Valuation of 2111

The profit-split method remains an essential tool for valuing intangible assets when it is refined with case-specific facts and data, including data that is available from purchase accounting.

Do Not Miss Out On the Advantages of the Profit-Split Method Despite Uniloc Management of the Advantages of Uniloc

A profit-split analysis for a trademark or other intangible asset attempts to quantify what share of the profit of a business is attributable to the subject asset.

Based on this asset-specific profit, its value can be calculated. Despite the adverse *Uniloc* decision of the U.S. Court of Appeals for the Federal Circuit in 2011,¹ profit split is an important if not essential element in the valuation of intangibles. In the wake of *Uniloc*, the method needs not only a vindication, but also a refinement based on case-specific facts and data. Purchase accounting data reported in financial statements can provide both.

Profit-Split In a Nutshell

The profit-split method is one of the oldest and most frequently applied methods for the valuation of intangible assets. Basically, profit-split attempts to allocate the total profit of a business to the different assets that contribute to it, including the subject intangible. The key element of the profit-split method is the derivation of an appropriate or reasonable profit-split percentage based on which a part of the total profit is apportioned to the subject intangible.

Overall profit-split Method. Textbooks on IP valuation suggest three different variants of the method to arrive at a profit-split percentage.² According to the overall profit-split method or contribution profit-split method, the combined profits earned by two parties from a transaction (e.g., a licensing transaction) are divided

between the two based on some allocation principle.

Analysis of Comparable Businesses. Under the comparable profit-split method (CPSM), the profitability of comparable businesses with comparable IPs is analyzed and applied to the subject business. Comparable profits describe the typical profitability of comparable businesses, including the full cost or expenses for the IP. The subject business calculates its profitability before charges for the subject IP, and then adds an IP charge to arrive at a comparable profitability.

Residual Profit. The residual profitsplit (RSPM) is a stepwise approach to profit allocation of different categories of assets. It starts with routine contributions to assets that are easy to value, i.e. tangibles or intangibles with a typical return rate. Thereafter, the residual profit is allocated to the remaining "special" IP assets of the subject business.

Complications. These three methods may sound simple, but in practice they are much more complicated. First, availability of data is limited. It is hard to find financial reporting data for comparable businesses with comparable IP, let alone accounting data about their IP. Further, there are no typical return rates for different classes of assets, at most for typical ranges of such return rates. Another restriction of the method is that it is a typical chicken-and-egg phenomenon. The concept of dividing profits among assets is both the crux of the problem and its solution. If the value of the different assets and IPs was known, a profit allocation would not be needed. And if the profit-split to different assets was known, it would be easy to calculate their values. But it is an equation with two unknown variables. So, valuing IP by comparables or by residuals—as the profit-split method suggests—is easier said than done.

Having said that, how can it be explained that the profit-split method is one of the most frequently applied methods to value IP? Well, this is because valuation practice found two ways out of this dilemma. One is simplification, the other sophistication.

Simplification. The problem of nonavailability of data was circumvented by simplification, or the so-called rules of thumb. As case-specific profit-split data was not available, valuation practice came up with some universal percentage figures presumed to be typical or average profit-split ratios for intan-



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gibles. In its early version, the rule of thumb said that 25% of the profit of a business is attributable to its IP. During the course of time, the rule was extended to different ranges extending from 10% to 35%. Further, the profitsplit method was often downgraded to a secondary method used to corroborate or "sanity check" the results of other primary valuation methods. The good thing with this simplification was that—once the percentage range was commonly accepted—its results were easy to comprehend for uninvolved recipients like auditors, judges, or bankers.

More Sophisticated. On the other hand, the profit-split method became much more sophisticated through financial modeling. Financial modeling is a tool to solve a valuation problem with different unknown variables and different assets to be valued within one and the same model. Typically, such models have some fixed limitations, for example enterprise value, total profit, and WACC. The model simulates-within such limitsthe unknown variables such that the outcome is most plausible. As a mathematical method, financial modeling is some sort of dynamic programming, where different parts of a problem (subproblems) are solved independently and then combined to reach an overall solution. Computer software greatly fostered the diffusion of financial modeling in valuation. However, its complexity results in reduced transparency; uninvolved recipients have problems to fully comprehend the results of such valuations. Therefore, financial modeling is the preferred method for internal use.

Profit-Split— From its Origins to *Uniloc*

The profit-split method was pioneered 50 years ago by Robert Goldscheider, one of the early masterminds in technology transfer.3 At the time, Goldscheider worked as special counsel in technology transfer and licensing issues for Philco Corporation, a consumer electronics company based in Philadelphia. Outside North America, Philco sold its products in 18 countries through licensing arrangements with local companies. The license agreements included various product technologies and patents, trade secrets and know-how, and a set of marketing intangibles including trademarks, photos, drawings, and other copyrighted materials. Further, Philco supplied key components under favorable terms to its licensees. For this bundle of IP and supply rights, each licensee paid a royalty rate of 5%. All licensees operated successfully in their local markets.

After guiding the business and working with the licensees for two years, Mr. Goldscheider observed that

Uniloc USA, Inc. v. Microsoft Corp., 632 F.3d 1292 (CA-F.C., 2011).

² Smith and Parr, Valuation of Intellectual Property and Intangible Assets, 3rd ed. (John Wiley & Sons, 2000) pages 401-403; Llinares and Mert-Beydilli, "How to Determine Trade Marks Royalties," 32 International Tax Review 12 (December 2006) pages 29-30; Zyla, Fair Value Measurement: Practical Guidance and Implementation, 2nd ed. (John Wiley & Sons, 2012), pages 288-293; Reilly and Schweihs, Guide to Intangible Asset Valuation (AICPA, 2013) pages 311-312.

For a detailed description see Goldscheider, "The Classic 25% Rule and The Art of Intellectual Property Licensing," 46 Les Nouvelles 148 (September 2011), pages 151-153.

the pre-tax profitability of each licensee was approximately 20%. Mr. Goldscheider concluded that "5 percent was a healthy royalty rate, and I was interested to note that it usually constituted about 25 percent of the profitability ultimately achieved by the various licensees." This finding was the starting point for Goldscheider to investigate the influence of actual or potential profitability of licensing transactions on the setting of royalty rates. He observed similar patterns from later technology transfer and licensing arrangements. A revenue treatment ratio of 3:1 between the licensee's and the licensor's interests proved to be workable in a number of different transactions in unrelated industries.

These early empirical observations led toward the formulation of a pragmatic 25:75 baseline working methodology which generated businesslike results in the negotiation of license agreements, and were the starting point of the profit-split method. The 25% (or any other percentage resulting from a particular royalty rate) is the part of the profit of a business which relates to the IP used by it.

Refinement. Later, the method was refined by the "next best alternative" available to the licensee. Starting from the baseline 25% ratio, a serious licensee would also consider the cost of the next best available alternative (e.g., development of the IP in-house, licensing other comparable IP, etc.) and compare it to the cost (royalty rate) at the 25% baseline profit-split ratio, eventually resulting in a lower or higher profit-split. Over time, the empirical 25% ratio of the early days was extended to a range from 10% to 35%, based on either net or gross profits, however with its center point always remaining at 25%.

In the course of time, the method was frequently applied by valuation professionals in various situations for its simplicity, for example:

• For the negotiation of royalty rates in IP licensing.

- By many courts to corroborate the determination of reasonable royalty rates to compensate for IP infringements.
- In transfer pricing to check the remaining profitability of a business after applying arm's-length royalty rates for the licensed IP.
- In financial valuations of IP to cross-check the feasibility of market comparables with business profitability.
- In accounting and auditing for quick checks of IP on the balance sheet.

Uniloc. In 2011, the U.S. Court of Appeals for the Federal Circuit brought an abrupt termination to the application of the 25% profit-split rule of thumb. In its ruling in a patent infringement dispute between Uniloc and Microsoft, it held that:

the 25 percent rule of thumb is a fundamentally flawed tool for determining a baseline royalty rate in a hypothetical negotiation. Evidence relying on the 25 percent rule of thumb is thus inadmissible under *Daubert* and the Federal Rules of Evidence, because it fails to tie a reasonable royalty base to the facts of the case at issue.⁴

The Court of Appeals further explained that this rejection is not meant to be a limit to general valuation principles, but only to the application of flat-rate schemes.

This court's rejection of the 25 percent rule of thumb is not intended to limit the application of any of the Georgia-Pacific factors. In particular, factors 1 and 2-looking at royalties paid or received in licenses for the patent in suit or in comparable licenses-and factor 12-looking at the portion of profit that may be customarily allowed in the particular business for the use of the invention or similar inventions-remain valid and important factors in the determination of a reasonable royalty rate. However, evidence purporting to apply to these, and any other factors, must be tied to the relevant facts and circumstances of the particular case at issue and the hypothetical negotiations that would have taken place in light of those facts and circumstances at the relevant time.

The rejection of the 25% rule of thumb underscores the importance of using facts of a particular case in calculating the reasonable value of IP. Having been widely accepted prior to this court decision, the 25% rule's rejection is felt across the valuation profession in all different applications of the profit-split method. Valuators are now expected to provide comparable profit-split data for their subject case, which almost always does not exist, and the lack of which was one of the reasons to apply the simple but comprehensive "rule of thumb" percentage ranges.

The Limitations of the Classic Profit-Split Method

Irrespective of the specific reasons that led to the rejection of the 25% rule in the *Uniloc* case, there are—and always have been—a number of conceptual limitations to the classic profit-split method:

- Bundle of rights. The license agreements in the original Philco example comprised a bundle of different IP rights, including patents, knowhow, trademarks, copyrights, and sourcing rights, at a royalty rate of 5% and a profitability of 20%. Each IP individually would have had a lower royalty rate, and a lower profit-split ratio. Thus, the actual profit-split ratio depends on the scope of the licensed rights.
- 2. No market price. According to the principles of the profit-split method, the licensed IP does not have a typical market price. Its price (royalty rate) is determined by the cost and revenue structure of the licensee and the resulting profitability, but not by the price that other licensees might have paid for similar IP, or that the licensor had achieved for similar IP in previous

The method needs not only a vindication, but also a refinement.

licensing negotiations. In reality however, the price for IP is sometimes what the licensor asks for irrespective of the profitability of the licensee.

- 3. No actual profits. The negotiation of royalty rates—and the resulting sharing of profits-is based on profit expectations of the licensee, but not on actual profits which might differ from expectations. Often, a license agreement relates to the subsequent launch of a new product or business. Depending on the source and the definition of failure, the flop rate of new product launches is between 40% and 80%. Obviously, actual profitability often does not match original expectations. Expost, it is likely that numerous unsuccessful licenses were overpaid with excessively high royalty rates.
- 4. No stable profits. Typically, the launch of a new (licensed) business requires some initial investment and expenses in the early stage. Average profitability varies from the start of

a licensed business until the end of its contract term. Thus, the licensee has to consider average expected profitability over the term of the agreement when negotiating the royalty rate.

- 5. Profit and benefit base. There has always been some degree of disagreement on the profit base for the profit-split method. The suggested profit base ranges from fully loaded profit (net profit) over gross profit to marginal or incremental profit. The benefits of a license may be attributed to the products sold that incorporate the IP, or to components or manufacturing processes only.
- 6. International expansion. The origins of the profit-split method—as described by Robert Goldscheider—go back to international licensing in an age of import restrictions, tariffs, and entry barriers. For a company to expand internationally there was often no alternative to licensing. The licensed property was granted on an exclusive basis in the licensed territory. Today, licensing is often an approach within the same

territory, for example via non-exclusive patents or brand extensions. It is not clear how this shift affects profitability and profit-split.

7. Value of IP increasing. As is widely known, intangibles make up for an increasing share of enterprise value. Today, intangibles account for an average of 80% of enterprise value while 50 years ago this percentage was in the area of 25%. In parallel with the structure of assets and value drivers, the sources of profit changed over time. Profits generated by intangibles increased at the same rate. Today, 80% of profits⁵ come from intangibles. At the origin of the profit-split concept, the 25% of profits generated by IP were allocated to IP. Today, the 25% profit-split rule allows only a fraction of IP-related profits to be allocated to IP.

Maybe these—and other—inconsistencies have been the reason for the extension of the classic profit-split concept from the initial 25% ratio to a larger range from 10% to 35%. But the major source of criticism of the prof-

⁴ Uniloc, note 1, *supra*, page1055.



it-split method has always been its missing empirical evidence. The method has never been proven and confirmed—except by Robert Goldscheider's description of the Philco case and the fact that it was widely used and accepted.

Empirical History

There have been a few attempts to provide empirical evidence for the general validity of the classic profit-split rule. The first attempt was made by Robert Goldscheider himself in 2002 to rebut the often stated criticism.6 Goldscheider and his co-authors tried to compare royalty rates from thousands of actual licensing transactions with expected long-run profit margins of the products that embody the subject IP. However they admit right away that they were unable to undertake a direct comparison of product profit and royalty rates because they had no access to such data.

In a first step, Goldscheider et al. selected 1,533 license agreements with running royalty rates on sales, grouped them into 15 industries, and identified median royalty rates per industry. In a second step, they identified 347 licensees from the 1,533 agreements that report and disclose their financial statements. Taking the total operating income of these companies, the authors compute an average operating profit

margin for the 15 industries over a period of 10 years. Then, they compare the 15 median industry royalty rates with the 15 average profit margins and find an average ratio of 27%.7 They conclude that the empirical analysis provides "some support" for the use of the 25% profit-split rule, but they also admit "that there is quite a variation in results for specific industries," ranging from an 8.5% split for the semiconductor industry to an 80% split in the automotive industry (see Exhibit 1).8 Likely, these variations would be even larger at the level of the 347 individual companies. The empirical test shows that on average the 25% split ratio is a good overall approximation, but the statistical variance is too high to explain the split ratios at an industry let alone company or licensed business level.

Second Study. A second attempt to analyze the relation between profitability and royalty rates was published by Kemmerer and Lu in 2008.⁹ They used average industry royalty rates for 14 industries compiled from 3,015 license agreements, and profitability from a fully separate sample of 3,887 companies mapped into the same 14 industries. As profitability measures they test operating profit, EBIT, and gross profit. Interestingly, the average royalty rate in their sample is 7.0%, which is substantially higher than the median rate of only 4.3% observed by



Goldscheider et al. On average they find that royalty rates account for 15% of gross, 41% of EBITDA, and 53% of EBIT margins. They confirm earlier findings that these overall ratios vary at industry level. Finally, they provide some limited support for the validity of the 25% rule based on operating profits assuming a (hypothetical) forced linear fitting between royalty rates and operating margins.

In a specification of his first study, Lu conducted a pro forma analysis based on corrected "pre-royalty" profitability data.¹⁰ In other words, he added the royalty rate on top of the profit margin, thereby assuming that the licensee considers the profitability of the licensed business before paying royalties for the IP and then applies the profit-split on this (higher) margin. Lu now finds an average 13% profit-split based on gross profit, 26% on EBITDA and 32% on EBIT. Based on these results, Lu concludes "The 25% rule still rules" and suggests starting royalty negotiations with 25% of EBITDA margin or 33% of EBIT margin. What he does not say

Valuators are expected to provide comparable data which almost always does not exist.

however is that on this pre-royalty assumption Goldscheider's classic rule would transform from 25% down to 20%.¹¹ Moreover, he does not address the large bandwidth of the individual or industry value around the overall average.

Evidence Not Provided. None of the empirical tests could provide evidence for the validity of the 25% rule.¹² The difficulty with these studies is that it was not possible to analyze the royal-ty rate and the profitability of a licensed business from the same set of data. Typically, researchers ana-

- 6 Goldscheider, Jarosz, and Mulhern, "Use Of The 25 Per Cent Rule in Valuing IP," 37 Les Nouvelles 123 (December 2002).
- 7 Using data from successful licensees only.
- 8 This range does not include the media and entertainment and the internet industry. Here, longterm industry profitability is far below median royalty rates, resulting in flawed ratios.
- 9 Kemmerer and Lu, "Profitability and Royalty Rates Across Industries: Some Preliminary Evidence," 8 J. of the Academy of Business and Economics (March 2008).
- 10 Lu, "The 25% Rule Still Rules—New Evidence from Pro Forma Analysis in Royalty Rates," 46 Les Nouvelles (March 2011).

lyzed a set of royalty rates, and a separate set of profit rates of other businesses in the same industry. There is some evidence that the overall average profit-split might well be in the area of 25%, depending on the profit base used. However, the variance from that average can be very large at the level of individual cases, thus the average being eventually meaningless in a specific case. The rule might still be used as some sort of a rule if the frequency distribution of the individual values around the mean value was known. This not being the case, the rule is not a rule but an average value with little relevance for a subject case. Insofar, the Court of Appeals was correct to require the consideration of relevant facts and circumstances of the case at issue.

Does Profit Explain IP Value At All?

Very broadly speaking, valuation is strongly oriented towards market prices or other concepts that come close to it. If market prices do not exist for an asset—which is typical for any IP asset—the next best principles are fair value or arm's-length. Both principles try to reconstruct a hypothetical but realistic transaction between unrelated parties.

Now, how does profit-split fit into these principles? According to profitsplit, the price of an IP asset depends on the profitability of the business that uses this IP. If the profitability of the business is low, a hypothetical independent buyer would pay a low price for it, and vice versa. However in reality, the value of the IP for the buyer might depend less on the profitability of the seller than on the benefit of the IP for the buyer. This raises the question if the value of IP depends on business profitability, and if this is a discrepancy between profit-split and other valuation methods which are based on market transactions? Interestingly, the valuation profession never discussed the question if there is a significant causality between business profitability and IP value. A clear yes to this question is however a prerequisite for the future application of the profit-split method-at whatever percentage ratio. To have a closer look at this question, we have to change perspective. The question to ask is not if profitability explains the value of IP, but rather, if IP contributes to profitability, and if, so how much?

Tangible Assets. If we looked for a moment at tangible assets only-PP&E, inventory, receivables—they are not profitable as such. The business must generate enough profit to pay for their depreciation. If the business wanted to sell them, it would typically earn their book value, without making a profit or a loss. If it is able to make profit on tangible assets, it is either because of speculation or these assets are currently in short supply. Thus, all tangibles sitting on the balance sheet generate the profit they have to: their depreciation and/or their cost of finance. Let us call this the base profit on book value.

⁵ Or more, depending on the required return rates on tangibles and intangibles.

Unaccounted Intangibles. Any additional profit on top of such base profit would be for assets that are not yet on the balance sheet—(unaccounted) intangibles. The value of these intangible assets would be the higher the more profitable the business. This is a very simple logic. The only difficulty is that we can't see the value of these intangibles in the books. They are not accounted for—unless the business is acquired.

A next question is—what would happen if the profitability and the value of the business increased? From which "improved" assets would the increased profitability come from? To understand these connections better, we have a closer look at the consecutive purchase accounting of two companies that were acquired two times within a few years, and analyze how different assets developed (see Exhibit 2).¹³

Both cases are quite different in their valuation multiples. EPAX has a high valuation in a high-margin and growth business; Cellu is a commodity business with low margins and large machinery. In both cases, the first acquirer created significant value before he resold the company. Visibly, both invested massively in tangible assets, thereby restructuring the business and increasing capacity, revenues and margins. But enterprise value grew by much more than only by these visible and accountable investments in tangibles. Intangible



assets increased as well. Higher quality, more efficient processes, and increased expenses for R&D and marketing might all have contributed to the increase in intangibles. Whatever it was, the two examples show that higher profitability typically results in higher valued intangibles.

Data Availability. Data availability is limited for such time-series analysis. Only a few such cases are known and reported in sufficient details. However, single values can be analyzed in large data samples from purchase accounting databases, like MARK-ABLES.14 Linear regression analysis illustrates how the asset structure of businesses changes with increasing profitability. The share of tangibles assets within enterprise value decreases with increasing profitability, while the share of goodwill increases. Identifiable and separable intangible assets behave steadily, as illustrated in Exhibit 3.15

The flat line for intangibles shows that the value of intangibles behaves proportionately with profitability. In other words—if profitability doubles, the value of intangibles will—on average—also double. Of course—this relation might be different for a particular business. But as an overall relationship, there is causality between profitability and the value of intangibles. This may sound simple and clear-cut, but it is an important if not vital finding for the future of the profit-split method. If this causality did not exist, profit-split would be doomed to die, not only as a 25% flat rule, but altogether.

Applying Profit-Split Based on Purchase Accounting Data

As stated earlier, one major problem of the classic profit-split method is data availability. Except for the few Philco licensees cited by Robert Goldscheider, profit-split could never be tested from a concise set of data. It was simply not possible to observe the value of the IP (its royalty rate) and the profit for the same IP, because either one of the two was unknown. A license agreement shows a royalty rate, but not the profitability of the

^{11 25/100} versus 25/(100+25).

¹² A detailed discussion of the empirical tests was published by Kidder and O'Brien, "Simply Wrong: The 25% Rule Examined," 46 Les Nouvelles 263 (December 2011).

¹³ Norwegian EPAX AS, a supplier of Omega-3 fish oils, was acquired in 2007 by Austevoll Seafood ASA, and then in 2013 by FMC Corporation. Cellu Tissu is a manufacturer of specialty tissue paper for use in personal hygiene products. Cellu Tissu was acquired in 2006 by Weston Presidio (an investment firm), and in 2010 by Clearwater Paper.

¹⁴ MARKABLES is a database containing data from over 6,500 PPAs, with a particular focus on trademark and brand assets. www.markables.net

¹⁵ The three lines add up to more than 100% due to non-interest-bearing liabilities. Such liabilities decrease with increasing profitability.



licensed business, even not its expected profitability. Even more, a licensee would be ill-advised to reveal his profit expectations to the licensor during license negotiations. And years later, the profit and loss statement of a licensed business no longer tells what royalty rate the licensee would have accepted, had he known its later profitability.

Data from Purchase Accounting. However, meaningful profit-split data is available in substantial numbers and detail from purchase accounting. Possibly, our view was clouded due to the approach of splitting profit between two separate parties we became so much used to. Purchase accounting, which is also frequently referred to as acquisition accounting, is the process of classifying, valuing, and accounting for all of the assets and liabilities that are included in the acquisition of a business. This process is rather standard for the tangibles assets and the liabilities that are already in the books of the acquired business. The difference between the book value of the

EXHIBIT 2 Asset Development over Time

Development of Assets Over Time – Purchase Accounting									
		EPAX AS			Cellu Tissu Holdings, Inc.				
US\$ million	2007	2013	Δ		2006	2010	Δ		
revenues	40	75	1.9x		329	511	1.6x		
enterprise value	98	340	3.5x		208	534	2.0x		
sales multiple	2.5x	4.5x	1.9x		0.6x	1.0x	1.7x		
tangible assets	40	212	5.2x		143	406	2.8x		
intangible assets	91	215	2.4x		70	286	4.1x		
debt	42	0	-		163	287	1.8x		
Source: MARKABLES.net									

EXHIBIT 3 Value of Identifiable Intangible Assets



acquired assets and liabilities and the purchase consideration is then allocated to the various intangible assets, and to goodwill.

Technically, the purchase consideration paid for the acquired business (or the enterprise value including debt) is the present value of all returns it is expected to generate in the future. The valuation of the intangible assets is an allocation of these expected future returns to particular assets. And the present value of any intangible asset at the date of the acquisition relates to its share of total future returns that are expected from that business. This reads like the nearly perfect profit-split for intangibles, and in fact it comes close to it. The results from purchase accounting— purchase price allocations on business combinations—are reported manifold in the financial statements of public companies. Exhibit 4 illustrates how to compute profitsplit data from the results of a purchase price allocation. In this particular business, 38% of future profits are expected to come from (existing) customer relations, 17% from product technology and 4% from trade names.

EXHIBIT 4 Computation of Profit-Split Data

EXHIBIT 5 Profit-Split Analysis

Acquisition of Life Technologies Corp. by Thermo Fisher Scientific Inc. Purchase Price Allocation as of February 3, 2014

(In millions)		Life hnologies	Useful life (years)	Profit split
Purchase Price				
Cash paid	\$	13,487.3		
Debt assumed		2,279.5		
Cash acquired	_	(463.0)		
	\$	15,303.8		100.0%
Net Assets Acquired				
Current assets	\$	1,755.5		
Property, plant and equipment		748.1		
Definite-lived intangible assets:				
Customer relationships		5,883.0	16	38.4%
Product technology		2,626.9	11	17.2%
Trade names and other		619.1	9	4.0%
Indefinite-lived intangible assets:				
In-process research and development		58.4		0.4%
Goodwill		7,167.0		46.8%
Other assets		246.7		
Liabilities assumed		(3,800.9)		
	\$	15,303.8		

Source: Thermo Fisher Scientific Inc., Form 10-K for the Period Ending 12/31/2014; profit split calculation by authors



4,550 share deals between 2004 and 2014; identifiable intangible assets not including customer relation Source: markables.net

These data applied to the more classic profit-split methods mean that Life Technologies would be willing to pay 21.6% of his profits as a royalty to license-in product technology, trademarks and in-process research.¹⁶ Moreover, Life Technologies would likely not pay a royalty for customer relations because these are typically owned and cannot be licensed-in. The use of such data is compellingly convincing. Still, the following limitations should be noted:

1. Useful life. Intangibles assets have different useful lives. For an intangible asset with a short useful life, its profits are expected to be generated faster, and vice versa for an intangible asset with very long or indefinite life. A 10% profit-split



with a useful life of ten years means a higher profit margin (for the next ten years) than a 10% profit-split over 20 years.

- 2. Fair value. The value of an intangible asset as stated in the purchase price allocation (PPA) is its fair value, not its market value or market price.¹⁷ It is thus the result of a fair value calculation. Still, it comes close to the willingness of the acquirer to pay for this particular asset, based on a real transaction of ownership of the subject business in total. Based on this real transaction, the fair values for particular intangibles can serve as a meaningful approximation for "market" prices paid for such intangibles.
- 3. Different use. The data represents the view of the acquirer, not the previous owner. If the acquirer intends to restructure the business, or if he has only little use for a particular

Business reality is far too diverse to be mapped with averages or narrow ranges.

intangible, he might allocate only little value to it, while this particular asset had a higher value to the previous owner, and vice versa.

4. Liabilities involved. In the PPA illustrated in Exhibit 4, the acquisition was a share deal involving noninterest-bearing liabilities of \$3.8 billion. These interest-free liabilities reduce the 100% base. Or, there are assets in the same amount that do not need to generate returns. Often, this is covered by netting of short-term working capital. If the acquisition is however performed as an asset deal, these liabilities are often not part of it, and the 100% base is higher. In such cases, prof-

- **17** For a comprehensive and detailed overview of fair value accounting, see Zyla, note 2, *supra*.
- 18 The MARKABLES database contains data from over 6,500 PPAs, with a particular focus on trademark and brand assets (www.markables.net).

it-split data taken from asset deals must be adjusted by liabilities that are typical for the subject industry.

5. Tax. The value of intangibles and goodwill can vary for its tax deductibility. Tax deductibility results in a higher value and in an interest-free tax liability of the same amount, and thus in a higher profit-split percentage. Typically, this information can be found with the PPA. In the case illustrated in Exhibit 4, neither intangibles nor goodwill are deductible for tax purposes.

Benefits. On the other hand, the benefits of profit-split based on purchase accounting data are quite obvious:

- 1. Data availability. Numerous data are available in the public domain and fully open to scrutiny.
- 2. Data quality. Data are calculated according to national and international accounting standards. Moreover, results of valuations are

cross-checked relative to each other and against the 100% threshold of purchase consideration effectively paid. Finally, data are audited by CPAs.

- 3. Transaction-based. Data result from real market transactions on M&A markets, where market conditions are more "perfect" than on licensing markets. Prices paid are based on commonly accepted valuation multiples and on thorough due diligence.
- 4. Established businesses. Businesses covered are fully established and reliably assessable. This compares to licensed businesses which are new and risky at the effective date of the license agreement, and often fail to succeed.
- 5. Profits from long-term ownership. Profitability is based on expected long-term, fully loaded profits to acquire and own the intangible. This is a more realistic concept than profit under a rather short-term license agreement.
- 6. Integrated data. Last but not least, the method is based on integrated data. Both price (value) of intangibles and profit-split relate to one and the same business.

A Reconciliation of the Classic Profit-Split Method

Using data from purchase accounting as comparables for profit-split valuation is a new approach. Now, it would be interesting to see how such data compare to the earlier attempts to verify the validity of the classic profitsplit method. The following analysis is based on data taken from the MARKABLES database.18 The profitsplit for the sum of licensable intangibles was analyzed as percent of enterprise value. Licensable intangibles were defined as identifiable intangibles not including such intangibles that are typically not licensable (e.g., customer relations, customer contracts, or backlog). The findings are illustrated in Exhibit 5.

¹⁶ 17.2% + 4.0% + 0.4%.

EXHIBIT 6 Frequency Distribution of Trademark Profit-Split



EXHIBIT 7 Trademark Profit-Split Analysis of Watch Businesses



Support for Goldscheider. Interestingly, the findings provide strong evidence for Robert Goldscheider's early observations. The mean profit-split of licensable intangibles is 24.4%, thus very close to Goldscheider's 25% observation. This finding is good for both Goldscheider, whose classic rule receives some sort of reconciliation, and for the purchase accounting-based method which shows mean values very similar to those found in the earlier research performed by Goldscheider et al. It must be noted that these findings relate to the sum of all (hypothetically) licensable intangibles a company owns or uses.

But beyond that 25% mean value, the findings also show the large bandwidth of individual data. 50% of all cases are situated somewhere between a 9% and a 32% profit-split. The other 50% of the cases have profit ratios even below or above these percentages. Obviously, there exist many businesses that need very little if any licensable intangibles to operate, and there are others whose value structure is driven to a very large extent by such intangibles. This is exactly what the Court of Appeals found and ruled in the Uniloc decision. Business reality is far too diverse to be mapped with averages or narrow ranges.

Trademark Profit-Split

profit-split in the original Philco analysis-and in many cases thereafterwas based on a bundle of different IP rights, including patents, know-how; trade names, and copyrights. This bundling seems to be usual practice in IP licensing. Out of 13,078 license agreements with unredacted running royalty rates listed in the RoyaltySource database, 83% comprise bundles of various IP rights, and no more than 13% are pure play license agreements covering one specific IP only.19 However, IP valuation and litigation is often about one particular IP; the bundle is more typical in transfer pricing for subsidiaries. The following discussion takes a closer look at the valuation of one particular intangible asset, namely trademarks (or brands).

Exhibit 6 illustrates the frequency distribution of trademark profit-split which-being a part of the total licensable asset bundle-must necessarily be lower (further left) than the distribution for all intangibles in Exhibit 5. The analysis shows that trademarks (or brands) account for an average of 13.1% of enterprise value or future profits. The median of the distribution is 6.6%. With regard to the classic profit-split rule of 25%, this would be far too high to be applied as a rule of thumb on a pure play trademark alone. Again, the bandwidth over all different trademarks in the sample is very high, ranging from close to zero up to over 100%.20

It is immediately clear that a brand of Swiss luxury watches must make a much higher contribution to profit than the trade name of an oil well drilling business in Idaho. Or in the case of a natural cat litter business, the value of the brand accounts for nearly 100% of enterprise value; the business sources the packaged products from a quarry mill nearby; it has no own production or technology, and no relations to end customers. Almost all of its enterprise value is driven by the brand. As the Court of Appeals concluded in *Uniloc*, "evidence ... must be



tied to the relevant facts and circumstances of the particular case at issue."

To further illustrate this, a peer group analysis of trademark profitsplit in the watch-making business based on purchase accounting data was performed (see Exhibit 7). Watches are generally known to be highly brand driven and to generate attractive profit margins. The peer group includes eleven different watch brands of which six are based in Switzerland, four in the U.S., and one in Germany.

Obviously, the profit-split ratios for the eleven watch businesses show a wide range from 18% to 102% (Exhibit 7, left part). The 25-75 quartiles range from 22% to 60%, the median is 25%. Towards the high end of the distribution, the curve shows a steep increase. This particular peer group as any other peer group—illustrates that industry or category specific profit-split ratios do not exist. Too different are the value driver and profitability structures at a company level, even within the same industry. linear relation between trademark profit-split and royalty rates (Exhibit 7, right part). The higher the profit-split ratio, the higher the royalty rate which the trademark generates on revenues. When looking closer at the eleven watch businesses, a clear segmentation appears. Luxury watches during normal course of business show both high profit-split ratios and high royalty rates. Commercial or fashion watches show medium royalty rates and profit-split ratios. The third segment comprises watch businesses in a turnaround situation. Considering the retail prices of the watches in that segment, they belong to the premium/luxury segment; considering their weak profitability however, their accounts leave no room for high trademark values. Thus, trademark profit-split becomes a major determinant of trademark value in connection with other determinants like royalty rate and overall profit margins. Similar trademark analyses can be performed for most categories or industries. Transfer Pricing Application. The

Further analysis reveals however a

application of such profit-split analyses is not limited to the valuation of intangible assets; it is also helpful in transfer pricing issues between subsidiary companies of a large corporation. profit-split shows the consolidated profit of the group which is attributable to a particular intangible asset (like trademark). Based thereupon, a functional analysis of trademark-related functions performed by the IP holding entity and the subsidiaries provides a further allocation of overall trademark profit onto different group entities.

Conclusion

Purchase accounting data is helpful for gaining a deep understanding of the transaction values of intangible assets, and their expected contribution to future profits of acquired businesses. Such data helps to reconcile and redirect the profit-split method, which has long been an important method for valuing intangible assets. With ample purchase accounting data available as comparables in the public domain, in-depth case-specific peer group analyses become possible. This will not only improve the quality of the profit-split method itself, but also make an important contribution to the overall accuracy of the valuation of intangibles in general.

¹⁹ Silva, "Letter in Reply to OECD on Transfer Pricing Comparability Data and Developing Countries," 4/11/2014. Accessed at http:// www.oecd.org/ctp/transfer-pricing/royaltystatllcconparability-and-developing-countries.pdf.

²⁰ The graph is cut at 40%.