

The Legal Framework of Patent Valuation: A Comparative View between the US, the PRC and Vietnam*

Tran Van Nam** & Tran Manh Hung*** & Do Tran Thanh****
& Truong Tan Dung*****

In today's world, intellectual property (IP) rights have become a significant part of overall corporate value as well as a "driver of important market transactions." Nevertheless, patent commercialization and claims for damages due to patent infringement are often obstructed by parties' differing positions on the patent value. To improve Vietnam's legal and practical environment for patent valuation, this paper constructs a comparison of the prevailing frameworks of the United States and the People's Republic of China with that of Vietnam

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** Associate Professor at the National Economics University Faculty of Law, Vietnam. Ph.D. (NEU), LL.D. (GASS), LL.M. (U.Turin-Italy). ORCID: <http://orcid.org/0000-0002-1884-6931>. The author may be contacted at: namtv@neu.edu.vn / Address: A1-1010, Faculty of Law, National Economics University, Giai Phong Rd, Hai Ba Trung Dist., Hanoi, Vietnam.

*** Attorney-at-Law (Baker McKenzie-Vietnam). LL.M. (Kyushu U.-Japan). The author can be contacted at: tanh@bmvn.com.vn.

**** Attorney-at-Law (Baker McKenzie-Vietnam). LL.B. (Hanoi Law U.-Vietnam). The author can be contacted at: Alex.Do@bmvn.com.vn.

***** LL.B. (Hanoi Law U.-Vietnam). The author can be contacted at: TanDung.Truong@bmvn.com.vn.

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to make recommendations meeting the stated purpose. An analysis of relevant academic literature suggests that parties should be allowed to choose their preferred valuation technique even when having engaged valuation professionals. Also, valuation service providers should be able to demonstrate the underlying rationale for selecting a particular valuation method. Other valuation techniques, such as forward citation counting, should also be studied to provide private parties, patent valuers and relevant state agencies in Vietnam with more options when facing the need to value a patent.

Keywords: Intellectual Property, IP Valuation, Patent Valuation, Patent Citation, Patent Monetization, Patent Commercialization

I. INTRODUCTION

The World Intellectual Property Organization (WIPO) defines IP valuation as “a process to determine the monetary value of subject IP, which must be separately identifiable.”¹ According to the International Chamber of Commerce, IP assets do not possess “an absolute value,” and their valuation results are influenced by different variables, including, *inter alia*, the valuation context; the period for which the IP rights will be held; the existence of uncertainties, whether they are legal, technological or market-wise, when estimating the future economic benefit of the IP asset, etc.² Patent valuation can become imperative in various circumstances: the financing and investment due diligence process, the M&A process, licensing and royalty negotiation, determination of the amount of damages or enforcement of IP rights, taxation purposes,³ etc. Nonetheless, determining the value of patent is not always a straightforward and easily reached process. Whether the parties in a patent transaction or legal dispute can settle at a reasonable middle ground depends primarily on whether the adopted valuation approach(es) are appropriately premised on any scientifically validated methodology perceived to be fair and reasonable by the parties concerned.

To provide solutions from a legal perspective, this paper conducts a comparative analysis of the legal frameworks on patent valuation in the United States, the People’s Republic of China, and Vietnam, as well as relevant academic literature shedding light on legal provisions, before arriving at what viable solutions are in place for Vietnamese lawmakers to consider when dealing with the valuation of

patent in Vietnam. This paper aims to compare the prevailing frameworks of some selected countries in order to improve Vietnam's legal and practical environment for patent valuation. The research includes (1) an introduction of patent valuation; (2) common patent valuation approaches; (3) legal framework for patent valuation in different jurisdictions; (4) discussion and findings; and (5) lessons for Vietnam.

II. COMMON PATENT VALUATION APPROACHES

The most popular approaches to patent valuation are market, cost and income. Due to the nature of IP, it is recommended that multiple approaches be applied to understand the value of an IP asset.⁴ It is also recommended to flexibly determine when and how different valuation methodologies are deployed, although certain approaches may be suggested for usage in some circumstances more than others.⁵ The market approach estimates the market value of an asset by analyzing the known market values of comparable assets.⁶ To put it simply, the value of a patent, as calculated using this method, is “what a willing buyer would pay a willing seller for a similar property,” which is premised on four requisites: “(i) the existence of an active market; (ii) past transactions of comparable property; (iii) [free and open] access to pricing information; and (iv) an arm's length transaction between [the buyer and seller].”⁷ According to Simensky and Bryer's analysis, factors establishing comparability are similar industry characteristics, similar profit histories, comparable market share or market share potential, equal responses to new technology, similar barriers to entry and similar growth prospects.⁸ Harald Wirtz opined that this approach can manifest into two forms, which more or less serve as a recapitulation of the above: (i) direct market value analysis, which takes into account past transactions entered for the subject IP itself and (ii) analogous or comparable transaction analysis, which evaluates prices paid for similar IP assets.⁹

The idea of cost approach is that the cost of creating or purchasing a new patent is proportionate to the economic value of the patent during its useful life.¹⁰ This is calculated through historical cost trending (some of these costs include research and development costs, work in process costs, manufacturing overhead costs and finished goods costs)¹¹ or recreation cost estimating.¹² This approach is grounded on the notion that no reasonable buyer would willingly pay more for an asset than the

cost they would incur by generating a similar asset on their own.¹³

The income approach is perceived by literature as a speculative method of patent valuation as it involves future assessment of economic benefits.¹⁴ The supporting backbone for the income approach lies in the concept that the value of an IP asset is equivalent to the net present value of the economic benefits enjoyed by the owner over the asset's lifetime,¹⁵ and that a reasonable average purchaser would pay up to the present value of the asset's anticipated benefits. The following factors shall be determined when adopting the income approach: the remaining effective life of the asset; the free cash flow-generating (or income-producing) prospects for each period of the asset's life; and the appropriate discount rate to bring expected returns back to the present value.¹⁶

III. LEGAL FRAMEWORK FOR PATENT VALUATION IN DIFFERENT JURISDICTIONS

A. Vietnam

Circular No. 06/2014/TT-BTC (Circular 06)¹⁷ provides for Valuation Standard No. 13 (Valuation Standard 13) regulating and guiding the valuation of intangible properties, which shall include IP and IP rights.¹⁸ Valuation Standard 13 is said to be the most comprehensive guidance for the valuation of intangibles in Vietnam that serves the purpose of sales, transfers, mortgaging, mergers, capital contribution, etc.¹⁹ Consistent with international practice, Valuation Standard 13 starts with prescribing the list of information that needs to be obtained when valuing intangibles properties. It goes on to stipulate three valuation approaches that are commonly used: market-based, cost-based; and income-based approaches. These approaches are not only guided by Valuation Standard 13, but also detailed under Valuation Standards Nos. 08, 09 and 10,²⁰ Joint Circular No. 39/2014/TTLT-BKHHCN-BTC (Joint Circular 39),²¹ and Circular No. 10/2019/TT-BTC (Circular 10).²²

In addition to Valuation Standard 13, the 2012 Law on Price (LoP)²³ dedicates one chapter²⁴ to prescribing valuation, which is categorized into different sub-chapters according to different types of appraisers: persons, enterprises and the state. The qualifications of appraisers, as well as the conditions for the issuance and revocation of the certificate of eligibility to provide valuation services, among others,

are regulated in detail by Decree No. 89/2013/ND-CP guiding the LoP (Decree 89).²⁵ The 2017 Law on Technology Transfer (LoTT)²⁶ and Decree No. 76/2018/ND-CP guiding the LoTT (Decree 76)²⁷ specify instances when the valuation of technology is required (e.g., when technologies created/purchases using state budget are contributed as capital to investment projects)²⁸ as well as specific conditions for organizations providing technology valuation services.²⁹

B. The People's Republic of China

The PRC Asset Appraisal Law (AAL)³⁰ is the highest legislation governing asset appraisal in China. According to the AAL, any appraisal professional shall join an appraisal institution to conduct an appraisal and may only practice appraisal in one appraisal institution.³¹ To regulate appraisers, the AAL requires these professionals to pass a qualification examination carried out by a relevant appraisal industry association.³² Concerning the appraisal procedure, the AAL prescribes that at least two appraisal professionals shall be appointed³³ and two appraisal methods shall be selected, except where only one method can be selected due to the appraisal practicing rules.³⁴

To provide further guidance for the valuation practice, the PRC Ministry of Finance issued Circular No. 43/2017 (Circular 43)³⁵ formulating basic guidelines for asset appraisal. Besides setting out the general principles for doing asset valuation business (regarding, e.g., the requirement of independence, objectivity, impartiality and possession of relevant professional knowledge), Circular 43 specifies the appraisal procedure for asset appraisal institutions and their appraisal professionals. Similar to international practices, Circular 43 lays down three basic valuation methods and their derivatives. Circular 43 also assigns the China Appraisal Society (CAS) to formulate asset appraisal practice guidelines and professional ethics guidelines in accordance with the standards set thereunder.³⁶

Established in 1993, the CAS is a national self-regulatory organization in the asset appraisal industry, actively participating in both national and international appraisal affairs.³⁷ Acting pursuant to the assignment under Circular 43, the CAS has issued Guideline for Patent Valuation No. 49/2017 (Guideline 49)³⁸ setting forth detailed regulations affecting the execution of patent valuation as well as instructions on how different valuation methods should be implemented. Guideline 49 requires appraisers to include in their valuation report the reasons for the selection of a

particular valuation method as well as the analysis leading to the final valuation result.

C. The United States

1. The Internal Revenue Manual (IRM)³⁹ of the Internal Revenue Service (IRS)

The IRS is the US's tax collection agency, which administers and supervises the execution and application of the internal revenue laws,⁴⁰ while the IRM is the official compilation of IRS policies, procedures and guidelines.⁴¹ Concerning patent valuation, Section 4.48.5 of the IRM lays out guidelines for the valuation of IP applicable to all IRS personnel who are engaged in valuation practice with respect to the development, resolution and reporting of issues that involve the valuations of IP.

In terms of IP valuation approach, the IRM stipulates five fundamental methods, comprising the market-based method, the cost-based method, the income-based method, the Monte Carlo (or probabilistic) method and the option valuation method.⁴² The first three methods are the most common ones discussed earlier in this paper. The Monte Carlo method is analogous to the discounted cash flow method save for the fact that it relies on probability analysis of estimated ranges to produce a statistical prediction of the expected value. The option valuation method applies to longer term and higher risk intangibles when early expenses are significant, and projected returns are in the distant future.

When a valuation method is chosen, the IRM requires appraisers to give the reasons for their decision, as well as those why other methods were rejected. The appraisers should guide readers to a logical and comprehensive understanding of intangible worth by presenting the suitability of each method and the veracity and dependability of the evidence supporting each method. The results should be reconciled; the applicable methodologies' outcomes should provide results with equivalent levels of value; and the underlying assumptions and limiting conditions affecting the analyses, opinions and conclusions should be stated.

2. Case law

The Daubert standard as a ground for the determination of a valid methodology

Expert witnesses pave way for a more accurate judgment of the fact which are considered "an integral part of the adjudication of complex scientific and technical disputes."⁴³ In arriving at the conclusion of whether a particular patent valuation

methodology offered by expert witnesses is admissible, courts in multiple cases have relied on the *Daubert* standard for their determination.

This standard comes from *Daubert v. Merrell Dow Pharmaceuticals, Inc.*⁴⁴ in which the US Supreme Court held that Rules 402⁴⁵ and 702⁴⁶ of the United States Federal Rules of Evidence (FRE) required only that an expert witness' testimony be relevant and reliable. In determining the fulfilment of the first requirement - "reliability" - of testimony, the court held that it should be relevant to scientific knowledge, in which the word "scientific" connotes a "grounding in science's methods and procedures," while the "knowledge" part indicates "a body of known facts or of ideas inferred from such facts or accepted as true on good grounds."⁴⁷ The testimony under this prong must be more than unsupported speculation or subjective belief⁴⁸ and must focus on methodology and principle instead of the conclusion it generates.⁴⁹ The court has noted several considerations to adjudicate the scientific validity of the testimony in question, which includes: "whether the theory or method in question can (and has) been tested; whether it has undergone peer review and publication, its known or potential error rate, the existence and upkeep of standards governing its use; and whether it has gained widespread acceptance within a relevant scientific community."⁵⁰ Since, among other instances, there are cases when well-grounded but innovative theories may not have been published, the court noted that publication would not "necessarily correlate with reliability."⁵¹

The other characteristic of an admissible testimony is relevancy. The "relevant evidence" may be defined as any evidence that has "any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence."⁵² Citing *United States v. Downing*, the court explained that the "relevancy" requirement demanded an answer to the question of whether expert testimony given in the case was sufficiently connected to the relevant facts such that it would help the jury settle a factual dispute.⁵³

Subsequent courts have devised their judgments to give clarification to the *Daubert* standard. The Court of Appeal in *I4I Ltd. Partnership v. Microsoft Corp.* observed that "*Daubert* and Rule 702 are safeguards against unreliable or irrelevant opinions, not guarantees of correctness."⁵⁴ Another court in the *Kumho Tire Co. v. Carmichael* clarified that the "basic gatekeeping obligation" under *Daubert* applies to all expert testimony, not just scientific testimony.⁵⁵ Specifically regarding patent

valuation, the court in *Better Mouse Co., LLC v. Steelseries ApS, et al.* upheld the patent citation analysis performed by the defendant's damages expert,⁵⁶ which will be further elaborated under Section 5.3.2.3 where the patent citation analysis is closely examined.

Application of the market-based approach

① *Yufa v. TSI Incorporated*⁵⁷

Aleksandr L. Yufa is an inventor who has applied for and acquired multiple US patents. In 2009, Yufa filed an action alleging that TSI Incorporated's predecessor-in-interest infringed on Yufa's patent by manufacturing and selling products believed to be utilizing technologies covered by the plaintiff's patent. Among other issues, a proper valuation of Yufa's patents was required, and Greyhound IP was assigned to perform the task. In performing the valuation, Greyhound IP conducted research on comparable transactions, completed a detailed analysis of the patents (including a litigation history) to determine how the market would likely view the patents, and estimated a value range for the patents based upon comparable transactions and an assessment of the analytical characteristics of each patent. The court in this case was satisfied with the valuation that had employed the market-based approach.⁵⁸

② *Kemlon Products Development Co. v. US*⁵⁹

Kemlon Products Development Co. and Keystone Engineering Co. did business in the R&D, manufacturing and sale of a number of patented products in the oil and gas industry. In 1976, the IRS conducted a tax audit over Kemlon and Keystone, during which the IRS questioned the correctness of the valuation of several patents held by Kemlon, specifically, whether any value ascribed to the patents should have been allocated to assets other than the patents, such like goodwill, as well as inquiries as to the useful life of the patents. Although Kemlon did cooperate in providing the IRS with all the information requested in relation to the patents and the patented product, it was the IRS's agent in charge of valuing the services who determined that contacting Kemlon's customers would be necessary. Questions wished to be asked were described by the agent in very general terms, e.g., whether the customer purchases a certain product from Kemlon owing to a particular fact or whether the customer would purchase this product in the absence of a specific feature, the customer's opinions on whether the patented product is superior to another type of Kemlon product along with their justifications, etc.⁶⁰

Finding in favor of the IRS, the Court of Appeals established that the IRS' demand to determine the exact allocation of the patents' value and the patents' useful life would necessitate an interview with customers to understand why they dealt with Kemlon and used the product in question as well as their projected future use of the product. The court also sided with the IRS in respect of the need for the IRS to independently obtain the above information from Kemlon's customer to ensure that Kemlon would not have the chance to sway and undermine the integrity of the customer's replies.⁶¹

Although this case did not directly address the issue of the application of the market-based approach, it should be noted that such approach is carried out on the assumption that the comparables have been precisely valued in the first place. This is where *Kemlon v. US* came into play by figuring out whether any portion of the patent's assigned value should have been allocated to other properties (i.e., goodwill), thereby allowing parties to arrive at a more precise valuation of the patent-in-suit.⁶²

Recognition of patent citation as a valuation technique

A patent's cover page includes references to other patented inventions that are considered relevant to the underlying patent.⁶³ When a patent is cited by subsequently issuing patents, the cited patent is deemed to have received a forward citation.⁶⁴ Academic literature highlights that patent citation information is facilitative only when used comparatively.⁶⁵ An estimate of the relative economic value of patents can be achieved by comparing citation counts across a pool of comparable patents⁶⁶ - patents identified on the basis of technology and age. Forward citation analysis, which is said to be an extension of the market approach, can be also used to extract or apportion out the relative value of a patent in a license agreement.⁶⁷

On the one hand, courts in several cases, as well as a great quantity of academic literature, fully supported the recognition of patent citation as a proxy for patent value. In *Better Mouse Co., LLC v. Steelseries ApS, et al.*,⁶⁸ the defendant's damages expert performed a patent citation analysis that was eventually upheld by the court under the *Daubert* standard. Specifically, the plaintiff contended that the defendant's adoption of forward citation analysis as a means to determine the value of a patent should be struck as it "ignores citations to related patents that disclose the same technology, thereby grossly undercounting the number of relevant forward citations."⁶⁹ In judging the reliability of the employed patent citation analysis, the court observed that the defendant had submitted publications showing citation

numbers correlated with patent value in several fields, thus indicating that the case met the fundamental premises for a forward citation analysis to be applicable.⁷⁰ Likewise, the court in the *Comcast Cable Commc'ns LLC v. Sprint Commc'ns Co. L.P.* noted the following:

[T]he forward citation method of analysis has been recognized in the academic literature as reliable since the 1990s. Indeed, one meta-analysis of published research on forward citation analysis ... found 'forward citation intensity is, in fact, correlated with economic value.' In short, courts have not rejected forward citation analysis outright.⁷¹

When considering the plaintiff's reliance on *Finjan* to object to the defendant's use of expert for their patent citation analysis, the court noted that *Finjan* did not dismiss forward citation analysis completely. Rather, the court in this case recognized that "a qualitative analysis of asserted patents based upon forward citations may be probative of a reasonable royalty in some instances."⁷² The court made a distinction between *Finjan* and the case at hand by reasoning that in the former instance, the exclusion of the expert was due to the fact that he did not tie the methodology to the facts of the case as well as potential problems with his analysis, i.e., many of the patents referenced one another. This is, as observed by the court, in contrast to how the defendant's expert conducted his analysis through modifying the forward citation method to take into consideration the age and category of the patent-in-suit and the other patents that are covered by the patent purchase agreement, which also included the patent-in-suit.⁷³

In addition to case law, there is a number of pieces of academic literature⁷⁴ supporting the view that the value of a patent and the number and quality of its forward citations are correlated. The rationale behind the use of citation counts as a proxy for economic values is that valuable patents will incentivize new yet related technology⁷⁵ due to the relatively high demand for the technology covered by such patents.⁷⁶ Down-the-line patents aimed at improving original innovations would likely cite the basic one, particularly due to the real motivation to have all relevant patents cited, which stems from the involvement of the applicant, their attorney, and the examiner in the process of finalizing the list of references.⁷⁷ This, as a consequence, increases the citation counts of the prior patented technology, making those citations first-hand evidence of the path-breaking nature of the

original patent.⁷⁸ Eventually, patents with relatively higher values tend to receive more forward citations than the relatively less valuable ones.

On the other, some commentators disagree with adopting forward citation as an indication of the patent's value. Pursuant to an article written by the University of Pennsylvania academics, a negative relationship can exist between patent value and citations when inventors and corporates invest in a "strategic innovation" so as to "make it harder for the next outside entrepreneur to leapfrog" and "steal the high monopoly rents."⁷⁹ According to the research paper, a "strategic innovation" is one that "decreases the likelihood that a prior productive patent will be improved upon, thereby increasing the value of the prior innovation and decreasing the expected number of citations it receives due to lack of entry."⁸⁰ This paper was referred to by the plaintiff in *Comcast*⁸¹ when they attempted to discredit and exclude the defendant's expert opinion that relied upon forward citation analysis. Nonetheless, the paper was eventually ruled out by the court as, according to the court's determination, one academic paper - the Penn Paper - was insufficient to "rebut decades of literature supporting forward citation analysis."⁸²

In addition, it is argued that a high number of citations of a patent may indicate its thorough disclosure, instead of the broad and well-supported claims.⁸³ Meeks and Eldering took an example of a patent that has a detailed description of the invention but contains claims that include only a limited portion of the described invention, constituting the classic case of "disclosed-but-not-claimed" error.⁸⁴

IV. FINDINGS

A. Comparison between Patent Valuation Legal Frameworks of the US, the PRC and Vietnam

Vietnam and China have detailed regulations on the valuation of intangible assets as prescribed under both statutes and their delegated legislation. This is undoubtedly a unique feature of a civil law country like Vietnam and China, the written law of which is typically characterized by its comprehensiveness.⁸⁵ It also anticipates all pertinent matters in certain areas of law as completely as possible.⁸⁶ In contrast, a common law country like the US recognizes judge-made law because a legitimate source and codifications might not be as elaborate as those in civil law counterparts.

The IRM, concerning the mentioned IP valuation section, mainly provides general guidelines for IRS personnel to follow, compared to the nationwide and fairly all-inclusive regulations under different valuation standards of Vietnam as well as valuation guidance issued by the CAS.

Nonetheless, due to the unique feature of *Stare Decisis*, the regulatory framework in the US is constantly elucidated with judges carrying out in-depth analyses to tackle the dispute brought before them on a case-by-case basis. Notably, rather than merely stating the rule, the US courts also provide the theoretical rationale for making their decisions. This has proven to be particularly significant for appraisal experts and other parties to the case to understand how valuation works in reality, as well as the logical justification rationalizing the applied valuation technique. The deliberation by courts over the admissibility of forward citation in assigning value to a patent indeed illustrates how this issue has been delved into by the US courts with an extensive reference made to a great amount of academic literature offering diverse and conflicting viewpoints. Clearly, this can only be achieved with the court's active participation in dispute settlement.

Meanwhile, the level of court participation in IP disputes in Vietnam is considered not active, with a relatively small number of disputes brought to the courts.⁸⁷ as compared to the US. According to the Deputy Chief Justice of the Supreme People's Court, one of the reasons why IPR holders rarely initiated a lawsuit to protect their rights was because leveraging administrative measures was often viewed to be quicker, less complicated and expensive, and exert more deterrent effects as compared to the litigation approach.⁸⁸ Experts from different Vietnamese State agencies (National Steering Committee for Combating Smuggling, Commercial Fraud and Counterfeit Goods, the General Department of Customs, the Supreme People's Court, the Ministry of Science and Technology, the Vietnam Intellectual Property Research Institute) also expressed concerns over the limitations in the quality and quantity of manpower in IP enforcement agencies, especially given the increasingly complicated IP cases.⁸⁹ This indeed results in the lack of case-by-case elaborations of statutory laws through dispute settlements in Vietnam as compared to the US context.

B. Shortcomings in the Valuation Regulations and Practices in Vietnam

Vietnam's legal documents used to cover almost all aspects related to the IP

valuation including: (i) when it is necessary to conduct an appraisal; (ii) operations of valuation service providers; and (iii) valuation standards for intangible assets.⁹⁰ Nonetheless, the legal regime for IP valuation in Vietnam has still been criticized by some for containing contradictions,⁹¹ notable among which is the inconsistency in how the laws recognize certain IPR subjects during business valuation. Specifically, under Decree No. 126/2017/ND-CP (Decree 126),⁹² an enterprise's goodwill, including trademark and trade name, is counted in the value of the enterprise during equitization.⁹³ Meanwhile, Accounting Standard 04⁹⁴ does not recognize trademarks or goodwill formed within the enterprises as intangible fixed assets to be valued when determining the value of an enterprise. According to Tran Thi Bao Anh, such a lack of consistency and concentration of regulations has resulted in how commercial banks in Vietnam are not staying in line with their valuation of the same asset.⁹⁵

Speaking of contradictions, under Accounting Standard 04, the value of intangible fixed assets in general (and patent in particular) is determined based on historical cost,⁹⁶ the approach to which is different from that under Valuation Standard 13. Such a difference results in the scenario that advantages created by the patent (e.g., profit increase) will not be counted in the patent's value should Accounting Standard 04 be applied. Although there has not been any disputes regarding patent valuation in Vietnam stemming from this contradiction of laws to date, we note one case in which the Committee of Judges of the People's Supreme Court of Vietnam, in its trial of cassation review, recognized the value of trademark as contributed capital in an equitized state-owned enterprise.⁹⁷ Although this case only concerned trademark, it can be applied by analogy to other intellectual assets, including patent.⁹⁸

In practice, it has been agreed among commentators that parties to a licensing agreement might not agree with each other's adopted valuation method due to a big gap between valuation results.⁹⁹ A case of commercializing a Remote Waste Treatment (RWT) Technology has shed light on an example of how the income-based approach applied by the technology's inventor and the cost-based approach preferred by the potential purchasers generated substantially different valuation estimates, often leading the negotiations between parties to a "dead end."¹⁰⁰ The hurdle in commercializing technology, as maintained by Tran Van Nam et al., is the factor de-incentivizing Vietnamese entities from developing technologies and applying for patents.¹⁰¹ It is further confirmed by statistics from the Ministry of Science and Technology revealing that the number of onshore patent applications

and registrations during 2010 and 2019 is equivalent to approximately 10% of the total number of applications and registrations of foreign counterparts.¹⁰²

In addition, it is reported that most companies when valuing intangible properties often adopt only one valuation method to arrive at their final conclusion of the properties' value without employing other approaches for comparison or rationalizing their use of that particular method only.¹⁰³ By relying on only one valuation method, appraisers might not be able to check for consistency in assumptions and human errors that may occur.¹⁰⁴ This can be a greater problem should there be no justification as to why only that particular method is chosen. When it comes to patent commercialization, licensors and licensee often stand on different points in the spectrum of the negotiation table where one wishes to license the patent with a high price, while the other opposes it. Hence, without examining different valuation approaches, the final valuation outcome can be the result of radical internalized bias, eventually obstructing the initial objective of commercializing the patent.

Last but not least, a lack of data that serves as an input for and facilitates the whole valuation process is reported to be present in Vietnam.¹⁰⁵ In other words, appraisers might not always have full access to information directly related to the value of a patent (information asymmetry), which is substantially attributed to the rather complex legal nature and uncertainties of such IP type. Therefore, it inevitably leads to the impracticality in valuing assets in general and patents in particular. For the market-based approach, for instance, to be chosen when valuing a patent, it is necessary that the appraiser has at least the data of an active market involving comparable property, e.g., royalty rates in arms-length transactions.

The same applies to the cost-based and income-based approach, in which the former requires information about the reproduction or replacement cost, while the latter necessitates the understanding of the estimates of future earnings as well as an appropriate discounted rate to compute the net present value of the intangible by way of adopting the discounted cash flow method. When it is not possible to ascertain all relevant legal issues materially affecting the commercialization of a patent (for example, whether multiple parties are having the prior use right over the patent, or whether there are any risks that the patent at issue can be invalidated), it might not even be reasonably feasible to choose an appropriate valuation approach, not to mention whether a fair and acceptable valuation outcome can be eventually arrived.

In addition, in certain areas, patents can be exploited in special ways, leading to significant valuation problems regarding transaction costs as well as bargaining power. For example, in the telecommunications sector, specifically concerning cellular technology such as 2G, 3G, 4G, 5G or 6G, users (e.g., phone manufacturers) are required to use thousands of standard-essential patents (SEP), and the calculation of license fee for each patent, when requested by the patent owner, is not always reasonably feasible. The bargaining power of the two parties also varies according to the applicable policies of the relevant jurisdiction (whether they tend to protect patent owners or favor potential users). Long story short, the key to the valuation of patents in technology transfer lies in the accessibility of essential information as well as the ability to appropriately assess the legal framework regulating the patent at issue.¹⁰⁶

V. LESSONS FOR VIETNAM

In addition to the cases where a standard valuation is required for state management purposes, for purely civil transactions on the transfer of the right to use (license) IP (including patent), valuation should be considered as price consulting. It means that the parties to the transaction should not be obliged to apply the price determined by the appraisal service. Parties shall have the freedom to agree on simple valuation methods, such as determining the license fee based on a certain percentage of the revenue generated through the exploitation of the patent by the licensee. Therefore, it might be impractical to wait for a legal system that can provide a “standard” value for civil transactions of the assignment or licensing of patent.

Noting that each valuation technique has its strengths and weaknesses and there is no definitive right or wrong approach,¹⁰⁷ when a valuation approach or method is chosen, Vietnam should, by studying the IRM as well as China’s above-mentioned regulatory documents on patent valuation, require valuation service providers to give rationales for their decision, as well as the reasons why other methods were rejected. This will indeed prompt them to examine different methodologies instead of arbitrarily picking one of their preference, consequently allowing them to get differing viewpoints on the value of the underlying asset. It should be stipulated that the final statement of value should indicate the suitability of each method, and

the correctness and dependability of the evidence supporting each method, guiding the reader logically to the final intangible value conclusion. It should also make sure that the outcomes of the applied methodologies provide similar value levels, harmonize the findings and outline the underlying assumptions and limiting factors that influence the analysis, opinions and conclusions. In adjudicating whether a chosen valuation technique should be considered admissible, Vietnam can further study the *Daubert* standard laying out a two-layer test to adjudicate the admissibility of witness testimonies, which, in the above-stated cases, were experts' opinions on the applicable patent valuation techniques.

Another point to note is that patent valuation in the US and China is relatively self-regulatory rather than closely monitored via legal documents by state authorities as in Vietnam. The enactment of the IRM in the US as well as guiding documents issued by the CAS in China can evidence how these countries view patent valuation as an industry where private stakeholders, rather than the state, should play a more dominant role. To this end, Vietnam can consider establishing a valuation association actively engaging in the patent valuation practice through, among others, issuing guidelines for the industry when valuing a patent. Taking China and its AAL and Circular 43 analyzed above as an example, legal documents in Vietnam should stay updated with the ever-changing circumstances and may provide the general principle and procedure, instead of strictly detailed legal substance, that the market shall adhere to when doing valuation business.

Besides, other valuation methods that have widely been recognized and upheld by courts and scholars can be useful references for Vietnam to develop its valuation regulatory framework. One of them, as discussed earlier in this paper, is the forward citation counting method, based on the common presumption that a valuable patent will likely pave the way for a technologically successful line of innovations, and thus will receive more citations than the relatively less valuable ones. When considering this valuation technique, it should be noted from the case law listed above that the US courts in these instances did not approve the technique unconditionally and straight away. Rather, they accounted for whether or not the citation analysis had been tied to the case's factual background (e.g., whether the analysis had been adjusted to take into account the patent's protection period and classification).¹⁰⁸

VI. CONCLUSION

Intangible assets in general and patents in particular are increasingly seen as a source of economic returns, and the prerequisite to achieving these is through valuation for their commercialization or defense in litigation. To derive a meaningful value on patents, a strong technical, business and legal understanding is required for any professionals undertaking valuation practices. Different methods commonly applied to assign value to intangibles are expressly or impliedly recognized by countries' legislation and academic literature to offer both advantages and difficulties to the valuation work. Hence, as indicated above, the US and China set down sensible prescriptions as to how appraisers should treat different valuation methods to arrive at the most appropriate techniques and outcomes. The US courts also provide a catch-all standard that can be used in litigation to determine whether a specific valuation methodology employed by an expert witness is admissible in cases of contention. Practices in the US have also introduced a fairly special valuation technique that, despite being met with controversies, can be a useful source of reference for valuation professionals in other countries. All of the above are recommended to be taken into account by Vietnamese legislators, scholars and practitioners to actualize the country's attempt to ameliorate its regulatory and practical environment for the valuation of patent or intangibles at large.

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