases have indicated, although not directly, that electronic files can constitute printed publications. *In re Wyer*³³ is one example in which the court stated that “whether information is printed, handwritten, or on microfilm or a magnetic disc or tape”³⁴ it can be considered a printed publication.

B. Categorizing Media Based on Optimization for Mass Production

Without a direct decision from the courts it is necessary to look for analogous rulings that shed light on the status of electronic documents. One method that is used to differentiate printed publications from non-printed publications is determining if the particular medium is optimized for widespread distribution. The first category of media is optimized for making a large number of copies and includes printing presses and mimeographs. Documents created on printing presses and mimeographs have universally been held to be printed publications.³⁵ The second category of media can be used for a variety of reasons, including but not limited to mass distribution. This category includes typewriters and microfilm. A document might be typewritten in order to have a clear, clean copy. A document might be put on microfilm to store and index it. While both media allow for easy replication, there are valid, alternative reasons for transferring them

32. *See id.* at 1234 (stating that “Oliver’s Web Basket” was different enough from ‘411 patent to be insufficient to invalidate ‘411 patent).

33. 655 F.2d 221 (C.C.P.A. 1981).

34. *Id.* at 229.

35. *See* Max Stul Oppenheimer, *In Vento Scribere: The Intersection of Cyberspace and Patent Law*, 51 FLA. L. REV. 229, 251 (1999) (stating that “[t]here appears to be no case holding that a mimeograph was not a printed publication”).

to that medium as well. Because of this, typewritten and microfilm documents require additional evidence in order to prove that they are printed publications. Usually that evidence comes in the form of indexing or publicly displaying the document.

It seems clear that electronic documents fall into the second category, those that could be created in that form for a variety of reasons. Typing is now an almost lost art with the advent of word processing. Why type something when you can key it into a word processing program that will verify your spelling, grammar and punctuation? Word processing also allows you to correct and re-print a paper, or cut-and-paste portions of text from other sources. Computers allow for quick and cheap transportation of documents, without fear of damaging them. They can also imbed pictures, change sizes and fonts, and print in different colors. All of these are additional reasons for creating an electronic document using a word processor as opposed to simply wishing to rapidly disseminate the information.

C. *“Printed” Theory Versus “Publication” Theory*

Another way to determine if a document is a printed publication is to look to the established meanings of “printed” and “publication.” In general, the courts have tended to focus on either printing or on publication, indicating that the original purpose behind the term “printed publication” no longer comports with the printing and publication industries.³⁶

Courts have construed “printed” to mean “probability of dissemination”³⁷ based on how the document is produced and “publication” to mean “public accessibility,”³⁸

36. *See id.* (outlining opposing theories).

37. *In re Wyer*, 655 F.2d 221, 226 (CCPA 1981).

38. *Id.*

regardless of the form the document takes. The courts have not come to any consensus as to which term is the dominant one, although the publication theory appears to have the upper hand,³⁹ so the cases often do not seem very consistent in their application.

One example of the “printed” view is *in re Hall*,⁴⁰ in which a single copy of a doctoral dissertation in a university library in Germany was sufficiently accessible to void a patent because it was indexed and catalogued. Similarly, in another case, a single copy of a college thesis was held to be sufficient because it was in a library index, even though there were copying restrictions on it.⁴¹ Advocates of the “printed” view do not require actual access by the public, only that it be published using a mass printing process and accessible to members of the public if they choose to look in the right place for it.⁴²

Under the “printed” theory, an electronic document would probably not be considered a printed publication because it has no physical form. The printed theory generally requires creation by a mass printing process, which is absent in on-line publishing. Even if the document were sent to people with ordinary skill in the art it would seem to fail the printed test.

Those favoring the “publication” approach tend to overlook the medium and concentrate on the public’s access to the information. Due to faulty indexing, microfilm that was produced from unpublished German patent applications during World War II was determined to fail the printed publication standard by the court examining *in re Tenney*,⁴³ even though there was a process for ordering copies. The fact that the

39. See Oppenheimer, *supra* note 30, at 234-35 (stating that “modern cases have tended to focus on ‘publication’ . . . with little regard for the document’s form or dissemination”).

40. 781 F.2d 897 (Fed. Cir. 1986).

41. *Ex parte Hershberger*, 96 U.S.P.Q. (BNA) 54, 56 (Pat. Off. Bd. App. 1953).

42. *Id.*

43. 254 F.2d 619 (C.C.P.A. 1958).

information was on microfilm was immaterial; what mattered was that it was essentially unavailable to the public because it was misfiled and therefore not really accessible. In *Philips Elec. & Pharm. Indus. Corp. v. Thermal & Elec. Ind. Inc.*,⁴⁴ the court held that microfilm could be considered a printed publication if it were properly indexed and filed.⁴⁵ Similarly, the *in re Wyer* court held that a patent was invalidated because of prior art in the form of an Australian patent on microfilm.⁴⁶ The reasoning was that there was a method in place for procuring paper copies.

Proponents of the “publication” theory do not have a problem considering electronic documents to have been published, as long as they were accessible and locatable by the public. The problem would be that the majority of websites on the Internet, while accessible, are not going to be easy to locate. Search engines index only a small fraction of all webpages; unless searchers know exactly what they are looking for, they will end up missing many websites that neither buy search words nor have a great deal of referring links. Because the Internet is always changing, it is difficult or impossible, to say what was actually available, to whom it was available, and how easy it was to locate at the time of the patent application.

D. Provisions of the MPEP Discussing Electronic Documents and the Internet

The MPEP is a publication of the USPTO that provides patent examiners with guidelines to be followed when examining patent applications. The MPEP describes

44. 450 F.2d 1164 (3rd. Cir. 1971).

45. *See Philips Elec. & Pharm. Indus. Corp. v. Thermal & Elec. Ind. Inc.*, 450 F.2d 1164 (3rd. Cir. 1971) (finding that microfilm could constitute printed publication if it were made available to public by proper indexing).

46. *In re Wyer*, 655 F.2d 221, 226-27 (CCPA 1981).

itself as “[a] loose-leaf manual, which serves primarily as a detailed reference work on patent examining practice and procedure for the Patent and Trademark Office's Examining Corps.”⁴⁷

MPEP § 2128 is the only section with information relevant to the issues in this paper. Other sections of the MPEP contain information about the citation of electronic documents,⁴⁸ restrictions on communications via electronic mail,⁴⁹ and general information about searches on the Internet,⁵⁰ but none of that is really relevant to how prior art is defined when dealing with the Internet.

There are three provisions within the MPEP § 2128 concerning prior art on the Internet. First, § 2128 treats the term “printed publication” as a single term that indicates that the document has been made public in a way that those ordinarily skilled in the art can locate it. Next, electronic publications can be considered printed publications under 35 U.S.C. 102(a) and (b) if they meet the criteria above. Finally, when an electronic document is posted on the Internet or other online database, if it meets the ‘printed publication’ standard, then it is considered to be publicly available as of its posting date. If the publication does not provide posting or retrieval dates, the document cannot be relied upon as prior art. Furthermore, there does not need to be a showing that anyone actually downloaded or viewed the document.

However, the MPEP does not provide any guidance on how to determine if an electronic publication meets the standard of a printed publication. The MPEP only says that electronic documents should be treated in the same manner that physical documents

47. *See Id.* at Introduction.

48. *See* MPEP § 707.05(e).

49. *See* MPEP § 502.03.

50. *See* MPEP § 904.02 (quoting *Internet Usage Policy*, 64 *F.R.* 33056 (June 21, 1999)).

are treated, with the exception that there must be a verifiable posting or retrieval date on an electronic publication. The two subsections under MPEP § 2128 contain general information about what is treated as prior art and what is not. Neither subsection deals specifically with the Internet.

The bottom line is that there is no real standard or guideline for how to treat electronic publications under the existing patent laws in the United States. At least in the near-term it will be an individual assessment of each case. In each of those cases it will be a question of creating an analogy to an existing rule for printed documents. Other countries are facing similar issues.

IV. State of the Law in Other Countries

There has not been any consensus in the rest of the world on how to deal with electronic prior art. The other notable patent issuing bodies are the JPO and European Patent Office (EPO). In addition, there is the World Intellectual Property Organization (WIPO), an agency within the United Nations (UN) that attempts to standardize intellectual property protection around the world.

A. The European Patent Convention

Like the U.S. Patent Act, the European Patent Convention (EPC) does not mention electronic documents. Article 54(2) of the EPC explains that “[t]he state of the art shall be held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the filing of the European patent application.”⁵¹ The language “or in any other way” seems to be fairly expansive. In fact a “decision of the Enlarged Board of Appeal of the European Patent Office (EPO)

51. EPC 54 art. 2.

states that ‘. . . Article 54(2) EPC does not make any distinction between the different means by which information is made available to the public.’”⁵²

Unfortunately, unlike in the U.S., there has been neither case law in Europe nor refinements to the EPC that would clarify this situation.⁵³ So, in addition to not having any legislative direction, the European courts do not even have any cases to use as precedents. The European system is only an improvement over the U.S. system in that the language is less restrictive.

B. World Intellectual Property Organization

The WIPO was organized as an agency under the UN in the late 1960s. WIPO is the successor of an earlier organization, the Bureaux Internationaux Reunis pour la Protection de la Propriete Intellectuelle (BIRPI), which was the secretariat of the Paris Convention. The Paris Convention, a treaty drafted in 1880 and in force in 144 countries, was the first modern multinational protection for intellectual property and established “national treatment,” “right of priority,” and “special agreements.” WIPO was formed to continue the basic principles of the Paris Convention, as well as to promote international patent harmonization, and generally to promote intellectual property rights worldwide.

The Fourth Session of the Standing Committee on the Law of Patents (SCP), a sub-group within WIPO, created a document entitled “Disclosure of Technical Information on the Internet and Its Impact on Patentability.”⁵⁴ The document gives an overview of the stance of the three major patent granting organizations, the USPTO, JPO

52. *Disclosure of Technical Information on the Internet and Its Impact on Patentability*, SCP/4/5 (November 6-10, 2000) at 9 [hereinafter WIPO paper] (quoting 1993 OJ (G1/92) at 277).

53. *See id.* (stating that “neither specific provision nor case law concerning a disclosure on the Internet and its prior art effect can be found”). A search of the EPC website (<http://european-patent-office.org/>) resulted in no decisions on the topic since the WIPO paper was released.

54. *Id.*

and EPO, on prior art and the Internet. Although the document raises many issues, including finding documents and time and date stamps, it ends with an invitation to SPC members to express their thoughts and opinions on the matter. While this is a good start, WIPO has, as yet, not come to any formal conclusions as to how to treat electronic prior art and disclosure over the Internet.

C. The Japanese Patent Office

Unlike the U.S. and EPC, Japan has revised its patent laws to specifically include prior art on the Internet. The Japanese equivalent to 35 U.S.C. § 102 (a) and (b) is § 29 (1) (iii), which states that “inventions which were described in a distributed publication or made available to the public through electric telecommunication lines in Japan or elsewhere prior to the filing of the patent application” are not patentable.⁵⁵ The Japanese system does not require a “printed publication” but merely dissemination of the information. In addition to the Patent Law itself, the Japanese Patent Office (JPO) has published the Operational Guidelines on Treatment of Technical Information Disclosed on the Internet as Prior Art⁵⁶ (guidelines), which fleshes out the standards for prior art on the Internet.

The guidelines define various terms from § 29 (1) and explain, and attempt to mitigate, problems presented by the Internet. The guidelines specifically mention the Internet and other electronic transmission methods as being covered by § 29 (1). Two of the problems that the guidelines address are the relative ease with which electronic documents can be modified and the trouble the public has in finding many documents.

55. Patent Law, Law No. 121 of April 13, 1959 as amended by Law No. 220 of December 22, 1999 (available at: <http://www.jpo.go.jp/shoukaie/patent.htm>). [Hereinafter Japanese Patent Law]

56. Published December 10, 1999 (available at: <http://www.jpo.go.jp/infoe/unnyousisine.htm>).

One of the greatest strengths of electronic word processing is the ease of modifying documents. In addition, because documents are time stamped by the computer on which they are modified, by changing the clock on the computer you can corrupt the time and date stamps and make a document look older or newer with little effort and no effective means of detecting the counterfeit. Section 3.1.1 (3) of the guidelines addresses this issue. It lists types of websites that can generally be relied upon to have accurate information that has not been tampered with. Publications that are found on “[w]ebsites of publishers that have been issuing publications etc. for a long time” and “[w]ebsites of academic institutions,” “international” or “public organizations” can be cited if they include dates of publication or if the examiner can get a certificate indicating time and content “from a person with authority or responsibility for the publication.”⁵⁷ If there is doubt about the date or content, the publication may not be used as prior art.

Because there are so many sites available on the Internet, and only a small number are indexed or easily found, it is necessary to determine if the public would be able to actually find the website in question. Section 3.1.2 addresses the issue of when a website is sufficiently accessible to the public. Subsection 1 outlines types of websites that are considered to be available to the public. These sites include: “[w]ebsites that are registered with search engines” or those that are “linked from the website of a related academic body or news site.”⁵⁸ This is not limited by websites that require passwords if “anybody can access the website etc. by acquiring a password through a set, non-discriminating procedure, regardless of whether there is a charge for acquisition of a

57. Japanese Patent Law § 3.1.1 (3).

58. Japanese Patent Law § 3.1.2 (1).

password.”⁵⁹ A website that charges a fee is acceptable as long as “anybody can access the website etc. by paying a fee.”⁶⁰

Section 3.1.2 (2) gives examples of sites that should not be considered when looking for prior art. Those websites include ones which are “only accessible by chance due to the lack of publication of the URL,”⁶¹ those that “are only accessible by members of a specific body or a company and of which information is treated as secrets,” encrypted websites, “excluding cases where a decoding tool is openly available through a set means, with or without a charge,” and “[i]nformation that is not published over a period of time sufficient to allow access to the general public.”⁶²

While there is certainly some wiggle-room in these definitions, the Japanese have made an effort to outline the basic guidelines and provide a roadmap for their examiners. How much time is “a period of time sufficient to allow access to the public”?⁶³ It is a judgment call, but at least it is an issue that has been raised and must therefore be addressed.

V. *How Information on the Internet Should Be Treated*

The chief difficulty Alice found at first was in managing her flamingo ... and when she had got its head down, and was going to begin again, it was very provoking to find that the hedgehog had unrolled itself, and was in the act of crawling away: besides all this, there was generally a ridge or furrow in the way wherever she wanted to send the hedgehog to, and, as the doubled-up soldiers were always getting up and walking off to other parts of the ground, Alice soon

59. *Id.*

60. *Id.*

61. URL stands for Uniform Resource Locator, and is synonymous with web-site address.

62. Japanese Patent Law § 3.1.2 (2).

63. *Id.*

*came to the conclusion that [croquet] was a very difficult game indeed.*⁶⁴

The problem with the current U.S. system is that, much like Alice's game of croquet with the Queen of Hearts, the rules are not clear and it is impossible to tell if the courts are making the right decisions because it is not at all clear what the point of the legislation is anymore. Japan, meanwhile, has taken a completely different approach, but one that has problems of its own.

A. Issues With the Japanese Approach

In Japan, the legislature has made a decision as to what should be included in prior art, and the Examination Standards Office (ESO) has provided reasonably thorough guidelines to make sure that the patent examiners look at the major issues and have some guidance concerning how to make their decisions. The real problem is not with the ESO guidelines and the issuing of patents, but with the lack of clarity when prosecuting patents. If an invention is patented and a rival manufacturer presents evidence of electronic publication on a website without "dates of publication" and that rival can produce numerous, disinterested parties to swear the public had access to the website prior to the filing date, what happens? According to the ESO guidelines the site has to have a publication date or a certificate "from a person with authority or responsibility for the publication."⁶⁵ In this case we have neither the date nor the certificate, but we do have other disinterested witnesses. It is unclear how such testimony would affect the outcome of a dispute.

64. *Alice in Wonderland* at 104-05.

65. Japanese Patent Law § 3.1.1 (3).

In addition to issues that are only partially discussed, there are other issues that the Japanese system does not address at all. The ESO guidelines focus on websites. While much of the information that is electronically published is in the form of websites, this approach ignores ftp sites, chat, E-mail and news. This potentially ignores large quantities of widely distributed information. It seems odd to preclude a patent because the invention was disclosed on a website that people had to actively look for but not for an invention that was disclosed in an E-mail that was sent directly to the same individual. Such a distinction is particularly puzzling in light of the fact that the Internet (and its predecessor ARPAnet) was initially designed specifically for university, corporate and military researchers.⁶⁶ Many of the tools, like news groups, were designed as a method for researchers and inventors to share ideas, information and inventions. By focusing on websites, the ESO ignores the reality of the means by which a great deal of information is disseminated within the community of users who are most likely to have ordinary skill in the art of many inventions.

B. Issues With the U.S. Approach

In the United States, the legislature has avoided any stand on the issue of what constitutes prior art and has left it to the courts to decide. The USPTO has published guidelines based on a few of the conflicting cases in an attempt to give some standardization to the patent examiners' decisions. The U.S. statutes reflect 165-year-old notions of how documents are created and disseminated that have been out of date for over 130 years.

66. See Krol, *supra* note 15 at 14 (explaining development and origins of Internet).

The U.S. system fails to give any meaningful guidance to examiners. Cerebral exercises used to determine what people born in the 1700's would think about the Internet are much like a game of croquet played with flamingos as mallets, hedgehogs as balls, and doubled over cards as wickets - ones that constantly get up and move to other parts of the field. Both seem destined to lead to ludicrous results. It does not seem at all implausible that different judges, using entirely different standards, will regularly come to widely varying conclusions on cases of the exact same type.

In order to fix this issue, Congress should rewrite § 102 (a) and (b) to replace the "printed publication" language. Instead, the statute should prohibit a patent in cases where the invention was disclosed to members of the public with ordinary skill in the art. In addition, the USPTO should write guidelines, similar to those in Japan, that outline the different issues with online and electronic publications and provide guidance for the examiners. However, unlike the ESO guidelines, the USPTO should provide guidance on all facets of electronic publishing.

C. Specific Recommendations

The USPTO should publish guidelines that account for the major forms of electronic communications. Unlike a federal statute, agency guidelines can be changed with some ease and should reflect the current state of technology. Ignoring for the

moment the single document rule,⁶⁷ which is outside of the scope of this paper, most forms of Internet communication can be dealt with much as are traditional forms of communications.

The proposed USPTO guidelines should follow the model used by the ESO guidelines, with the addition of including references to ftp servers and information catalogued on Archie or Gopher, even though the mass of information is published on the Web. Archie and Gopher are cataloging utilities that act much as card catalogues. Because a single copy of a doctoral dissertation in a university library in Germany could defeat a U.S. patent,⁶⁸ it seems to make sense that an electronic version of that same document on the university's ftp server would be similarly fatal to a patent application if the document were catalogued on an Archie or Gopher server.

While websites are mentioned in the ESO guidelines, chat and news are not, so guidelines will have to be created from scratch for those media. Both chat and news are generally geared toward specific interest areas. Certainly a posting in a chat room, on a bulletin board or to a listserv should qualify as prior art if it is frequented by members of the public who have ordinary skill in the art. These communication methods are similar to conferences and conventions, which are attended by specific interest groups. In such a case accessibility of the public is not really at issue because the interested public has been

67. The single document rule states that in order for an invention to be anticipated under 35 U.S.C. § 102 (a)-(b), every element must be contained within a single document. *See Connell v. Sears Roebuck Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983). This becomes an issue with electronic documents because they don't have a distinct physical form or easily recognizable boundaries. If a document links to another document does that count? How about if each page of the document is in a different file? Does an IRC conversation count as a document? Is a whole website one document or many? *See John T. Soma & Alexander J. Neudeck, The Internet and the Single Document Rule: Searching for the Four Corners of the Electronic Paper*, 78 J. PAT. & TRADEMARK OFF. SOC'Y 751 (1996) (discussing issues surrounding single document rule and electronic documents).

68. *In re Wyer*, 655 F.2d 221, 226-27 (CCPA 1981).

made aware of the location of the document. Either the document was sent to them (listserv) or was made available at a place frequented by people with ordinary skill in the art (chat rooms and bulletin boards). If postings are archived and searchable, there is an even stronger case for blocking patents because even someone who missed the original posting can search through and find the posting later. Additionally, because all such postings are independently time- and date-stamped, there is a reasonably reliable indicator of when the information was made available to the public.

The final method of electronic communication that the proposed guidelines must address is E-mail. Documents sent via E-mail should be considered as prior art if they are sent to people ordinarily skilled in the art, or if they are widely distributed. This is a similar situation to a paper document sent through the mail. An interoffice memo would probably not constitute prior art, and neither should E-mail sent to an internal distribution list. But a graduate student sending a written copy of her thesis by mail should not be treated differently than if she had E-mailed an electronic copy instead.

VI. Conclusion

'Cheshire Puss,' [Alice] began, ... 'Would you tell me, please, which way I ought to go from here?'

'That depends a good deal on where you want to get to,' said the Cat.

'I don't much care where — ' said Alice.

'Then it doesn't matter which way you go,' said the Cat.

'— so long as I get SOMEWHERE,' Alice added as an explanation.

'Oh, you're sure to do that,' said the Cat, 'if you only walk long enough.'⁶⁹

69. *Alice in Wonderland* at 76-77.

The U.S. patent system is poorly equipped to deal with prior art on the Internet. Different standards and a general lack of direction from Congress are inhibiting the patent system from creating standard and reliable rules. The corresponding uncertainty undermines the very purpose of the system by discouraging people from disclosing new knowledge to the public. Congress needs to update the antiquated language of the Patent Act with a reasonable alternative that takes into account changes in publishing technology that have taken place over the last 130 years. Until Congress decides what constitutes a printed publication the courts, we will, much like Alice, be left wandering aimlessly through an electronic wonderland.