Patent Search Primer – Guidelines from Practitioners

A White Paper

Prepared by the
IPO Patent Search Committee

This paper was created by the authors for the Intellectual Property Owners Association Patent Search Committee to provide background to IPO members. It should not be construed as providing legal advice or as representing the views of IPO.

August 2010

Table of Contents

Preface

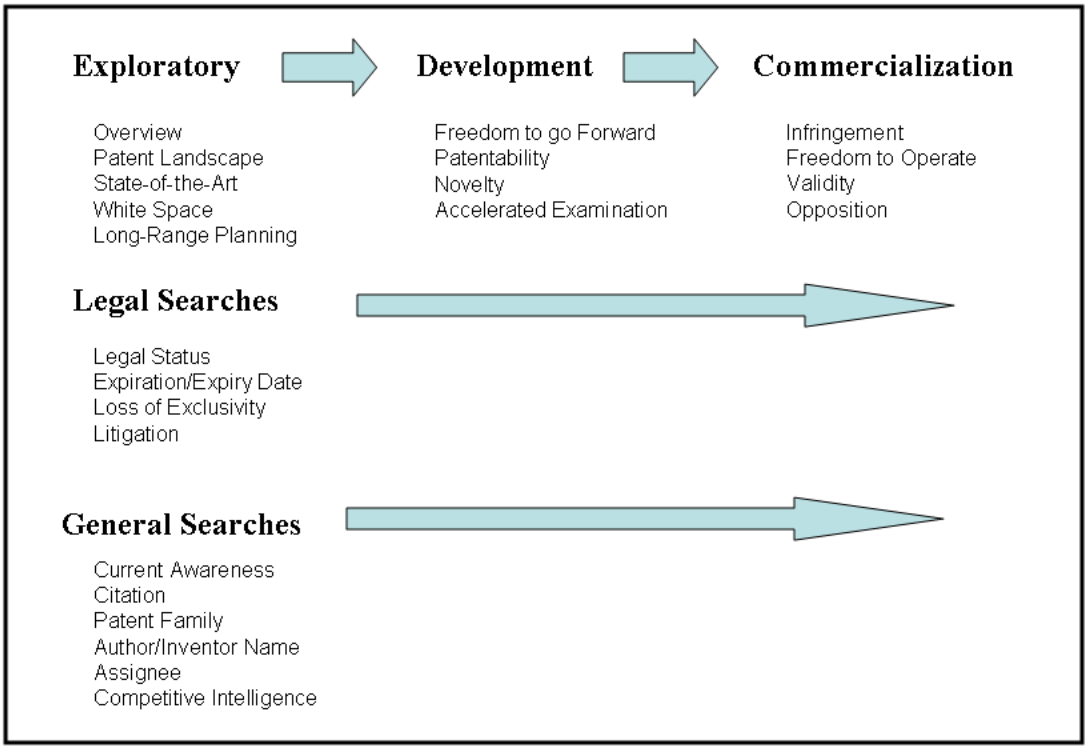
In 2007, the IPO commissioned a new standing committee, the Patent Search Committee, with a general charter to examine topics and to be a resource for information related to patent searching. The Committee is comprised of patent searchers and users of information resulting from patent searches. The industries and technologies represented by the Committee members include software, semiconductors, pharmaceuticals, biotechnology, electronics, chemicals, transportation, energy, consumer and industrial products.

The Patent Search Committee selected as its first project the categorization of the types of patent searches and the development of standard definitions, scope, and common practices for each patent search type. The deliverable from this project is this Patent Search Primer, the first of its kind. The Patent Search Primer is the result of a collaborative and iterative process of contributions, review, and refinement of objective, scope, and content by Committee members, with guidance, support, and feedback from the Committee Chair, Vice Chair, IPO Board Liaison, and IPO Staff Liaison. It fulfills a specific goal of the Patent Search Committee to educate IPO members about subjects related to patent searching.

The basic arrangement of material in this Primer is by patent search type. In the selection, arrangement and discussion of patent search types, this Primer reflects its aim and intended readership: It is a guide by and for IP practitioners - practitioners whose work includes patent search activities which are aligned with and support the technical, commercial, and legal needs and interests of the innovative enterprises in which they work.

In general, search types can be categorized or organized in many ways. Some organization schemes may be more instinctive and more relevant to some disciplines than others. The Committee has elected to organize search types according to a typical product development timeline that is familiar to most businesses and researchers, which includes an Exploratory phase, a Development phase, and a Commercialization phase. Many searches would typically fall within one of these phases, but others such as legal searches and many general searches extend across the product development timeline and may be needed at several points in the timeline as shown in the following diagram:

Product Development Timeline



The patent search types are addressed in the following order:

- Broad product or technology searches
  - Overview
  - Patent Landscape
  - State-of-the-Art
- White Space Finding
- Long Range Planning
- Freedom to go Forward
- Patentability
- Novelty
- Accelerated Examination
- Freedom to Operate
- Validity
- Opposition
- Patent/Legal Status
- Expiration/Expiry Date

- Loss of Exclusivity
- Litigation
- Current Awareness
- Citation
- Patent Family
- Inventor/Author
- Assignee
- Competitive Intelligence

The scope of patent searches is defined on a case-by-case basis and may include, for example:

- Types of documents (such as patent and/or non-patent literature)
- Geography (patent authorities)
- Time period to be covered
- Whether claims and/or the full specification needs to be searched
- Whether the search needs to cover a feature individually and/or in combination with other components of the system
- Comprehensiveness of the search based on business requirements, client demands, or budget limitations

In addition, resources and databases used for each search type can vary significantly based on the technology to be searched and business objectives. Budget can also be a key factor in the selection of these resources.

All aspects that define the search approach including the extent, focus, breadth, and depth of the search can be considered as the scope of the search. Specific factors that should be considered when defining the scope are summarized under each search type. Since situation-specific details affect the scope and level of effort for a given patent search type, the discussion of patent search types includes commonly encountered factors that drive expanded scope or that may require adaptations to basic search practices. Such factors can be commercial, technical or legal, e.g., issues that may arise when interacting with global search or examination authorities.

Resource and cost implications of factors influencing the scope of searches are included not only in the discussion of each search type but are also outlined in a reference table in the Appendix of this Primer. The Appendix also includes supplementary detail related to terms and definitions, search time and costs, search recommendations and types of deliverables/reports.

This Patent Search Primer was developed by the contributing authors for the IPO Patent Search Committee to provide background to IPO members. It should not be construed as providing legal advice, as representing the views of the IPO, or as a compilation of recommended best practices, e.g., to demonstrate candor and good faith in support of patent applications. Under United States Patent and Trademark Office regulation (37 C.F.R. §1.56) and under United States law, each individual associated with the filing and prosecution of an application for a United States Patent has a duty of candor and good

faith in dealing with the Patent Office, which includes a duty to disclose to the Patent Office all information known to that individual to be material to patentability of the patent application. This duty exists during the pendency of the patent application. Information that falls within the scope of this obligation may become known as a result of searches that are described by this Patent Search Primer. It is strongly recommended that applicants seek advice from their counsel concerning the duty of candor and good faith as it applies to specific applications and information.

Readers of this Patent Search Primer should consider it a living document, subject to expansions, revisions, and updates as inspired by feedback from IPO members and consistent with the Patent Search Committee charter.

I. Exploratory Searches

Subject Matter

- Broad product or technology searches
    - Overview search
    - Patent landscape search
    - State-of-the-Art search
- White space finding search
- Long range planning

A. Broad Product or Technology Searches Overview, Patent Landscape, and State-of-the-Art

Definition:

- Overview, Patent Landscape, and State-of-the-Art Searches are broad searches typically directed at understanding the art surrounding a particular product or technology. The searches frequently result in a large number of patent and/or literature findings—for example 1,000 to 10,000 or more.
    - Overview Searches typically address all art (patent and non-patent literature) related to the product or technology. The searches often cover a wide range of time.
    - Patent Landscape Searches are similar to overview searches, but focus on patents, patent applications, and other IP.
    - State-of-the-Art Searches are also similar to overview searches, but often emphasize art describing more recent technical or product advances.
    - The above three searches are sufficiently similar that the above terms are often used interchangeably.

Example:

- The client is looking to develop a clear understanding of the evolution of and state of the art in the field of mousetraps. Given the long history of mousetraps, the search will go far back in time and will cover both patent and nonpatent literature.

Synonyms:

- IP landscape
- IP mapping
- Patent mapping
- Collection searches

Purpose:

- Searches described in this section are typically used to identify art which may impact a research or business project for which the company has already chosen a clear focus.

Other important considerations:
Deliverables:

- In view of the typical large number of results, the searches are frequently delivered as new in-house databases/collections. Such databases are often organized such that each record is assigned one or more categories in a taxonomy.
- Searches having fewer results are frequently delivered as a spreadsheet or a text document.

B. White Space Finding

Definition:

- A White Space Finding Search is a preliminary search for patentable innovations and open art, including expired patents, that describe alternative technical approaches (in-kind and not-in-kind) to achieving the objectives intended by the technical approach(es) described in a preliminary invention.

Example:

- The client is asking for a patent search to be conducted to see if a mousetrap being worked on in R&D fits into the "white space" of the field of trapping unwanted vermin. Traps for vermin other than mice may be looked at in both non-expired and expired patents.

Synonyms:

- Exploratory IP search
- IP landscape, initial/preliminary

Purpose:

- To provide input for refinement of the invention concept
- To understand competitive landscape
- To provide input for (re)direction of technical development program for the invention

Other important considerations:
Data sources to include:

- Active and expired patent art in databases of relevant geographic regions (particular attention paid to both forward and backward citations from active patent art judged to be particularly relevant to the invention)
- Third party/competing technology and sources
- Industry publications
- Conferences
- Trade-shows

C. Long Range Planning

Definition:

- Long Range Planning Searches are broad exploratory searches, typically occurring when a company considers entering a new area. Such searches occur early in the timeline—typically before a specific invention is made, and often before a project is defined. The scope of a particular search will be a function of the needs/questions surrounding the new area. Contemplated new areas can include a wide variety of business opportunities, such as technology opportunities, licensing opportunities, new product opportunities, or a combination of such opportunities.

Example:

- The client wants to go into the field of vermin trapping further than they have ever ventured into the area. Some methods of trapping mice alive in household settings have already been developed by the R&D group (in a preliminary manner). The search, however, will look at methods of trapping many types of vermin, will look at both lethal and nonlethal ways of trapping, and will look at many different applications of the traps, including household, industrial, and outdoor applications.

Synonyms:

- Collection searches
- IP mapping
- Patent mapping

Purpose:

- Finding new applications for existing capabilities—products
- Finding new applications for existing capabilities—licensing
- Finding new applications for existing capabilities—new business (merger and acquisition, spin-off, joint venture)
- Finding experts
- Exploring new products
- Exploring new technologies
- Finding previously undiscovered synergism with existing technologies
- Finding equipment, location, and other needs

II. Development

Subject Matter

- Freedom to go forward
- Patentability
- Accelerated examination
- Novelty

A. Freedom to Go Forward

Definition:

- A Freedom to Go Forward Search is a search based on limited details to determine the level of risk of commercializing or using a proposed technical approach, such as a proposed product, material, or process.

Example:

- Client approaches with the following question: "Our product development team is designing an improved mouse trap. The mouse trap has the following design and specifications. Can we finalize this design and keep moving toward commercialization?"

Synonyms:

- Opportunity or potential to go forward
- Limited or preliminary right to practice and continue to develop
- Determining White Space

Purpose:

- The typical goal of such a search is to determine the level of risk of the technical approach potentially infringing any valid and enforceable patents for any geographical area(s) of interest.
- Identify potentially blocking patents
- Identify licensing or other synergistic opportunities
- A Freedom to Go Forward search can be done in conjunction with a Patentability or State-of-the-Art search

B. Patentability

Definition:

- A Patentability Search is a search conducted to identify relevant prior art as a basis for determining the novelty and non-obviousness of the idea

Example:

- Before committing further resources to develop and commercialize an improved mouse trap of a given design and key specifications, the client asks "Can we get patent protection for this and, if so, how broad could it be?"

Synonyms:

- Prior art search
- Novelty search
- Patent Opportunity

Purpose:

- To provide findings to assist in the determination of relevancy and differentiation of the innovation from the prior art.
- To identify prior art to help decide whether to pursue a patent as well as determining potential claim scope and value to the business.

Other important considerations:

- Both patent and non-patent literature should be considered with no time limits.
- The entirety of each reference should be considered (as opposed to just the claims)

C. Novelty

Definition:

- A Novelty Search is a search conducted to determine prior disclosure of an exact or very similar idea, that would potentially limit the claim set

Example:

- Before committing further resources to develop and commercialize an improved mouse trap of a given design and key specifications, the client asks “What aspects of this invention are novel enough for patent protection?”

Synonyms:

- See also “Patentability” above; a novelty search can be a component of a broader patentability search
- Knock-out search

Purpose:

- To determine if there are precedents for the idea
- To establish breadth of claims
- To provide input to the legal team concerning the claim set based on prosecution experience

Other important considerations:

- Both patent and non-patent literature should be considered with no time limits.
- The entirety of each reference should be considered (as opposed to just the claims)

D. Accelerated Examination Search

This search applies only in the US and is the only type of search in this Primer with formal requirements as defined by the United States Patent and Trademark Office (USPTO) and provided in the Manual of Patent Examining Procedure (MPEP) § 708.02(a) Accelerated Examination.

Definition:

- An Accelerated Examination Search is a search of prior art in support of the preparation of a petition under established USPTO procedures for the accelerated examination of a patent application with the goal of completing examination within twelve months of the filing date of the application. (See 71 Fed. Reg. 36323 - 26Jun2006)

Examples:

- You are seeking venture capital on a new mousetrap that you want to commercialize quickly and need to request accelerated examination of the patent application.
    - Sample Accelerated Examination (AE) Pre-Examination Search Document [DOC] http://www.uspto.gov/web/patents/accelerated/ae_presearch_sample.doc
    - Sample AE Support Document [DOC] http://www.uspto.gov/web/patents/accelerated/ae_support_document_sample.doc

Synonyms:

- Examination or Pre-examination Search
- PCT International Search Report (Form 210 and 237)

Purpose:

- The pre-examination search must be directed to the claimed invention and encompass all of the features of the claims, giving the claims the broadest reasonable interpretation. See MPEP § 708.02(a) I H (2).
- The pre-examination search must also encompass the disclosed features that may be claimed. An amendment to the claims (including any new claim) that is not encompassed by the pre-examination search or an updated accelerated examination support document (see item I) will be treated as not fully responsive and will not be entered. See MPEP § 708.02(a) I H (3).

Other important considerations:

- At the time of filing, applicant must provide a statement that a pre-examination search was conducted, including an identification of the field of search by United States class and subclass and the date of the search, where applicable, and for database searches, the search logic or chemical structure or sequence used as a query, the name of the file or files searched and the database service, and the date of the search. See MPEP § 708.02(a) I H.

- The pre-examination search must involve U.S. patents and patent application publications, foreign patent documents, and non-patent literature, unless the applicant can justify with reasonable certainty that no references more pertinent than those already identified are likely to be found in the eliminated source and includes such a justification with this statement. See MPEP § 708.02(a) I H (1).

- In addition to the pre-examination search requirements, the applicant must also provide an accelerated examination support document in support of the petition. See MPEP § 708.02(a) I I.

- For each reference cited, the accelerated examination support document must include an identification of all the limitations in the claims that are disclosed by the reference specifying where the limitation is disclosed in the cited reference. See MPEP § 708.02(a) I I (2).

- An accelerated examination support document must include an information disclosure statement (IDS) in compliance with 37 CFR 1.98 citing each reference deemed most closely related to the subject matter of each of the claims. See MPEP § 708.02(a) I I (1).

III. Commercialization

Subject Matter

- Freedom to Operate
- Validity
- Opposition

A. Freedom to Operate

Definition:

- A Freedom to Operate Search is a search of claims of non-expired patents and pending, published patent applications related to a proposed, well-defined product or process.

Example:

- A client has designed a mousetrap with well defined features. A search is conducted for claims that broadly cover any combination of the features as well as claims describing the features more specifically. The search covers non-expired patents and published applications.

Synonyms:

- FTO
- Clearance
- Right-to-Practice
- Freedom-to-Practice
- Freedom-to-Market
- Non-infringement or Infringement

Purpose:

- To identify non-expired patents and pending, published patent applications to assist in the determination of risk of an accusation of patent infringement
- To identify potential licensing strategies
- To identify potentially blocking IP

Other important considerations:

- Freedom-to-operate searches should include all claims of non-expired patents and published applications related to the proposed product or process in all countries in which the manufacture, use, or sale of the proposed product or process is expected to occur.
- Databases to include:
    - Patent/published application resources worldwide or within countries/regions of interest
    - Other non-patent sources may be included as requested
- Publicly available information or open art disclosed in expired patents may also be included in a Freedom-to-Operate search.

B. Validity

Definition:

- A Validity Search is a search of prior art which may be used to assess one or more claims of a patent to determine if they were properly allowed.

Example:

- A patent for a mousetrap similar to one sold by your company is found. The claim(s) of the patent will be searched in the worldwide literature (both patent and non-patent) to uncover earlier art to support the conclusion that the patent's claims were issued in error.

Synonyms:

- Invalidity
- Prior art search
- Examination search

Purpose:

- Search results are used to determine if each claim of a granted patent meets the patentability standards of the issuing country or region.

Other important considerations:

- A validity search includes all patent (US and non-US) and non-patent literature including, for example, journal publications, conference papers, dissertations, and technical reports in addition to all other public disclosures or uses.

- The search should include the prosecution history of the patent in question and any closely related patents filed by the patentee.
- The search may also include the file histories of patents referred to or rebutted during the prosecution of the patent at issue.
- Sources to include:
    - U.S. and International patent resources; subject resources to be determined by the industry/organization where the search is being conducted. Non-patent sources should include industry/trade publications, conference papers, journal publications, technical reports, and/or other competitor/business-related materials.
    - Patent-related literature
    - Competitors
    - Publicly available competitor information that includes competitor products in the US and countries/regions of interest
    - Industry publications
    - Conferences
    - Trade-shows
    - Internal technical and/or industry-related resources
- The search typically is directed to art available to public before the filing date/priority date of the subject patent.

C. Opposition

Definition:

- An Opposition Search is a search of prior art which may be used to challenge the validity of one or more claims of a newly granted patent within the opposition period of the issuing authority.

Example:

- A German patent for a mousetrap was recently granted. The claims read on your company's new product. A search is conducted in the worldwide literature (both patent and non-patent) to find earlier art to support the conclusion that the German patent's claims were issued in error. Opposition searches must be conducted in a timely manner in order to satisfy the deadline for initiating an opposition proceeding.

Synonyms:

- Validity
- Invalidity
- Reexamination

Purpose:

- Search results are used to determine if each claim of a newly issued or newly granted patent (within the opposition period of the issuing authority) meets the patentability standards of the issuing country or region.

Other important considerations:

- An opposition search includes both patent (U.S. and non-U.S.) and non-patent literature (including but not limited to journal publications, conference papers, dissertations, and technical reports). The search should include the prosecution history of the patent in question and any closely related patents filed by the patentee. The entire disclosure of the related art is examined to determine if the claims were properly allowed in accordance with the novelty, obviousness, enablement, and written description standards of the country in question
- Sources to include:
    - US and International patent resources; subject resources to be determined by the industry/organization where the search is being conducted.
    - Non-patent sources should include industry/trade publications, conference papers, journal publications, technical reports, and/or other competitor/business-related materials.
- The subject patent is a recently granted non-US patent. The opposition period varies; for example, in Europe it is 9 months. Art must be prior to the filing/priority date of the subject patent.

IV. Legal Searches

Subject Matter

- Patent/Legal Status
- Expiration/Expiry Date
- Loss of Exclusivity (pharmaceutical specific)
- Litigation

A. Patent/Legal Status

Definition:

- A Patent/Legal Status Search is an investigation of actions that take place during prosecution and/or after an invention publishes as a patent application or issues as a granted patent to determine any changes in ownership or changes in scope of protection or term.

Examples:

A patent on a mousetrap is identified through an earlier search. The searcher is asked to confirm the current assignee and to report on past changes in ownership including:

- Reassignments
- Security interests or agreements
- Patent Pledge(s) (as per bylaws of Standards Organization, e.g. Open Source)

The same mousetrap patent is searched for involvement in legal action, including:

- Litigation or opposition action(s)
- Interference(s)
- Reexamination/Reissue

Additionally, the patent is checked to ensure that it is active and whether or not the patent term has been adjusted:

- Extension(s)
- Expiration or Loss of Exclusivity
- Terminal disclaimers
- Payment of maintenance fees

Finally, the searcher checks for:

- Correction(s)
- Disclaimers

A published application for a mousetrap is found and the searcher must check the status of the application as well as any changes in ownership:

- Abandonment for failure to respond/Express Abandonment
- "Deemed to be withdrawn"
- Reassignment

Synonyms:

- Active Patent Search
- Family Status Search
- Post-issuance/Post-grant activity

Purpose:

- To determine if a patent's ownership has changed as a result of reassignment
- To determine if the patent is in force or the scope of the patent has changed.
- To determine if patent rights are affected by government or commercial contract

B. Expiration/Expiry Date

Definition:

- An Expiration/Expiry Date Search establishes the definitive date, after consideration of patent term adjustment, by which a patent ceases to protect the claimed invention.
- Patent term adjustment includes extension of patent term due to the Patent Term Restoration Act of 1984 or Hatch-Waxman Act

Synonyms:

- Patent Term
- Critical Date

Purpose:

- To establish the date by which the patent has entered the public domain.

C. Loss of Exclusivity (LOE) Date (pharmaceutical specific)

Definition:

- A Loss of Exclusivity Search establishes the definitive date, after consideration of all allowable extensions of time, by which a patent ceases to protect the claimed invention. A Loss of Exclusivity date search is broader than an expiry date search.
- At least in the US, the LOE date may or may not be the same as the expiry date due to the consideration of additional allowable extensions of time.

Synonyms:

- LOE
- Expiration Date (see also Expiry Date above)

Purpose:

- To establish a date by which the invention enters the public or standards domain as it relates to patent protection.

D. Litigation

Definition:

- A Litigation Search is a search conducted on specific patents, technologies, entities or a combination thereof to help determine involvement in any legal action.

Example:

- A manufacturer of mousetraps is identified. Before your company proceeds with business discussions with the company, a court record and legal database search is conducted to determine to what degree the company is active in patent litigation and what patents are litigated.

Synonyms:

- See also “Legal Status” above; the search for litigation involving a specific patent may be requested as part of a “patent legal status” search.

Purpose:

- To determine if an entity (individual, corporation, academic or research institution) is involved in patent litigation as a plaintiff or defendant.
- To identify specific patents involved in the litigation.
- To determine how the litigation is resolved.
- A litigation search may be used as background for vetting potential targets for acquisition, licensing, and other business partnerships. The search results may also assist in identifying entities most likely to sue within a given industry and assist in assessing the risk of litigation to your own entity.

Other important considerations:

Scope:

- Depending on the level of comprehensiveness required, in addition to the subject entity, the search may include any predecessor companies of the entity, subsidiary companies, and companies acquired by the entity. In some instances, prominent figures associated with the entity should be searched.
- In addition to searching, this type of report may include review of court documents.
- Business and news sources may be consulted along with legal sources.
- The search may include the prosecution history/file wrapper history of the patent in question to determine the breadth of the allowed patent.

V. General Searches

Subject Matter

- Current Awareness
- Citation
- Patent Family
- Inventor/Author
- Assignee
- Competitive Intelligence

A. Current Awareness

Definition:

- A Current Awareness Search is a search conducted on a periodic/ongoing basis against the most recently published documents in a defined technology or for a selection of patentees.

Example:

- A client has been assigned a project on improving the spring action of a mousetrap. He had a state of the art search done on mousetrap springs to find prior publications (patent and non-patent literature) and would like to be notified of new publications. Because he will receive results weekly, he broadens the strategy to mousetraps in general to learn of other techniques to solve the problem.

Synonyms:

- SDI (Selective Dissemination of Information)
- Alert
- Watch
- Continuing awareness

Purpose:

- Track competitors or inventors

- Monitor technology/product area
- Track the status of a litigation
- Track the status of a reexamination or interference
- Track status of a specific patent/patent application or patent family

Other important considerations:

Scope:

- As the search is performed against a limited time period the strategy is typically broader than for a retrospective search. It can be run against patent, technical, and/or business literature.
- Searches can be established to run on demand, automatically at predefined intervals or ongoing with notification in response to particular triggers (e.g. publication of a patent).

B. Citation

Definition:

- A Citation Search is a search based on patent and non-patent literature references cited by author, inventor, applicant, or examiner of a previously identified reference. Citation searches may be performed backward or forward. A backward citation search locates and delivers references that were cited by the identified reference. A forward citation search locates and delivers subsequent references that cited the identified reference.

Example:

- A patent for a mousetrap similar to one sold by your company is found. A forward citation search is performed on that patent to identify more recent publications citing the patent. A backward citation search is performed to find references cited by the original patent.

Synonyms:

- Forward Reference Search
- Backward Reference Search
- Citation Tree

Purpose:

- To surface additional art based on a significant reference.
- Uncover earlier prior art for a validity or clearance search.
- Identify and understand the impact of a patent portfolio.
- Used in patent quality analysis models.
- Find seminal patent or innovator in the art.
- Discover others advancing the art, especially competitors who are building on researcher's art.
- Quickly locate pertinent references as previously identified by experts.

Other important considerations:

- For backward citations complex searching capability is not required as the necessary information is listed on the face of the patent or in the search report. Many patents are available free through internet databases. Locating technical literature may require a database subscription.
    - U.S. Patents – citations on "References Cited" section of patent
    - U.S. Applications – no "References Cited" section, consult prosecution history on USPTO PAIR
    - EP, PCT – Search Reports and Register Plus
    - Non-patent Literature – at end of article/document
- Forward citation searching requires an automated system, forward citations cannot be found by referring to the identified reference. Not all databases allow for forward citation searching. Examples of databases that do include forward citations are Derwent PCI, Questel's FamPat, Espacenet, USPTO, CAS STN Chemical Abstracts Plus, Science Citation Index, and search interfaces Delphion, Micropatent and PatBase (for patent data only).
- Citation searching is another method of finding art related to a subject document. Although searching by keyword and class/subclass will typically locate the majority of related art, there are times when a related reference will have neither of these corresponding features and consequently be missed. Those skilled in the art that have made the determination to cite another reference, provide an additional perspective to assist in creating a complete repertoire of related art.

C. Patent Family

Definition:

- A Patent Family Search is a search to identify all patents and patent applications based on one or more related priority applications, including divisionals, continuations, continuations-in-part, and country coverage.

Example:

- A patent application surfaces that describes a mousetrap similar to a client's design but either hasn't granted or was rejected by its patent office. A patent family search is performed to identify all related published applications and patents to understand whether or not their claims may be different.

Synonyms:

- Inpadoc Family
- Derwent Family

Purpose:

- To assist in the determination of right to practice based on country-specific coverage.
- To understand variations in disclosures and claims among family members.

- To determine the priority date of a patent reference for patentability, validity, and infringement studies.
- Indicator of possible grant or rejection based on status of other family members.
- The breadth of the family represents importance of technology to assignee.
- Used in patent quality analysis.

Other important considerations:

- Before beginning a patent family search it is important to understand the definition of "family" the database is using. Some databases include documents directly or indirectly linked via priority numbers whereas others require that documents have identical priority information.
- There are at least four patent databanks for identifying patent families, and each deals with these families differently.
    - FamPat - Questel
    - Derwent World Patent Index (WPI) - Thomson Reuters
    - INPADOC - EPIDOS, The European Patent Office
    - CAS - Chemical Abstracts Service

For more detail as to how each defines a patent family it is recommended that you go to http://wiki.piug.org/display/PIUG/Patent+Families .

D. Inventor/Author

Definition:

- An Inventor/Author Search is a search to identify patent and non-patent publications by a given inventor or author.

Example:

- A client sees a mousetrap from another company at a trade show that is similar to his design. A search is performed to surface patent publications assigned to that company covering the mousetrap and one patent is found. A search on the inventors listed on the patent is then performed to uncover additional publications by the inventors.

Synonyms:

- Presenter/Scientist/Researcher/Expert Name Search

Purpose:

- To surface additional relevant art based on a particular reference.
- Collect portfolio of inventor/author's publications.
- To identify pre-grant publications (PGPs) assigned to a company where the company is not published on the application. Note: approximately 70% of U.S. PGPs do not identify an assignee other than the inventor.
- Verify inventor/author expertise to make better informed decision on acquisition, consulting or hiring.

Other important considerations:

Scope:

- To be comprehensive, both patent and non-patent literature could be relevant.
    - Can include journals, conference proceedings, technical reports, dissertations, etc.
- Most free databases have the capability to search by inventor name. The databases that are fee based usually have some analysis/reporting capabilities as well.
    - Caveat: It is common to miss inventors due to misspelling or name change between geographies/cultures. Middle initials may or may not be used also creating confusion. Occasionally an inventor's name will appear on patents or publications in various forms, e.g. William John Smith, Bill J. Smith, B. John Smith. Additionally, when non-English documents are translated, the first and last names may be transposed.
- Consider research organizations and universities as sources of authorship.

E. Assignee

Definition:

- An Assignee Search is a search to identify the individual or corporate owner of a given patent or published application.

Example:

- A patent for a mousetrap similar to one sold by your company is found. A search is conducted to find other mousetrap patents to the assignee that might prevent your company from selling your design.

Synonyms:

- Owner, Company or Competitor Name Search
- Patentee Search

Purpose:

- To identify patents and applications assigned to a specific entity.
- To surface additional relevant art based on a particular reference.
- Identify a specific entity's patent portfolio which can be analyzed by technology, filing trends or geographical distribution.
- Identify a specific entity's portfolio to determine the legal status of references.
- Identify licensing and acquisition opportunities
- To complete due diligence.

Other important considerations:

- Most free databases have the capability to search by assignee. The databases that are fee based usually have some analysis/reporting capabilities as well. Some databases standardize assignee names and/or provide company codes.
    - Caveat: Many published U.S. patent applications do not list an assignee. If a search is run to determine all intellectual property for a given assignee it is possible to miss relevant art. A check of the U.S. assignment database on the USPTO website is recommended. The IFI/Claims database (available on Dialog, STN, and Questel) lists a probable assignee based on the U.S. assignment database and information on the front page of the document.
    - It is common to miss assignees due to misspelling, abbreviations, or name change between geographies/cultures.
    - Be cautious about related companies, for instance a patent may be owned by a given company, its parent company or even a technology holding company.
    - Usually only the original assignee is identified on the patent record, but some services track reassignment or change in ownership. There is no obligation to report licensing, sale, or assignment of patents.

F. Competitive Intelligence

Definition:

- A Competitive Intelligence Search is a search to compare and contrast the efforts of competitors or potential competitors to develop an understanding of the landscape within a given technology or to understand the activities or direction of one or more specific companies.

Example:

- A client wants to understand competitors' patent portfolios for mousetraps to identify areas which potentially allow for the development of new proprietary products. A search is conducted and analyzed by assignee, patent classes and priority date to identify competitors and assess their patent activity by subject and timeline.

Synonyms:

- Marketplace Analysis/Marketplace Investigation
- CI Search
- See also "Exploratory Searches" (Section I)

Purpose:

- Determine the leaders within a given technology or market.
- Analyze the patent portfolio and non-patent literature to determine the business and technical strategies for one or more companies within a given technology. Non-patent information may include scientific articles, trade publications, and other sources of business information.

- Determine how technology is changing over time; and use the information as a predictive tool for creating future products, processes or services (enhance innovation and build technical know-how).
- Determine if business opportunities appear available because competitors have not published in certain areas.
- Determine the technical activity in a field in order to help assess the interest in pursuing the area.
- Predict how competitors and other members of the business community might react to an initiative from your organization.
- Help identify potential partners, customers, suppliers, or competitors; consider licensing, M&A, joint development agreements as tools for establishing a business relationship.
- Identify potential infringing parties to your own patent estate.
- Provide input to a SWOT analysis (Strengths, Weaknesses, Opportunities and Threats).

Other important considerations:

Scope:

- This type of search can be limited to the patent literature but to be most effective it should include information from the general scientific literature, business intelligence from trade shows, media releases and other sources. The integration of such information provides the clearest picture of the competitive landscape and the future paths that the technology might take.
- This type of search may involve several iterations as the project evolves:
    - Project start: To verify that there is sufficient opportunity to justify entering the area.
    - Periodically: During the project this search can be continued in the form of alerts or in-depth searches especially if project goals change or you become aware of changes in the marketplace.
    - Prior to launch: As a final check to determine if all intellectual property issues have been adequately addressed.
- The results of this search are particularly important because they can be a driver for a strategic intellectual asset plan and the corporation's business plan.

Appendices

Time/Cost Expectations

The following table is intended to provide the IP professional with a guideline for expenses related to the types of searches defined in this document. This is to be used purely as a guideline so that one may gain a sense of potential expenses; these are not hard and fast rules for budgeting search costs.

The cost of searching can vary greatly between search types as well as from specific project to project. Any search can be as high-level or exhaustive as resources allow.

There are several areas in which cost impacts the search process. Factors which should be considered when determining a budget for a search project include:

- the search professional or search team,
- access to data sources,
- the type of output desired by the client.

The professional searcher must be given the proper amount of time to prepare the search approach as well as time for post-processing and analysis of the results. Decisions regarding data sources must be made – reliance on “free” sources will reduce cost but may also impact the completeness and accuracy of results. Value-added data sources have associated higher costs but come with such advantages as more complete data sets, deeper indexing, and cleaner data records. Reporting considerations must also be factored into the cost equation including document retrieval and translation services.

This table presents a relative view of searching costs. No specific dollar amount has been attached to the dollar signs presented below. Fewer dollar signs represent a relative lower cost for the search with greater numbers of dollar signs representing relative greater cost. In some categories cost will increase as search iterations increase and at other times, a later iteration involving a more focused search may result in less cost.

In the end, whether or not a search report is useful to the client depends largely on communication between the client and searcher. Discussions involving cost can often become difficult and uncomfortable for both parties and it is therefore advised that the client approach the issue of cost early on in the process and with full knowledge of the process and a clear concept of what end product is desired.

Cost Guideline by Search Type	
Type of Search/Category	Cost/Time Range
Exploratory Searches	
Overview	$$-$$$$$
State-of-the-Art	$$-$$$$$
Patent Landscape	$$-$$$$$
White Space Finding	$$-$$$$$
Long Range Planning	$$-$$$$$
Development Searches	
Freedom to go Forward	$$$
Patentability	$$$
Accelerated Examination	$$$$$
Novelty	$$
Commercialization Searches	
FTO/Clearance/Right-to-Practice	$$$$$
Validity	$$$$$
Opposition	$$$$$
Legal	
Legal Status	$
Expiry Date	$
Loss of Exclusivity	$
Litigation	$$$$
General	
Current Awareness	$-$$$
Citation	$
Patent Family	$
Author/Inventor	$$
Assignee	$-$$$
Competitive Intelligence	$$$$$

Database and Search Engine Considerations

The IPO Patent Search Committee has compiled this appendix for use as a guide when preparing a search. The IPO Patent Search Committee takes no position regarding best practices for carrying out any particular search, including the searches described in the Primer. Search strategies will vary based on factors that include, but are not limited to, the technology area, the business situation, and the individual(s) conducting the search.

Once the parties review the disclosure/invention which will be the subject of the search and agree to the scope of the search, the following points should be considered:

1) *Selection of data sources based on content.*

Three major areas of data content must be considered at the beginning of the search -

- U.S. patents and published applications
- International patents and published applications
- Non-patent literature (technical and business literature)

The appropriateness of including all or some data content must be determined at the start of the search.

There are select searches in the Primer which would dictate the use of specific databases in lieu of or addition to the content listed above. These include –

- Litigation
- Patent status/(re)assignment
- Expiry/Expiration/Lapsed due to non-payment of fees

Finally, some searches require databases with specialized capabilities such as –

- Patent family searches
- Forward/backward citation searches
- Patent assignee/Probable assignee searches
- Author/Inventor searches

2) *Selection of data source based on type of database.*

Databases generally fall into one of two major types –

- Fulltext – the entire text of each referenced document is available in the database for searching keywords, phrases, or a combination of both. The documents are also available for online viewing, printing, or downloading and may include charts, graphs, or diagrams.
- Bibliographic – these databases are known for their structured data formats and uniform records. Select fields are represented for each document including, but not limited to, author/inventor, title, source information, and abstract. The databases also include descriptor terms and/or subject indexing. Bibliographic databases traditionally have a high-level of value-added features but do not include the fulltext of the documents.

It should also be noted that many databases are a hybrid of these two types. The combination of fulltext documents with some structured data and indexing is becoming more commonplace as search engines become more robust and storage systems become more affordable.

Fulltext, bibliographic, and combinations of both types of databases can be found for patent and non-patent literature searching. Therefore, the key to selecting the type of database is in the planned search strategy. Strategies used in fulltext databases may not be appropriate for bibliographic databases and visa/versa. Databases which rely on value-added indexing and structured data tend to retrieve result sets which are higher in precision and lower in recall, requiring the searcher to be very familiar with the indexing and classification structures of the database so that pertinent hits are not lost. Databases with larger amounts of text tend to retrieve result sets higher in recall and lower in precision, requiring the searcher to filter through more hits than when using a bibliographic database.

Some industries have developed specialized databases in order to meet their industry's needs. The chemical, pharmaceutical, and biotechnology industries are good examples of specialized data needs that have given rise to specialized search types such as chemical structures, polymer searching, and biotechnology sequence searching. Additionally the searcher must be familiar with the benefits and limitations that make each online and/or free database unique, so that the final result is a complete, integrated answer set from multiple databases.

3) *Selection of data source based on cost.*

Cost can vary widely among data sources. Factors that impact the cost of a data source include –

- Data record type – fulltext, bibliographic, or a combination
- Content Coverage – number of countries included in a patent database, number of publishers included in a literature database, etc.
- Date Coverage – the number of past years included in the database, the frequency by which the database is updated with new data
- Indexing/Descriptors – the level of specialized indexing added to the database, the use of human indexers in the process
- Value-added features – data fields or functions the database provides which are unique from others in the market (examples – citation searching, statistical analysis, enhanced titles/abstracts, translated data from non-English documents)

The use of "free" sources will reduce the overall cost of the search but may impact the completeness and accuracy of the results. Fee-based data sources provide value-added features which may increase costs but come with advantages such as more complete data sets, cleaner data, and deeper indexing.

Any search can be as high-level or exhaustive as resources allow. It is prudent that the client and searcher have a frank discussion on cost issues before any work takes place (for more information on cost, please see the Appendix – Cost).

4) *Use of classification searching with or without keywords/phrases*

Patent offices throughout the world have organized technology into various classification schemes. These classification schemes attempt to direct the searcher to the most likely places to locate relevant art for a given search criteria. Classification searching involves locating the most likely class to search and within the class the most likely subclass(es). The use of classifications alone or in conjunction with keywords/phrases is a common approach to patent searching.

Most patent database include classification as a means of searching. It is important to keep the following points in mind when pursuing a classification search –

- Review what classification schemes are available in the database – USPTO, ECLA, IPC, Derwent Codes, etc.
- Review what version of the classification scheme is available – IPC8, IPC7
- Determine if the data provider updates classifications as they change over time or only provides original classifications (from the time of grant). Take note whether or not current and/or original classifications may be searched.
- Review the expected number of documents to be retrieved for each class/subclass. Determine if all documents in the class/subclass should be reviewed or should keywords/phrases be added to the strategy in order to narrow the retrieval.

In addition to the focus on the "most likely" places to find art to fulfill a specific search criteria, it should also be noted that some art will be found in places which are analogous to the invention. Analogous art would be located in related classifications and literature sources which present reasonable/similar solutions to the problem being solved but were not included in the original search strategy. These classifications can sometimes be identified through notations (see also notes) found in classification schemes or cross-referenced classifications found on relevant art.

5) *Resources*

In addition to the considerations listed above, the IPO Search Committee recommends the searcher and/or search client educate him/herself to the vast array of databases available in the marketplace.

The USPTO has taken considerable effort to organize available resources and recommended searches by technology area. This effort, known as the Search Templates, strives to include both patent and non-patent resources applicable to specific technologies. The IPO Search Committee would like to point to that effort as a reasonable place to begin considering search sources and strategies –

http://www.uspto.gov/web/patents/searchtemplates/searchtemplates.htm (homepage)

http://www.uspto.gov/web/patents/searchtemplates/class.htm (by class)

A second source of patent search information which may assist in the process of forming a search strategy is the Patent Information Users Group (PIUG). PIUG maintains a WIKI, discussion forum, and links to patent resources –

http://wiki.piug.org/display/PIUG/PIUG+Space

Deliverables/Reports

Specific deliverables should be agreed upon with the client, however, the search strategy, specific sources searched, other materials consulted, and a description of the searcher's approach to the search should be included. Please note – AE Searches (p. 11) have special reporting requirements dictated by the USPTO.

List of Acronyms

AE	Accelerated Examination
CAS	Chemical Abstracts Service
CFR	Code of Federal Regulation
CI	Competitive Intelligence
ECLA	European Classification
EPIDOS	European Patent Information and Documentation Systems
EPO	European Patent Office
FTO	Freedom to Operate
IDS	Information Disclosure Statement
IFI	Patent Intelligence Company (producer of patent data files)
INPADOC	International Patent Documentation Center
IP	Intellectual Property
IPC	International Patent Classification
IPC7/IPC8	Versions of the International Patent Classification
LOE	Loss of Exclusivity
M&A	Merger and Acquisition
MPEP	Manual of Patent Examining Procedure
PAIR	Patent Application Information Retrieval
PCI	Patent Citation Index (Derwent)
PCT	Patent Cooperation Treaty
PGP	Pre-Grant Publication (U.S. published patent applications)
PIUG	Patent Information Users' Group
SDI	Selective Dissemination of Information
SPC	Supplementary Protection Certificate
STN	Scientific and Technical Network (online information provider)
SWOT	Strengths, Weaknesses, Opportunities and Threats
USPTO	United States Patent and Trademark Office
WPI	World Patent Index (Derwent)

Glossary

Analogous Art – Prior art which is in the same field of endeavor or reasonably pertinent to the particular problem with which the inventor is involved. Analogous art may be located in related classifications and literature sources which present reasonable/similar solutions to the problem being solved but were not included in the original search strategy.

Blocking Patents/Blocking IP – Intellectual property/patents owned by a competitor that prevents an entity from exploiting its own invention without a license to the competitor's IP.

Chemical Abstracts Service (CAS) – A division of the American Chemical Society and online services partner of STN, CAS is the most authoritative and comprehensive source for chemical information available. CAS is the producer of Chemical Abstracts and the CAS Registry File.

Classification Scheme – A method of organization of a collection of information according to a set of pre-established principles (examples of classification schemes include IPC, ECLA, and USPCS).

Collection—A compilation of patent and non-patent art relating to a particular subject. The collection may be compiled from virtually any source or group of sources. For example, collections may be made by compiling particular results from a search, compiling particular items found by a researcher during his or her research study, or compiling items from another source. A collection may be stored in virtually any format—such as an internal company database.

Collection Search—A term having various meanings throughout the search community. Although its definition may be clearly-defined within a particular company, the definition can vary significantly from company to company. Typical definitions include:

- A search addressing the evolution of a technology over a specific period of time.
- A search, addressing a particular problem, which is directed at all methods (past and present) to solve the problem.
- A search addressing art pertinent to the filing of a patent application—particularly art which will enhance the familiarity of the person drafting the patent application with the field of the invention.
- A search addressing art which can be used by research and development teams (or independent inventors) to brainstorm new applications for existing technology.
- A search addressing art which can be used for commercial intelligence, reverse-engineering, corporate profiling, assignee profiling, licensor/licensee profiling, inventor profiling, and research and development.
- A search addressing the compilation of art relating to a particular invention or subject matter.

In view of the similarity between some the definitions and certain terms used elsewhere in the Primer, the term "collection search" appears as a synonym in sections relating to those terms.

Delphion – A patent search and analysis platform including over 40 million documents worldwide. Originally an IBM initiative (1997), the service was spun off from IBM in 2000 and is currently owned by Thomson Reuters.

Derwent – A subsidiary of the Thomson Reuters, Derwent provides worldwide enhanced patent data through a collection of specialized databases.

Dialog – A database platform with over 400 available resources, Dialog is known for its business coverage as well as scientific and intellectual property. Under the guidance of Roger K. Summit, Dialog was the first online information retrieval system to be used globally (1966). The company is currently owned by ProQuest.

Duty of Candor – Requirement for full disclosure regarding a patent application. The requirement that all publications known to the applicant that may adversely affect the patentability of their invention must be disclosed to the USPTO.

Effective Filing Date (see Priority Date)

Espacenet (or esp@cenet) – A free online service for searching patents and patent applications produced by the EPO.

File Wrapper - The folder in which the USPTO maintains the papers related to a given application.

Filing Date – The date a patent application is filed at a given patent office.

Hit – A record retrieved from a database that matches the search query entered into the database.

IFI/Claims – Producer of patent data files with coverage dating to the 1950s, IFI is known for its rigorous assignee standardization process, continual class code updates and annual top patentee analysis. The company is owned by Wolters Kluwer.

Indexing – An analysis of the subject matter of a document to identify the concepts represented in the document and the allocation of descriptors and/or classifications to allow these concepts to be retrieved.

Information Disclosure Statement (IDS) – A submission of relevant background art by the applicant during prosecution of an application for patent. Background art may include patents, published applications, journal articles, conference papers, or other published material.

INPADOC – An international patent data collection founded by WIPO (1972) and later taken over by the EPO (1991); this database provides patent family and patent legal status from 96 countries and patenting authorities.

Interference – A proceeding to determine who was first to invent claimed subject matter when two or more rival parties have filed for a patent on the same invention. This type of proceeding arises between two or more pending applications or at least one pending application and one unexpired patent.

MicroPatent – A patent and trademark search and analysis platform including worldwide coverage. Originally a supplier of microfilm/CD-ROM copies of documents (1970s), the company was later purchased by Information Handling Inc (1997) and finally by Thomson Reuters (2004).

Non-obviousness – Used in U.S. patent law to describe one of the requirements that an invention must meet to qualify for patentability. The invention must not be obvious, that is a person having "ordinary skill in the art" would not know how to solve the problem the invention solves using the same method or mechanism claimed in the application.

Novelty – The invention must be new as defined by patent law. The invention may not be patented if it was disclosed before the date of filing or date of priority.

PatBase – A searchable patent database covering over 30 million patent families with historical information dating back to the early 1900s. Produced by MineSoft.com the database includes extended patent families, with each unique invention representing one consolidated family.

Patent Pledge - A dedication to the public of intellectual property. A pledge may take various forms but it basically includes a public commitment from a patent owner not to sue one or more parties for infringement, typically, in support of a specific usage. This is usually done by companies in support of specific technologies, standards, or particular industry trends, such as the open source. The goal is to facilitate adoption of a specific technology, standard, or software.

Patent Quality Analysis – A statistical approach for valuing a patent or patent portfolio. The use of indicators and metrics to breakdown and assess component parts of the patent and/or portfolio of patents in order to determine quality and value.

Point of Novelty – For utility type inventions characterized by a number of descriptive features or elements, the key or essential two to four interrelated feature or element type phrases that form the crux of the invention novelty. For an inventive design, the key elements or features such as surfaces or shapes that form the crux of the design novelty.

Precision – In information retrieval the measure of relevant records to total records retrieved by a given search query in a database. This may also be referred to as a "relevance ratio".

Prior Art – Earlier information made available to the public before the filing/priority date of a patent application which show the claimed invention is not new or that it is obvious.

Priority Date – The date a patent or patent application may claim priority to an earlier filed application (that is a continuation application, domestic application with an international filing or an application based on a US provisional). May also be referred to as the "effective filing date" or "earliest priority".

Priority Document – An earlier filed patent application which provides "priority" for a later filed application. A validly claimed priority establishes the "effective date of filing" for the examination of the later filed application.

Prosecution History – The record of the examination of a patent application, including the original application itself, responses made by the examiner, and amendments made by the applicant to address objections raised by the examiner.

Public Domain – Property rights held by the public at large.

Questel – An online information provider specializing in intellectual property data. Questel produces a series of unique databases (i.e. FamPat) as well as serves as a platform to host databases produced by other providers.

Recall – In information retrieval the number of relevant records retrieved by a search query to the total number of relevant records in the database. A narrowly defined search query may miss relevant records therefore reducing recall; a broadly defined search query may retrieve a larger number of records which will increase relevant recall but also increase the number of nonrelevant records which may be retrieved.

Reissue – If a patent has found to have an error, the USPTO will correct the error and issue the corrected/amended patent which will have the term of the remaining unexpired term of the original patent.

Reexamination – A process where a patent is reevaluated by a patent examiner to verify that the subject matter claimed is patentable. The party requesting a reexamination must show prior art which raises a substantial question of patentability.

Science Citation Index (or SciSearch) – One of the original cited reference indexes, SciSearch is an international, multidisciplinary database of scientific and technical literature. Founded by Eugene Garfield in the early-1960s, the database is currently owned by Thomson Reuters.

Selective Dissemination of Information (SDI) – A current awareness system designed to keep a user informed of specific news and information topics. Originally related to library and information science, SDIs were based on an "interest profile" submitted by a user who would receive journal abstracts related to the interests specified. The concept was first described in the 1950s by IBM scientist, Hans Peter Luhn.

STN (STN International) – Online worldwide database service specializing in science and technical information and is known for their chemical structure and sequence search capabilities. STN is owned by CAS and Fiz Karlsruhe.

Terminal Disclaimer – Where more than one patent is granted to an inventor on the same invention, the disclaimer will limit the expiration of the newer patent to the date of the older patent's expiration. In addition, the more recently granted patent will only be enforceable if both patents remain commonly owned.

Value-Added – The enhancement added to a product or service by a company before the product is offered to customers. In the online database industry such enhancements may include expanded indexing, specialized search capabilities, and usage of controlled vocabulary.

WIKI – Collaborative website comprising the collective work of many authors.

IPO Patent Search Committee Members

Patent Search Committee 2010 Membership

Ronald Andermann
Cardinal IP

Joe Arrouk
Pizzey Patent & Trade Mark Attorneys

Carol Bachmann
3M Co.

Patricia Bushey
DuPont

Susan Collen
Intellectual Property Owners Association

William Coughlin
Ford Global
IPO Board Liaison

Michele Crecca
International Business Machines Corp.
IPO Search Committee Chair 2010

Abdi Dirie
International Business Machines Corp.

Gavin George
Haynes & Boone

Steven Hampton
McAndrews, Held & Malloy Ltd.

Jeremy Hargis
Brooks Kushman

Mildred A. Hastbacka
TIAX LLC

Alec Hirsch
Research in Motion Ltd.

Debjani Kapila
General Electric

Stephen Key
Prior Art & Searching

Ford Khorsandian
Technology & Patent Research (TPR) International, Inc.
IPO Search Committee Vice-Chair 2010

Karl Mautz
Freescale Semiconductor Inc.

Jennifer Mayhorn
Polymer Group

Jason Miller
BP America

Steven J. Perron
3M Co.

Shayne Phillips
Halliburton

Bruce Resnick
Cargill, Incorporated

Elizabeth Richardson
Intellectual Property Owners Association

Sandra Unger
Exxon Mobile Corp

Camilla Williams
Kilpatrick Stockton

Patent Search Committee 2008-2009 Membership

Ronald Andermann
Cadinal IP

Carol Bachmann
3M Co.

Kerryn A. Brandt
The Dow Chemical Company

Michael Brodbine
Brooks Kushman

Patricia Bushey
DuPont

S. Robert Chuey
Procter & Gamble Co.

Michele Crecca
International Business Machines Corp.

Abdi Dirie
International Business Machines Corp.

Sarah Dressel
Procter & Gamble Co.

Kassim M. Ferris
Stoel Rives LLP

Gary Ganzi
Siemens
IPO Board Liaison

Gavin George
Haynes & Boone

Mildred A. Hastbacka
TIAX LLC

Claire Hogikyan
Pfizer, Inc.

Richard M. Hooper
Integrated Intellectual Property and Technology

Ford Khorsandian
Technology & Patent Research (TPR) International, Inc.
IPO Search Committee Vice-Chair 2008-09

Jessica K. Landacre
Intellectual Property Owners Association

Karl E. Mautz
Freescale Semiconductor, Inc.

Eric D. Middlemas
Eastman Chemical Co.

Sandip Minhas
QUALCOMM, Inc.

Holly N. Moore
Pratt & Whitney - United Technologies Corp.

Steven J. Perron
3M Co.
IPO Search Committee Chair 2008-09

Shayne Phillips
Halliburton

Leah M. Reimer
Cantor Colburn, LLP

Bruce Resnick
Cargill, Incorporated

Rafael E. Rosado
Pratt & Whitney - United Technologies Corp.

Dawn Russell
Arent Fox LLP

Kendall Sheets
CPA Global

Brian K. Stierwalt
ConocoPhillips

Sandra Unger
Exxon Mobile Corp