

How licensing a portfolio of standard-essential patents is like buying a car

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The calculations made when trading-in an old car for a new one are similar to those undertaken by two patent holders when they cross-license their respective patent portfolios.



Photo: Stock photo © michaeljung

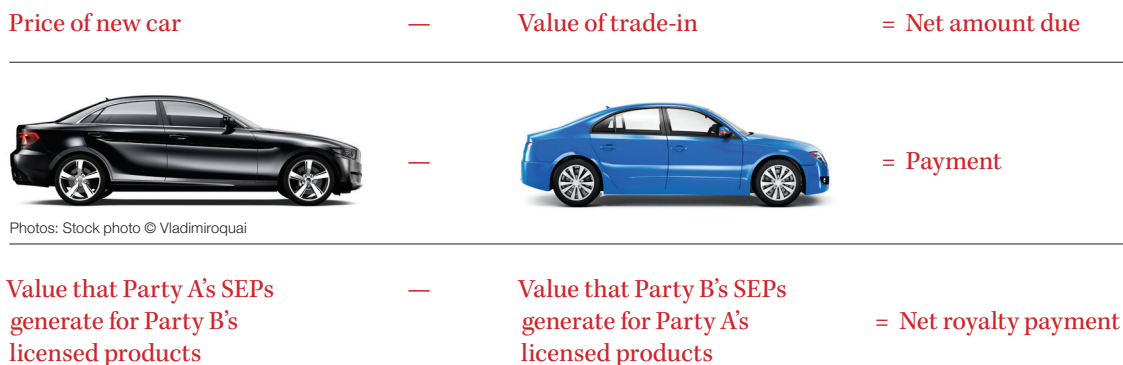
A driver wants to replace her old BMW 328i with a new Toyota Camry. At the dealership, she decides to accept the dealer's offer to trade in her used car and receive a credit (a "trade-in allowance") toward the price of the Camry. The dealer and the driver are each, in effect, simultaneously buying and selling in this transaction. The dealer offers to buy the used BMW at a price equal to the trade-in allowance. The better the condition of the used BMW, the higher the credit the dealer will grant the driver toward the net price—that is, the total amount of cash exchanged for the new Camry. If the BMW's fenders were rusted, the dealer would offer less than he would pay if the car were in pristine condition.

An analogous transaction occurs when two patent holders cross-license their respective patent portfolios. Each patent portfolio commands a particular royalty payment from the counterparty. Typically, the royalty specified in a cross license is a net-balancing royalty that one party must pay to the other—that is, the difference between the one-way royalties that each party owes the other for the use of its respective patent portfolio.

The net-balancing royalty, or the cash exchanged, will equal the difference between the royalty for the more valuable portfolio and the royalty for the less valuable one.

The values that the parties' patent portfolios generate for the other determine which party is the net payer and which the net recipient of royalties and the amount of the net-balancing royalty. As Figure 1 illustrates, the net-balancing royalty is analogous to the net price of the new Camry.

Figure 1



Photos: Stock photo © Vladimiroquai

CROSS-LICENSING PORTFOLIOS OF STANDARD-ESSENTIAL PATENTS (SEPS)

The parties' patent portfolios might include standard-essential patents (SEPs) that they have committed to license on fair, reasonable, and nondiscriminatory (FRAND) terms. Standard-setting organizations develop and promote technical standards (for mobile phones, for example) that permit interoperability among standard-compliant products. A SEP is a patent that a manufacturer needs to use to produce a standard-compliant product.

SEP holders sometimes also manufacture the standard-compliant product that incorporates their own SEPs. It is common for SEP holders to cross-license their SEP portfolios to one another, enabling each party to manufacture its standard-compliant products without infringing the other's SEPs, and to receive compensation for its contributions to the standard.

NET-BALANCING ROYALTIES

Holding all other factors constant (including each party's revenue from sales of its licensed products), the party whose SEP portfolio contributes less value to the relevant standards will pay the net-balancing royalty. Like the car dealer, a net recipient will assess the "trade-in value" of the net payer's SEP portfolio when offered in exchange for the use of the net recipient's SEP portfolio. Just as the driver who is trading in a used BMW in poor condition will pay more for the new Camry than a driver trading in a used BMW in good condition, the weaker the net payer's SEP portfolio relative to the net recipient's, the higher the

net-balancing royalty. The net-balancing royalty in a cross license thus reflects the values of *both* parties' patent portfolios. It is necessarily equal to or (far more likely) *less than* the value of the net recipient's patent portfolio.

WHAT IF THE CAR DEALER STOPS ACCEPTING TRADE-INS?

Suppose that the dealership decides to stop accepting a trade-in from a driver wanting to purchase a new car. If the dealer does not grant a credit toward the price of the new Camry, the transaction becomes a one way sale by the dealer. Similarly, if two parties have entered into a cross-license agreement, and Party B decides to stop licensing its patented technology, or Party A decides to stop obtaining a license for Party B's patented technology, then the transaction is no longer a cross-license. The parties simply become a licensor and licensee, and the net-balancing royalty between them simplifies to a one-way royalty. That one-way royalty equals the value of the licensor, Party A's, patent portfolio because the value that Party B's patents generate for Party A's products falls to zero.

ADJUDICATED FRAND ROYALTIES

Judges, juries and arbitrators may be required to interpret a net-balancing royalty in a cross license to determine reasonable-royalty damages for patent infringement and for setting FRAND royalties for SEPs. This can be challenging. Determining a patent portfolio's one-way royalty based on a cross license that specifies only a net-balancing royalty is analogous to calculating the price of the new Camry on the basis

of the net price charged after accounting for the trade-in allowance for the used BMW. Without knowing the value of the BMW, it is hard to calculate reliably the price that the dealer would have charged for the Camry if a customer had not traded in her used car. Suppose that the driver paid a net price of USD7,500 for her new Camry, after trading in her used BMW. That fact indicates only that the one-way price of the Camry must exceed USD7,500 (assuming that the trade-in value of the used BMW exceeded zero), because the net price of USD7,500 is the one-way price of the Camry less the one-way price (the trade-in value) of the used BMW.

The net price does not indicate by how much the one-way price of the Camry exceeds USD7,500. To measure that amount, previous transactions for a new Camry or a used BMW could shed light. A transaction for a new Camry of the same model year would provide the most direct and informative benchmark. However, if the price of such a transaction is not available, then transactions for a used BMW, combined with other information (namely, the net price of USD7,500 that the driver paid), help in determining the one-way price of the Camry. Suppose that the dealer sold for USD15,000 a used BMW in similar condition to the one that the driver traded in for a new Camry. We can then estimate that the driver received a trade-in allowance of USD15,000 for her BMW. The driver paid USD7,500 beyond the comparable trade-in value, which implies that the estimated one way price of the Camry was USD22,500 (that is, $USD15,000 + USD7,500 = USD22,500$).

COMPARABLE LICENSES

Similarly, existing patent licenses comparable to a hypothetically negotiated license can help adjudicators determine the reasonable-royalty damages that an infringer owes the patent holder. When an adjudicator is required to estimate the one-way royalty for a patent portfolio based on the net-balancing royalty in a cross license, previous license agreements for either patent portfolio in that cross license might inform the calculation. Comparable license agreements upon which licensors and licensees have willingly agreed reflect the real-world market valuation of the SEP owner's patented technologies. US courts consider such agreements probative of the royalty upon which the parties in a dispute would willingly have agreed in a hypothetical negotiation. The Federal Circuit said in *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 79 (Fed. Cir. 2012), that comparable licenses are "highly probative as to what constitutes a reasonable royalty" and that "actual licenses most clearly reflect the economic value of the patented technology in the market place." Likewise, royalties specified in comparable licenses represent what SEP holders and their licensees considered to be fair and reasonable in previous negotiations. Calculating a FRAND royalty based on what other similarly situated licensees paid in previous license agreements also satisfies the nondiscrimination requirement of a FRAND royalty.

THE EFFECT OF THE NET PAYER'S SALES ON THE NET-BALANCING ROYALTY

To calculate a reasonable royalty for a patent portfolio using the net-balancing royalty in a cross license, it is necessary to adjust the damages calculation according to the extent to which each party uses the counterparty's patent

portfolio. The net payer in a cross license does not necessarily have the weaker patent portfolio—that is, the portfolio that contributes less value to a relevant standard. Suppose that Party A sells 1,000 units of a product that uses Party B’s patent portfolio, and Party B sells 100 units of a product that practices Party A’s patent portfolio. Also suppose that Party A charges a per-unit royalty of USD2 for its patent portfolio and Party B charges USD1. Table 1 shows that, even though Party A’s patent portfolio is more valuable and Party A licenses its patent portfolio for a higher per-unit royalty, Party A will be the net payer in a cross license between Party A and Party B.

Table 1: The effect of sales on the net-balancing payment

	Unit sales [1]	Per unit royalty of counterparty’s patent portfolio [2]	One-way royalty payment [3] = [1] x [2]
Party A	1,000	USD1	USD1,000
Party B	100	USD2	USD200
Net balancing payment that Party A owes Party B			USD800

In the 1920s, Les Kelley began to circulate a list of automobile prices that became a trusted source for both consumers and dealers, the *Kelley Blue Book*. The availability of pricing information for cars of virtually all makes, models and conditions eased negotiations between consumers and dealers and helped enable exchange that benefitted both parties. Lack of information (for example, about what other licensees of the relevant patent portfolio paid in royalties) might frustrate a SEP holder’s attempts to negotiate a license. Perhaps patent licensing would become more efficient if standard-setting organizations adopted some of the mechanisms that the market for automobiles has devised to increase the transactional efficiency of voluntary exchange.

For further reading about licensing standard-essential patents on fair, reasonable, and nondiscriminatory terms, see

- J. Gregory Sidak, *The Meaning of FRAND, Part I: Royalties*, 9 JOURNAL OF COMPETITION LAW & ECONOMICS 931 (2013) (www.criterioneconomics.com/meaning-of-frand-royalties-for-standard-essential-patents.html)
- J. Gregory Sidak, *The Meaning of FRAND, Part II: Injunctions*, 11 JOURNAL OF COMPETITION LAW & ECONOMICS 201 (2015) (www.criterioneconomics.com/meaning-of-frand-injunctions-for-standard-essential-patents.html)



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