

# A Survey Of Licensed Royalties

BY STEPHEN A. DELANEY<sup>1</sup>  
and CURRIE HORTON<sup>2</sup>



*Authors' survey gives insight into licensing royalty rates negotiated in 12-month period by firms*

Trying to explain the factors that go into the valuation of an invention or technology only confuses people that licensing is three parts intellectual and one part common sense. Inventors and top management want to know what their technology is worth to their organizations. Prospective patent licensees want to know what to pay for such technology. Licensing executives understand that the answers to these questions from both sides, is that it depends.

Technology transfer is not a "win-win" game. A negotiation between licensee and licensor has to be a "win-win" situation. Both have to be fairly compensated. This article, and the survey underlying it, were designed to investigate how patent licensing executives deal with this challenge.

The authors decided that it would be an important addition to licensing, technology knowledge if a survey were undertaken whose primary focus was on what companies running royalty sales, both licensor and out, were negotiating by licensing executives within the past 12 months. The authors would like to acknowledge both the seminal work done in this area by McGinnock, Biss and Paris in their June 1991 *INNOVATION* article "Patents: Achieving Royalty Rates" and the assistance provided by Arthur Anderson.

In the end, a patent licensing survey was composed and resulted in over 2,000 licensing executives worldwide. All executives were members of the Licensing Executives Society and were asked to answer 27 questions. A total of 438 useful an-

swers were returned and tabulated.

## DEMOGRAPHICS OF THE RESPONDENTS

Three out of four of the respondents work in "for-profit" businesses while one out of four work in academic, research or government. Three-quarters are executives, owners or inventors in their organizations.

Over 50% of executives are located in the United States or Canada, 19% work in Europe, 7% work in Japan, and 2% in Australia. Of the "for-profit" respondents, 40% worked for companies that had less than \$20 million in total gross revenues, 35% for companies generating between \$21 and \$50 million, and 18% for companies generating between \$51 million and \$1 billion.

The remaining 32% worked for companies that had gross revenues of \$1 billion or more. The "non-profit" organizations had smaller gross revenues with about 44% working for organizations with revenues of \$20 million or less and the balance, 56%, for organizations with sales greater than \$20 million.

Some 28% of the respondents function as the main negotiator for their organization in the technology transfer licensing process. Some 20% are involved in the marketing of technology and 17% are legal advisors. In the past year, 96% of all respondents have negotiated at least one license, while 30% negotiated more than five licenses during that same period. Some 17% reported having five or more active technology licensing agreements, 40% had between 1 and 50 agreements, and 32% had more than 50 technology licensing agreements currently in force.

## EXCHANGE OF TECHNOLOGY OR TRANSFER OF TECHNOLOGY

The respondents were involved in a variety of different technology transfer activities. They reported that their organizations were involved in the following technology transfer areas (Table 1):

Licensing Out	89%
Licensing In	66%
Co-developments	42%
Strategic Alliances	38%
Joint Ventures	24%
Cross-Licensing	23%

Table 1

It is interesting to note that 7% of the respondents only licensed-in technology, while 24% only licensed-out, and the majority, 71% did both. Of all respondents, 99% of their licensing-in agreements are with U.S.-owned businesses and 43% are with foreign-owned businesses. In contrast, the licensing-out agreements by the respondents are evenly divided between U.S.-owned and foreign-owned businesses.

## How Are U.S. Companies Licensing

Respondents whose organizations are based in the United States reported licensing technology to and from all corners of the world. The most frequently mentioned countries are listed in Table 2.

The dichotomy between where U.S. companies license-in and out remains is considerable. While the United States is a net importer of goods from abroad, it appears to be a net exporter of technology know-

<sup>1</sup>CMA, Dayton & Associates, Danville, California.

<sup>2</sup>Stratocore-Law, Anaheim, California. Paper written for presentation at the ILSA (USA & Canada) Annual Meeting, San Diego, California, November 2-5, 1997.

	In	Out
USA	67%	64%
Japan	37%	33%
Other Britain	4%	4%
Germany	2%	2%
France	2%	3%
Canada	7%	8%
Korea	4%	2%

**Table 2**

how often. The largest differences in licensing-in and out were found with the Asia-Pacific countries.

#### THE LICENSING PROCESS

The number of departments involved in the negotiation, evaluation and approval of technology transfers was greater than expected. The respondents reported that within their organizations the following departments normally provided input and advice on technology licensing matters (Table 3):

Legal and Regulatory	56%
Research	65%
Licensing	66%
Technical and Engineering	66%
Sales and Marketing	59%
Finance and Accounting	56%
Manufacturing and Production	29%

**Table 3**

Given the number of departments consulted, it is remarkable how fast license agreements can be completed. The average time to negotiate a patent license (from initial inquiry to the consummation of the agreement) was three to 12 months, with the median time period being slightly less than six months.

There are several reasons for an organization to engage in technology licensing. The majority of respondents identified their organization's primary patent licensing strategies as the generation of royalty income.

Royalty Income	47%
Developing a Business Advantage	24%
Product/Profit Maximization	44%
Increased Technical Proficiency	12%
Defense	30%
Deferring or Defeating Others	13%

**Table 4**

With the exception of academic institutions, very few organizations

reported that Royalty Income was their only licensing strategy. Furthermore, 69% of the pharmaceutical executives reported that Product Profit Maximization was their primary goal.

#### FINANCIAL MEASURES

There are various financial calculations relevant to determining an appropriate royalty rate. These calculations form the underpinnings of the respective bargaining positions of the parties. The pertinent financial measures frequently are used as initial starting points for negotiations. They can subsequently be used to project a range of negotiations and finally to fine tune those figures leading to a mutually satisfactory royalty from both the licensee and licensee perspective. The financial measures that surveyed organizations use in determining the appropriate royalty are as follows:

	In	Out
Discounted Cash Flow	56%	65%
Profit Sharing		
Analysis	32%	34%
Return on Assets	39%	27%
"20% Rule" as a Starting Point	24%	36%
Capital Asset Pricing Model	17%	30%
Excess Return		
Analysis	6%	7%

**Table 5**

In determining an appropriate royalty, Discounted Cash Flow and Profit Sharing Analysis are clearly more prevalent than the other measures on both licensing-in and out. This might be expected since the data for such analysis is more readily available to the licensee and this type of analysis is routinely used in investment evaluation decisions. On the other hand, the "20% Rule" is more easily used as both a starting point and a benchmark by smaller organizations without the in-house licensing expertise. The Capital Asset Pricing Model (CAPM) and Excess Return Analysis may be too sophisticated and academic for common use, and may be too difficult to present to the other side.

The respondents were asked to

rank the importance of the following factors in their determination of the amount of initial up-front fee or recurring royalties to be paid or received. The responses are on a Likert Scale where 1 equals "Not Important" and 5 equals "Very Important":

	In	Out
Amount of the Proceeds	4.3	4.2
Utility Over Cost		
Methods	4.2	4.2
Scope of Exclusivity	4.1	4.1
Licensee's Anticipated Profits	3.8	3.4
Contractual Success	3.7	3.7
Licensee's Resources	3.7	3.6
Comparable License Rates	3.6	3.7
Duration of Patent		
Estimated Economy Anticipated Profits	3.2	3.1
Contractual Relationship		
Type, Along with	2.9	2.9
Sales	2.1	2.1

**Table 6**

These 11 factors were instrumental by writers to parallel the factors list elaborated in the case of Grupa Polska in U.S. Plaster Corp., now being used in the U.S. Federal Circuit to determine appropriate royalty rates in patent infringement cases. Where there is no previously negotiated royalty rate or when an established royalty rate appears inappropriate, the authors believe that these Grupa-Polish factors can be used as a useful check list to assist negotiators in the determination of an appropriate reasonable royalty rate.

#### LICENSING AGREEMENTS

Almost all licensing arrangements are reduced to writing as a way of evidencing the mutual consent to certain rights and obligations by the parties. Respondents were asked what terms and conditions they generally included in their licensing agreements.

The results show that eight of the 10 listed terms and conditions are normally included in most licensing agreements. The infrequent usage of the Non-Compete Clause may be due in large part to the illegality of this clause in certain jurisdictions, and the low usage of the Warranty

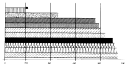


Table 7

of Non-Implementation condition may stem from the desire of licensees to limit their potential liability for royalties over which the licensee has little control. The high frequency of dispute resolution clauses (over 80%) is higher than the authors anticipated.

#### METHOD OF PAYMENT

In order for the right to use and exploit the technology, the licensee usually pays compensation to the licensor. This compensation comes in many forms. When licensing in, the respondents said the typical methods used in paying for technology were as follows using a Likert scale where 1 equals "Never Use" and 5 equals "Frequently Used":

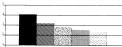


Table 8

Some 40% of licensees report paying Lip-Frost Fees when licensing technology. This is usually done in conjunction with a running royalty. Of the 60% who do pay Lip-Frost fees, the median was between 1 and 10% of total anticipated royalty payments. It should be noted that 35% of the respondents paid less than 7% while 22% reported paying over 10%. The conclusion is that the per-

cent of royalties collected at the beginning of the license varies significantly. The use of running royalties either in combination with Lip-Frost fees or by themselves, evidences a strong preference for licensees to minimize upfront cash flow and to have the licensees bear some portion of the risk. This may be the reason that Lump-Sum Payment Only was the least used of all methods.

The licensing-out respondents were more likely to receive upfront fees than licensing-in respondents (61 versus 40%) and their median upfront fee was higher (10 versus 6%).

#### ROYALTY BASE

The respondents listed the typical



shows that from 50 to 94% of all licensees are receiving royalties in at least one form of payment. Running royalties are preferred because they provide for recurring royalty payments that are proportional to use, of economic success of the intellectual property licensed, and offers a "built-in" inflation adjustment factor.

As Table 9 shows, the parties to an intellectual property license usually agree to use net sales rather than gross or net profits as a royalty base. This is probably because the licensees generally do not desire to disclose their proprietary sales information to outsiders, and the licensors feel that the determination of gross or net profits depends on too many operational and accounting factors and is too easily manipulated.

royalty bases to which a running royalty rate is applied. The licensing-in and licensing-out responses are on a Likert scale where 1 equals "Never use" and 5 equals "Frequently Used."

Table 9 shows that the most typical form of royalty used in licensing intellectual property is the running royalty times a royalty rate of net revenues. This finding parallels other empirical studies that have

#### PRODUCT DEVELOPMENT

There are many factors that go in to establishing a running royalty for a willing licensee and willing licensor, including (1) where in the de-

1. Determination of a licensor's Royalty is based on a license agreement. Product Pricing for Successful Technology Transfer, James P. Coughlin and Robert S. Miller, Carlisle Group Company, Ltd., 1976.

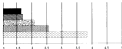


Table 9

religant process the technology is, (2) how important and commercially successful is the technology, (3) how profitable this technology is or will be, and (4) how easy is it to design around the patent claims.

When asked, "Does your organization license its technologies that are not completely developed?" 80% answered "never," 82% said "sometimes," and 37% responded "frequently." The follow-up question was, "What percentage discount rate would your organization use when evaluating technologies still in the pipeline?" They were asked to rate on a product development scale based on three phases. The Lab Phase is when research is completed and development of the concept is reduced to practice. The Detailed Design Phase involves conceptual ideas being fully developed, engineering designs completed and technology protection applied for. In the Pilot or Prototype Phase, the prototype has been tested and the product test marketed. At this point regulatory approvals are being sought. The percentage discounts, based on these phases, were as follows:

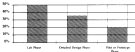


Table 10

Table 10 shows that the further along in the product or technology development cycle the technology is the higher the royalty the tech-

nology can garner. For example, if a fully developed patented technology was worth a 20% royalty, then a comparable technology in the Lab Phase would garner a 9% royalty. The same technology in the Detailed Design Phase would receive a 6 1/2% royalty, while if it is in the Pilot or Prototype Phase would receive an 8% royalty.

#### RUNNING ROYALTIES

Not all patents are alike. In fact, over 90% of the over 100,000 patents issued in the U.S. each year have little or no value to anyone other than the patent owner. On the other hand, some patents produce great value, e.g. the London Colloid Laser Patent. To measure a patent's innovativeness and the impact of that innovativeness on royalty rates, we designed a scale, which we call the Innovativeness Scale, as follows:

##### Revolutionary

Notifies a long, felt need or creates a whole new industry.

##### Major Improvement

Significantly enhances quality or

is an existing, product or service.

Using the Innovativeness Scale, respondents were asked to list the range, \_\_\_\_\_ % to \_\_\_\_\_ % of running royalty rates their organizations licensed during the last five years.

#### AVERAGE RUNNING ROYALTY — LICENSING-IN

	Less	High
Revolutionary	7 to	15%
Major Improvement	4 to	8%
Minor Improvement	2 to	5%

Table 11

The 734th Revolutionary patents is an average of the lowest number reported by the respondents, 10% is the average of the higher number reported by respondents. Since a few exceptionally high or low responses could have a tendency to skew the averages, the median running royalty rates were calculated and presented.

#### MEDIAN OF RUNNING ROYALTY — LICENSING-IN

	Less	High
Revolutionary	5 to	10%
Major Improvement	3 to	7%
Minor Improvement	1 to	4%

Table 12

Using the same innovativeness scale, respondents were asked what range the range of running royalty rates their organizations licensed-out during the last five years.

#### AVERAGE RUNNING ROYALTY — LICENSING-OUT

	Less	High
Revolutionary	7 to	14%
Major Improvement	5 to	9%
Minor Improvement	3 to	6%

Table 13

product superiority in an existing product, process or service.

##### Minor Improvement

Incremental/Incremental improvement

## MEDIAN RUNNING ROYALTY—LICENSING OUT

Technology	Low	High
Major Improvement	2 to 10%	10%
Minor Improvement	2 to 10%	10%

**Table 14**

We know that occasionally even what would be categorized as a minor improvement to an existing product or service will have a large economic payback and hence command a substantially higher royalty. Nevertheless, the results here, which are averages and medians of all the data, show a clear correlation between the innovativeness of a product and the eventual running royalty the patent can be licensed for. The data also appear to show that LDCs receive royalties slightly higher than when licensing out than when licensing in.

## RELATIONSHIP OF PROFITS AND ROYALTIES

To analyze the relationship between anticipated gross profits and running royalty rates respondents were asked if their organizations were offered a license at a new product or service with 20 to 100% Gross Profits, approximately what running royalty rate do Pat Sales would their organization be willing to pay.

Gross Profit Percentage	Net Sales (excluding Royalty)	Licensor's Portion of Licensee's Gross Profits
100%	0%	15.0%
90%	0%	13.1%
80%	4%	10.0%
40%	4%	10.0%
20%	2%	10.0%
10%	1%	10.0%

**Table 15**

Some 10% or higher of a licensee's gross profits tends to be the predominant rate that is being used by a majority of the respondents when consummating licenses. It is interesting that the profit sharing tops out at only 10%. The explanation for this might be that these are anticipated gross profits, which may not prove out, so the lower licensee's portion is a hedge compensating for the risk taken. Another explanation may be simply that licensee are uncomfortable paying running royalties at

a rate that is higher than "normal."

## COST-SAVING TECHNOLOGIES

Respondents were asked, when they were evaluating "Cost-Saving" technologies that will reduce manufacturing costs, or improve output or quality, what percentage of the cost savings would their organizations be willing to pay (as a licensee) or demand (as a licensor). Table 16 illustrates their responses.

Percent of Costs Saved	Pat	
	In	Out
1-10%	44%	17%
11-20%	44%	30%
20-50%	12%	26%
Over 50%	0%	27%
Total	100%	100%

**Table 16**

These amounts are lower than we anticipated. We're expecting the respondents to split the cost savings equally between licensee and licensor. The difference may arise because the licensee is bearing the majority of the risk that the cost savings are not achieved.

## INDUSTRY DIFFERENCES

One of the respondents, Tams Raktka, IP Nokia Telecommunications

calls the pharmaceutical and non-pharmaceutical industries, the authors sorted the survey results by industry. Pharmaceutical companies represented approximately 20% of the survey respondents.

The median running royalty rates for pharmaceutical and non-pharmaceutical organizations were as follows:

	Pharma (n=10)	Non-Pharma (n=10)
Revolutionary	10.0%	3.0%
Major Improve-	5.0%	1.7%
ment		
Minor Improve-	2.5%	1.7%
ment		

**Table 17**

Clearly, Mr. Raktka and others in correct industry does matter when setting running royalty rates. Because of the special circumstances in which each industry operates, economic realities often dictate the range of royalties within that industry. For example, pharmaceuticals generally invest significant sums in research and development and regulatory approval for new medications that often are required in the market exclusively through patent protection. However, although significant variations in royalty rates may exist between industries, there may also be a wide range of royalty rates within each industry.

The authors recognize that royalty rates from the joint are seldom the benchmark to setting a royalty in a new situation. Royalties are seldom, if ever, "pure." Rather, they are complex. They are largely in the crucible of arm-length negotiations where the royalty rate, although a vital component, is frequently not the only important issue.

Each royalty is only a single data point and the relevance of a prior negotiation by others to your case (even if for the same technology) depends mostly on the comparability of the issues and the economics. Indeed, will they be "on all fours," and frequently all you will know is the category of technology (e.g., "medicine") and the royalty rate that resulted. Reducing the data to generalized ranges is a further dilution of it. Moreover, some "data" is merely hypothesizing, e.g., "reasonable

costs, underscores that any simplistic licensing paradigm can not automatically be applied across the board. "Where the product of a given company is a system (e.g. airplane, nuclear power plant, telecommunications network) then the number of patents utilized in such a situation is fundamentally different from, say, the pharmaceutical industry where one patent equals the product."

To test whether there are significant differences in royalty rates between industries and more speci-

royalty" determinations in litigation, or in litigation. Although useful, this information does not have the same meaning or value as actual arm's-length negotiated results.

Having thus disclaimed, we still

feel that the past experiences of specific royalty agreements suggested for by others can be a useful guide, a reality check ("are we in the ballpark?") and a reassurance. As a tool of persuasion, even generalities from the past royalty

ranges may help not only with those on the other side of the table but on your side as well. And, at times, when the ability to generate a profitability prediction is limited, prior royalty rates may even be the best guide available.