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Quality or quantity – defining and building the ideal patent portfolio

By Eligio C Pimentel and **Chad A Pahnke**, McAndrews, Held & Malloy Ltd

Strategically effective patent portfolio development and management is vital to the financial success of any company, particularly technology companies. With studies finding that as much as 84% of the market value of companies in the S&P 500 is derived from intangible assets, intellectual property represents a large proportion of that value. In particular, patents are essential to maintaining and growing market share and profit margins for many companies. Despite that fact, many increasingly treat patent preparation and prosecution as just a budget line item, rather than a means to achieve strategic advantage and alignment with business objectives. This is frequently a mistake.

A robust, valuable and effectively enforceable patent portfolio is best acquired in close partnership with patent counsel that is attuned to the specific needs of the business. This is unique to every business, requires adequate time and attention, and should not be reduced to a budget line item. This chapter discusses a framework for thinking about patent quality when developing a patent portfolio, and highlights a developing array of patent data analytics tools that can improve the effectiveness of both patent counsel and business stakeholders striving to balance patent quality and quantity while building an ideal patent portfolio.

Quality and quantity

The strength of a patent portfolio is often measured by the quality and quantity of its patents. The general goal of portfolio management is to optimise both of those attributes for a given set of resources (the patent budget). But depending on the particular business goals, any emphasis on quality and quantity may be weighted differently for different portfolios.

Through its claims, a patent defines the technology space within which a patent owner can exclude others from practising. Conventionally, a patent portfolio's quality has been concerned with the strength of this ability to exclude others. As a result, patent quality is often considered to be a function of the market for the technology and the patent counsel's skill in preparing the patent document.

The other typical measure of a patent portfolio's strength focuses on the quantity of patents. Owning a large number of patents in a particular technology space can increase barriers to entry (the costs and complexity) for would-be competitors in that space. As a result, quantity-focused portfolios are often used for defensive purposes. For example, large patent portfolios can discourage competitors from instigating patent-related disputes with the portfolio owner, or from even attempting to enter a technology space because of the crowded nature of the prior art.

Efforts at maximising quality and quantity involve a balancing of the available (and typically limited) investment resources, typically outlined in the form of a patent budget. In this balance, the quantity of patents in a portfolio are tied to direct, unavoidable expenses, such as preparation costs, filing fees and periodic maintenance or annuity taxes. In contrast, maximising quality can involve lengthy negotiations between patent counsel and the patent offices in which protection is sought. Put simply, costs associated with maximising quality are subject to variation, while the marginal incremental costs associated with increasing the quantity of patents in a portfolio are largely fixed.

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Business-centred framework for considering patent quality

The goal of any patent portfolio is monetisation. Patent monetisation may occur through direct sale or licensing of patents, use as collateral in financing or simply through risk mitigation for existing business activities. This chapter approaches patent quality from the perspective that, in addition to conventional factors associated with patent prosecution (ie, preparing a well-drafted application), quality must also be assessed in the context of the business goals or objective, or value of the patent to the business. Accordingly, a high-quality patent is one that provides the greatest ability to monetise the patent in the manner desired by the business. As the patent's ability to exclude others from the technology more closely aligns with the goals of the business, the patent's quality increases.

For instance, a patent owner that has market share preservation as a business goal may consider patents that protect incremental improvements in the relevant technology to be of higher quality than patents covering market-disrupting technologies. That is because, in this example, the patent owner values extending established market share over licensing or other patent monetisation techniques (even though patenting a disruptive technology may still have benefits to the established player).

Choosing a quality or quantity-based approach

Business objectives should drive patent strategy. The business stakeholders responsible for determining this patent strategy include management, marketing, sales, legal and technical staff. Unsurprisingly, the balance between quality and quantity may be different for any two companies, within the same company at various business stages, or even among company departments or business units.

Exemplary business goals include defensive patenting, licensing, collateral and protecting market share. A business may have a general patent strategy, but different technologies, business segments, products or other divisions of the business might have different priorities, and each should be considered separately according to its goals. For example, the patent strategy for a mature market is typically different from the patent strategy for an emerging market technology.

Patent counsel should therefore recommend a value-based, quality-quantity strategy that aligns with the business needs. These recommendations are most effective when the counsel has in-depth understanding of the business. In this regard, not only is technical competency in the relevant technology required, but also the ability to understand the product market, sales strategy and company strengths.

Effective patent counsel must develop a portfolio strategy in close collaboration with business stakeholders. Recommendations may be more quality-based or more quantity-based depending on the targeted business segments, products or technologies. Evaluating prospective inventions based on the chosen patent strategy often involves answering certain questions:

- How does this invention fit into the company's product or service offerings?
- Is this invention applicable to products or services other than those designed or intended by the inventor?
- What benefit does this invention provide to the customer?
- How will the products or services involving this invention be marketed?
- Will sales of the products or services embodying the invention justify the cost of patenting and/or associated maintenance fees?

While patent counsel may learn the critical aspects of the products and market from the business stakeholders, patent counsel can also guide the business stakeholders on IP protection. It is advisable to train stakeholders on the basics of patent protection, including how the patent portfolio strategy affects the stakeholders, and the

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strategic differences between available suggested approaches. To this end, patent counsel can be instrumental in training management, marketing, sales and technical staff on how to leverage patents (and other intellectual property) towards the stakeholders' own goals. By educating stakeholders, a company can improve compliance with a patent strategy, reduce the number of missed patent opportunities and ultimately reduce risk.

Patent data analytics tools

Patent counsel can leverage patent data analytics tools to gain additional effectiveness and efficiency. Patent data analytics tools are a developing field that can leverage more than 78 million worldwide patent families to identify patterns and trends. Businesses and patent counsel familiar with such tools are more effective and efficient at:

- using company resources to improve their understanding of portfolios and individual technologies;
- selecting an appropriate balance between quantity and quality when developing a patent portfolio; and
- improving both quality and quantity in the patent portfolio.

Before the emergence of modern patent data analytics tools, information representative of a technology field would typically be available only through resource and labour-intensive processes (ie, performing patent landscape searches and manually evaluating the results for specific criteria). Patent data analytics tools have drastically reduced the time involved for skilled patent counsel to obtain the same (or better) information from a set of search criteria, such as the patent owner, priority date range, technology classification, keywords, jurisdiction or other data metric values.

But even though data analytics tools can significantly assist in efficiently managing patent portfolios, the insights provided by these tools still

require that they be evaluated by patent counsel in conjunction with business stakeholders:

- While data analytic metrics may suggest that a patent or application is of high value, knowledgeable patent counsel may quickly identify quality issues that reduce the actual value of the patent to the owner.
- An application that is considered of low value according to data analytics metrics may in fact be of high quality due to the patent's purpose for the owner.

Accordingly, the effective use of patent data analytics tools involves efficient identification of low or high-value patents, with outside counsel and business stakeholders acting as filters for decision making based on these tools.

Early identification and evaluation of a patent landscape

Patent data analytics tools can help identify and map the patent landscape before businesses invest in major development efforts or in a new technology space. For example, patent data analytics tools can provide metrics that indicate the relevance of a patent to a technology field, providing an indicator of the patent's market value. Other metrics can help identify quality competitive patents and potential blocking patents. Patents identified as high quality may need to be avoided, acquired from the patent owner, improved on or designed around. Significantly, having early knowledge of certain critical patents in the applicable technology fields can substantially reduce risk and conserve significant resources during a company's own product development.

In addition, patent data analytics tools can identify the significant patent owners in a particular field. Patent owners can be quickly identified as having portfolios of different sizes and strengths based on available metrics (see Figure 1). Patent strength can overcome a lower quantity when it comes to the overall value of a portfolio, as illustrated by the overall strength of the portfolio of Company B (compared with Company A). Nevertheless, both low-quantity, high-metric portfolios and high-quantity, low-metric portfolios should be reviewed during product development for completeness. By using this information, patent counsel can work more efficiently with the business stakeholders on product development strategy.

Diverting resources from low-quality patents to support higher quantity

Market research shows that approximately $8 billion in patent maintenance and annuity fees will be due worldwide in 2021 alone. For patent owners with substantial portfolios underlying their product and service offerings, the patent maintenance and annuity fees that are due may not be justified by the quality of some of their patents.

Data analytics tools can help the business identify leading candidate patents that should be abandoned, sold or otherwise eliminated from the portfolio. By freeing resources that would otherwise be directed to maintenance fees or prosecution costs on low-quality patents, resources can be diverted to support additional or higher-quality patents. Patent data metrics can focus decision making towards maintaining or 'pruning' certain patents in a portfolio (see Figure 2).

FIGURE 1. Visual comparison of four example patent owners – the bubble size depicts the total patent metric value for all patents owned by the patent owner

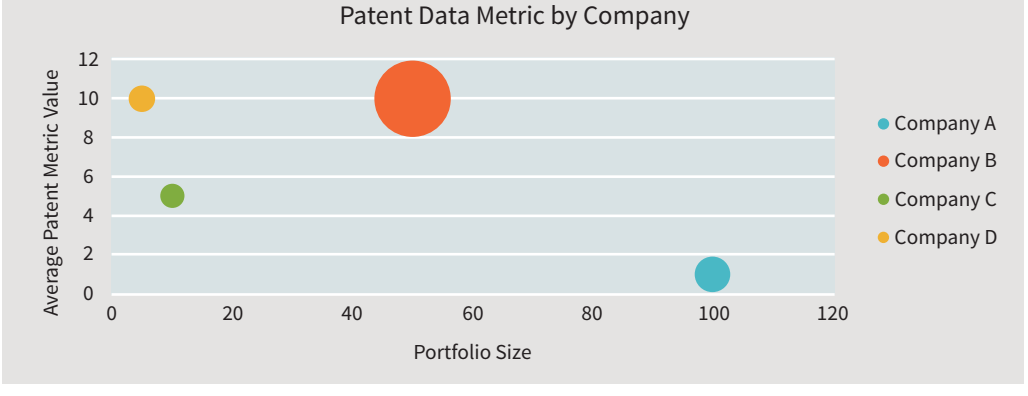

FIGURE 2. Visual indication of the number of patents in a portfolio that fall into ranges of an example metric, from lowest to highest values

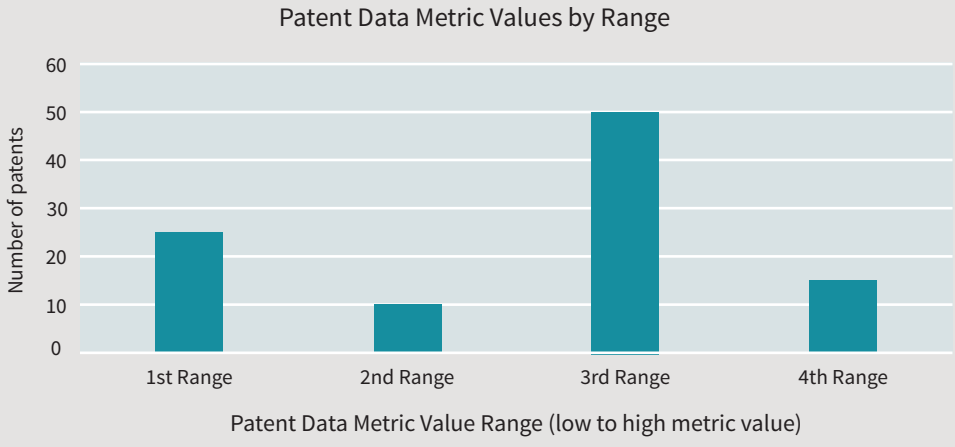

Figure 2 shows how patents in a portfolio can be categorised into ranges based on a selected metric value, with the fourth range being of higher value than the first range. For instance, of all the patents in the portfolio, 25 have metric values in the lowest range. Using the illustrated distribution, the priority should be on evaluating continued maintenance fee payments for the patents in the lowest range, or perhaps the lowest two. The savings realised by reducing the spending on underperforming patents can then be redirected to support new, higher-quality patents.

In addition, data analytics tools can help guide the prosecution of patent applications. For example, they can identify the historical statistics for a patent examiner that highlight certain tendencies or patterns that may be predictive of how the examiner will approach a company's patent applications. In addition to the merits of the particular application, patent counsel can use this data to make early decisions on how to reduce pendency and costs for any application. Patent examiner statistics may also indicate that a patent application has a high likelihood of incurring high costs for obtaining a patent from that examiner. When faced with an examiner who has a higher-than-average length of application pendency, patent counsel may recommend a strategy that involves an early appeal of the examiner's rejections, thereby avoiding extended prosecution, improving the quality of the resultant patent and providing cost savings that can be redirected to support new and higher quality patents.

Improving effectiveness and quality during patent prosecution

Some patent data analytics tools enable patent counsel to receive alerts on the occurrence of custom-defined characteristics or events in a portfolio or technology space. This is a highly efficient way to stay up to date on patent activity for either a particular technology or from a particular competitor.

In addition, merging the insights from multiple patent data analytics tools allows for the creation of custom-built approaches and metrics that can further improve the effectiveness and efficiency of patent portfolio management. For example, by identifying a patent application that is likely to have higher costs (per data tool A) and does not score well on value-based metrics (per data tool B), the business may decide that the cost-to-quality ratio for the patent application favours focusing the patent application at an early stage to reduce the costs of prosecution while maximising quality.

Continuation strategy

Patent continuation practice involves filing multiple patent applications using the same disclosure and priority date to obtain multiple patents. Continuation practice is a powerful tool for improving the quantity and quality of a patent portfolio, and particularly for adapting the patent

portfolio to market developments occurring after filing a patent application. In this context, patent counsel can leverage patent data analytics tools to identify patent families that are strong candidates for filing continuation applications. For example, patent data analytics tools can help identify trends in the same technology space as an active patent application. The data, in combination with input from patent counsel and business stakeholders, may suggest that utilising continuation practice can improve the alignment of the patent family with the developing business goals.

Comment

Patent data analytics tools will never replace the judgment-based valuation analyses achieved through trusted partnerships between patent counsel and business stakeholders. But studies of patent data are ongoing, and there is constant improvement in both the available data and the insights that can be obtained. As these improvements continue, use of these tools present patent counsel and patent owners with new and better opportunities to optimise the overall value of patent portfolios, as well as the efficiency and effectiveness of their management. Companies are best served by working with patent counsel that have a robust understanding of the company's business and will work with stakeholders to closely align patent strategy with business strategy. *iam*

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