Categorizing the Useful Arts: Past, Present, and Future Development of Patent Classification in the United States*

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In 1836, Congress directed the Commissioner of Patents to develop a patent classification system. After 178 years of dynamic development, that United States Patent Classification system is being retired in favor of a new system, developed jointly with the European Patent Office, called Cooperative Patent Classification (CPC). Professor Simmons presents the history of the patent classification system in the United States and discusses how CPC is being implemented.

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Classification lies at the foundation of the mental processes. Without the power of perceiving, recognizing resemblances, distinguishing difference in things, phenomena and notions, grouping them mentally according to those resemblances and differences, judgment is impossible, nor could reason be exercised in proceeding from the known to the unknown.1

United States Patent Classification: An Example

§1 In the 224 years of its existence, the United States Patent and Trademark Office (USPTO) has issued more than eight million patents.2 The USPTO’s ability to evaluate new patent applications requires that this collection be organized and categorized both as an aid to searching and as a tool for the departmental organiza-

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tion of the thousands of patent examiners currently employed by USPTO.\(^3\) To this end, in 1836, USPTO developed its own classification system: United States Patent Classification (USPC),\(^4\) which has been in use ever since. USPC has undergone many revisions and changes since it was first introduced. Not surprisingly, given the circumstances of its development, the system can be confusing to the uninitiated.

\(^2\) Initially consisting of sixteen classes of devices and technologies, the USPC now includes more than 430 classes. Moreover, the subdivision of inventions within a class is sometimes bewildering, counterintuitive, and inconsistent. For example, consider Class 24—Buckles, Buttons, Clasps, Etc. (See Figure 1.) This class schedule was not one of USPC’s original sixteen classes, but was added in 1872.\(^5\) Its organization follows the original USPC practice of reserving Subclass 1 for Miscellaneous,\(^6\) that is, a place to put items that belong in the class but do not fit into any of the subclasses. Thereafter, the class is divided into subclasses in numerical order, from 1 to 12. Some of the numbers are followed by decimal numbers or letters, but overall in numerical order. However, after subclass 12, the classification list begins to skip around: 10A, 15, 13, 3.2. Subclass number 11 is subdivided alphabetically, whereas 3.2 is subdivided numerically. The division and subdivision of Class 24 seemingly defies logic.

\(^3\) Although it looks perplexing, the USPC system has worked well for much of the 178 years of its existence. But as the USPTO has grown to assume its place as a global player in the world of intellectual property, USPC has reached a point where it no longer meets the needs for which it was originally created. USPC is currently being phased out and is scheduled to terminate on December 31, 2014. On January 1, 2015, USPC will be replaced by a new, more globally compatible system.\(^7\)

**History of the USPC**

\(^4\) In 1790 Congress enacted the new country’s first patent act.\(^8\) The United States Patent Office granted its first patent a few months later,\(^9\) but forty-six years elapsed before Congress directed the Patent Office to develop a formal classifica-

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The two factors necessitating formal classification were not present in the early years of the Patent Office. One is the need to manage and organize a large collection of applications, and the other is to aid the patent search process. In the beginning, the collections of U.S. patent applications and granted patents were small enough to manage without a formal classification system. By the time they began to grow larger, searching was not an issue.

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Patent authorities process patent applications in one of two ways: registration or examination. Registration means that the office grants every patent for which it receives a properly completed application. Examination means that a subject matter expert reviews each application to determine whether it meets statutory criteria (typically novelty and originality) and grants the patent only when these criteria are met. This review is accomplished by performing a prior art search. The definition of prior art includes, among other things, any “printed publication,” but as a general rule, patent examiners focus much of their searching on patent documents.

The Patent Office’s examination process established in 1790 quickly became unworkable as the volume of applications increased, and in 1793 a second patent act changed the process from examination to registration. But this patent registration method had its own set of problems and limitations. Because every application resulted in a granted patent, there was no quality control, and the courts quickly filled up with patent validity and infringement actions. In 1836, Congress enacted “An Act to promote the progress of useful arts, and to repeal all acts heretofore made for that purpose.” This act reverted back to application examination, the process the United States has used ever since. With the return to examination came a requirement for prior art searching, and it became necessary to develop a formal patent classification system.

The USPC is the world’s oldest patent classification system. The 1836 patent act included the first statutory mention of a patent classification system. It directed the Commissioner of Patents to “cause to be classified and arranged, in such rooms or galleries as may be provided for the purpose . . . the models and specimens of compositions and fabrics and other manufactures and works of art, patented or unpatented, which have been, or shall hereafter be deposited at said office.” Inventors had been required to submit a working model of their invention to accompany their written patent application since the first patent act of 1790. This requirement was repealed in 1870. Today, a model may still be required at the discretion of the USPTO.

17. Id. § 20.
20. Models or exhibits are not generally admitted as part of an application or patent. “With the exception of cases involving perpetual motion, a model is not ordinarily required by the Office to demonstrate the operability of a device.” 37 C.F.R. § 1.91 (2014).
From the beginning, the USPC grew organically; individual patent examiners did whatever they believed worked for them within their respective areas of expertise. Early on, the collections of patent documents were small enough that examiners could keep track of them without a formal, hierarchical classification system. But with the advent of the USPC, the manner of subdividing classes became an issue. In 1867 the Commissioner of Patents reported:

The new classification is nearly completed, and will shortly be printed. The number of classes has risen from 22 to 36, a number of subjects being now recognized individually which were formerly merged with others under a more generic title. Among these are builders’ hardware, felting, illumination, paper, and sewing machines, to each of which subjects so much attention has been directed by inventors that a division became a necessity to secure a proper apportionment of work among the corps of examiners.21

USPC currently has more than 430 classes, which grew from the original sixteen broad categories used informally in 1830. Patent classification was more than just a method to organize a collection; it was, and continues to be, used to determine which examiner will review which patent applications.22

Patent examiners were allowed to make their own changes to the USPC without approval from anyone until 1877.23 But it took until 1898 for the Commissioner of Patents to create a Patent Classification Division,24 at which time its members embarked on a mission to revise the existing classification system. They looked to a number of historical sources for “Precedents and Authorities.”25 They referenced a philosophical principle, “the ancient tree of Porphyry,”26 named for Porphyry of Tyre.27 The Classification Division also considered library classification systems, but they “have not been deemed adequate to the exactness and refinement essential to a patent office classification of the useful arts.”28 In 1899 the Patent Classification Division issued its first revision to Class 20 Wooden Buildings.29 This was the first time a USPC class featured multiple hierarchical subdivisions.

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26. Id. at 19.
27. Porphyry of Tyre was a third century philosopher whose Introduction is a beginner’s study guide to an earlier work by Aristotle. It was required reading for students of logic well into the nineteenth century. Porphyry describes Aristotle’s concepts of genus and species, providing an early precursor to Linnaean taxonomy. Porphyry, Introduction (Jonathan Barnes trans., 2003).
Patent Classification Challenges

¶11 One of the challenges faced by the developers of a patent classification system relates to the nature of the patenting process. One critical element of a successful application is that the idea must be “novel.” Because a patent application attempts to describe something that by its very nature is new, this very novelty can make the technology difficult to categorize. Nanotechnology is an illustrative example. “A precise and uniform definition of the terms nanotechnology and nano-scale has long eluded scientists and patent offices. Lack of a standardized definition has implications for patent search and classification, and for tracking patenting trends.”

¶12 Developing a classification scheme to encompass all of “the useful arts” is an incredibly difficult endeavor. Not only are new technologies constantly developing, but existing technologies can be combined in new ways. It is a similar problem to deciding where to put the platypus, an animal having characteristics of both a bird and a mammal, in Linnaean taxonomy. While this problem is rare in nature, it occurs frequently in patent applications.

¶13 Successful classification systems typically have a single, underlying philosophy. In implementing a classification system, indexers must make choices about where to put things and refer to the philosophy for guidance. An understanding of the philosophy is critical for both indexers and searchers to be able to use a classification system effectively. Because the useful arts that comprise patentable technology are so complex, the USPC has developed several different philosophies over time.

¶14 The preferred philosophy is called proximate function. The logic behind this idea is that a single invention performing the same function could have several different applications; thus function, or what the invention does, is the preferred access point. “Function” is distinguished from “use.” The proximate function of a blade is to cut things. What the cutting accomplishes—trimming paper, chopping vegetables, performing surgery, and so on—is the use. “Agitation” is a proximate function that can be used to wash clothes, churn butter, or mix paint.

¶15 While proximate function has been a primary guiding philosophy of the USPC system, it could not always be achieved. USPC has employed five different philosophies, all of which are currently in use. The other four philosophies are industry, effect, structure, and multiple aspect. Industry is an approach based on what would be helpful to practitioners of the art in companies doing similar work: automobiles, bee keeping, and brewing, for example.

30. A detailed explanation of the legal requirements that a patent application must satisfy to become a granted patent in the United States is beyond the scope of this article.
33. U.S. PAT. & TRADEMARK OFF., supra note 6, at 3; see also Louis Falasco, Bases of the United States Patent Classification, 24 WORLD PAT. INFO. 31 (2002).
34. U.S. PAT. & TRADEMARK OFF., supra note 6, at 3.
Effect, or product, covers “complex processes or structures requiring successive manipulations involving plural acts.” Examples include telecommunications, manufacturing, and chemical processes. Structure is based on what things are made out of and so is used most often as a way to divide up a larger category. Structure is used to subdivide classes covering chemical compounds and alloys. Multiple aspect is the newest addition to the list and is used for inventions that combine previously existing technologies to create something new. These combined technologies have to be indexed in more than one place.

The object of any classification system is to group like things together. Ideally, a classification system provides for only one symbol to be assigned to each item; for example, only one call number can appear on the spine of a book. But patent documents often receive multiple symbols. Classification symbols in the USPC are mainly derived by analyzing a patent filing’s claims. A “claim” is the legally enforceable part of the patent and contains the inventor’s new idea. Since most filings have multiple claims, several different USPC symbols can appear on a single patent filing. The principle mandatory classification in USPC is known as the Original Class (OR) and is based on the controlling claim. The additional symbols are called Cross-Reference (XR) classifications. If examiners believe that it will be helpful to future patent searchers, they can add additional cross-references derived from the description as well as the claims. The challenge for the examiner is to balance the utility of additional cross-references with the time it takes to generate them.

Typically, classification systems are set out in a hierarchical outline format, leading from general to more specific and detailed entries. The indexer works down through the hierarchy to find the best matching classification symbol to assign to each patent application.

**Patent Searching Challenges**

Classification is a critical element in the difficult art of patent searching. There are many limitations to searching collections of any type of full-text documents. One challenge is whether the searcher can compile a list of key words or whether the search involves a concept. A “concept” is an idea that cannot be described by a list of synonyms arranged into a search statement with Boolean logic. Globalization is an example of a concept—you know it when you see it. A highly relevant document could discuss how to do business in countries around the world without containing any form of the term “global.” A search of the truncated term *global* (global, globally, globalization, globalisation, etc.) will find only a fraction of the relevant documents in a collection, if any. Searching with classification codes solves this problem, as it allows a searcher to specify concepts as represented by the corresponding classification symbol. Classification provides a method to search for relevant items independent from the ability of the searcher to think up relevant key words to include in the search statement.

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35. *Id.* at 3–4.
¶20 Another limitation of full-text searching is the inherent ambiguity of the English language, where the same word can be used as both a noun and a verb. For example, the word “drive” can be used as a verb meaning to proceed down a road in a vehicle but also as a noun meaning a computer memory storage device. Another example is the word “plastic,” which as a noun refers to a polyolefin-based material but as an adjective describes a quality of molten metal, as in super plastic forming.

¶21 Searching full-text patent filings is especially difficult due to the nature of the transaction involved. The art of patent drafting is not to reveal any more information than necessary. Inventors are required by law to describe how their invention works, but there is no provision that they have to make the technology easy to find. A classic training example is to use the phrase “dimpled spherical object” rather than golf ball. While “dimpled spherical object” is a perfectly accurate description of what a golf ball looks like, these are not words that anyone would typically think to include when searching for an improved golf ball.

¶22 An alphanumeric classification system operates outside the parameters of language altogether and so avoids all of these searching problems. Each alphanumeric code symbol, like a call number, stands for a single concept. The searcher can also employ symbols to find documents in other languages, even those written in non-Roman alphabets. This is a significant advantage when performing a global patent search.

¶23 Maintaining an up-to-date classification system is critical for both examiners and patent searchers. One of the goals of a classification system is to provide an appropriate depth of coverage. The system needs to provide enough granularity so that any single code symbol will retrieve a manageable number of items. If the classification symbols are too broad, then the searcher will retrieve an unworkably large number of results. Any body of knowledge requiring classification will grow and change over time. When a classification code symbol that worked well in the past reaches a point where it retrieves too many items, then it is time to subdivide that code.

¶24 When a patent classification code is subdivided, the next question is whether to re-index the underlying collection of documents previously classified. Should the record display both the old code symbol and the new one, or does the new symbol replace the old one? It is critical that searchers understand how a system is updated and whether it is regularly re-indexed. If the collection is not re-indexed, searchers have to keep track of which codes were used during which

37. “The inventor of the process, or the corporate organization by which he is employed, has some incentive to keep the invention secret while uses for the product are searched out. However, in light of the highly developed art of drafting patent claims so that they disclose as little useful information as possible—while broadening the scope of the claim as widely as possible—the argument based upon the virtue of disclosure must be warily evaluated.” Brenner v. Manson, 383 U.S. 519, 533–34 (1966) (emphasis added).
39. Anyone familiar with the West Key Number System has encountered this issue. The Bankruptcy topic is continually being subdivided because this area of the law changes frequently. Bankruptcy key numbers can have up to seven digits, whereas the key numbers in most other topics typically have no more than three.
periods of time and adjust their searches accordingly, depending how far back in
time they need to go.

¶25 A patent search combining both key words and classification symbols typi-
cally retrieves more relevant results.\textsuperscript{40} When searching patent literature, a reliable,
up-to-date classification system is a critical piece of the search process.

\textbf{USPC in Transition: The End of an Era}

¶26 IP5\textsuperscript{41} is a forum made up of the world’s five largest patent authorities: Europe
(EPO), Japan (JPO), South Korea (KIPO), China (SIPO), and the United States
(USPTO).\textsuperscript{42} The members of IP5 work cooperatively to reduce the global backlog of
patent applications. IP5’s original ten “Foundation Projects” promoted “[t]he elimi-
nation of unnecessary duplication of work among the offices, enhancement of patent
examination efficiency and quality, and guarantee of the stability of patent right.”\textsuperscript{43} In
2014, the ten Foundation Projects were consolidated into four “activities” addressing
different aspects of the patenting process. One of the original ten Foundation Proj-
etcs, “Common Hybrid Classification,”\textsuperscript{44} has transitioned to an activity and is now
listed as “Classification (WG1).”\textsuperscript{45} IP5 plays a vital role in global patent classification
harmonization, and the work of this activity will be ongoing.

¶27 IP5 has determined that international patent classification harmonization
is an important goal. “[T]he only way to ensure efficient high-quality patent search-
ing in large multi-language document collections is by investing consistently in
classification.”\textsuperscript{46} The efficiencies of scale created by a single, shared system outweigh
the benefit of multiple classifications.\textsuperscript{47} EPO took the lead on the IP5 Foundation
Project for “Common Hybrid Classification” in 2008.\textsuperscript{48}

\begin{footnotes}
\item[40.] “This approach reinforces the strength of each type of search key and enables optimum
23 \textit{World Pat. Info.} 15, 16 (2001). \textit{See also Seven Things to Consider Before Starting a Search}, EUR.
(“Don’t limit yourself to a key word search. A technical concept can also be represented by a classifi-
cation symbol. A sound search strategy will therefore involve a logical combination of key words and
classification symbols.”).
\item[41.] \texttt{FIVEIPOFFICES, www.fiveipoffices.org} (last visited Feb. 15, 2015).
\item[42.] \textit{About IP5 Co-operation}, \texttt{FIVEIPOFFICES, http://www.fiveipoffices.org/about.html} (last visited
Feb. 15, 2015).
\item[43.] \textit{Ten Foundation Projects, FIVEIPOFFICES} (May 28, 2014, 1:35 AM), https://web.archive.org/web/
20140528013015/http://www.fiveipoffices.org/projects.html (retrieved from the Internet Archive).
\item[44.] \textit{Common Hybrid Classification, FIVEIPOFFICES} (Feb. 9, 2013, 10:41 PM), https://web.archive.
org/web/20130209224154/http://www.fiveipoffices.org/projects/commonhyb.html (retrieved from
the Internet Archive).
\item[45.] \textit{Classification (WG1), FIVEIPOFFICES, http://www.fiveipoffices.org/activities/class.html} (last
visited Feb. 15, 2015) (“The IP5 Offices are working on harmonising their classification practice”).
\item[46.] \textit{Common Hybrid Classification, supra} note 44.
\item[47.] The benefit of being able to choose among different patent classification systems is that one
system can do a better job than another when it comes to classification based on either structural
breakdown or granularity for particular technologies.
\item[48.] \textit{Common Hybrid Classification, supra} note 44; \textit{see also} Pierre Held, \textit{IPC Workshop, WIPO:
The Common Hybrid Classification Project of the fiveIPoffices} (Feb. 8–10, 2010) (PowerPoint slides),
\textit{available at} http://www.wipo.int/edocs/mdocs/classifications/en/ipc_wk_ge_10/ipc_wk_ge_10_renheld
.ppt.
\end{footnotes}
¶28 On October 25, 2010, USPTO and EPO announced an initiative to jointly develop a patent classification system that would replace USPC in the United States and EPO’s system, European Classification (ECLA), in Europe. While both offices participated in its development, the new system, Cooperative Patent Classification (CPC), is in large part based on ECLA. The new scheme debuted on January 2, 2013. At first glance, CPC is almost indistinguishable from ECLA. Because of this similarity, EPO implemented CPC fully from the start, where USPTO had to phase it in gradually. USPTO is required by statute to classify its patent documents, but the agency has the authority to work out how to accomplish this task.

¶29 This joint initiative represents an extraordinary example of international cooperation, as USPTO will continue to work closely with EPO to further develop and maintain CPC going forward. The goal is to incorporate the best practices of both agencies. Each office will assume responsibility for different parts of the classification system. For example, USPTO will take the lead on developing the sections covering business method patents, currently listed in USPC Class 705, which includes data processing for financial, business practice, management, or cost/price determination.

¶30 On January 2, 2013, the USPTO began a two-year transition process to work through the full implementation of CPC. The USPC system will officially terminate when CPC comes fully into force in the United States on January 1, 2015. During the transition, both systems are available on the classification search page on the USPTO web site.

¶31 The decision by USPTO to retire the USPC could not have been an easy one. Former USPTO director David Kappos admitted “that the US Class system was broken.” He explained that maintaining an up-to-date classification is an expensive process. Around the turn of the millennium, USPTO diverted staff from developing the classification system to examining patent applications. Faster processing of the patent application backlog resulted in a neglected classification system. Kappos outlined why it was time for a new classification system in a June 13, 2012, blog post titled “Top Reasons Why USPTO is Moving to CPC.” The decision ultimately came down to International Patent Classification (IPC) compliance. Like the English system of weights and measures, USPC is a stand-alone system in a world where most other patent classification systems are based on IPC.

¶32 The IPC was created by a treaty, the Strasbourg Agreement Concerning the International Patent Classification, concluded on March 24, 1971.

54. Thomas Jefferson proposed a metric measuring system in 1791, if only we had listened. Plan of Thomas Jefferson for Establishing Uniformity in Coinage, Weights, and Measures of the United States, Jan. 17, 1791, American State Papers, 10, Miscellaneous 1:36.
treaty required signatory countries to apply IPC codes to their published patent filings. The IPC is managed and maintained by the World Intellectual Property Organization (WIPO).\textsuperscript{56} The United States ratified and signed the agreement in 1975.\textsuperscript{57}

\textsection{33} While the IPC represented a huge step forward in global patent classification harmonization, it is not without problems. The main issue with IPC implementation has been updating, that is, dividing existing subsections of the classification system and adding new ones. Under a rigorous updating process, new code sections are developed by a “committee of experts” under the direction of the WIPO.\textsuperscript{58} But until recently, five years elapsed between updates. This is a glacial rate of change in the modern world, where a new generation of mobile phones comes out every few months. In the patent universe, having a current classification system is a critical issue.

\textsection{34} While waiting between IPC editions, two patent authorities, JPO and EPO, began to go in their own directions. Both countries adopted IPC as their starting point but found a way to make their versions more current. In Japan, JPO developed the Japanese File Index (FI). In Europe, EPO developed European Classification (ECLA). Classification symbols in each of these systems look similar to an IPC code symbol but with additional alphanumeric characters added on at the end. Both provide significantly more detailed classification than is possible with IPC. IPC has about 70,000\textsuperscript{59} entries, while FI has about 190,000\textsuperscript{60} and ECLA has about 140,000.\textsuperscript{61}

\textsection{35} CPC has more than 200,000 subdivisions, thus providing for even more detailed and specific classification.\textsuperscript{62} While IPC and CPC code symbols look very similar, as both begin with the same characters, CPC symbols have additional numeric characters added on at the end, containing a total of up to eleven.\textsuperscript{63} At the top of the hierarchy, both systems follow IPC’s eight sections, A-H. CPC has added

\begin{itemize}
  \item \textsuperscript{57} Id.
  \item \textsuperscript{60} Japan Patent Office, Outline of FI/F-term 6 (Dec. 2013) (PowerPoint slides), available at http://www.jpo.go.jp/torikumi_e/searchportal_e/pdf/classification/fi_f-term.pdf. “[The] FI scheme is revised twice a year in correspondence to the progression of technology. When [the] FI scheme is revised, documents which were already classified with old FI entries are reclassified accordingly.” FI Revision Information, JAPAN PAT. OFF., http://www.jpo.go.jp/torikumi_e/searchportal_e/fi_revision.htm (last visited Feb. 15, 2015).
  \item \textsuperscript{62} Id.
  \item \textsuperscript{63} Variable length was a useful feature of the ECLA system. It showed at a glance the depth of the hierarchy— the longer the symbol, the deeper the hierarchy. Because CPC has a standard number of characters, this is not possible. Kristin Whitman, \textit{Ready or Not, the Cooperative Patent Classification Has Arrived!}, \textsc{Intellogist} (July 22, 2012), http://intellogist.wordpress.com/2012/07/12/ready-or-not-the-cooperative-patent-classification-has-arrived/.
\end{itemize}
section Y, to cover new technologies. (See Figure 2.) For example, Y02 is “Technologies or applications for mitigation or adaptation against climate change.”

¶36 Since 2011 IPC has been updated annually, where CPC is updated monthly.

¶37 Figure 3 shows the listing for “BUTTONS, PINS, BUCKLES, SLIDE FASTENERS, OR THE LIKE.” When compared to USPC Class 24 (Figure 1), the CPC schedule is much easier to follow.

¶38 The closed ECLA code is no longer available on EPO’s Espacenet website. Yet patent searchers are anxious to retain access to the old ECLA schedules going forward. ECLA codes are no longer being applied, but patent searchers still want to use this classification system for retrospective searching. A number of patent information vendors have stepped up to help with this issue. Interestingly, Japan is the

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66. “It is expected that there will be multiple revisions in a year.” Frequently Asked Questions, supra note 61.


68. Three patent information providers retaining the closed ECLA schedules on their systems are Thomson Reuters, Minesoft/PatBase, and Innography: Cooperative Patent Classification (CPC)—FAQ 2013, IP & SCI.—THOMSON REUTERS, http://ip-science.thomsonreuters.com/m/pdfs/dwpicovkinds
only patent authority still providing this information. The JPO website features a side-by-side concordance that contains all four systems: IPC, FI, ECLA, and CPC.  

§39 USPC symbols are no longer applied to U.S. patent filings published after December 31, 2014, but the USPC code as a whole will be retained on the USPTO website, and the individual code symbols currently listed on published U.S. patent documents will continue to reside in a searchable field.

§40 In Figure 4, the CPC symbol is identical to one of the IPC symbols: B61C 11/04. USPTO has added CPC symbols to all its published documents going back to US1 from 1836, but this was accomplished via an electronic concordance system, and the degree of accuracy is yet unproven.
USPTO is scheduled to complete its implementation of CPC by January 1, 2015. EPO has successfully implemented CPC. Other patent authorities around the world are watching closely, and China and South Korea have already indicated their interest in implementing CPC, at least on a pilot basis. Currently CPC is maintained by USPTO and EPO. It is unclear at this point what, if any, future involvement other countries would have in the development of the CPC system. If these pilot projects develop into full-fledged implementation, there will have to be some mechanism for other patent authorities to have input in the future development of CPC.

While CPC is good news for most of the world’s patent authorities, one country, Japan, faces a near-impossible choice. JPO has spent time and money developing the FI classification system but now must decide between three alternatives. Does it assert its independence by not implementing CPC? If so, it would replace the United States as the only major country out of compliance with the rest of the world. Does it abandon all its work on FI and adopt CPC? There are significant economies of scale to be achieved by joining the system in use in the rest of the world. Does it both maintain FI and adopt CPC? It is very expensive to maintain two independent classification systems, yet that appears to be the alternative that Japan is moving toward.

Conclusion


73. JPO has an additional indexing feature called F-terms, which are even more complex than FI. F-terms provide more granularity, but they are not part of a formal classification system, being more like metadata tags, and so are outside the scope of this article. See Stephen Adams, Information Sources in Patents 282 (3d rev. ed. 2012).
It will be interesting to watch how CPC and IPC develop in relation to each other. CPC is more detailed and has a more frequent updating schedule, but IPC is required by law while CPC is voluntary. Ideally, the people managing the two systems will be able to work in tandem going forward. If EPO and USPTO can work together, then there is hope that the people who manage CPC and IPC can work together, but it will take some very skillful negotiation to reach consensus. This is a role for the IP5 Forum to play, as evidenced by its Activity on Classification (WG1). Whatever happens in the future, one thing is certain—the United States will finally take its place as a full player in the global patent classification space.

74. The activities of the IP5 WG1 are focused on developing the IPC further in areas where the IP5 Offices have an interest in doing so (e.g. technical areas currently not existing in the IPC but available in an internal scheme). These activities consist of:

- Revising the IPC in areas where CPC and FI/F-term entries match, where considered appropriate, by directly introducing the scheme entries into the IPC.
- Quickly adapting classification schemes to fast moving areas / emerging technologies so that, already in the early stages of a technology, examiners from the IP5 Offices can benefit from an effective and up-to-date scheme with a sufficient granularity in those technical areas.

Classification (WG1), supra note 45.