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#### Introduction

Intangible assets must be managed as diligently as tangible assets. Without some measurable information, however, effective management of intangible assets is nearly impossible or, at the very least, inefficient.

Using IP.com's Patent Insight Indexes, decision-makers and intellectual property managers can obtain the information needed to effectively identify high and low-quality intellectual assets. In addition, objective data enable managers to apply traditional objectives and performance metrics to the intellectual property management process.

#### **Capabilities**

- Meaningful patent analysis
- 100% web-based for simple, fast management of portfolios
- Reliable, transparent metrics
- Comprehensive evaluations of patent assets
- Actionable identification of strengths and weaknesses

#### **Benefits**

- Accelerates the critical decision-making process
- Discovers exclusive data needed to gain advantage on competitors
- Increases company value by improving all IP-related processes
- Improves licensing information, R&D, and annuity budget reduction
- Identifies patents that are at risk
- Validates M&A due diligence quickly and efficiently

The Patent Insight Indexes are a trustworthy source of guidance. The entire process is transparent, repeatable, and objective. Meaningful and actionable explanations of each index score as they pertain to the patent management decision process within an organization are provided. Patent Insight Indexes provide a clear account of each of the critical quality indicators that correspond to a patent's value. Alone, or in combination with other indexes, Patent Insight scores help attorneys and technology decision-makers make informed decisions regarding patent asset management.

# **The Patent Vitality Report**

Patent quality is the basis for most substantive decisions based on patent value. This might be to assess the commercial or enforcement qualities of a single patent in a licensing negotiation or to analyze large-scale patent collections to maximize portfolio asset value.

The Portfolio Intelligence Report is generated using advanced linguistics, a powerful cognitive search engine, and a statistical process to qualitatively analyze both patent application publications and granted patents from the Top 7 (T7) Authorities: IP5 + WIPO + Germany.

#### **Peer Group**

The Patent Vitality Report is created from a dynamic peer group of related patents. IP.com's proprietary, cognitive retrieval engine uses the text found in the abstract and claims of the defined Patent of Interest (POI) to perform a concept search, which identifies the 100 most comparable patents to the POI. These patents comprise the peer group.

Concept based semantic retrieval is more effective than keyword searching to identify the documents that form the peer group. Keyword searching is incapable of identifying non-obvious art residing in different industries or defined by different jargon. In fact, keyword patent searching carries the inherent danger of not finding all of the relevant art even within a specific technology segment, because shrewd patent writers purposely use a lexicon that frustrates the most diligent patent searcher.

This is a higher grade of analytics than other statistical patent scoring systems, which compare the POI to the patents within a certain classification. Using patent classifications (such as the Cooperative Patent Classification system) to define the peer group is limiting. A strategy that uses classifications prevents the analysis from evaluating non-obvious technology areas that may contain highly relevant art, which an organization could use to challenge the validity of the POI.

The peer group used to generate the Patent Vitality Report is dynamic. As the number of granted patents grows in any given technology area, the scope of each patent necessarily becomes narrower. Over time, the incremental value of each additional patent may become increasingly small; however, the pioneering patents that created the peer group can become increasingly valuable.

#### **Patent Insight Index Scoring**

The Patent Vitality Report contains fourteen scores that in isolation or in combination contribute to the overall assessment of a patent. The Patent Vitality Report computes the quality score of each POI as it compares to the peer group surrounding that patent.

The qualitative value of a patent is comprised of multiple components. A single-score patent rating system is incapable of providing the transparency needed to identify these components. Without fully understanding the specific attributes of a patent, people are powerless to render any reasonable licensing, investment, business, or litigation decision.

The dynamic generation of Patent Insight Indices provides information specific to Technology Vitality, Research Vitality, Market Vitality, Comparative Vitality, and Emerging Technology. By providing this high-resolution analysis of multiple patent indices, the Patent Vitality Report delivers the most reliable real-time, real-world characterization of the POI when compared to any other available objective computer modeling system.

IP.com uses a statistical process in computing the scores for each of the Patent Insight Indices. The objective of the Patent Insight Index statistical process is to identify causality, and in particular, to draw a conclusion of the effects of the independent quality indices of a patent document on dependent variables. The conclusions of many statistical studies correlating patent quality indices are incorporated into the Patent Insight Index

computations and are applied to a group of related patents (peer group) as an indicator of how the POI would score against the group for that particular index.

Patent Insight Index scoring analyzes a patent based on four factors for each of the Vitality groups and two factors for the Emerging Technology group. The Patent Vitality Report generates a score based on the strength of each index ranging from 0-1000. Patent Insight Index scores provide a relative qualitative value, rather than an absolute value. The process computes the scores and then normalizes each factor against a related probability curve. A higher Patent Insight Index value equates to a greater POI strength in that factor, while a lower score equates to a higher risk of litigation and/or lower value for that POI.

## **Vitality Groups**

In order to provide an overview of a POI compared to the peer group, the Patent Vitality Report groups the fourteen individual Insight Factors into four vitality groups. Each vitality group illustrates a different view of the peer group and the patents or entities in a given space. The vitality groups simplify decision making to meet the specific needs of an organization.

#### **Technology Vitality**

This group illustrates the technology opportunity afforded through the patent, without the use of backward or forward citations as an indicator. This group generally indicates the novelty of the patent, the market share of the owner, and the level of market concentration. The Technology Vitality report is made up of the Patent Uniqueness (PatUniq), Technology Opportunity (TechOpp), Assignee Portfolio Size (AsgSiz), and Market Maturity (MktMat) Patent Insight Indexes.

#### **Research Vitality**

This group illustrates the technology strength and financial commitment to the technology space by the filing entity (i.e. assignee). Patents with low scores in this group require a more thorough review for elimination (internal) or invalidity (external), given the lack of significance. Conversely, patents with high scores are likely cornerstones of "patent bundles", which require vigorous defense. The Research Vitality report comprises the Patent Uniqueness (PatUniq), Patent Recognition (PatRec), Patent Commitment (PatCom), and Technology Breadth (TechBrth) Patent Insight Indexes.

#### **Market Vitality**

This group illustrates the patent's ability to influence other technologies, create value in multiple industries, and have global appeal. Patents with high index scores are significant to the art and are likely to command a premium in the market. Conversely, patents with low scores are of lower quality and require evaluation for possible elimination. The Market Vitality report is made up of the Market Maturity (MktMat), Market Globalization (MktGbl), Patent Value (PatVal), and Technology Breadth (TechBrth) Patent Insight Indexes.

#### **Comparative Vitality**

This group illustrates the assignee's standing and commitment to the technology space in comparison to the peer group. Practically speaking, many of the indices in this group favor larger entities. Larger entities can use this group to monitor competitive developments in the peer group (i.e. gaining/losing market power). Individual inventors and small-to-medium sized entities can use information from this group to learn about the number of potential licensing partners that are active in the technology space. The Comparative Vitality report comprises the Patent Quality (PatQ), Technology Opportunity (TechOpp), Inventor Interest (InvInt), and Market Interest (MktInt) Patent Insight Indexes.

#### **Emerging Technology**

Two additional indices, when applied in combination, illustrate emerging technology. A high Peer Recognition (PeerRec) score coupled with a low Technology Currency (TechCur) score might signal a seminal patent. The rationale is that a patent that is actively cited within the first three years of issuance, where little relevant art was found prior to issuance, represents a significant breakthrough in technology.

# The Individual Patent Vitality Indexes

Each individual Patent Vitality Index provides a more in-depth view into the patent quality of the POI. The factors each focus on a specific characteristic of the POI and enable a quantitative comparison of the POI to the peer group.

#### Patent Uniqueness (PatUniq)

The Patent Uniqueness index is based on the semantic distance between the target patent and the closest member (patent or application) of the peer group, not considering those from the same Filing Entity. A large semantic distance from the nearest match indicates a high degree of uniqueness or distinctiveness. A smaller semantic distance generally indicates a presence of similar technology in the patent database (both forward and backward). This indicates whether this patent is a small incremental step or a significant leap over the technology disclosed in the closest peer.

Practically speaking, a patent with a larger semantic distance from the closest peer more often characterizes a breakthrough technology. Conversely, a patent with a very low semantic distance represents a small improvement over competitive technology.

- **Low Score:** The novelty of the target patent was sufficient to satisfy the novelty conditions for patentability under 35 U.S.C. 102 at the time of granting but, may reflect very little practical novelty advantages over other patents within its technology group at the present. The target patent may also represent only a very small, incremental advancement over the prior art.
- **High Score:** The target patent teaches a highly novel invention that, when compared to other patents within its technology sphere, reflects a significant quality advantage.

• Other Considerations: A low novelty score alone does not necessarily suggest a low value patent. If the patent holder owns other patents that are closely related to the target patent (i.e. *patent bundle*), then even with a low novelty score the POI may add appreciable synergistic value to the owner's portfolio, if considered an incremental addition to the patent bundle. However, it is also important to look at the specifics of a high scoring patent, because not all "revolutionary" technology ultimately develops into highly valuable commercial markets. The more unique the technology, the bigger semantic distance to the nearest patent or application. The higher the final index value, the lower the chance of legal challenges based on Novelty.

The Patent Uniqueness index is based upon Semantic Gist™, IP.com's smart and powerful search engine described in US8548951 Method and system for unified information representation and applications thereof and additional patents pending.

#### **Technology Opportunity (TechOpp)**

This index defines the target patent owner's level of competitive positioning against other small to medium sized multi-patent owners within the same technology sphere. Small entities are those with no more than 5 patents granted in a given year (using the average of the most recent three years). Large entities are those with more than 100 patents granted in a given year. Medium entities are the rest.

The Technology Opportunity index reflects the number of the assignee's patents (Patent Group) in the peer group relative to the size of others' Patent Groups identified within the peer group. Is the portfolio of the POI owner the largest or dominant portfolio in the peer group?

The importance of this index relates back to the target patent owner's research and development budgets and strategy and may significantly influence the company's long-term patent filing and portfolio-building strategy. If a company appears to control the dominant share of a target market already, then additional investment within this technology domain may not be warranted and may suggest instead investing to establish a stronger position in a different market.

A company with an inferior market position, that is committed to long-term market share capture, can clearly identify the scope of market investment by its major competitors through patent group analysis.

- **Low Score:** The owner of the target patent occupies a very small and highly vulnerable position in a market dominated by superior technology investors (though the individual patent may still be strong).
- **High Score:** The owner of the target patent has already committed significant resources to dominate this technology area. Unless there is a compelling reason to continue aggressive investment in this area (e.g., the patent filing trajectory of its competitors is continuing to rise), the better action for the patent owner might be to redirect its investment to new emerging markets.

The Technology Opportunity index is based upon a proprietary calculation using the number of small and medium size entities in the peer group.

#### **Assignee Portfolio Size (AsgSiz)**

The Assignee Portfolio Size index is based upon the number of patents that have the same original assignee entity (usually the current owner) of the POI in the peer group. It assumes that broader market protection is afforded to the applicant that owns other patents within the peer group.

A target patent that is the only patent owned by a company does not leverage the benefit of having other closely related patents to group together for a more formidable enforcement strategy. On the other hand, a target patent that is but one of many within the technology sphere owned by the same company can enjoy a premium on its potential commercial value – a synergistic effect realized when the target patent is bundled or grouped with its closely related same-owned patents.

From an enforcement perspective, a Patent Group represents a more serious threat, and therefore commands a premium on the ultimately negotiated licensing terms.

- **Low Score:** The target patent is one of a smaller group of patents (or is a single, non-grouped patent) in a technology sphere dominated by companies owning significantly larger groups of closely related patents. The target patent is of little or no premium value.
- **High Score:** The target patent, if licensed, has the potential to realize a value premium, because, when grouped with other closely related patents, it creates a more formidable offering.

The Assignee Portfolio Size index is based upon a proprietary calculation using the portfolio size of the POI assignee. This type of index is referenced by Kurtossy in PERIODICA POLYTECHNICA SER. SOC. MAN. SCI. VOL. 12, NO. 1, PP. 91–101 (2004).

#### **Market Maturity (MktMat)**

The Market Maturity index is based upon the ratio of the number of unique large entities in the peer group and the number of unique small/medium entities in the peer group.

The core assumption underlying this index is that a particular field presents a more favorable environment within which to pursue opportunities to generate the highest revenue per licensee by directing attention to potential licensees or infringers that have "deep pockets," rather than toward many small companies that might lack the relative means to mount an affirmative defense or, more importantly, might have little market share, thereby representing little licensing royalty potential.

- **Low Score:** Many small companies share the market space defined by the technology sphere. This represents an undesirable ratio of high litigation investment to revenue opportunity.
- **High Score:** A few large, "rich" companies share a commercially valuable market space (as indicated by the investments these few companies have made in multiple patents identified within the technology sphere). This represents a desirable revenue opportunity-to-litigation cost ratio.
- **Other Considerations:** A market defined by very many small companies may nevertheless represent a lucrative enforcement licensing opportunity, even though

the target patent has a low score on this index (e.g., using an enforcement strategy of filing suit against a large number of alleged infringers, yet providing a compulsory licensing "fee" priced such that taking a license is economically preferable to a more costly litigation defense.)

The Market Maturity index is based upon a proprietary calculation using the size and number of entities in the peer group.

#### **Patent Recognition (PatRec)**

The Patent Recognition index represents how well the POI is recognized as a seminal or important patent in the peer group. The Patent Recognition is determined by the current position of the target patent in a rank ordered list of the peer group based on the total number of forward citations of each unique (one representative per simple family) publication in the peer group. A higher number of forward citations to this patent, when compared to the peer group, indicates a higher level of technical sophistication.

The most important technologies are built upon in the future, as refinements to the technology develop to address specific product features or market trends. The number of forward citations a patent receives positively correlates with its technological importance, as measured by expert opinions, social value, and industry awards, as well as to an increased economic value of the invention.

- **Low Score:** The target patent simply builds upon the core technology taught in other patents, resulting in an improvement that may prove to be quite small and commercially insignificant.
- **High Score:** The target patent is emerging as the pioneer or seminal patent, upon which an industry or important technology is building. A high score may indicate a target patent that has a clearly superior technology and market position. Typically, pioneering or seminal patents achieve a very high score in this index.

The Patent Recognition index is based upon a proprietary calculation using forward citation counts, a well-established metric for patent quality (see, for example <a href="http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf">http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf</a>).

#### Patent Commitment (PatCom)

The Patent Commitment index is based on the patent family size, a function of the divisionals, continuations and authorities that have received a patent application based on the original POI application. A larger value for Family Size suggests a larger investment by the original owners. The total number of members in a patent family indicates the investment of the assignee and how the assignee thinks about their technology.

- **Low Score:** The core technology of the patent of interest was protected in a limited manner. This shows low interest and investment in protecting the technology.
- **High Score:** Indicates a greater financial commitment by the filing entity or patent owner of this technology. A high score is positively correlated with the renewal probability. Typically, pioneering or seminal patents eventually achieve a very high score in this index.

The Patent Commitment index is based upon a proprietary calculation using family size, a well-established metric for patent quality (see, for example <a href="http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf">http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf</a>).

#### **Market Globalization (MktGbl)**

The Market Globalization index is based on the number of unique authorities in the forward citations of the patent of Interest (Forward Authorities).

A greater number of unique authorities in the forward citations of the POI argues in favor of a stronger, more substantial, and persistent technology. The more unique authorities present, the higher the worldwide interest in the technology space; therefore, the worldwide investment in the technology itself is high. A larger value for Forward Authorities suggests a greater potential market size. A larger value also suggests an increasing probability of legal challenges.

This factor also provides a measure of the impact of the POI on external sources. This measure shows the worldwide interest in the developments made in the POI, which also may lead to greater licensing potential for the POI.

- **Low Score:** The core technology of the peer group is protected in a limited geographic region. This shows low interest and investment in protecting the technology.
- **High Score:** There are broader global opportunities for the invention and greater investment in protecting the technology. Typically, pioneering or seminal patents achieve a very high score in this index.

The Market Globalization index is based upon a proprietary calculation using forward citations, a well-established metric for patent quality (see, for example <a href="http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf">http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf</a>).

#### **Patent Value (PatVal)**

The Patent Value index is based on an estimated forward citation activity over the lifetime of the patent of interest using the normalized citation activity of the patent's primary CPC subclass. Generally, a larger number of forward citations correlates with the value of this patent. The score is determined by first calculating a profile for the patent's broad CPC group. This patent's performance to date is compared to the profile to determine the score. The higher this score, the more likely the patent is valuable.

Compared to relevant patents within the target patent's technology sphere, each extra citation per patent indicates a greater influence on other inventions. This index is normalized over the lifetime of the patent to account for the fact that forward citations received grow over time.

• **Low Score:** The target patent has not been cited or has been cited very few times when compared to patents in the technology sphere. This indicates that the market value of this patent is substantially lower than other, more valuable, patents to which it was compared.

• **High Score:** The target patent has been effectively "peer reviewed" and found to be a highly pivotal disclosure of technology. This preceded a high volume of subsequent patent application filings. Typically, pioneering or seminal patents achieve a very high score in this index.

• **Other Considerations:** Before attributing a high value to a high scoring patent, the reviewer must consider whether the target patent was the first of a long-extended family of continuations or divisional patents filed by the same applicant (but not equally cited by third parties). This may indicate a false positive score.

The Patent Value index is based upon a proprietary calculation using forward citations, a well-established metric for patent quality (see, for example <a href="http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf">http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf</a>).

### **Technology Breadth (TechBrth)**

The Technology Breadth index is based on the number of different technology categories identified in the patent's forward citations, which differ from the present invention. The technologies are identified by CPC sub-group codes. The more CPC codes within this patent's forward citations that differ from the POI, the more diffused the core technology is. A core technology that is ultimately diffused across a broad range of technologies and industries enjoys a better opportunity for commercialization and for generating substantial licensing revenue.

- **Low Score:** The target patent technology is not considered commercially valuable outside of its primary industry or market segment. Most of the licensing opportunities appear to originate from within the target patent owner's own industry or markets.
- **High Score:** The technology of the target patent has diffused through many unrelated and perhaps originally unintended industries and market segments. Not only does this signal an important new core technology, but also is predictive of potentially larger than anticipated opportunities for licensing revenue. Typically, pioneering or seminal patents achieve a very high score in this index.

The Patent Breadth index is based upon a proprietary calculation using forward citation CPC sub-group codes, a well-established metric for patent quality (see, for example Verhoeven et. al., Measuring Technological Novelty with Patent-Based Indicators (April 1, 2015) <a href="https://ssrn.com/abstract=2382485">https://ssrn.com/abstract=2382485</a> or <a href="http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf">https://ssrn.com/abstract=2382485</a> or <a href="http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf">https://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf</a>).

#### **Patent Quality (PatQ)**

The Patent Quality is based on how well the claims and abstract of the POI are supported by the full patent text compared to the match between the POI's claims and abstract and the closest three patents or applications in the peer group, not considering those from the same Filing Entity.

The Patent Quality is based on the semantic distance of the POI from its own claims and abstract compared to the semantic distance of the three most relevant patents from the

POI's claims and abstract. Patents that teach the art as well as or better than the POI represent invalidity/infringement risks or enforcement/licensing opportunities, depending on whether the peer group patents have an earlier or later priority date.

- **Low Score:** Using the teachings from the POI and the semantic retrieval algorithms, patents were found that scored markedly higher the POI itself. This suggests that other patents teach the POI's claimed technologies better than the POI does.
- **High Score:** The teachings in the POI scored well when compared to other patents found in the same conceptual space. This means that the POI strongly teaches its own subject matter.
- Other Considerations: A low score should be a warning indicator to the patent owner considering enforcing the patent. Alternatively, an alleged infringer would consider a low score as a positive indicator regarding their litigation defense strategy. In addition, if the POI has the oldest priority date, then the patents that score above the POI might represent enforcement or licensing opportunities.

The Patent Quality index is based upon Semantic Gist<sup>™</sup>, IP.com's smart and powerful search engine described in US8548951 Method and system for unified information representation and applications thereof and additional patents pending. See also the Patent Clarity metric discussed by Guerrini, Defining Patent Quality, 82 Fordham L. Rev. 3091 (2014). Available at: http://ir.lawnet.fordham.edu/flr/vol82/iss6/18.

#### **Inventor Interest (InvInt)**

The Inventor Interest index is based on the current number of unique inventors in both the POI and the POI's forward citations after eliminating self-citations.

More inventors on the POI and in the peer group argues in favor of a stronger, more substantial, and persistent technology. A solo inventor may earn a patent, but the quality of the technology of that patent might not favorably compare to a patent in which a company invested salaries of multiple engineers or inventors.

This factor also provides a measure of the impact of the POI on external sources. This measure shows how many other inventors are affected by the developments made in the POI.

- **Low Score:** A solo inventor or a very small group of inventors developed the core technology of the peer group, reflecting statistically lower technology strength. In addition, very few others are likely paying attention to the technical developments in the POI.
- **High Score:** This indicates greater individual participation in this inventive space and greater impact on others. Typically, pioneering or seminal patents achieve a very high score in this index.

The Inventor Interest index is based upon a proprietary calculation using forward citation inventor network size showing the level of activity in a technology.

#### **Market Interest (MktInt)**

The Market Interest index is based on the number of unique assignees of the forward citations of the POI. It posits that more assignees citing the POI suggests bigger influence in the market and more licensing opportunities.

- **Low Score:** Very few companies invest in the related technology, thereby reducing the potential for many licenses
- **High Score:** Many licensing targets are approachable and can possibly convert to profitable royalty streams. This is especially true if many companies reside in non-obvious and non-competitive industry or market segments. Typically, pioneering or seminal patents achieve a very high score in this index.

The Market Interest index is based upon a proprietary calculation using forward citations, a well-established metric for patent quality (see, for example <a href="http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf">http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf</a>).

#### Peer Recognition (PeerRec)

The Peer Recognition index represents how well the POI is recognized by citations when compared to closely related patents within three years of publication. The Peer Recognition index is based upon the recent citation activity of the POI vs the patent in the peer group with the highest level of citation activity. It posits that an invention generates greater interest (but also an increased risk of litigation) if the patent, within three years of issuance, has more forward citations than its highest cited peer.

Highly competitive technology areas that have a correspondingly high volume of patent filings reflect the high commercial value of a given market. A patent with a commercially low value has a higher likelihood of avoiding litigation than a patent in a fiercely competitive market space.

- **Low Score:** Competitors are not viewing this patent; therefore, it likely has little commercial value.
- **High Score:** This patent has a high litigation probability because it exhibits the characteristics of a patent that was filed early in the emergence of what is now a market filled with potentially infringing competitors. Typically, pioneering or seminal patents achieve a very high score in this index.
- Other Considerations: For enforcement or licensing purposes, a patent scoring high on this index may have a very high commercial value. Statistically, a high scoring patent has a high probability of coming into litigation and may be considered a high value asset. A company that manufactures products claimed by patents scoring low in this index may want to examine invalidity or opposition opportunities prior to or in response to litigation brought by the patent owner.

The Peer Recognition index is based upon a proprietary calculation using forward citations, a well-established metric for patent quality (see, for example <a href="http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf">http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf</a>).

#### **Technology Currency (TechCur)**

The Technology Currency index indicates the level and currency of prior art activity related to the patent. The index is based upon the number of recent backward citations and the number of total backward citations, not including self-citations. The index is discounted over time to account for fading interest in older patents.

It posits that the number of backward patent citations compared to the backward patent citations within three years of application tends to suggest a larger market size. A large number of backward citations might also indicate a highly developed technology area and greater connections to other related technologies. This positively corresponds to a larger market size because large markets evolve over time, and during that time, many improvements emerge.

- **Low Score:** Very few backward citations are present, possibly indicating that there is little or no commercial market opportunity (i.e. very little prior art).
- **High Score:** The target patent has a long list of backward citations, indicating that the patent has found a commercially valuable improvement that warrants the investment in a patent.
- Other Considerations: A reviewer should consider the following factors before determining the value contribution of this index. First, a large number of nonpatent references may only reflect an active technology research area, not a commercially valuable market. Second, a target patent with very few backward citations may become a seminal patent, as it might disclose "revolutionary" technology.

The Technology Currency index is based upon a proprietary calculation using both backward and forward citations, another well-established metric for patent quality (see, for example Verhoeven et. al., Measuring Technological Novelty with Patent-Based Indicators (April 1, 2015) <a href="https://ssrn.com/abstract=2382485">https://ssrn.com/abstract=2382485</a> or <a href="http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf">https://ssrn.com/abstract=2382485</a> or <a href="http://www.oecd.org/sti/ieconomy/Chapter2-KBC2-IP.pdf">https://ssrn.com/abstract=2382485</a> or

### **Conclusion**

The Patent Insight Indexes found in IP.com's InnovationQ® and InnovationQ Plus™ provide a consistent and repeatable method for managing intangible assets — intellectual property. When true value, risk levels, and potential return on investment are in question, the Indexes offers the decision-support information intellectual property managers need to make strategic and tactical business, legal, or technology decisions and provide competitive intelligence to find the best answers.

The proven Patent Insight Indexes provide real time qualitative analysis of each patent of interest (POI) that is analyzed to provide the most relevant set of comparable patents and

technologies available, and to discover exclusive data needed to gain advantage on competitors.

Using the IP.com's Patent Insight Indexes intellectual asset managers can now effectively identify high and low-quality assets, and with objective data, can begin to apply traditional management objectives and performance metrics to the intellectual property management process.