
1. Data sources on patents, copyrights, trademarks and other intellectual property

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In this chapter, we provide a roadmap of the sources of data on the various forms of intellectual property (IP) protection. We first explain what data is available about patents, copyrights, trademarks, and other types of IP, and where to find it. Then we identify and analyze data sources specifically relating to IP licensing and litigation, growing areas of research by scholars and lawyers.

I. PATENTS

There are numerous sources that permit advanced searching and free downloading of individual patents. U.S. patents and published patent applications are freely searchable and downloadable from the United States Patent and Trademark Office (USPTO) website.¹

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¹ U.S. patents can be searched at United States Patent and Trademark Office. 2017. 'USPTO Patent Full-Text and Image Database', <http://patft.uspto.gov/netahtml/PTO/search-adv.htm>. According to the website, the database includes all U.S. patents issued since 1976, whereas patents from 1790 through 1975 are searchable by Issue Date, Patent Number, and Current Classification (US, IPC, or CPC) categories. Full text images of U.S. patents back to 1790 are available at United States Patent and Trademark Office. 2017. 'US Patent Full-Page Images', <http://patft.uspto.gov/netahtml/PTO/pating.htm>, although the results are not searchable. U.S. published patent applications can be searched at United States Patent and Trademark Office. 2017. 'Patent Application Full Text and Image Database', <http://appft.uspto.gov/netahtml/PTO/search-adv.html>. The USPTO began publishing certain patent applications in 2001.

There are other free websites that permit searching of U.S. patents.² These websites appear to obtain their data from the USPTO.

Bibliographic information about individual U.S. patents is also downloadable for free from the USPTO.³ Bibliographic information includes, for instance, inventor names, assignee of patent at issuance, U.S. and International patent classification, filing date, issue date, claims of priority, etc. The USPTO also provides basic aggregate statistics about U.S. patent grants, filings, and other patent-related information.⁴ The availability of bulk downloadable data will be discussed shortly.

International patent information is also available from a number of sources. European Patent Office (EPO) patents are searchable at the EPO's eSpaceNet website.⁵ The EPO also operates PatStat,⁶ which permits users to generate bibliographic information on all EPO patents, for a fee (de Rassenfosse et al., 2014). The World Intellectual Property Organization (WIPO) hosts a free website, PatentScope, that permits searching of WIPO patents.⁷ Google patents permits searching of some international patents, in addition to U.S. patents.⁸ The Organization for Economic Co-operation and Development (OECD) also provides basic statistical information on international patents.⁹

In addition to governmental sources, various commercial databases permit searching of U.S. and international patents. For instance, LexisNexis, Westlaw, and BloombergLaw¹⁰ permit searching of U.S. patents. Thomson Innovation,¹¹ which is owned by Westlaw, permits more extensive searching and analysis of patents. For example, Thomson Innovation maintains data on patent families and allows for examiner-provided citations to be distinguished from applicant-provided citations (starting for patents and applications published in 2001). While these databases all contain the underlying patents, the commercial databases permit easier downloading of demographic characteristics of patents after a desired query.

² Numerous websites permit free downloading and searching of patents, including, for instance, 2017. Free Patents Online, freepatentesonline.com and Google Patents, <https://patents.google.com/>.

³ The data, beginning in 2002 and through the present, is downloadable at ReedTech. 2017. 'USPTO Data Sets', <http://patents.reedtech.com/pgog.php>. Some scholars report finding it time-consuming and generally difficult to parse the bibliographic information into a useful format.

⁴ United States Patent and Trademark Office. 2017. 'Statistics', www.uspto.gov/learning-and-resources/statistics.

⁵ EPO patents can be searched at European Patent Office. 2017. 'Espacenet Patent search', <http://worldwide.espacenet.com>.

⁶ European Patent Office. 2017. 'Patstat', www.epo.org/searching/subscription/raw/product-14-24.html.

⁷ World Intellectual Property Organization. 2017. 'Patentscope', <https://patentscope.wipo.int/search/en/search.jsf>.

⁸ The Help page for Google patents indicates that it obtains patent information from the USPTO, the EPO, and WIPO. Google. 2017. 'About Google Patents', <https://support.google.com/faqs/answer/2539193>.

⁹ OECD. 2017. 'Intellectual property (IP) statistics and analysis', www.oecd.org/science/innovation/oecdpatentdatabases.htm. The OECD website indicates that the data is mainly derived from the EPO's PatStat dataset.

¹⁰ Bloomberg Law. 2017. www.bloomberglaw.com/patent_search.

¹¹ Clarivate Analytics. 2017. 'Derwent Innovation', <http://info.thomsoninnovation.com/>.

Patent citation information is available through the National Bureau of Economic Research (NBER).¹² The NBER website contains several free data files. These files contain various demographic information about each U.S. patent issued from 1976 until 2006, including assignee, filing date, issue date, and International classification. They also include the number of times that the patent was cited in patent prosecution by another patent. Unfortunately, the NBER citation field does not distinguish between citations provided by a patent applicant and those supplied by the patent examiner.¹³ An update to the NBER patent citation data file to include more recent patents is expected to be released shortly. The NBER patent citation data includes all citations to U.S. patents, including citations by the same inventor. Such self-citations can be removed by using the disambiguated inventor dataset. Lee Fleming and others have updated and refined the NBER patent dataset, and made their data available to the public.¹⁴

Recently, the USPTO, through an agreement with ReedTech, has released bulk patent data in a granular format, which is specifically geared for researchers.¹⁵ Using the NBER classifications, the USPTO constructed the USPTO Historical Patent Data Files, four research datasets containing time series and micro-level data by NBER sub-category on applications, grants, and in-force patents spanning two centuries of innovation.¹⁶ The USPTO also has datasets including the gender of inventors, the full text of claims, foreign priority, the number of figure sheets, and other information.¹⁷ We understand that all of the relevant data from grants and published applications—e.g., citations—can be parsed directly from the full-text XML files available via bulk downloads from Google.

Information about patent prosecution is also available for download. Through the Patent Application Information Retrieval (PAIR) system, one can view the prosecution history of a U.S. issued patent or published patent application.¹⁸ For a majority of patents issued and applications published in the last five to ten years, PDF images of the actual

¹² National Bureau of Economic Research. ‘Patent Data Project’, <https://sites.google.com/site/patentdataproject/Home>. The seminal article introducing and explaining the dataset is Hall et al. (2001).

¹³ Beginning with patents issued around 2002, examiner citations were marked with an asterisk on the face of the patent. Citations cited by the applicant in an information disclosure statement do not have an asterisk. For patents issued before 2002, there is no way to identify examiner citations from the face of the patent.

¹⁴ <https://dataverse.harvard.edu/dataset.xhtml?persistentId=hdl:1902.1/15705>.

¹⁵ The USPTO’s home page for its electronic bulk data (patent and trademark) is available at United States Patent and Trademark Office. 2017. ‘Bulk Data Products’, www.uspto.gov/learning-and-resources/electronic-bulk-data-products. ReedTech has released additional data to the public, available at ReedTech. 2017. ‘Public PAIR Patent Access Download’, <http://patents.reedtech.com/Public-PAIR.php>.

¹⁶ United States Patent and Trademark Office. 2017. ‘Historical Patent Data Files’, <http://www.uspto.gov/learning-and-resources/electronic-data-products/historical-patent-data-files>. For a discussion of the USPTO’s historical patent data files, see Marco et al. (2015).

¹⁷ <http://www.patentsview.org/download/>.

¹⁸ Members of the public can use Public PAIR, which requires entry of a Recaptcha code. United States Patent and Trademark Office. 2017. ‘Patent Application Information Retrieval’, <http://portal.uspto.gov/external/portal/pair>. Public PAIR has publicly available information on patents and published applications. Private PAIR, which is only available to registered patent attorneys or agents, does not require a Recaptcha and further provides access to non-public information on applications that the attorney or agent is authorized to view. United States

prosecution documents (i.e., office actions, restriction requirements, originally filed applications, amendments, etc.) can be accessed. For older patents and applications, only the table of contents of the prosecution history is available. The full prosecution history for these older patents is only available in hardcopy format from the USPTO. Through cooperation with the USPTO, Google has made available certain PAIR data.¹⁹ We believe that Google's patent PAIR data is generally complete for applications published in the last several years, although it may not be comprehensive historically. The USPTO has released parsed datasets of patent examination data,²⁰ including a separate research dataset on office actions.²¹ Patent Advisor²² is a Reed Technology/Lexis product that has a database of millions of prosecution histories and provides information about patents and patent prosecution. Researchers should note that applications which have not been published or issued as patents, whether because they are premature (less than 18 months from filing) or because the applicant requested non-publication, are missing from the PAIR data. PatentBox also permits searching of patent file wrappers.²³ Patent Ninja provides detailed statistical information relating to specific patent examiners, including information relating to examiner interviews at the USPTO.²⁴

Google has also assembled additional patent data, which it makes available for free download. The additional patent data includes text from patent assignments (1980–current),²⁵ patent maintenance fee filings and abandonments (1981–current),²⁶ patent classification,²⁷ and Image File Wrapper petition decisions.²⁸ The patent assignment data only includes assignments and other documents recorded with the USPTO.²⁹ Because recording is voluntary (although encouraged), the assignment database represents an incomplete subset of all assignments. The remaining dataset should be more complete, although we have not independently verified as much.

Although the USPTO has released substantial amounts of data on patent prosecution, data about the agency itself is less available. The Freedom of Information Act (FOIA)

Patent and Trademark Office. 2017. 'Portal Applications', <https://ppair.uspto.gov/authenticate/AuthenticateUserLocalEPF.html>.

¹⁹ Google. 2012. 'USPTO Bulk Downloads: PAIR Data', www.google.com/googlebooks/uspto-patents-pair.html.

²⁰ Graham, Marco and Miller (2017). The dataset is available for download at www.uspto.gov/learning-and-resources/electronic-data-products/patent-examination-research-dataset-public-pair.

²¹ Lu, Myers and Beliveau (2017). The dataset is available for download at www.uspto.gov/learning-and-resources/electronic-data-products/office-action-research-dataset-patents.

²² <http://kr.lexisnexisip.com/products-services/intellectual-property-solutions/lexisnexis-patent-advisor>.

²³ The Patent Box. 2017, www.thepatentbox.com/.

²⁴ <https://examiner.ninja/>.

²⁵ Google. 2012. 'USPTO Bulk Downloads: Patent Assignment Text', www.google.com/googlebooks/uspto-patents-assignments.html.

²⁶ Google. 2012. 'USPTO Bulk Downloads: Patent Maintenance Fees', www.google.com/googlebooks/uspto-patents-maintenance-fees.html.

²⁷ Google. 2012. 'USPTO Bulk Downloads: Patent Classification Information', www.google.com/googlebooks/uspto-patents-class.html.

²⁸ Google. 2012. 'USPTO Bulk Downloads: Patent Petition Decisions', www.google.com/googlebooks/uspto-patents-petitions.html.

²⁹ Various companies, such as Innography, offer seemingly similar information for a fee.

permits members of the public to request information from federal agencies. These include the USPTO (via the Department of Commerce), the Copyright Office, and the Food and Drug Administration. For example, Michael Frakes and Melissa Wasserman obtained patent processing information (Frakes and Wasserman, 2013, p. 92), as well as a full examiner roster from the USPTO (Frakes and Wasserman, 2017, p. 553).³⁰

While there is no specific form to use in making a FOIA request, the government provides specific contact information to use for each agency.³¹ The FOIA request itself must reasonably describe the records sought. The agency is required to promptly respond to the request and provide responsive documents or indicate a reason for denial of the request. The government may charge educational requestors for the costs of duplication of the records, and may charge commercial users search charges as well. Public Citizen publishes an informative guide on the FOIA process.³² The courts, however, are not subject to FOIA requests.

II. TRADEMARKS

Relative to patents, there are fewer sources of data on trademarks. Free online searches of trademarks can be conducted at the USPTO website through the Trademark Electronic Search System (TESS).³³ TESS permits searching on text and images of registered marks, and marks in pending and abandoned applications. Many other countries also have government-run websites that permit trademark searching.³⁴ Trademarks can also be searched on Lexis, Westlaw, BloombergLaw and other fee-based places. One new fee-based service, TrademarkNow, provides searching across many international trademark offices and uses sophisticated artificial intelligence and natural language processing techniques to find marks similar to those being searched.³⁵

The USPTO, through the Office of the Chief Economist, has released bulk trademark data.³⁶ The USPTO trademark data set is updated annually, and contains detailed information on 8.6 million trademark applications filed with or registrations issued by the

³⁰ Other information, such as examiner wages, are also likely subject to a FOIA request.

³¹ United States Department of Justice. 2011. 'FOIA.Gov: Make a Request', www.foia.gov/report-makerequest.html.

³² Public Citizen. 2017. 'How to File a FOIA Request: A Guide', <http://citizen.org/Page.aspx?pid=458>.

³³ TESS can be accessed at United States Patent and Trademark Office. 'Trademark Electronic Search System (TESS)', <http://tess2.uspto.gov/>.

³⁴ For instance, the U.K. operates Gov.UK. 'Search for a trade mark', www.gov.uk/search-for-trademark, and the Canadian Intellectual Property Office operates Government of Canada. 2017. 'Canadian Trademarks Database', www.cipo.ic.gc.ca/app/opic-cipo/trdmrks/srch/bscSrch.do. See also World Intellectual Property Organization. 2017. 'Global Brand Database', www.wipo.int/branddb/en/. WIPO also provides statistical reports. See World Intellectual Property Organization. 'Intellectual Property Statistics', www.wipo.int/ipstats/en/. Japanese trademark records are available in digital format from the National Center for Industrial Property Information and Training, www.inpit.go.jp/info/standard/download/standard_dl/sgml5.3.html.

³⁵ TrademarkNow, www.trademarknow.com/.

³⁶ United States Patent and Trademark Office. 2017. 'Trademark Case Files Dataset', www.uspto.gov/learning-and-resources/electronic-data-products/trademark-case-files-dataset-0.

USPTO, beginning in 1870. It is derived from the USPTO main database for administering trademarks and includes data on mark characteristics and designs, prosecution events, ownership, classification, renewal history, foreign priority, and international registration. International bulk data is more difficult to locate. Additionally, the United Kingdom government has released bulk trademark data.³⁷

The USPTO has also released a bulk dataset of trademark assignments.³⁸ This dataset comprises documents that parties have filed relating to trademark assignments, securities interests, releases of security interests, and other related documents. The USPTO dataset includes information from 1952, and is updated annually. It should be noted that, as for patents, recording trademark assignments and security interests with the USPTO is not mandatory. Therefore, the dataset is only a subset of all trademark assignments and security interests.

Google has also assembled various large databases of trademark information from the USPTO, which are available for free download.³⁹ The Google data was updated through 2015 and the file format is eXtensible Markup Language (XML), which may permit easier manipulation than the bulk USPTO data. One series of data files consists of the images of trademark word mark, serial number, registration number, filing date, registration date, goods and services, classification number(s), status code(s), design search code(s) and pseudo mark(s) from April 7, 1884 to present. Another series of data files includes the text of trademark applications for the same time period. Google also provides trademark assignment data (1980–present), as well as Trademark Trial and Appeal Board decisions (1955–present). Finally, Google provides a dataset with images of all applications (not just those that mature into registrations) from a recent period, 2010 until present.

III. COPYRIGHTS

Unlike patents and trademarks, copyrights are not substantively examined by the government. Copyrights are registered by the U.S. Copyright Office, provided all the paperwork is properly completed and the required fee is remitted. Currently there is no requirement that a creator of an expressive work register her copyright. Rights accrue even without registration, and there is no central repository of copyrighted but unregistered works. Thus, any investigation of current copyrights that relies upon registrations will be limited by selection concerns. Registration provides certain benefits, including permitting the owner to initiate a lawsuit and potentially authorizing special ‘statutory’ damages. Before 1989, and especially before the passage of the 1976 Copyright Act, registration played a more important role.

³⁷ Gov.UK. ‘Transparency data IPO: Trade mark data release’, www.gov.uk/government/publications/ipo-trade-mark-data-release.

³⁸ United States Patent and Trademark Office. 2017. ‘Trademark Assignment Dataset’, www.uspto.gov/ip/officechiefecon/tm_assignments.jsp. For a discussion of the dataset, see Graham et al. (2015).

³⁹ The Google bulk download of USPTO trademark data can be found at Google. 2012. ‘USPTO Bulk Downloads: Trademarks’, www.google.com/googlebooks/uspto-trademarks.html.

Registrations and renewal information for works registered before 1978 are maintained in physical copy in the Copyright Public Records Reading Room. The U.S. Copyright Office is presently engaged in a Digitization and Public Access project, with the goal of providing electronic access to the pre-1978 registrations.⁴⁰ Although the pre-1978 registrations and other documents are not available through the Copyright Office, there are other limited sources for the information. For instance, some early information on books, dramatic compositions, and other works is maintained by the University of Pennsylvania Libraries.⁴¹

For works registered in 1978 or later, the Copyright Office maintains the Copyright Catalog,⁴² an electronic searchable database. The Copyright Catalog permits searching by author, title, keyword, and registration number, and several other fields.⁴³

Many creative works are licensed through The American Society of Composers, Authors and Publishers (ASCAP). In the U.S., ASCAP does not share much information about its collection of copyrighted works. Analogous EU collecting societies often publish more data.⁴⁴ Martin Kretschmer and Ruth Towse maintain a wiki of empirical studies relating to copyrights.⁴⁵

Information about specific creative works is available. For example, Nielsen has data on music and book sales, among other things. Nielsen information is expensive to obtain and we do not believe that it provides free data to academics. Additional information about music can be found on Discogs⁴⁶ and Musicbrainz.⁴⁷ The Internet Movie Database has information on movies.⁴⁸ Bowker⁴⁹ has more information on books, as does Amazon.

IV. TRADE SECRETS AND OTHER INTELLECTUAL PROPERTY

By definition, information protected by trade secret laws must be secret. It cannot be generally known or readily ascertainable. Consequently, any public database of trade secret information would destroy the trade secret status of the information. Thus, we are aware of no public directory. Information about trade secrets, when available, is typically found in judicial decisions relating to claims of misappropriation of trade secrets. These cases, some of which are filed in state courts, can be found on Westlaw, Lexis, BloombergLaw,

⁴⁰ U.S. Copyright Office. 'Digitization Project', <http://copyright.gov/digitization/index.html>.

⁴¹ The Online Books Page: Copyright Registration and Renewal Records, <http://onlinebooks.library.upenn.edu/cce/>.

⁴² U.S. Copyright Office. 'Copyright Catalog', <http://cocatalog.loc.gov/cgi-bin/Pwebrecon.cgi>.

⁴³ Robert Brauneis and Dotan Oliar have assembled the post-1978 copyright registration data and plan to make it available to researchers in bulk format in the near future.

⁴⁴ For a list of some of these societies, see Wikipedia. 2017. 'List of copyright collection societies', http://en.wikipedia.org/wiki/List_of_copyright_collection_societies. Martin Kretschmer and Ruth Towse have been very successful mining data from those sources.

⁴⁵ www.copyrightevidence.org/evidence-wiki/index.php/Copyright_Evidence.

⁴⁶ Discogs. 2017, www.discogs.com/.

⁴⁷ MusicBrainz, <https://musicbrainz.org/>.

⁴⁸ IMDb. 2017, www.imdb.com/.

⁴⁹ Bowker, www.bowker.com/.

and other online litigation databases. As far as we know, other types of IP-like rights, such as rights of publicity, performance rights, unfair competition, and so forth, are also only catalogued in reported decisions.

V. LICENSING DATA

IP licensing data is generally limited to those licenses that are disclosed to the Securities and Exchange Commission (SEC) by public companies as material transactions under the securities laws. These licenses are available on the EDGAR database for no charge,⁵⁰ as well as Lexis and Westlaw, which allow more sophisticated searching than on the SEC's website.

Unfortunately, the set of publicly disclosed licenses is much smaller than the total universe of licenses. Some private companies have collected the licenses in EDGAR, plus have added other licenses available from other sources, and have made them available for a fee. These companies include RoyaltySource,⁵¹ ktMine,⁵² RoyaltyStat,⁵³ and Valuation Resources.⁵⁴ Royalty Range provides a collection of European licenses.⁵⁵ The Association of University Technology Managers provides information on university licenses.⁵⁶

Moreover, there is scant publicly available information about letters that demand the recipient to take a license. Chillingeffects has a limited database of patent demand letters, as provided by some demand letter recipients.⁵⁷

VI. IP LITIGATION

For federal cases, the Administrative Office of the Courts (AO) provides access to electronic dockets and related documents on its Public Access to Court Electronic Records (PACER) system.⁵⁸ Importantly, PACER only carries those dockets and related documents that have been electronically logged. We have found that starting in 1999, PACER carries 95 percent or more of all cases, and nearly 100 percent of cases since the mid-2000s. However, because many courts did not convert to electronic case filing until the mid-2000s or later, case documents—other than orders—are widely available only for cases filed in the mid-2000s or later (and vary by jurisdiction before then). Perhaps more problematic than PACER's limited selection of cases and documents are its limitations in searching

⁵⁰ U.S. Securities and Exchange Commission. 'EDGAR: Company Filings', www.sec.gov/edgar/searchedgar/companysearch.html.

⁵¹ RoyaltySource, www.royaltysource.com/.

⁵² Ktmine. 'License Agreement Database', www.ktmine.com/ip-data/license-agreements/.

⁵³ RoyaltyStat. 2017, www.royaltystat.com/.

⁵⁴ Valuation Resources. 'Royalty Rates and License Fees', <http://valuationresources.com/EconomicData/Royalty.htm>.

⁵⁵ Royalty Range, www.royaltyrange.com/.

⁵⁶ The Association of University Technology Managers. 'AUTM Licensing Activity Surveys', www.autm.net/resources-surveys/research-reports-databases/licensing-surveys/.

⁵⁷ <https://trollingeffects.org/letters>.

⁵⁸ Public Access to Court Electronic Records (PACER), www.pacer.gov/.

for cases. The ‘Case Locator’ allows search by court, case number, subject matter (e.g., patent, copyright, trademark, and party name) across all courts.⁵⁹ However, there is no means by which to search docket entry text, much less the text of documents filed with the court. Moreover, PACER charges \$0.10 per page of information, which can often add up quickly, especially when users are downloading multiple documents.

For these reasons, several commercial and non-commercial services provide alternative access to the PACER data. For instance, the RECAP project (PACER spelled backwards) provides free access to select PACER dockets and documents.⁶⁰ PACERPro⁶¹ and DocketAlarm⁶² provide front-end user interfaces to PACER that allow searching across cases and dockets by many different fields, including free-text and Boolean-style searches. Both services generally provide documents already in their databases at no additional charge and access to any PACER document for an additional, small fee. In a recent development, the USPTO has released bulk raw data from patent litigation, including the cases, attorneys, and docket entry descriptions.⁶³

Other services have assembled large amounts of PACER data and resell it on a subscription basis (sometimes with additional fees for downloading documents not on file). Lexis Courtlink,⁶⁴ Westlaw CourtExpress,⁶⁵ and Bloomberg Law Dockets⁶⁶ each offer docket-related services with sophisticated searching across cases and related dockets, as well as some information located in court documents (e.g., patent numbers in CourtLink). Bloomberg Law Dockets will retrieve many documents from PACER without charge for academic accounts. Other services which are IP specific—including DocketNavigator,⁶⁷ Lex Machina, MaxVal IP,⁶⁸ and RPX⁶⁹—provide advanced searching across different types of IP cases (generally since 2000). These services also offer daily email updates of newly filed cases. Many of these services also provide information about pending Patent Trial and Appeal Board (PTAB)⁷⁰ and International Trade Commission (ITC) actions.⁷¹

⁵⁹ PACER, <https://pcl.uscourts.gov/search>. For discussion of the accuracy of PACER’s nature of suit field, see Sag (2013) and Kesan and Ball (2006, p. 260, n. 177).

⁶⁰ Free Law Project. 2017. ‘RECAP Project — Turning PACER Around’, www.recapthelaw.org/.

⁶¹ PacerPro. 2017, www.pacerpro.com/.

⁶² Docket Alarm. 2017, www.docketalarm.com/.

⁶³ United States Patent and Trademark Office. 2017. ‘Patent Litigation Docket Reports Data’, www.uspto.gov/learning-and-resources/electronic-data-products/patent-litigation-docket-reports-data/. Patent numbers and case types for cases filed from 2003 to 2016 will also be available in this dataset.

⁶⁴ www.lexisnexis.com/en-us/products/courtlink-for-corporate-or-professionals.page.

⁶⁵ Thomson Reuters Westlaw. 2017. ‘Dockets’, <https://courtexpress.westlaw.com>. A scaled-down version of CourtExpress is available in Westlaw itself via its Westlaw Dockets service.

⁶⁶ www.bloomberglaw.com/page/law_school#advanced-search/dockets.

⁶⁷ Docket Navigator. 2015, <http://home.docketnavigator.com/>.

⁶⁸ Litigation Databank. 2017, <http://litigation.maxval-ip.com/>.

⁶⁹ RPX Insight. 2017, https://search.rpxcorp.com/users/sign_in.

⁷⁰ PTAB data is also available for no charge at <https://ptabdataui.uspto.gov/#/documents>.

⁷¹ ITC data is also available for no charge at United States International Trade Commission. 2017. ‘Electronic Document Information System (EDIS)’, <https://edis.usitc.gov/edis3-external/app>. The ITC also provides summary statistics about its investigations at United States International Trade Commission, <https://usitc.gov>.

Some of the services, such as Westlaw, Lexis, and Bloomberg, also make available docket and related information in select state court cases.

A major limitation of all of these services is that there is no means to download data in bulk for academic analysis, such as empirical study with STATA, Excel, or other statistical packages. Docket Navigator provides some downloading capabilities in Excel format on a free basis for academics. The University of Michigan's ICPSR service provides limited federal case information and related coding from the AO for no charge.⁷² However, ICPSR recently changed its policy and now requires institutional review board (IRB) approval for its litigation data, and makes data usage subject to confidentiality restrictions. The Federal Judicial Center (FJC) recently began providing the same information for free without restriction.⁷³ Moreover, the reliability of some of the AO data has been questioned.⁷⁴ A private consulting group of patent law professors and economists, Academic Expert Group (AEG), has assembled a large collection of PACER data and related documents on IP litigation cases, which it makes available for bulk download to academics for research purposes for a small fee.⁷⁵ Unlike the ICPSR data, no IRB approval is needed, though the AEG generally requires that the data be kept confidential other than for peer review purposes.

Direct access to PACER and its documents provides a much larger universe of documents than the sets of opinions available on Westlaw, Lexis, and Bloomberg. However, one of the authors has conducted an informal study of summary judgment patent orders available on PACER and has found that at least since 2010, it appears Westlaw carries nearly all of the orders that appear on PACER in electronic format. A related issue is the so-called 'Rule 36' orders from the Federal Circuit, which are mere summary affirmances with no further information.⁷⁶ In order to know which issues were appealed in these cases, it is necessary to review the briefs. Although Westlaw has these briefs from 2004 onward, they do not consistently appear prior to that date. Because the Federal Circuit did not add electronic case filing until a few years ago, it is necessary to consult at the Federal Circuit the paper versions of missing briefs filed prior to 2004.

Another problematic coverage issue in these databases is the set of reported litigated patent numbers. Researchers have relied on Derwent's 'LitAlert' service (available in Westlaw and Lexis) to provide reported litigated patents.⁷⁷ This data is derived from reports sent by district courts to the USPTO of pending litigation. Unfortunately, in separate work we are undertaking to assemble litigated patent numbers, we have found that many districts do not regularly report to the USPTO. Thus, the Derwent data substantially underreports litigated patents. As noted earlier, some services provide searching by patent number against data derived from PACER (e.g., Courtlink and RPX), but these

⁷² www.icpsr.umich.edu/icpsrweb/ICPSR/series/72.

⁷³ For lawsuits filed after 1988, the data is available at www.fjc.gov/research/idb/interactive/IDB-civil-since-1988.

⁷⁴ See, for example, Beebe (2006, pp. 1652–54) and Hadfield (2004).

⁷⁵ Please contact the authors of this chapter for further information about AEG's data.

⁷⁶ For a discussion of Rule 36 affirmances see Schwartz (2008). The Federal Circuit adopted Rule 36 in 1989. See Dunner et al. (1995). Even before 1989, there were typically a few Federal Circuit summary affirmances each year, which also require consulting the briefs to ascertain the appealed issues.

⁷⁷ Clarivate Analytics, Westlaw, <http://ip-science.thomsonreuters.com/support/patents/dwpioref/hosts/westlaw/>.

data are not available for bulk download. We plan to complete our litigated patent number database and make it available for research purposes in the near future.

Another area of interest is data about non-practicing entities (NPEs), pejoratively termed ‘patent trolls’. The two main sources of data for researchers has been data from Patent Freedom⁷⁸ and RPX.⁷⁹ Unfortunately, these companies have not allowed general release of their bulk data for independent verification by other researchers, and subsequent work by one of the authors along with other researchers has shown that both entities tend to be fairly aggressive in labeling entities as NPEs.⁸⁰ This alternative coding of NPEs (for 2010 and 2012) classifies litigants as one of operating companies, individual inventors, failed operating companies/failed startups, universities, patent holding companies, patent aggregators, technology development companies, and IP subsidiaries of operating companies. The full data set is available for full download at the NPE Data website.⁸¹ The Stanford NPE Litigation Dataset, led by Shawn Miller, classifies a random sample of patent plaintiffs since 2000.⁸² Other data about business entities can be acquired from Compustat,⁸³ Hoovers,⁸⁴ VentureXpert,⁸⁵ Wharton Research Data Services,⁸⁶ and Dun & Bradstreet.⁸⁷

There are some sources that have coded the underlying data in order to provide more information and, sometimes, statistics about IP litigation. As mentioned earlier, the AO data available at the ICPSR service provides additional, hand-coded information, about IP cases (though, again, some have questioned its reliability). Another site of interest is PatStats, run by Paul Janicke and the University of Houston School of Law,⁸⁸ which provides statistics about patent law issues at the district court and Federal Circuit levels for cases since 2000.

Other entities provide reports with statistics, such as the Federal Circuit,⁸⁹ the FJC,⁹⁰ the Government Accounting Office,⁹¹ PricewaterhouseCoopers,⁹² RPX,⁹³ Lex Machina,⁹⁴

⁷⁸ Patent Freedom, www.patentfreedom.com/.

⁷⁹ RPX. 2017, www.rpxcorp.com/.

⁸⁰ Some of RPX’s data is now searchable at its portal, but is not available for download in bulk. See RPX Insight. 2017, https://search.rpxcorp.com/users/sign_in.

⁸¹ www.npedata.com.

⁸² <https://law.stanford.edu/projects/stanford-npe-litigation-dataset/>. For a description of the dataset, see Miller (2017).

⁸³ For academics, Compustat is available on the Wharton Research Data Services Wharton Research Data Services. 2017, <https://wrds-web.wharton.upenn.edu/wrds/index.cfm>.

⁸⁴ D&B Hoovers. 2017, <http://hoovers.com>.

⁸⁵ VentureXpert is a Thomas Reuters product.

⁸⁶ Wharton Research Data Services. 2017, <https://wrds-web.wharton.upenn.edu/wrds/>.

⁸⁷ Dun & Bradstreet. 2017, www.dnb.com/.

⁸⁸ Patstats.org, www.patstats.org/.

⁸⁹ United States Court of Appeals for the Federal Circuit, www.cafc.uscourts.gov/the-court/statistics.

⁹⁰ United States Courts, www.uscourts.gov/Statistics/JudicialBusiness/2013.aspx.

⁹¹ U.S. Government Accountability Office. 2013. ‘Intellectual Property: Assessing Factors That Affect Patent Infringement Litigation Could Help Improve Patent Quality’, www.gao.gov/products/GAO-13-465.

⁹² PWC. 2017. ‘2017 Patent Litigation Study’, www.pwc.com/us/en/forensic-services/publications/patent-litigation-study.jhtml.

⁹³ RPX. 2017. ‘Reports’, www.rpxcorp.com/reports/.

⁹⁴ Lex Machina. 2015, <https://lexmachina.com/category/reports/>.

Docket Navigator,⁹⁵ and LegalMetric.⁹⁶ A very useful report is the American Intellectual Property Law Association survey, which estimates fees and expenses for a variety of IP activities, from prosecution to licensing and litigation.⁹⁷

The underlying cases, especially cases decided by the various courts of appeals, can be obtained from numerous sources, most notably Westlaw, Lexis, and BloombergLaw. There are several indexed and coded data sets of reported decisions of IP cases that are publicly available. For instance, William Mitchell Law School provides a trademark litigation search engine,⁹⁸ and the University of Georgia provides a patent litigation datafile.⁹⁹ These data sets are useful and required substantial effort on the part of those who assembled the datasets. Researchers should be aware that since these datasets were compiled from reported cases from Westlaw, Lexis, United States Patents Quarterly (USPQ), or BloombergLaw, they constitute only a subset of all litigated cases.

USPQ, in particular, may be particularly unrepresentative of the population of litigated cases (Rantanen, 2016). USPQ has apparently reported all or substantially all of the historic appellate decisions relating to patents, except for summary affirmances. However, its coverage of district court decisions is less complete, with some districts and judges largely absent. Also, like all judicial decisions relating to litigation, judgments on the merits (i.e., bench trials and grants of summary judgment) are more likely to be enshrined in a reported decision than other rulings (i.e., denials of summary judgments). Jury verdicts are also missing from reported decisions, because they are decided by the jury without a decision by the judge, unless there is a separate judicial ruling concerning judgment as a matter of law. Depending upon the research question presented, these selection issues may be paramount.

Westlaw and Lexis appear to presently be comprehensive. However, we believe that even as recently as 2009, both Westlaw and Lexis were missing a non-trivial number of unpublished opinions. In the 1999–2000 timeframe, they were missing many more unpublished opinions. Furthermore, while Westlaw and Lexis both have the complete set of ‘published’ opinions (those available in F. Supp, F. Supp.2d., F.2d, F.3d, etc.), at least before 2010, they had somewhat different collections of unpublished opinions. Because the completeness of these databases has increased over time, researchers should exercise caution when using them to study time trends.

Data on specific aspects of IP litigation is available on an ad hoc basis. There are too many of these individual datasets to list them exhaustively here. To provide a small sample for illustrative purposes, an enormous series of datasets relating to technology standards, patent pools (including membership and licensees) and industry consortia is available at the Searle Center of Northwestern Law School.¹⁰⁰ Rudi Bekkers, Christian Catalani,

⁹⁵ Docket Navigator. 2015. ‘Year in Review’, www.docketnavigator.com/document/special/Docket%20Navigator%20Year%20in%20Review%202015.pdf.

⁹⁶ Legal Metric. 2016, www.legalmetric.com/.

⁹⁷ American Intellectual Property Law Association. 2017, www.aipla.org/learningcenter/library/books/econsurvey/Pages/default.aspx.

⁹⁸ <http://app.mitchellhamline.edu/trademark>.

⁹⁹ TheUGAPatent LitigationDatafile, <http://people.terry.uga.edu/jlturner/patentlitigationdata/>.

¹⁰⁰ Northwestern Pritzker School of Law. ‘Data on Technology Standards, Industry Consortia, and Innovation’, www.law.northwestern.edu/research-faculty/searlecenter/innovationeconomics/data/technologystandards/.

Arianna Martinelli, Timothy Simcoe, and Cesare Righi maintain the Disclosed Standard Essential Patents Database.¹⁰¹ Recent data on fee shifting in patent infringement lawsuits has been released.¹⁰² Professor Barton Beebe has released data on likelihood of confusion cases in federal trademark litigation, fair use decisions in copyright law, and trademark dilution cases.¹⁰³

Our discussion so far has centered on U.S. IP litigation. Data on international IP litigation is much more difficult to access, especially for American researchers. For example, DARTS-IP makes available information on international IP litigation for a fee.¹⁰⁴

VII. CONCLUSION

A substantial amount of data is available for patents, copyrights, and trademarks, domestically and internationally, as well as domestic IP litigation. Unfortunately, much of this data is not accessible for bulk download for research purposes, sometimes making it time-consuming or costly to acquire. Less data is available for international IP litigation and licensing, and little to no data—other than reported decisions—is available for trade secrets and other IP rights. These limitations have made it difficult for researchers to perform comprehensive empirical studies. We hope that this chapter has illuminated some of the pockets of data available to researchers, and these pockets will expand over time so as to provide a wide array of comprehensive data to answer fundamental questions in the field of IP.

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¹⁰¹ <http://ssopatents.org/>

¹⁰² For data from 2015 see Crouch (2015). Older data is also available from Research on Innovation, www.researchoninnovation.org/data.html.

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¹⁰⁴ darts-ip, www.darts-ip.com/world/.

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