Licensing Executives Society
(U.S.A. and Canada), Inc.

A Member Society of the Licensing Executives Society International

May 15, 2009

The Honorable William E. Kovacic
Chairman, Federal Trade Commission
Office of the Secretary
600 Pennsylvania Avenue, N.W.
Room H-135 (Annex I)
Washington, DC 20580

Evolving IP Marketplace – Comment, Project No. P093900

Dear Chairman Kovacic:

The Licensing Executives Society (U.S.A. and Canada), Inc. (LES USA & Canada) is a professional association of about 6,000 members engaged in discovery, and the development, protection, and commercialization of intellectual property. LES USA & Canada is also the founding member society of the Licensing Executives Society International (LESI), a global society of over 12,000 members in 90 countries. We appreciate the opportunity to participate in the FTC's Hearings regarding the Evolving Intellectual Property Marketplace. 73 Fed. Reg. 70645 (Nov. 21, 2008).

We congratulate you on your efforts to examine the intellectual property marketplace. Ours is a unique voice especially relevant to these Hearings. LES USA & Canada is the oldest and largest professional society dedicated to the *business* of intellectual property. Our diverse membership brings together perspectives from the research, business and legal communities from every industry sector. The Hearings present a unique opportunity to speak on behalf of our members of the value of intellectual property, the vitality of the marketplace, and the importance of sustaining commercial interest to ensure further exploration, development, and distribution of innovative technologies. Society benefits from innovation; and innovation is stimulated when properly rewarded.

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LES USA & Canada is concerned by some views expressed in the Hearings. For example, some have called for an open registration system for intellectual property-related agreements. Many of our members believe that the confidentiality of such agreements provides many benefits, including: 1) protecting investment in the development of new technologies; 2) maintaining strength of the intellectual property that supports those investments; and 3) protecting proprietary business interests and information necessary to foster continued investment in new technologies. Without addressing the merits of such a system, we believe this is but one example of an initiative likely to have profound effect; and one that might diminish, rather than promote, innovation.

LES USA & Canada would welcome the opportunity to work with the FTC and others to explore the merits of increased transparency in licensing agreements, and how that might be achieved while stimulating both competition and innovation. LES USA & Canada is already working in this direction. Q. Todd Dickinson, Professor Iain Cockburn, and Jim Malackowski, have spoken in these Hearings of the work of LES USA & Canada, along with its Foundation, in researching and publishing deal terms, royalty rates, and other key marketplace metrics in licensing transactions. The LES USA & Canada Foundation has published annual survey results reporting trends in the licensing marketplace (*les Nouvelles*, LES International, 2004-2009). LES USA & Canada recently published a highly regarded report from a survey of royalty rates and licensing terms in the biopharmaceutical industry (LES USA & Canada, 2008). We are expanding that initiative to other industries.

Those initiatives illustrate the potential for the collection and publication of valid, current market data that balances transparency and confidentiality. The research has been well received, and is widely supported by key innovators and those engaged in the development and commercialization of intellectual property.

LES USA & Canada strongly encourages the FTC to move carefully and deliberately to avoid upsetting that delicate balance. We recommend that the FTC actively elicit the

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participation and cooperation of stakeholders in this effort, and avoid taking further steps without a full and fair opportunity for stakeholders to participate. The FTC might consider the establishment of an Advisory Board to provide informed comment and recommendations for establishing appropriate and meaningful objectives, and policies for achieving those objectives. LES USA & Canada can provide able and effective assistance in this realm, and would welcome the opportunity to participate on such an Advisory Board.

On behalf of the Board of Trustees of LES USA & Canada and all its members, we look forward to working with you to ensure that the American marketplace is fair and pro-competitive while remaining the best and most innovative in the world.

Please contact our Executive Director, Ken Schoppmann, to discuss how we can take the next steps together.

Thank you.

Sincerely,

Francois Painchaud
President
Licensing Executives Society
(USA and Canada), Inc.
president@les.org

For additional background information on LES USA & Canada, please visit our web site, www.lesusacanada.org.

A Review Of The LES (USA & Canada) 2007/2008 BioPharmaceutical Royalty Rate And Deal Terms Survey

By Steven Renwick and James A. McCarthy

Intellectual property valuation in the healthcare sector is often achieved through a combination of discounted cash flow (DCF) and net present value (NPV) calculations, supported by benchmarking based on publicly available deal information. Published total deal value figures invariably show upfront and various milestone payments. However, it is an unfortunate situation for dealmakers that royalties, potentially the largest financial component of the deals they would most like to benchmark, are the one piece of information that almost all companies will keep closest to their chest. The details of these figures are almost always kept confidential by the companies involved. In the United States, public companies are required to file the contracts of material licensing transactions with the U.S. Security and Exchange Commission (SEC). However, the relevant sections and numbers related to financials, and royalty rates in particular, are generally redacted in these filed contracts and are protected under restrictive confidentiality clauses for five or more years. These SEC filing requirements are only for public companies and material transactions. Thus, deals not subject to this requirement include public company deals that are not material to the overall size of the company (i.e. "large pharma"), deals by private companies such as numerous biotech companies, small pharmaceutical companies, ex-U.S. companies and university deals. The result is that actual or primary data on licensing royalty rates and deal terms is limited for a large portion of the industry.

Databases, such as PharmaDeals® and ReCap, will provide deal information where it has been made publicly available; or, where possible, request unredacted versions of filed contracts that are over five years old, through the Freedom of Information Act (FOIA). Nevertheless, there remains an unsatisfactory amount of contemporary royalty information available, covering current deals conducted in the last five years, for dealmakers to use as benchmarks in their licensing negotiations.

It was with the aim of filling this knowledge gap that the Licensing Executives Society, (U.S.A. & Canada), Inc. (LES) Board of Trustees commissioned a royalty rate survey project and requested volunteer LES members to execute an extensive survey in 2007.

The basic objective was to provide LES members with relevant, cutting edge licensing information and industry specific data that cannot be found elsewhere. As a result, LES provides to LES members contemporary, value-added information to benchmark themselves against others in the industry and enhance their deal making expertise. The survey report was issued in summer of 2008 and is available exclusively to LES members electronically via the LES Web site. A summary of the results of that survey is presented in this paper.

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Methodology

A previous survey, looking at Licensing Practices and Factors Affecting Royalty Rates, had been conducted in 1991.[1] This survey had covered all industries represented by LES members and had received 118 participants. Other notable, recent analyses of pharmaceutical royalty rates include a paper published in *les Nouvelles* in March 2008,[2] which covered all industries and again relied on publicly disclosed data, and a healthcare-specific report published by PharmaVentures in 2008,[3] which included

1. McGavock DM, Haas DA and Patin MP. Licensing Practices, Business Strategy, and Factors Affecting Royalty Rates. *Licensing Law and Business Report* 13, 205-216 (1991).

2. Porter M, Mills R and Weinstein R. Industry Norms and Reasonable Royalty Rate Determination. *les Nouvelles* 43, 47-64 (2008).

3. A Guide to Royalty Rates in Pharmaceutical Licensing Deals. PharmaVentures (2007).

analysis of a similarly structured deal terms survey.

It was decided that this current survey would look specifically at the biopharmaceutical segment of the LES Health Care Sector and take advantage of Web-based survey tools and technologies. This was done with a view to expand the survey in the future to other industries and on to a global basis, based on the learnings from this survey.

The survey was conducted in the form of an online questionnaire to each LES member company that was a member of the LES Health Care Sector. The survey questions were designed by an LES member survey committee, all experienced dealmakers. The time frame selected was to solicit information only on deals conducted in the prior three years. The online questionnaire instrument was constructed by Veris Consulting, an independent research company, specialized in confidential surveys conducted by professional associations. Use of an independent company to collect the survey data ensured the confidentiality of the deal information submitted by the survey respondents; furthermore, no personal, company or product names were collected. No LES staff member, leader or survey team member had any access to the raw data submitted or knowledge of who participated.

The survey execution was announced and launched at the 2007 LES (USA & Canada) Annual Meeting held in Vancouver. Participation was sought through a series of letters and e-mails to all LES (USA & Canada) Health Care Sector members in each health care company. This was followed up with telephone calls to senior LES members at the top 50 pharmaceutical companies to encourage their participation.

Before looking at the results of the survey, it is important to clarify the nature of the data on which the analysis was based and to suggest a disclaimer. In total, 230 licensing deals were submitted by 86 pharmaceutical organisations of various sizes. Ultimately, 155 deals representing completed surveys were included in the analysis, meaning that a number of organisations submitted more than one deal. This opens up the possibility of data bias due to potential over-representation by a particular organisation type. Furthermore, due to the criteria with which the deal data was sorted and analysed, many of the analyses were conducted on data sets with a relatively small sample size. Therefore, although the results presented in this paper are indicative of industry practices, they should not be construed as definitive representation of the whole pharmaceutical industry. Nevertheless, this data represents the most recent analysis available of contemporary, biopharmaceutical licensing royalty information for deals conducted in the last three years.

It is intended that this survey can act as a pilot for future royalty rate surveys, which may be expanded to the LES International community. With expanded geographic reach and increased participation, this survey can become more robust with each cycle.

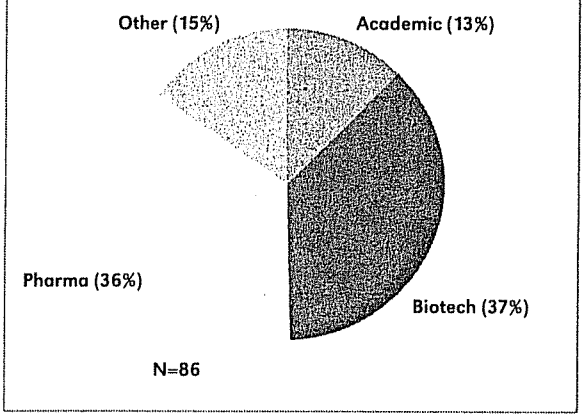
Respondents Profile

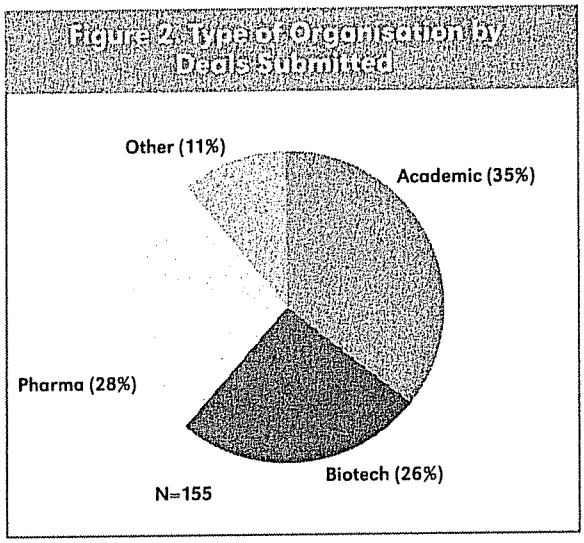
In total, 230 deal responses were received of which 155 deals were a fully-completed survey and were thus used in the analysis. Respondents were invited to submit data on deals executed in the previous three years. There was a natural bias towards more recent deals, with 78% of them included in the analysis completed in 2006 or 2007 (2005–35 deals; 2006–58; 2007–62). The submission of deals by licensors and licensees was split 70:30. Quality control was conducted and the data was examined for matching deal submissions to ensure that single deals were not submitted by both licensor and licensee; none were found.

Data from PharmaDeals® shows that from 2005 to 2007, there were 2,575 life sciences licensing deals completed, of which approximately 2/3 included a U.S. or Canadian company. As this survey was targeted to U.S. & Canadian companies, the deals submitted to the survey are a narrow but significant snapshot based on approximately 9% of the deals executed over this period.

As mentioned above, 86 organisations submitted deals, meaning that several organisations submitted multiple deals. There was a higher proportion of

Figure 1: Type of Organisation by Respondents





pharma and biotech respondents (36% and 37% respectively), while academic institutions represented 13% of respondents (Figure 1). The remaining respondents opted to identify themselves as "Other" partnering organizations that included bio/pharma holding companies, law firms, medical devices, and nutraceuticals. Although representing only 13% of respondents, the academic institutes were responsible for submitting 35% of the deals meaning that multiple deal submissions were more frequent amongst this group (Figure 2). Deals submitted by pharma companies represented 28%, biotech companies 26% and "other" 11%. This over weighting of academic deals provides a valuable insight not readily available. It provides a bias toward early stage deals that should be taken in to account when looking at the following analyses.

Nearly half (47.7%) of the deals were for small molecule drugs and about a quarter (24.4%) were for biological therapeutics (data not shown). The remainder were for platform technologies (11.9%), natural products (4%) and "other" (11.9%). For the purposes of this analysis, platform technology deals and natural products were not included in the analysis of therapeutics. The ratio of small molecule drug deals to biological deals in this data-set appeared to be particularly high. This is not reflected in the PharmaDeals data representing the whole industry, where the ratio is closer to 50:50. The reason for a bias towards small molecule deals in this data-set is unclear. The top three therapeutic areas reported in the survey were oncology, CNS and cardiovascular, which corresponds with the therapeutic distribution of deals found in PharmaDeals.

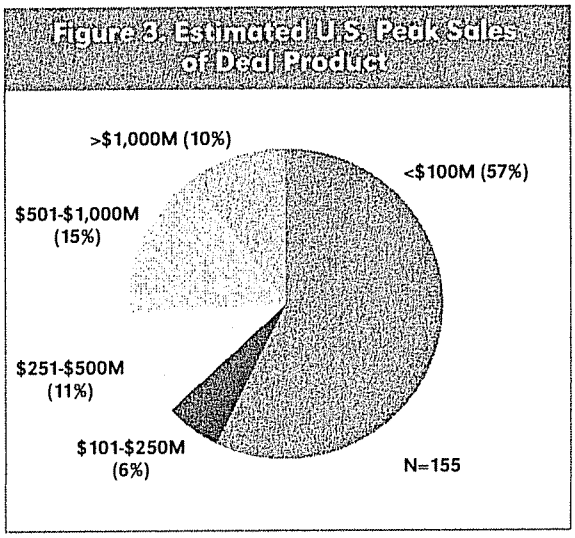
Further details of the analysed profiled deals include a strong majority of the deals (88%) being for exclusive rights; only 10% of deals included co-promotion or co-marketing rights, with a further 7% of deals including commercialisation options. In terms of the territorial profile of the deals 70% of all the deals were for worldwide rights with 90% including at least the U.S. rights.

The analysis of the predicted peak U.S. sales for the products shed an interesting light on the profile of the data submitted. Over half the reported deals were for products with predicted peak U.S. sales of less than U.S. $100 M (Figure 3). Although deals for products ranging up to potential "blockbuster"[4] status were submitted to the survey, this analysis does suggest that the data would be biased towards lower value product deals.

An objective of the survey was to capture information on recent deals and provide deal information not available through Freedom of Information (FOI) approaches, especially for small and private pharmaceutical and biotech companies. However, additional analyses were conducted on deals considered relevant to "big pharma" companies.

For example, additional analysis was conducted for deals, considered relevant to "big pharma" that met the following criteria:

- Only deals with biotech or pharmaceutical companies as out-licensors



4. Generally considered to be drugs with annual sales of over U. S. $1 Billion.

- Assets estimated to have greater than $250 million in peak sales potential
- Exclusive deals that included at least the U.S. territory rights
- No platform deals

This "big pharma" criteria produced a subset of 32 deals. It was recognized that this is a small sample, but it did allow for some limited observation on how terms for these deals differed from the overall survey sample.

While only 12% of the fixed royalty deals met the "big pharma" criteria, over 40% of the tiered royalty deals met the criteria (Figure 4).

In the following analysis, deals were separated into those that had fixed royalties (83 deals) and those that had tiered royalties (54 deals). Eighteen (18) deals which did not include a royalty component were not included in the analysis. Also, whereas respondents were asked to be specific about the stage of clinical development for the products at the time of the deal, to avoid analysis of low deal numbers, submitted deals were grouped according to key points in development. The groupings used were: Group 1–Preclinical; Group 2–IND filed through Phase II enrolled (pre-proof of concept (POC)); Group 3–Phase II completed through Phase III enrolled (post-POC); Group 4–Phase III completed through NDA submitted; Group 5–Marketed. An advantage of this approach was to analyze the data based on differences in clinical information available that might contribute to value created. For example, Group 3 deals comprised of Phase II completed and Phase III enrolled have the same set of clinical data to consider for "value" and "risk" assessments.

Fixed Royalty Deals

The clear majority of reported deals with fixed royalties were for preclinical products (49 deals), with comparatively few deals in the other groups (Figure 5). Due to the low sample number, only the preclinical, pre-POC and launched deals were analysed. There was negligible difference between the averages for the two early groups, with the average fixed royalties for preclinical products at 4.3% and for pre-POC products at 4.6% (Figure 6). The medians for these groups better illustrated the expected difference with 3.5% for preclinical and 5% for pre-POC. It was surprising to compare the range between the two groups with royalties ranging between 0.3 and 25% for the preclinical group and 2 to 8% for the pre-POC group. This disparity most likely represents the low 'n' number for group 2 (9) versus group 1 (49). For

Figure 4: Deal Types Including "Big Pharma" Criteria

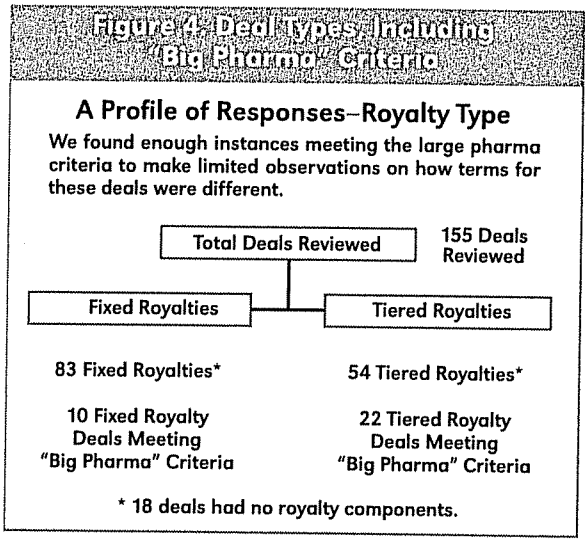


Figure 5: Fixed Royalty Deals by Stage of Development

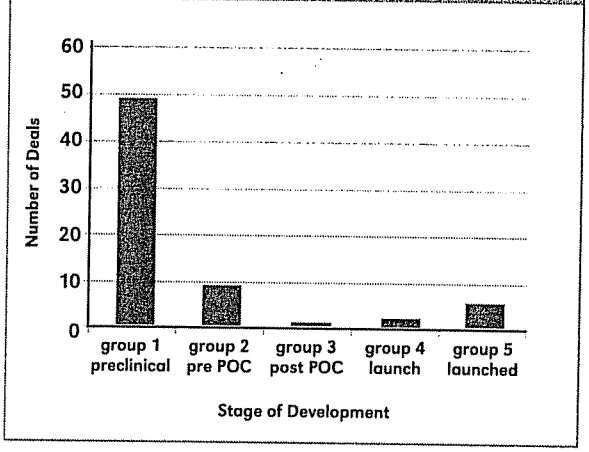
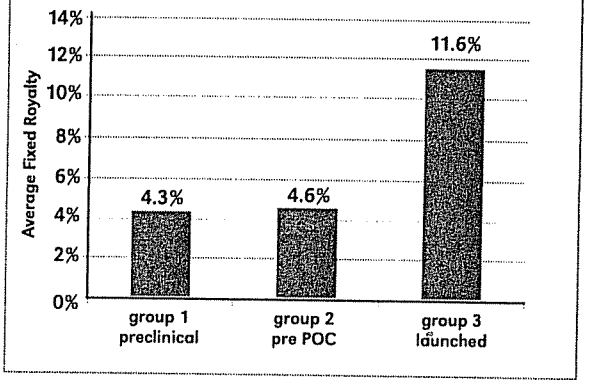


Figure 6: Average Fixed Royalties by Stage of Development



the 6 launched products the average fixed royalty was 11.6% with a median of 7.5%. The maximum royalty found in this range was surprisingly low at 27.5%—data from PharmaDeals suggests that deals for launched products can command royalties of up to 40%.

Figure 7: Preclinical Fixed Royalties by Product Type

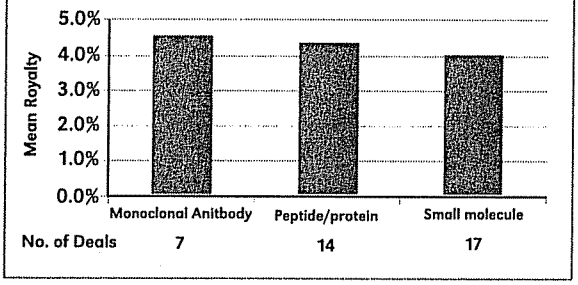


Figure 8: Deals With Stacked Royalties by Product Type

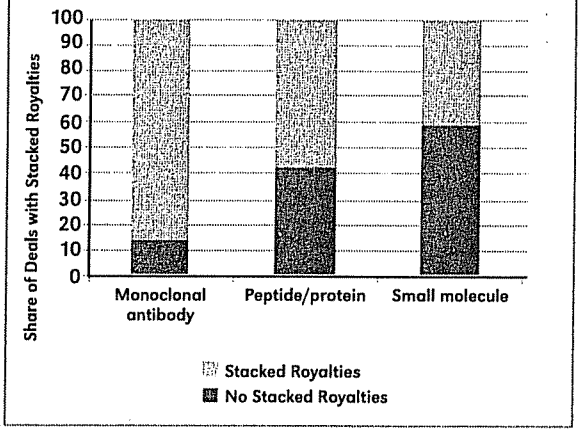
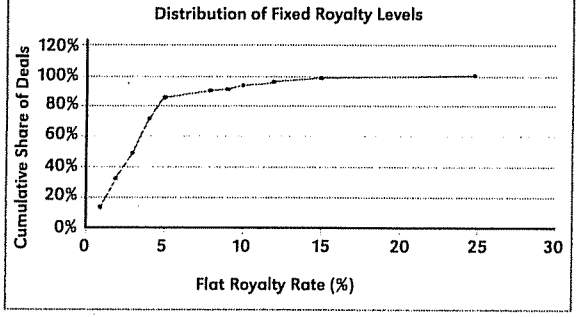


Figure 9: Distribution of Fixed Royalty Rates

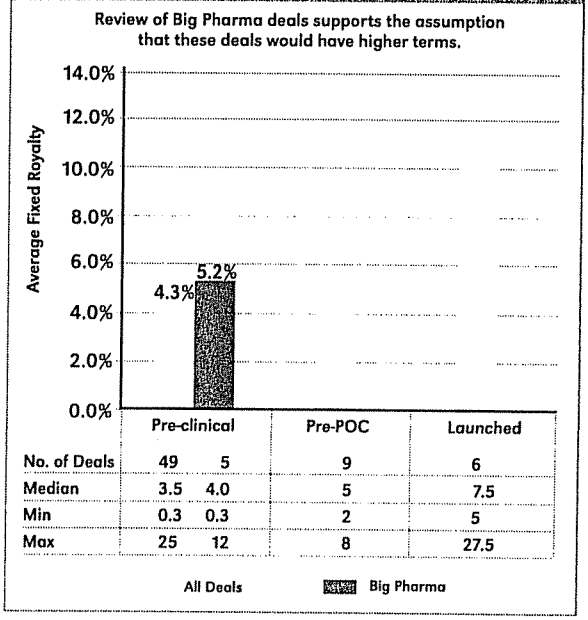


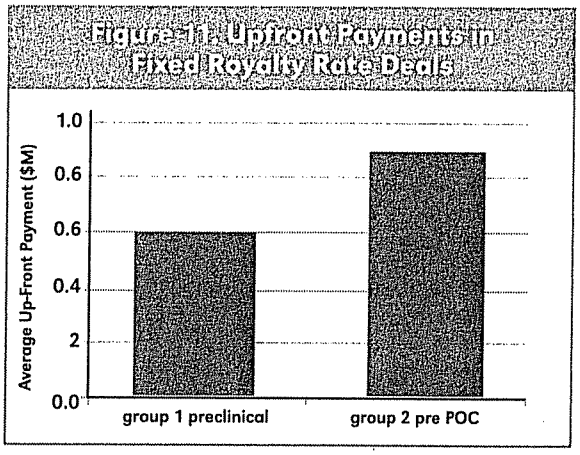
Looking at preclinical deals alone, deals for biologicals were found to attract slightly higher royalties than deals for small molecules (Figure 7). Unsurprisingly, given the fundamental IP involved in developing biologicals, nearly all preclinical fixed royalty deals for monoclonal antibodies involved stacked royalties compared to only 40% of small molecule deals (Figure 8). Overall, a plot of the distribution of fixed royalty preclinical deals shows that 86% of deals had a royalty rate of <5% and 49% had a fixed royalty of <3% (Figure 9).

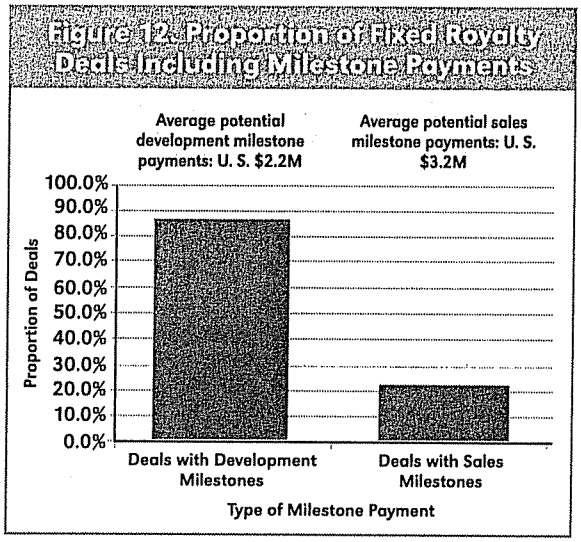
For the fixed royalty deals that met the "big pharma" criteria, the majority (5 of 10) were concentrated in the preclinical phase. Compared to the sample of fixed rate preclinical deals, the "big pharma" criteria deals had modestly higher financial terms with a mean fixed royalty rate of 5.2% vs 4.3% for the total sample and a median royalty rate of 4.0% vs 3.5% (Figure 10).

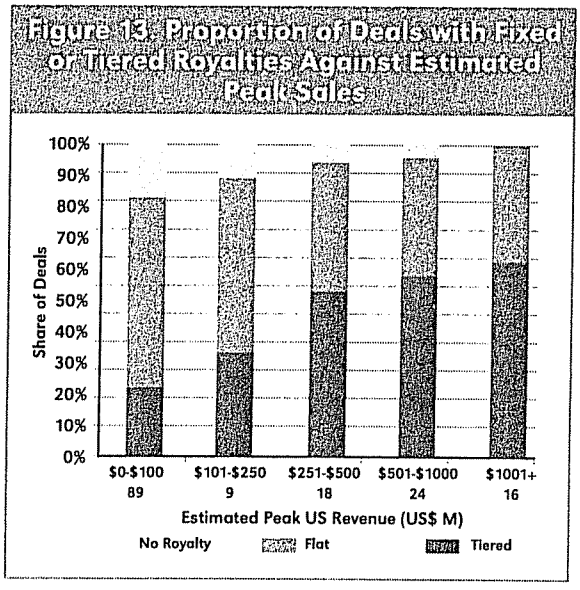
Upfront payments for the preclinical and pre-POC fixed royalty deals averaged below U.S. $1 M, with pre-POC deals returning slightly higher payments than preclinical deals (Figure 11). While 65% of preclinical fixed royalty deals included development milestones, the average potential payment was U.S. $2.2M. In comparison, only 15% of these deals included sales milestones, although the average for these was slightly higher at U.S. $3.2 M (Figure 12).

Figure 10: Average Fixed Royalties by Stage of Development







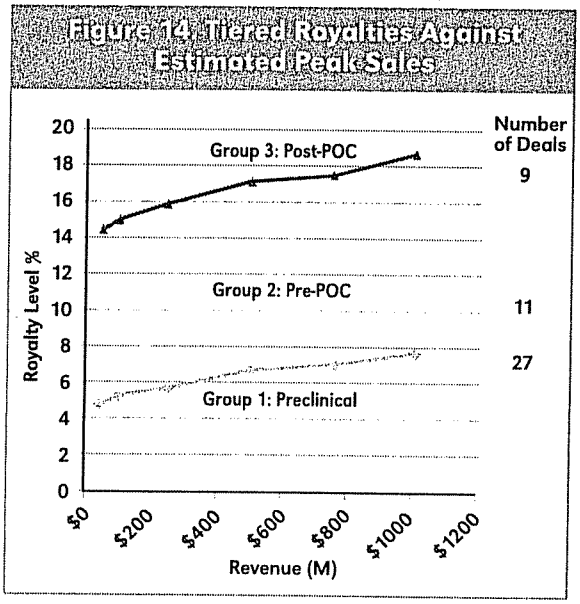


The low average value of the upfront and milestone payments in these deals might reflect the bias of the deal towards low sales-potential products. In comparison, average upfront payments (whether fixed or tiered royalties) for preclinical licensing deals, during that same period, in PharmaDeals were U.S. $11.7 M, while average milestone payments (development and sales) were U.S. $157.7 M.

Tiered Royalties Deals

While the fixed royalty deals showed a bias towards low-potential value products, there was a clear trend that the use of tiered royalties increased as the predicted peaks sales of the products increased (Figure 13). This finding supports the use of tiered royalties as a compromise during negotiations for larger value deals where there is greater potential for disparity between the sales predicted by the licensor and the licensee. In total, 55 tiered royalty deals were included in this analysis.

As different thresholds were used for comparing royalty rates in different deals, the royalty rates at six standardised revenue levels were used to compare royalties. The standardised revenue levels were set at U.S. $50 M, U.S. $100 M, U.S. $250 M, U.S .$500 M, U.S. $750 M and U.S. $1 B. In this analysis there were enough deals to analyse the preclinical, pre-POC and post-POC groups. The findings were consistent with expectations, with the average royalty rate in preclinical deals rising from 5 to 8% through the tiers (Figure 14). For pre-POC deals the royalties grew from 7 to 10%. There was then a significant increase in royalties



for products post-POC, with the royalties increasing from 14 to 18%.

Notably, the range of royalties for preclinical and pre-POC deals involving tiered royalties was higher than averages in the equivalent fixed royalty deals (Figure 15). This suggests that as deals which involve tiered royalties are likely to be for higher value products, they are likely to command a greater share of the revenues for the licensor upon commercialisation.

For tiered royalty deals that met the "big pharma" criteria, the distribution was similar to fixed royalty deals with the majority (13 of 22) concentrated in preclinical deals. As was observed in fixed rate deals, the "big pharma" preclinical deals had higher average royalty rates in tiered royalty deals ranging 1.5% to 2.0% higher than the overall sample (Figure 16).

While tiered royalties can make a deal more acceptable to both sides during deal negotiations, they do also add a layer of administrative complexity for the ongoing execution, analysis, reporting and royalty payment. The most frequent number of tiers in such deal structures was three (Figure 17). It was interesting to note that a number of preclinical deals had four or five tiers. Given the difficulty with which the future success of a product can be predicted at the preclinical stage, many would consider this to be an unnecessary level of complexity. Nevertheless, even with such early-stage products, there can be a large gap in the sales expectations between the licensor and the licensee and multiple tiers may be the only way to resolve such differences.

Average total potential milestone payments in the tiered royalty deals reported in the survey were significantly higher than those of fixed royalty deals. However, for development milestones there was no trend for deals at different stages of development with pre-POC deals having an average of U.S. $48 M and post-POC deals having an average of U.S. $55 M (Figure 18). Sales milestones did show a clear trend through development stages, with potential sales milestones increasing from U.S. $29 M for preclinical deals, to over U.S. $100 M for post-POC deals (Figure 19).

Regarding the milestones for tiered royalty "big pharma" deals, the total development milestones were lower than the universe for early stage/

Figure 15: Comparison of Fixed Royalties vs Tiered Royalties

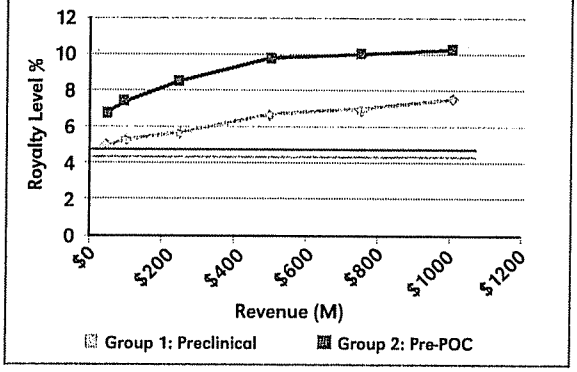


Figure 16: Tiered Royalties by Stage of Development

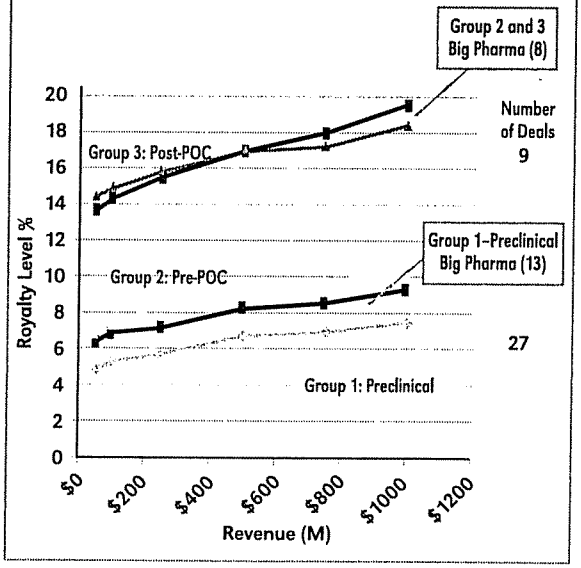


Figure 17: Tier Frequency in Tiered Royalty Deals

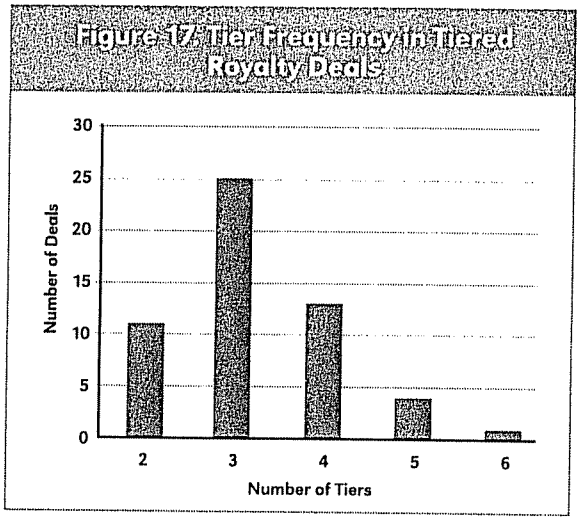


Figure 18: Development Milestones by Stage of Development in Tiered Royalty Deals

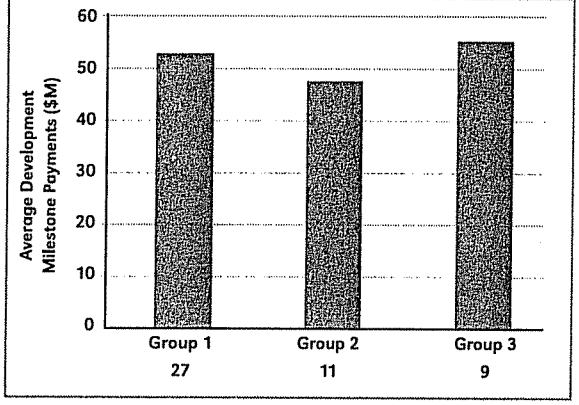
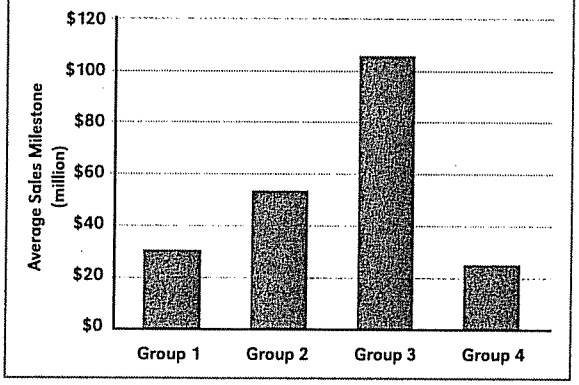


Figure 19: Sales Milestones by Stage of Development in Tiered Royalty Deals



preclinical deals but higher for the post "proof of concept" stage. The sale milestones for the tiered royalty "big pharma" deals were higher at all stages (Figure 20).

In comparison to the fixed royalty deals, the average upfront payments for tiered royalty deals were more in line with expectations and showed a more significant increase as clinical stage progressed. Average upfront payments for preclinical products in tiered royalty deals were just under U.S. $5 M in comparison to U.S. $0.6 M for fixed royalty deals (Figure 21). Pre-POC tiered royalty deals had an average upfront payment of over U.S. $8.5 M in comparison to U.S. $0.9 M for the fixed royalty deals. However, these values were still below the average upfront payments from the PharmaDeals data.

Discussion and Observations

In negotiating the value distribution in a deal, it is common to perceive that the deal may be "front" or "back-weighted." This means that a licensor may sacrifice eventual royalties in return for a higher upfront payment when the need for capital is more immediate, and vice versa when immediate cash requirements are not so urgent. This perception was not supported by the data from the survey, with an analysis of upfront payments vs royalties for preclinical deals showing a general trend for larger upfront payments in the highest royalty deals (Figure 22). One possible reason for this is that in preclinical deals, the high developmental risk associated with the product reaching commercialization means that royalties, which will be very far-off, contribute a relatively small proportion of the value in the deal and might therefore be less sensitive in negotiations. This trend suggests that at the preclinical stage, a strong negotiator can potentially extract both near- and long-term value from a deal and should not necessarily be thinking about whether they want to weight the deal towards either the up-front payment or royalties. Once products move through the clinic and the product is de-risked, it is likely that the balance between upfront and royalties (front/back weighted) would be restored.

In comparison to a typical analysis of deal terms based on

Figure 20: Tiered Royalties Summary

This set of deals indicated increasing financial returns associated with later points in development.

	Group 1– Preclinical	Group 1– Large Pharma	Group 2– Pre-POC	Group 3– Post-POC	Group 3– Large Pharma
Sample Size	27	13	11	9	6
Average Royalty Rate	~5% growing to ~8%	~6.5% growing to ~10%	~7% growing to ~10%	~14% growing to ~18%	~14% growing to ~18%
Up-Front Payment	$4M	$4M	$9M	$19M	$28M
Development Milestones	$53M	$44M	$48M	$55M	$86M
Sales Milestones	$29M	$34M	$53M	$105M	$153M

Figure 21: Upfront Payments by Stage of Development in Tiered Royalty Deals

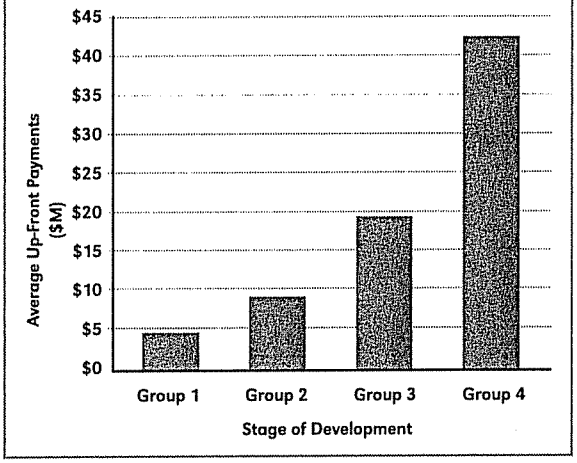
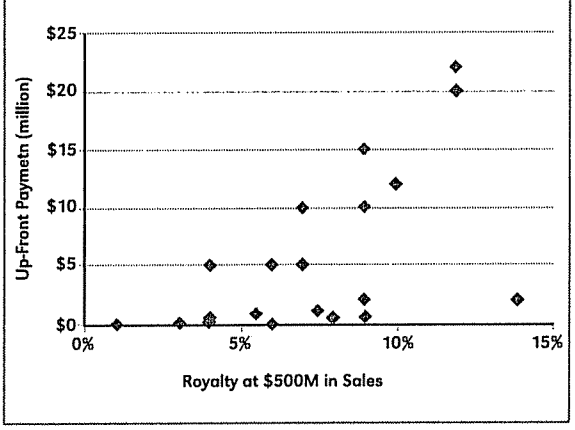


Figure 22: Upfront Payments Versus Royalties in Preclinical Tiered Royalty Deals



data from available commercial databases such as PharmaDeals, the value of the deals analysed in this survey may appear low. However, it is worth remembering that the deal databases that are traditionally used in licensing analyses, are populated with deal information that has been made publicly available or from large "material" deals by public U.S. companies that are required to submit the deals to the Security and Exchange Commission. These deals will tend to have a bias towards the more "eye-catching" deals with large headline values while "less sensational" licensing deals are not publicised to the same degree. For this reason, analysis of deal trends from such commercial database sources may give a disproportionately higher financial valued view of dealmaking than is actually present in the health care industry. As was discussed earlier, the data submitted to this survey had a bias towards deals submitted by universities (35%), biotechs (26%), early stage deals and products with low predicted peak sales potential, which would be expected to attract lower deal values. The deals that met the "big pharma" criteria had higher financial terms and were more aligned with industry expectations based on insights from the available databases

Therefore, while these factors mean that caution needs to be taken when interpreting the analysis of such data, especially with low sample size, the deals represented in this survey provide guidance and possible trends to current and future deal terms that can be achieved in the above context.

In summary, this report illustrated detailed analysis on fixed royalties, tiered royalties, valuation and therapeutic areas in biopharmaceutical deals. It reveals a more current perspective on biopharmaceutical licensing royalty rates and deal terms than the Freedom of Information (FOI) approach allows.

Future Plans

The Licensing Executives Society (U.S.A. & Canada), Inc. plans to conduct the BioPharmaceutical Royalty Rate and Deal Terms Survey on a regular basis. It is planned that the next survey will be conducted in conjunction with other LES International societies and will survey companies worldwide. This will provide LES members a truly global insight into contemporary deal terms information. This 2007/2008 LES (USA & Canada) survey will act as a pilot upon which the global survey can be built. It is hoped that on the back of this survey, and the value-added information gleaned that is not available from other sources, participation in the next survey will be greater, thus increasing the significance of this analysis to all LES members. The roll out of future survey results will continue to provide LES members, on an ongoing basis, valuable insights into contemporary deals that are not readily available, as well as, timely indications of future trends in the ever-changing deal environment. ■

LES (USA & Canada) Acknowledgments

This survey was commissioned by the LES (USA & Canada) board of trustees as a service to its members. Due to the great usefulness of its content, the board of trustees extended access to this report to

the members of all LES national or regional societies. The hard and skilful work of many LES volunteers contributed to the excellent results. Particular thanks go to Jim McCarthy, CLP (EGEN, Inc.), who led and co-ordinated the entire survey effort from outset to completion. Steven Renwick (PharmaVentures) was instrumental throughout, leading the survey design and was a major contributor to the analysis. Jim Lynch (Strategic Access), Dan McGavock, CLP (CRA International) and Deni Zodda (NovaDel Pharma) all contributed to the design and execution of the survey. Special thanks to Ben Bonifant (Campbell Alliance) and Jeff Snell (CRA International) for data analysis and report preparation. In addition, Veris Consulting played a major role in the survey design, execution and final report. The biggest thanks and recognition must go to those LES (USA & Canada) members who took the time to complete the confidential survey that made possible a survey report "by LES members, for LES member benefit."

U.S./Canadian Licensing In 2007-08: Survey Results

By Louis P. Berneman, Iain Cockburn, Ajay Agrawal & Shankar Iyer

Initial Results of a Survey Conducted in Spring 2008 by The Licensing Foundation of LES (USA & Canada), on behalf of The Licensing Foundation.[1,2]

Introduction

This paper is the fifth report of the Annual Survey conducted by the LES Licensing Foundation. As in prior years, the survey was conducted by an online questionnaire of the membership of LES (USA & Canada). The data were obtained primarily in April/May 2008, and refer to the period 2007. Two related but distinct survey questionnaires were used, one for Technology Creators/Users (i.e. buyers or sellers, licensors or licensees), and one for Professional Service Providers (law firms and consultants).

The objective of this survey is, as in previous years, to provide an annual, synoptic perspective on events, and trends in "the business of licensing" that can assist licensing professionals in understanding and advancing the business environment in which they operate and to which they contribute. The survey also seeks to provide information about IP licensing which may be used by the public, academic researchers, government policy analysts, and others to grasp the issues and impacts of licensing business practices.[3]

Specific inquiry themes for this survey were: licensing and the courts—to assess the impact of recent court decisions on licensing; investigating underlying motivations in licensing—business development versus enforcement of rights; and, to determine the impact of patent trolls on licensing activity.

Summary of Survey Methodology

A Web-based survey was sent to the LES (USA & Canada) membership in April/May 2008. Separate questionnaires were developed and sent to Technology Creators/Users and Professional Service Providers, but not to specific industry sectors. We received 602 usable responses from Technology Creators/Users and 277 usable responses from Professional Service Providers. Strict anonymity was guaranteed and provided. As in all prior years, once responses were deemed authentic, they were matched to one of eight categories based on their industry sector and the reported size of their organization. We distinguished between large and small entities or companies, based on the number of employees (greater or less than 500) and four industry groups: Health, DICE (Digital Information Computers Electronics), Industrial, and University/Government.[4] Responses were then anonymized with no identifying information retained. Because responses were anonymized, we had no ability to link responses to other datasets or to do longitudinal studies of respondents. Discussion of the sample and survey design, including survey administration and response rate, is attached as Appendix A.

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Summary of Findings And Discussion

In this survey, we asked questions exploring three major themes:

1. The Licensing Foundation is a wholly-owned 501c3 subsidiary of LES (USA & Canada). Additional information on the Foundation is available at: *www.licensingfoundation.org.*

2. The Licensing Foundation during 2007 was managed by its Board comprised of Alan Baum, E.B (Ted) Cross, Ada Nielsen, Dwight Olson, Art Rose, and assisted by Ken Schoppmann of the LES (USA & Canada) office. The authors also wish to acknowledge the contribution of the LES Foundation past-president Richard Razgaitis.

3. Since LES (USA & Canada) membership predominately reflects technology licensing of patents, know how, trade secrets, and copyrighted software—and relatively under-represents licensing of trademarks and copyrighted content, for example—the licensing industry so characterized by these data is primarily about technology licensing.

4. The term "company" is used as a generic reference to an IP asset owning entity, which was primarily represented by corporate entities but includes representation from universities, research institutes, and government laboratories.

1. Licensing and the courts—impact of recent court decisions;

2. *Business development vs. enforcement of rights*; and

3.Impact of patent trolls.

As in previous years, we also queried respondents' profiles and asked about volume of licensing activity and context questions about respondents and their organizations. Of note, we found that 85 percent of Technology Creators/Users respondents are non-lawyers and 38 percent of respondents had less than five years of licensing experience. (See Tables 1 and 2.)

Table 1: What is Your Primary Background/Training Outside the Licensing Field?

For "IP Makers/Users"—85% of respondents are NON-Lawyers

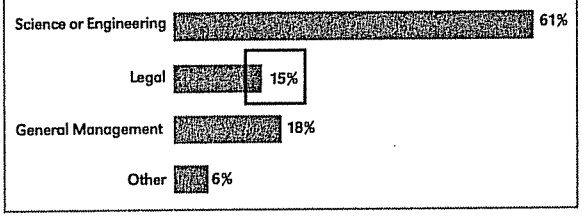
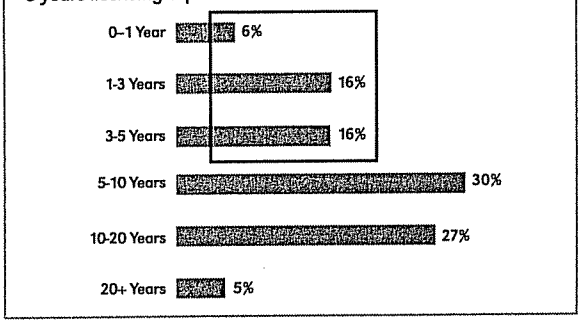


Table 2: How Many Years Have You (Personally) Been Involved in Licensing?

For "IP Makers/Users"—38% of respondents have less than 5 years licensing experience



Licensing and the Courts—Impact of Recent Court Decisions

We asked respondents a series of questions related to recent significant court decisions that dealt with licensing disputes or have implications for the future treatment of license agreements. Specifically, we asked about respondents' level of ***awareness***, depth of ***knowledge, concern***, and the actual ***impact*** on their business of recent court rulings. Decisions in cases such as *Medimmune v. Genentech, Sandisk v. STMicroelectronics, Seagate, KSR International v. Teleflex, and eBay v. MercExchange*—(see Table 3) have generated commentary in the popular press and elsewhere, and have been widely interpreted as favoring licensees over licensors and patent holders. Yet despite the public hand wringing and debate, the survey data we collected from individuals actually involved in the management of intellectual property suggests that the hand wringing and pursuant interpretations are not necessarily mimicked by the survey respondents.

We first asked respondents whether or not they had thought at all about these recent court rulings. Surprisingly, at least for us, only 76 percent of Professional Service Providers and 67 percent of Technology Creators/Users replied in the affirmative. Though this may just be a debate of the "is the glass half full or half empty" variety, given the salience of these cases, the intensity of discussion in the press and at professional gatherings, and their potential to affect licensing practice, we are nonetheless startled that a quarter of responding Service Providers and a third of responding Technology Creators/Users had not thought about the impact of these recent court rulings.[5] Perhaps transaction-oriented professionals see changes in legal doctrine, even landmark court rulings, as irrelevant to their

Table 3: Recent Court Cases

- ***MedImmune v. Genentech***—Supreme Court rejected reasonable apprehension of suit test for declaratory judgment jurisdiction in allowing a licensee to challenge the validity, enforceability or non-infringement of a licensed patent without requiring a breach or termination of its license.
- ***Sandisk v. STMicroelectronics***—Federal Circuit broadened declaratory judgment jurisdiction to situations in which there is an assertion of patent rights and a responsive contention of the right to engage in the accused activity without a license.
- In re ***Seagate Technology, LLC***—Federal Circuit revised the standard for proving willful infringement by requiring clear and convincing evidence of objective recklessness on the part of the accused infringer instead of a mere failure to exercise due care to avoid patent infringement.
- ***KSR International v. Teleflex***—Supreme Court rejected strict application of teaching/suggestion/motivation (TSM) test for determining obviousness; perceived as raising the bar for sustaining the validity of patents.
- ***eBay v. MercExchange***—Supreme Court rejected general rule that a permanent injunction should follow a finding of patent infringement absent exceptional circumstances in favor of application of the traditional four-factor test: (1) irreparable injury; (2) inadequate remedy at law; (3) balancing of hardships of parties; and (4) the public interest.

5. Or at least were not willing to report having done so!

Table 4: Licensing and the Courts

Recent court rulings (e.g., *Medimmune v. Genentech, Sandick v. STMicroelectronics, Seagte, KSR International v. Teleflex, and eBay v. MercExchange*) appear to have swung the pendulum of licensor-licensee interests in favor of licensees. Have you **thought about the impact** of one or more of these rulings on...

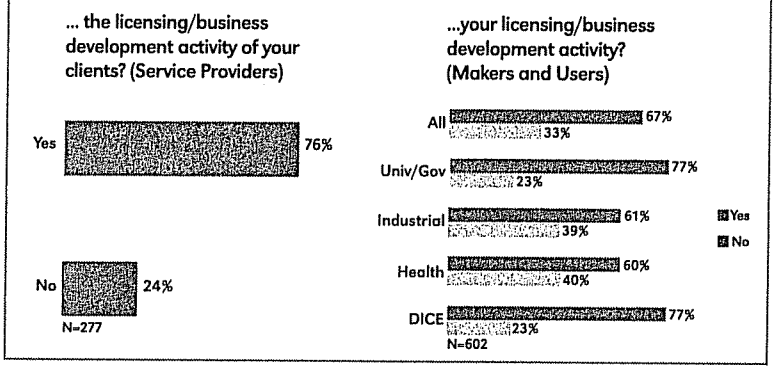
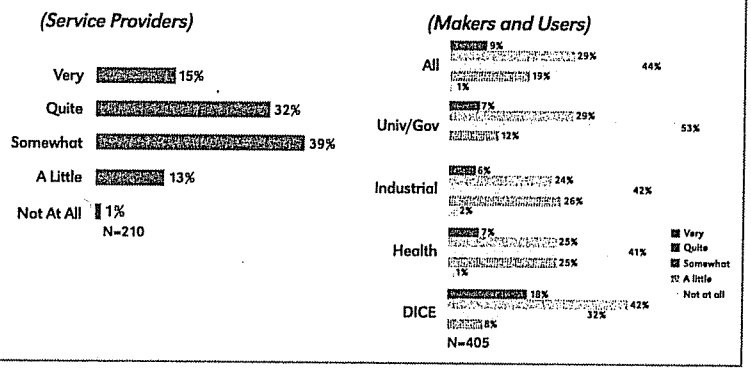


Table 5: Licensing and The Courts

Regarding recent court rulings such as those cited above that appear to have altered the balance between licensors and licensees:

How **knowledgeable** are you about these recent rulings?



daily business. Perhaps these results reflect personnel turnover in the licensing function: in past surveys we have found that about one third of Technology Creator/User respondents had less than 5 years of licensing experience. Perhaps this finding points to an opportunity for LES US/C to communicate such issues more effectively to its members.

Among respondents who were ***both aware and had thought about the impact*** of these recent court rulings, about one-half reported that they were very or quite ***knowledgeable*** about these rulings. Again, while licensing professionals focused on transactional matters may not have reached a definitive opinion about these recent court decisions, we were surprised they were not more knowledgeable. Are these court decisions simply irrelevant to people focused on transactions? Or, is it the case that we are seeing relatively slow diffusion of information out of legal circles into the community of practitioners. Interestingly, when we look at sectoral differences, among Technology Creators/Users, the DICE industry sector stood out with 60 percent of DICE respondents very or quite knowledgeable, while one-third to one-half of the other industry respondents were very or quite knowledgeable. Since the litigants in many of these cases were companies from the DICE sector, it is probably not too surprising that respondents from this sector were more familiar with the matters and decisions. Nonetheless, these rulings are likely to have implications beyond DICE, so these differences in knowledge across sectors point to relatively slow diffusion of information.

We then explored how ***concerned*** respondents were about the impact of these rulings on their business. In short, the answer was "not so much." Overall, about two-thirds of respondents were "somewhat" or "slightly" concerned. We suspect that these relatively sanguine responses reflect confidence that any negative implications of, for example, the Medimmune decision can be handled transactionally, and a sense that some of the other decisions, for example, KSR, most significantly impacts legal practice rather than business dealmaking. (See Table 6.)

How concerned are you about these recent court decisions, and what is your sense of respondents' level of concern? There is, however, a significant correlation between respondents' knowledge and their degree of concern. Perhaps low levels of concern, therefore, reflect limited knowledge.

In terms of ***actual impact***, both Professional Service Providers and Technology Creators/Users largely viewed recent court rulings as having a neutral or negative impact on their business, with over half of Professional Service Providers and nearly two-thirds of Technology Users/Creators reporting a neutral impact, and one-quarter and one-fifth reporting a moderately negative impact respectively. Very few respondents viewed the impact as positive, even those

Table 6: Licensing and the Courts

Regarding recent court rulings such as those cited above that appear to have altered the balance between licensors and licensees:

How concerned are you about the impact of these rulings on your business?

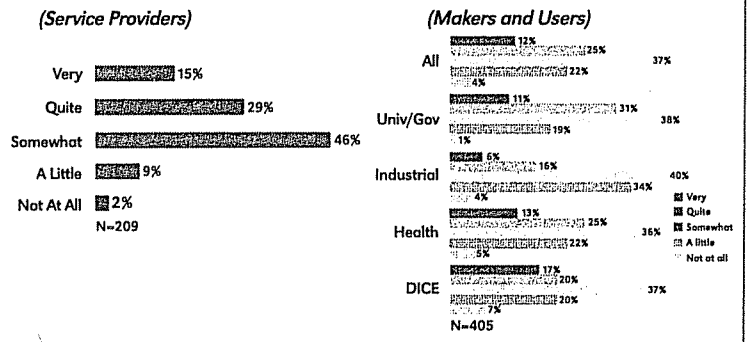


Table 7: Licensing and the Courts

What has been the actual impact of these rulings on...

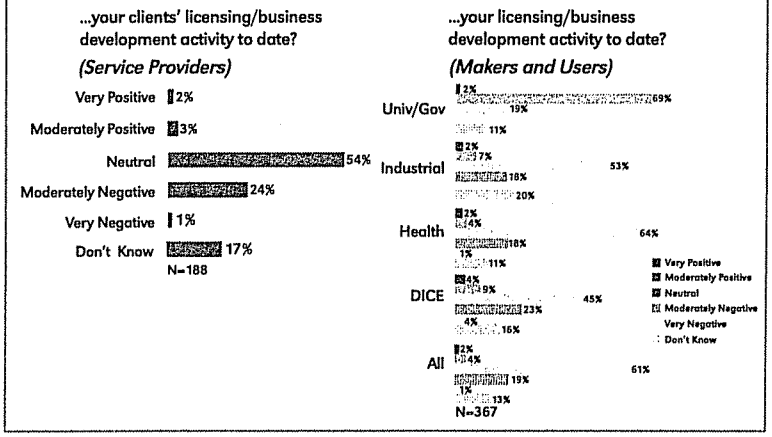


Table 8: Georgia Pacific Factors

The rates paid by the prospective licensee for the use of other IP or IP comparable to the IP that you are/your client is licensing	Makers and Users	55%
	Service Providers	65%
Fees and royalty rates paid by existing/other licensees, if any, for the IP you are/your client is licensing	Makers and Users	65%
	Service Providers	72%
The commercial relationship between the licensor and licensee, such as whether these organizations are competitors in the same territory in the same line of business	Makers and Users	48%
	Service Providers	65%
The contribution of the IP you are/your client is licensing towards promoting sales of and generating revenues and profits from other products of the other party	Makers and Users	56%
	Service Providers	66%

Reflects respondents selecting "Very Important" or "Quite Important"

whose organizations were engaged in substantially more in-licensing than out-licensing. Perhaps, more time is needed for diffusion of information or for the impact of these recent court rulings to sink in. Perhaps, licensing professionals need more time to adjust. But, perhaps, despite the hand wringing and public debate, the pendulum has not swung too far in favor of licensees.

We also asked respondents about business factors they consider in preparing for licensing negotiations, drawing upon the so-called "*Georgia-Pacific* factors" frequently offered to courts in the analysis of reasonable royalties in patent damages. Specific factors that we asked questions about included:

- Rates paid by the prospective licensee for the use of other or comparable IP;
- Fees and royalties paid by existing/other licensees;
- The commercial relationship between the parties (i.e. direct competitors or other); and
- Contribution of the IP towards promoting sales and generating revenues/profits from other products.[6]

Majorities of Professional Service Providers and Technology Creators/Users indicated that they considered these factors "very important" or "quite important" in preparing for negotiations in the real world. Under the Georgia-Pacific standard, courts consider the likely outcome of a hypothetical negotiation between the patentee and the alleged infringer, and responses to this survey (particularly from Technology Creators/Users) offer reassurance that some of the considerations embodied in the Georgia-Pacific factors reflect actual licensing practice.

6. *Georgia-Pacific Corporation v. United States Plywood Corporation*, 318FSupp1116, 6USPQ 235 (SD NY 1970).

Table 9: Technology Makers and Users – Business Development v. Enforcement of Rights

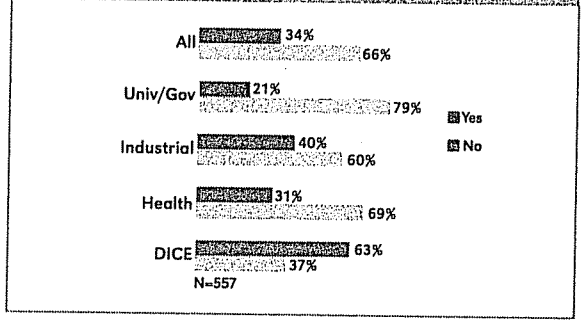
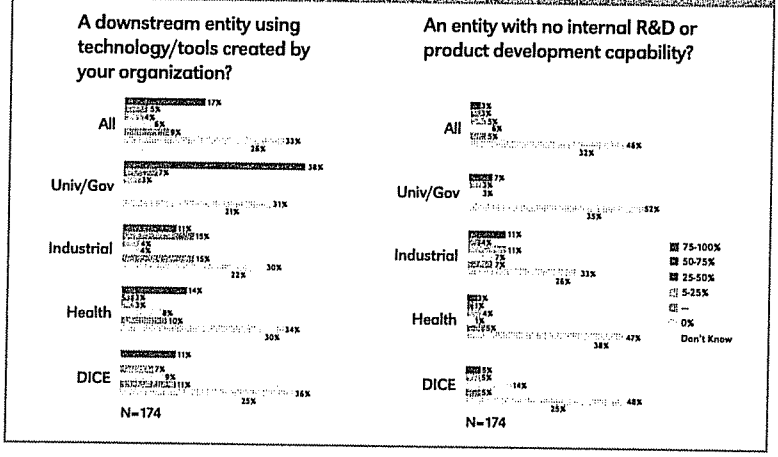


Table 10: Technology Makers and Users – Business Development v. Enforcement of Rights



Business Development v. Enforcement of Rights

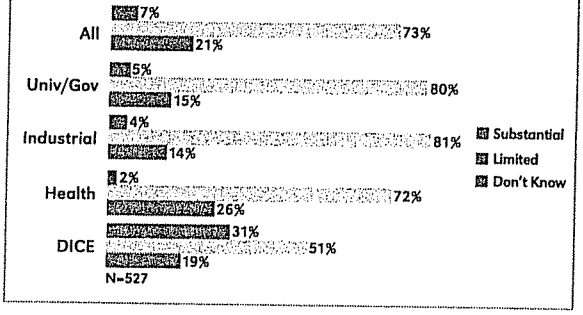
About one-third of respondents indicated that their respective organizations have entered into license agreements to settle or avoid litigation or to enforce their IP rights (i.e., divide the pie) as opposed to enabling a business development opportunity (i.e., increase the size of the pie). Differences across industry sectors are quite sharp. While we were not surprised with the finding that 63 percent of DICE respondents had entered into license agreements to settle or avoid litigation or to enforce their IP rights, we were surprised that 21 percent of university and government organizations reported having done so, as we believe it is generally perceived that these organizations have been historically reluctant to enforce IP rights. Perhaps, times are changing. It is important to note that while involvement in some enforcement activity is widespread, licensing to settle or enforce rights accounts for a very small fraction (10 percent or less) of total effort/resources of the licensing function. (See Table 9.)

We found that respondents indicated that most disputes were with parties in the same industry and operating in the same relative space in the value chain. Interestingly, much enforcement activity seems to take place largely within the set of R&D performing companies. Relatively little enforcement is reported to be directed at entities with no internal R&D or product development capacity. (See Table 10.)

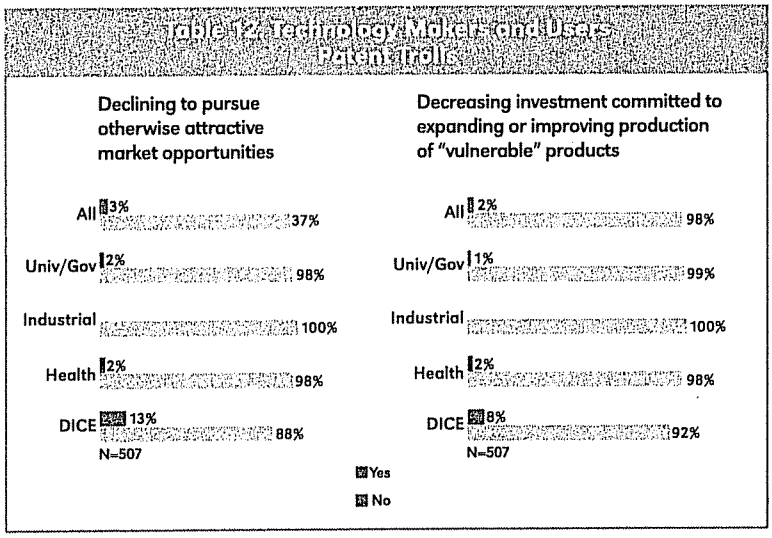
Impact of Patent Trolls

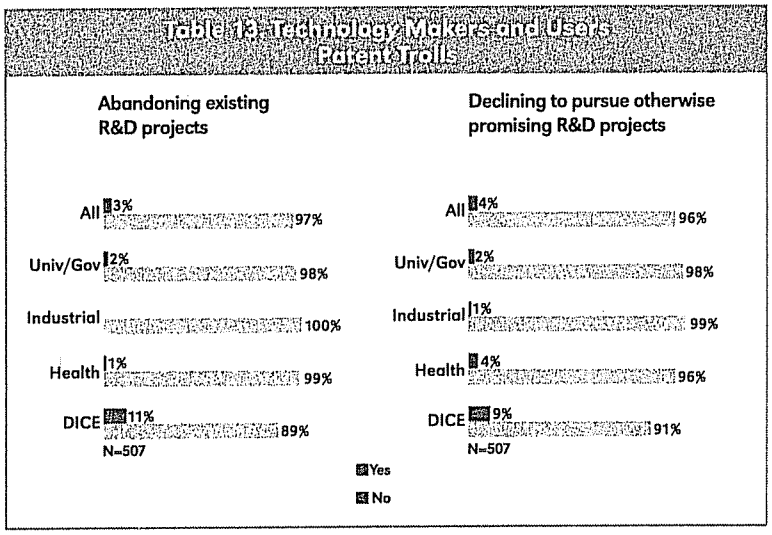
"Patent Trolls" have attracted much controversy and comment in recent years.[7] But outside of some highly publicized cases, the impact of trolls is unclear. For some organizations the threat of litigation by patent trolls may have only limited impact, requiring relatively little management time and resources, analogous to the background level of "slip and fall" litigation faced by any business. Most

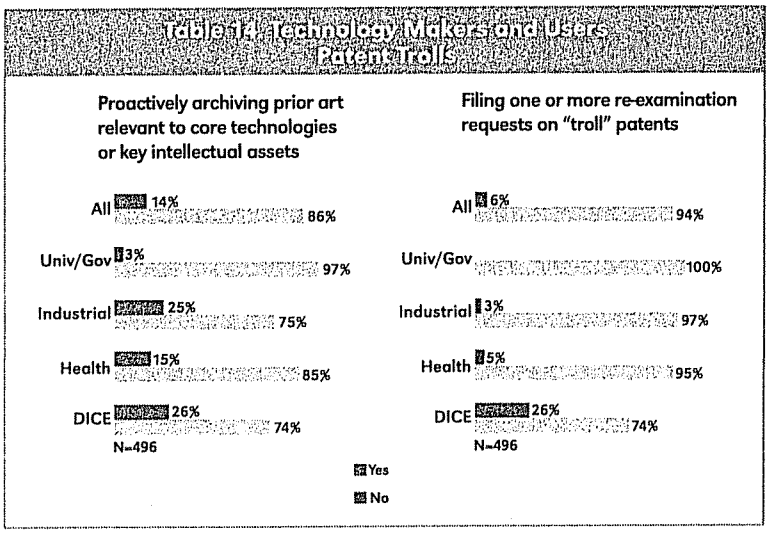
Table 11: Technology Makers and Users – Patent Trolls



7. As used in this survey "patent troll" refers to entities that apparently exist solely to exploit a specific piece of IP and have no product development, manufacturing or marketing capacity. The business press characterizes patent trolls in a similar fashion. For example, *Business Week* refers to patent trolls as "...businesses that make money by purchasing patents and then suing big companies for infringement" (April 7, 1998). *Forbes* describes a patent troll as "...someone who demands undeserved royalties" (May 5, 2008). *Financial Times* describes a patent troll as "... operates by coming up with ideas and then registering them to block others in the field" (May 9, 2008). *Investors Business Daily* describes patent trolls as "...patent-licensing firms that often end up taking legal action. Critics say trolls seldom ever create any inventions worthy of patents themselves" (May 29, 2008). *The Wall Street Journal* describes patent trolls as "...companies [that] acquire patents with the sole purpose of licensing them to others without ever manufacturing products" (September 17, 2008).







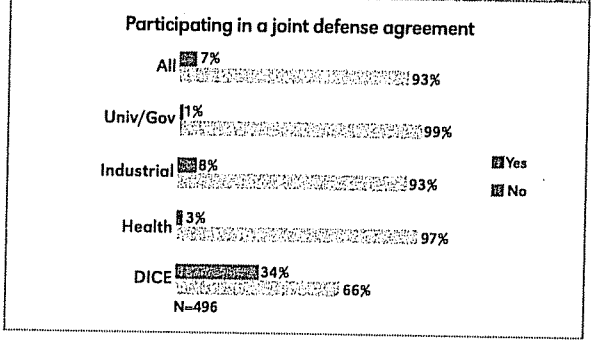
of the respondents to this survey agreed with this "slip and fall" risk characterization of the impact of patent trolls on their business. (See Table 11.)

However, 31 percent of respondents in the DICE sector indicated that the impact of patent trolls was substantial, consuming significant time and resources and altering the strategic direction of their business. Companies in the DICE sector, more than in any other sector, reported that they had:

- Declined to pursue otherwise attractive market opportunities (13 percent) or decreased investments committed to expanding or improving production of products of potentially vulnerable to patent trolls (8 percent) (See Table 12.);
- Abandoned existing R&D projects (11 percent) or declined to pursue other R &D projects (9 percent) because of the threat of patent trolls (See Table 13.);
- Proactively archived prior art relevant to core technologies or key intellectual assets (28 percent) and filed one or more reexamination requests on "troll" patents (28 percent)(See Table 14.); and
- Participated in joint defense agreements (34 percent). (See Table 15.)

These data indicate that the economic impact of patent trolls is both highly concentrated, and limited largely to a small but important constituency of LES US/C, namely large DICE companies. For these companies, patent trolls, or the threat of trolls, are a very real problem. But why is this confined to the DICE sector? Perhaps this is a reflection of the issuance of what some economists and attorneys have characterized as overly broad patents issued in the past in software and related technologies? Or perhaps companies in other sectors have been more proactive in developing

Table 15: Technology Makers and Users: Patent Trolls



and deploying business strategies and tactics to avoid or address such threats.

Summary

We were impressed with a number of findings:

- The relatively brief experience of the licensing and business transactional professionals among Technology Creators/Users, that is, 38 percent had 5 years or less experience.
- The finding that only 33 percent of respondents had thought about recent court rulings and the real or potential impact on their business, and only 40 percent of respondents were knowledgeable about these rulings. Would more respondents be concerned about the impact of these court rulings if they were more knowledgeable about them? Had respondents that were more concerned made a greater effort to become more knowledgeable? The data did not allow us to differentiate. We saw a disproportionate level of both concern and knowledge among large DICE companies.
- The finding that only 7 percent of respondents believed trolls have had a substantial impact on their business, and these respondents were almost exclusively from large DICE companies.
- The data suggest that for LES (USA & Canada) the recent court rulings and the threat of patent trolls present both a challenge and opportunity. There appears to be a need to raise the level of education both deeply and quickly among the membership. There are clear differences among industry sectors who are apparently concerned about different issues.

Future Plans

Given budget constraints, The Licensing Foundation does not plan to conduct additional surveys for the foreseeable future. The responses of LES US/C members to this and previous surveys have been gratifying. We hope and trust that we, and those who have come before us, have provided useful insights.

Acknowledgments

The Licensing Foundation wants especially to recognize that its funding has been primarily the result of contributions made by LES (USA & Canada). We have also received limited financial contributions, and massive time and wisdom contributions from many different LES US/C members. These contributions are gratefully acknowledged. Most of all we want to acknowledge the effort made by the respondents, thank you!

Appendix A

Sample and Survey Design

Survey Administration

The survey was administered in the form of online questionnaires accessed via the Internet. Approximately 6,000 members of the Licensing Executives Society (U.S.A. and Canada), Inc. were invited in April/May 2008 to participate in the survey via several rounds of email from The Licensing Foundation. The Web survey format was chosen to limit costs, maximize accuracy and to be minimally intrusive. This type of survey also allows for "dynamic" serving of questions in response to users' input, minimizing the extent to which respondents are presented with irrelevant or redundant questions. When used for "closed" list-based samples such as the LES US/C membership mailing list, Web surveys have been shown to perform as well or better than traditional hardcopy mail-back survey instruments. Separate versions of the survey were administered to the approximately 3,000 members identified as technology creator/users and to the approximately 3,000 identified as being providers of professional services (legal, consulting, etc.). LES US/C members self-report, job title, company, professional status, and industry affiliation; nonetheless there is substantial scope for errors in identifying respondents as "Technology Creator/User" versus "Professional Services." The survey Web site received more than 1,000 hits with 643 respondents completing at least one question on the Technology Creator/User Survey, plus 304 on the Professional Services Provider Survey. Respondents were guaranteed anonymity, and no records linking their identity to the database of survey questionnaire responses have been retained.

Response Rate

Of the more than 700 visits to the Technology Creator/User survey Web site, 643 respondents completed at least one question. After eliminating records for respondents who appear to have moved through the questionnaire without answering more than a handful of questions, the final sample contains 602 usable records. where the respondent answered most,

or all, of the questions presented to them.

Response rates to specific questions were generally high, generally greater than 80 percent of the "core sample" of respondents. Note that because the survey questionnaire branched at various points to ensure that respondents were only presented with relevant questions, the denominator for calculating response rates is not always 602. For example, of the total of 602 "core sample" records analyzed, only 334 were presented with questions about in-licensing after answering "Yes" to Q22—"Is your organization involved in any in-licensing agreements?" Note also that for questions posed in "tabular" format, e.g. where the respondent was asked to "check all that apply" or to answer several questions on the same general topic, if they answered any of the questions in the table, missing responses to other questions in that table are interpreted as "N/A" or "Don't know" as appropriate.

The degree to which the results presented here can be considered statistically representative of all technology licensing activity in North America is difficult to assess. It is important to note that the LES US/C membership list is a "convenience sample," not a randomized quota based or stratified sample designed to be statistically representative of an underlying population. "Frame bias" i.e. unrepresentativeness of the LES US/C membership list compared to the population of all licensing professionals is unlikely to be a significant problem, unless there are large numbers of people engaged in technology licensing who are not members of LES US/C, and who differ systematically from those who are. "Response bias," i.e. systematic differences between the members in the sample who choose to respond and those who do not, is not possible to assess fully. The distribution of respondents across industry sectors approximates the distribution in the entire mailing list, with some over-representation of the Healthcare and University/Government sectors. However, since we lack information about other characteristics of non-respondents, such as the size of their organization, it is not possible to evaluate potential bias arising from different response rates across, e.g., large versus small entities.

Though 602 responses from a sample frame of 3,000 (for the Technology Creator/User version of the survey) may seem low, it is in line with similar voluntary surveys that typically have a 10-30 percent response rate. Note that because LES US/C membership is individual, not corporate, a single organization can appear multiple times in the mailing list. The LES US/C members identified as belonging to the Technology Creator/User category come from less than 1,200 distinct organizations, with very few organizations generating multiple responses. We therefore achieved coverage of about 50 percent of the total number of Technology Creator/User organizations represented in the LES US/C membership.[8] LES US/C members who were sent the Professional Services Provider version of the survey had lower response rates (277 from about 3,000) but it should be recognized that a substantial fraction of these members are unlikely to be able to respond meaningfully to this survey, since they are student members, executive recruiters, and the like.

Demographics/Background of Respondents' Organizations

We asked a series of "demographic" questions about respondents' organizations to help with putting their answers in context.

About two-thirds (62 percent) were responding on behalf of a "corporate licensing office reporting for the entire company." The remainder responded on behalf of a licensing office within a business unit or division (34 percent) or a stand-alone licensing subsidiary (4 percent). The number of licensing professionals in each organization varied widely: 20 percent of respondents reported that they were the only licensing professional in their organization, 38 percent belonged to organizations with two to five, and 30 percent had 5 to 25—so almost 90 percent of licensing offices had less than 25 licensing professionals—but 2 percent responded that they were part of 100+ licensing groups.

Health Care was the dominant industry (46 percent), generally reflecting LES US/C membership, with an additional 28 percent from universities/government labs. The sample was evenly split between large (>500 employees) and small organizations. Respondents' organizations were heavily engaged in R&D: 70 percent reported being active in basic research and 73 percent were active in developing new products and services, while less than 40 percent were engaged in production of goods or services or selling to end-users. The average organization in the sample had $8.7B in annual revenues, 8,200 employees and spent $493MM in the past year on R&D. But these figures conceal wide diversity: almost 15 percent of organizations had less than 20 employees, and 25 percent had more than 10,000; 13 percent reported $1MM or less in annual revenues, while more than 30 percent reported more than $1B; and 9 percent reported $1MM or less in annual R&D spending while 11 percent reported over $1B. ■

8. The figure is approximate since individual members do not always identify their organization to LES.

U.S./Canadian Licensing In 2006; Survey Results

By Richard Razgaitis

Initial Results of a Survey Conducted in February/March 2007 by The Licensing Foundation of LES (USA & Canada), on behalf of The Licensing Foundation.[1,2]

Abstract and Summary of Findings

This paper is the fourth such report of an annual survey conducted by The Licensing Foundation, a wholly owned subsidiary of LES (USA & Canada). As in prior years, the survey was conducted by an online questionnaire of the membership of LES (USA & Canada). The data were obtained primarily in February 2007 were for the period 2006.[3]

Two related but distinct survey questionnaires were used, one for IP asset owners (buyers or sellers, licensors or licensees), and one for service providers such as outside law firms and consultants. As in all prior years, once the responses were deemed authentic they were correlated within one of eight segments, and anonymized. The eight distinguished segments were large and small companies,[4] based on the number of company's employees—greater or less than 500, and, further, by four industry groups: Health, DICE (Digital Information Computers Electronics), Industrial, and University/Government.

For the third year we included two questions relating to perceived societal/environmental opposition to certain underlying values of licensing such as the right of an IP owner to protect and license, or not to license, its IP. As for the 2004 and 2005 data, these 2006 data report a substantial concern.

The objective of the Foundation's survey is as follows: provide an annual, synoptic perspective on key statistics, events, and trends in "the business of licensing" that can assist licensing professionals in understanding and advancing the business environment in which they operate and to which they contribute, and can be used by the public, academic researchers, and government policy analysts to grasp the issues and impacts of licensing business practices.

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Since LES membership predominately reflects technology licensing of patents, know how, trade secrets, and copyrighted software—and relatively under-represents licensing of trademarks and copyrighted content, for example—the licensing industry so characterized by these data is primarily about technology licensing.

Sample and Survey Design[5]

Survey Administration

The survey was administered in the form of an online questionnaire accessed via the Internet. Over 6300 members of the Licensing Executives Society (U.S.A. and Canada), Inc. were invited in February 2007 to participate in the survey via several rounds of e-mail from The Licensing Foundation. The Web survey format was chosen to limit costs, maximize accuracy, and to be minimally intrusive. This type of survey also allows for "dynamic" serving of questions in response to users' input, minimizing the extent

1. The Licensing Foundation is a wholly-owned 501c3 subsidiary of LES (USA & Canada). Additional information on the Foundation is available at: www.licensingfoundation.org.

2. The Licensing Foundation during 2007 was managed by its Board comprised of E.B. (Ted) Cross, Ada Nielsen, Tanya Moore, Dwight Olson, Richard Razgaitis, Art Rose, and James Sobieraj, and assisted by Ken Schoppmann of the LES (USA & Canada) office.

3. There is some potential confusion as to survey periods and publications for these four Foundation surveys. The first survey was taken in early 2004, published in les Nouvelles December 2004 (p. 139ff) for data (responses) corresponding to the year 2003. Likewise the second and the third survey were taken in early 2005 and 2006 and published in the December 2005 (p. 145ff) and the December 2006 (p. 233ff) issues of les Nouvelles corresponding to the data periods 2004 and 2005, respectively. The data reported here were taken in February and March 2007, but respondents were asked to answers the questions for 2006.

4. The term "company" is used as a generic reference to an IP asset owning entity, which was primarily represented by corporate entities but includes representation from universities, research institutes, and government laboratories.

5. The discussion here was provided by Prof. Iain Cockburn of Boston University who, along with Prof. Ajay Agrawal of the Univ. of Toronto were retained by The Licensing Foundation to assist in the development of the survey instruments, and collecting and validating the data.

to which respondents are presented with irrelevant or redundant questions. When used for "closed" list-based samples such as the LES membership mailing list, Web surveys have been shown to perform as well or better than traditional hardcopy mail-back survey instruments. Separate versions of the survey were administered to the approximately 3600 members identified as technology creator/users and to the approximately 2700 identified as being providers of professional services (legal, consulting etc.). LES members self-report, job title, company, professional status, and industry affiliation; nonetheless there is substantial scope for errors in identifying respondents as "Technology Creator/User" versus "Professional Services." The survey Web Site received more than 1200 hits with 613 respondents completing at least one question on the Technology Creator/User Survey plus 344 on the Professional Services Survey. Respondents were guaranteed anonymity, and no records linking their identity to the database of survey questionnaire responses have been retained.

Response Rate

This paper reports results for the Technology Creator/User Survey. Of the 800+ visits to the survey Web Site, 613 respondents completed at least one question. After eliminating records for respondents who appear to have moved through the questionnaire without answering more than a handful of questions, the final sample contains 524 usable records.

While not all respondents answered all questions, response rates to specific questions were generally high, generally greater than 80 percent of the total number of respondents. Note that because the survey questionnaire "branched" at various points to ensure that respondents were only presented with relevant questions, the denominator for calculating response rates is not always 524. For example, of the total set of responses analyzed, only 325 out of 524 were presented with questions about in-licensing after answering "Yes" to Q32—"Is your organization involved in any in-licensing agreements?"

The degree to which the results presented here can be considered statistically representative of all technology licensing activity in North America is difficult to assess. It is important to note that the LES membership list is a "convenience" sample, not a randomized quota based or stratified sample designed to be statistically representative of an underlying population. "Frame bias" i.e. unrepresentativeness of the LES membership list compared to the population of all licensing professionals is unlikely to be a significant problem, unless there are large numbers of people engaged in technology licensing who are not members of LES, and who differ systematically from those who are. "Response bias," i.e. systematic differences between the members in the sample who choose to respond and those who do not, is not possible to assess fully. The distribution of respondents across industry sectors approximates the distribution in the entire mailing list, with some over-representation of the Healthcare and University/Government sectors. However since we lack information about other characteristics of non-respondents, such as the size of their organization, it is not possible to evaluate potential bias arising from different response rates across, e.g., large versus small entities.

Though 524 responses from a sample frame of 3600 may seem low, it is in line with similar voluntary surveys that typically have a 10-30 percent response rate. Note that because LES membership is individual, not corporate, a single organization can appear multiple times in the mailing list. The LES members identified as belonging to the Technology Creator/User category come from less than 1200 distinct organizations, with few organizations generating multiple responses. We therefore achieved coverage of about 40 percent of the total number of Technology Creator/User organizations represented in the LES membership.[6]

The following sections of this report tabulate responses to the Technology Creator/User survey.

Throughout, percentages may not add to 100 due to rounding. For questions posed in "tabular" format, if a respondent answered any of the questions in the table, any missing responses to other questions in that table are interpreted as "N/A" or "Don't know" as appropriate.

Demographics/Background of Respondents

We asked a series of questions about the background, experience, and industry/licensing structure of the respondents:

1. The dominant "primary background/training outside the license field" was "science or engineering" with 62 percent of the responses. The next largest response was "general management," 18 percent, followed by "legal" at 15 percent, and "other" at 6 percent. The relatively few legally trained responses may be surprising: it was even less than those with a general business management background (presumably undergrad business majors, perhaps followed by MBAs), and only one-fourth of those with science/engineering backgrounds. This result is not inconsistent with LES membership, as these

6. The figure is approximate since individual members do not always identify their organization to LES.

data are for the Technology Creator/Users, which does not include service providers such as outside law firms.

2. The most-frequently cited licensing experience level was 5 to 10 years (30 percent), closely followed by 10 to 20 years (29 percent). 31 percent reported one to 5 years, 5 percent less than one year, and 5 percent more than 20 years. So, more than one-third (36 percent) had five years or less experience.

3. About two-thirds (65 percent) were responding on behalf of a "corporate licensing office reporting for the entire company." The remainder responded on behalf of a licensing office within a business unit or division (30 percent) or a stand-alone licensing subsidiary (5 percent). The respondents were split fairly evenly between being "senior most" (45 percent) and not senior most (56 percent). The reported number of licensing professionals in each entity varied widely: 16 percent of respondents were their entities' sole licensing, professional, 39 percent of entities had two to five, and 34 percent had 5 to 25—so more than three-fourths of the licensing offices had less than 25 licensing professionals—but 2 percent responded that they were part of 100+ licensing groups.

4. Healthcare was the dominant industry (48 percent), generally reflecting LES membership. When asked where "most business" was done by their respective entities 43 percent responded "U.S." and 36 percent "Global." About the same percentage had companies with less than 100 employees (31 percent) as greater than 5,000 employees (35 percent). R&D spending showed a wide disparity as well: 13 percent of those responding worked for entities spending more than $1 billion per year on R&D, 30 percent between $1 and 20 million, and 8 percent less than $1 million.

Relative Importance of Various Forms of IP

One of the repeat questions in 2006 was the relative importance of various forms of IP in creating competitive advantage. 83 percent of the responses gave patents the highest rating, "extremely important," with only 11 percent saying that patents were "moderately important," and almost no responses for "slightly important" (3 percent) and "not important" (1 percent).

The next most important IP form was "know how" which scored, respectively: 46 percent, 34, 13, 4, and 4 (from extremely important to not applicable). Know how was scored more highly than "trade secrets," whose corresponding scores were: 31 percent, 25, 18, 12, and 14. The most frequent response for trademarks and copyrights was "slightly important" at 34 and 33 percent, respectively; Only 17 percent and 13 percent ranked these as extremely important, which was less than those who ranked them as not important (18 percent and 21 percent, trademarks and copyrights, respectively).

It is interesting to compare the year-over-year results. The responses were similar for the top three IP forms, which were ranked as extremely important: patents, 83 percent (2006) vs. 80 percent (2005); know how, 46 percent vs. 50 percent; trade secrets, 32 percent vs. 34 percent. These differences are so small that they could reflect statistical variation; if they are reflecting a real change, it suggests that the perspective in February 2007 looking back on calendar year 2006 is that patents were held to be more important and both know how and trade secrets less important than the responses a year prior. (It will be interesting to see what effect the recent court decisions on patent matters will have on next year's survey results).

Dealmaking

One of the areas of high importance to licensing professionals is the use of IP as the basis of licensing transactions. After all, the first letter in "LES" is all about dealmaking around and with IP. During these four years of surveying, we have asked many different questions to get at key issues from beginning to end of the business process of IP dealmaking: (1) motivations for creating IP in the first place, (2) dealmaking preparations/impediments, (3) negotiations and deal breakdown, (4) dealmaking remorse, and, (5) deal demise.

(1) Motivations for Creating IP. In this current 2006 survey we repeated questions from the 2005 Survey about motivations. Those most frequently cited as "extremely important" were as follows. Two motivations essentially tied for highest response: generate licensing revenue (43 percent of respondents) and realize higher returns on proprietary products (42 percent). Next most frequently cited were use as a basis for strategic partnerships/JVs (39 percent), manage litigation risk (38 percent), prevent/slow down imitation of technology or products (34 percent), and improve bargaining strength in negotiations or disputes (32 percent). The following three motivations were found to be less important, most-frequently cited as "moderately important:" signal capabilities to inventors / partners / customers / prospective employees (33 percent), improve bargaining strength in other business negotiations with customers of suppliers (29 percent), and make life difficult for competitors (e.g. by blocking their technology development, raising their R&D costs) (28 percent).

Unlike the data for the relative importance of various forms of IP, the distribution of these responses was relatively flat. For the six "extremely important" motivations cited above, there were notably frequent responses for "moderately important" (ranging from 22 percent to 30 percent), "slightly important" (11 percent to 24 percent), and even to "not important" (7 percent to 18 percent). This suggests that there is a much great dispersion as to motivations than as to importance of the IP so generated. The above 2006 data are generally consistent with that obtained for 2005. The two motivations from the 2005 survey that received more than 40 percent responses for "extremely important" were likewise realize higher margins on proprietary products (44 percent) and generate licensing revenue (40 percent), with almost identical percentages as in the current data.

Patent litigation is highly newsworthy; this is enabled by its public nature, the large financial claims made, and (perhaps) because we have an innate interest in observing gladiators in combat. Yet, when we asked—in the past 12 months, about what percentage of your organization's licensing activities were motivated by settling or avoiding litigation, as opposed to being motivated by a business opportunity?—the responses were heavily weighted away from litigation: 37 percent responded "0 percent of the time," 29 percent said 1-5 percent of the time, and 18 percent said 5 to 25 percent of the time. Only 3.9 percent responded for any of the categories above 50 percent of the time. These 2006 data exhibited somewhat lower percentages as to time spent on litigation matters than we obtained in 2005, when only 7 percent responded "0 percent of the time," 39 percent said 1-5 percent, 24 percent said 5-25 percent, and 8.7 percent responded in one of the greater than 50 percent of the time categories. The difference in response for the "0 percent of the time" category, 37 percent in 2006 vs. 7 percent in 2005, seems pretty dramatic.

A closely related issue is the subject of "trolls." Although it has become a term of art, the word is freighted with unsavory dangers; no children's book is likely to be entitled "Happiness is a Warm Troll." To avoid as much as possible coloring the response, we provided an extended definition (for purposes of the survey)[7] and asked, "the impact of trolls on your organization has been?" 67 percent of the responses replied limited (see previous footnote), 27 percent replied not applicable, and only 6 percent replied substantial. A follow up question was has your organization sought to mitigate the risks posed by troll litigation by increasing effort on any of four choices. The dominant response was not applicable: did not take any specific action—79 percent. Only 15 percent indicated that they had been proactively archiving prior art relevant to core technologies or key intellectual assets. Less than 10 percent indicated any of: participating in a joint defense agreement (7 percent), filing one or more re-examination requests on troll patents (5 percent), or other (5 percent).

(2) Dealmaking Preparations. The 2006 Survey asked a series of questions relating to the effect of "uncertainty" going into negotiations. The five response choices throughout this series of questions were (1) could not estimate, (2) within 5 percent, (3) within 25 percent, (4) within 100 percent, and (5) within 300 percent. Think for a moment: what would you predict the most-frequent response to have been for every kind of uncertainty and every survey segment (large and small companies, and health / DICE / Industrial / Univ-Gov)? Answer: everyone in every context appears to believe that most of the time they knew "the answer" within 25 percent.[8]

When asked about uncertainty as to the date of first significant sales, all six segments exhibited the largest response for the "within 25 percent" category ranging from a low of 31 percent (Univ/Gov) to a high of 51 percent (DICE) expressed this view. Total market uncertainty? 25 percent to 37 percent believed they knew the number within 25 percent.[9] Production costs? All but Univ/Gov responded most often with the within 25 percent option (response frequency ranging from 35 percent to 49 percent).[10] All segments responded

7. Entities that apparently exist solely to exploit a specific piece of IP and have no product development, manufacturing, or marketing capacity—have attracted much comment in recent years. For some organizations, the threat of litigation by "trolls" may have only a limited impact, requiring relatively little management time and resources (analogous to the background level of "slip and fall" litigation faced by any business). For others, the impact may be substantial, consuming significant time and resources, and altering the strategic direction of business (e.g., by declining otherwise attractive market opportunities, decreasing investment, redirecting R&D efforts, relocating operations, etc.).

8. Could this be another manifestation of a "25 Percent Rule?"

9. One exception: The Univ/Gov sector responded most frequently (32 percent) for knowing the potential within 100 percent, and 25 percent for within 25 percent.

10. Univ/Gov responded 18 percent; its most frequent response was 29 percent for within 100 percent, followed closely by could not estimate at 26 percent.

to within 25 percent for the probability of meeting technical milestones (frequency of response ranged from 33 percent for DICE to 47 percent for Health); we will return to this subject from a different perspective when we consider deal remorse below. Also asked was their degree of uncertainty in the other party's BATNA: Best Alternative to a Negotiated Agreement. Surprisingly, we received basically the same within 25 percent answer as the most frequent response (ranging from 22 percent for Univ/Gov to 37 percent for Industrial). However, there were relatively high frequency responses for this BATNA uncertainty question expressed by could not estimate (11 percent to 27 percent). The respondents were then asked about the sources of such uncertainties. These data are shown in Fig. 1 below.

No one factor was cited most often as "extremely important," but shown by the bold font are all the factors that received more than 50 percent of the responses as being either "extremely important" or "moderately important." The highest scoring factor was absence of reliable market data at any cost (combined 70 percent "extremely" and "moderately" important—substantially more than the 55 percent received by the next most cited factor). Shown in the shaded boxes are the most frequently cited categories.

(3) Negotiations and Deal Breakdown. Last year's survey focused on this area.

(4) Deal Remorse (regret). Last year's survey identified, among other things, that the most frequent issues, with the benefit of hindsight, that the respondent would now restructure were business and technical milestones (44 percent and 40 percent of responses, respectively) and field of use restrictions (43 percent of responses). We used this insight to ask questions below relating to deal demise.

(5) Deal Demise. This year we focused on the failure of deals already done, either by some form of unwinding or amending of the agreement, or formal disputes. On series of questions asked the following: What fraction of the following types of deals are likely to 'go bad' in the sense of requiring substantial renegotiation, ending up in arbitration/litigation, or being effectively abandoned by one or more of the parties involved? The choices

Figure 1

Q19: How important are each of the following factors in limiting the degree to which these sources of uncertainty can be reduced?

	Not important	Mildly important	Moderately important	Extremely important	Moderately + Extremely important
(b) Absence of reliable market data (at any cost)	7%	17%	42%	28%	70%
(i) Overall limitations on our internal ability to do the needed level of opportunity analysis	10%	26%	40%	15%	55%
(c) Insufficient internal marketing experience/capacity	8%	13%	37%	17%	54%
(g) Absence of ANY useful data on comparable deals	11%	28%	30%	21%	51%
(a) Market data too expensive to obtain	15%	29%	33%	17%	50%
(d) Insufficient internal capability to evaluate/forecast technical progress	16%	29%	32%	15%	47%
(f) Data on comparable deals is too expensive/too difficult to obtain	16%	31%	28%	18%	46%
(h) Unable to determine other party's alternatives	9%	38%	34%	12%	46%
(e) Insufficient production experience/capacity to assess costs	19%	30%	27%	13%	40%

given were: 0 percent, 1-5 percent, 5-25 percent, 25-50 percent, 50-75 percent, 75-99 percent, and 100 percent.

The first of this series of questions asked about agreements with small enterprises (< 500 employees). The most frequent response was that 5-25 percent of such deals had "gone bad;" the individual sector frequency responses for this level of deal demise ranged from 26 percent for DICE to 35 percent for both Health and Univ/Gov. We then asked the same question but for agreements with large enterprises. We received essentially the same answer: 5-25 percent of deals was the most frequent answer (ranging from 26 percent for DICE to 35 percent for Univ/Gov). One might have expected a difference, given how different large and small companies are in many respects. But in terms of deal demise, the data were very similar. We also asked about agreements with startups (privately funded firms that do not yet have substantial revenues). Here there was exhibited a slight shift to more frequent concerns, but the effect was modest: the most frequent response was again 5-25 percent (but with generally less frequent responses than for large or small companies, ranging from 12 percent for Industrial to 31 percent for Health), with the 25-50 percent of deals "gone bad" being almost as frequently cited (ranging from 13 percent to 25 percent for the various segments), and about one-fourth responding with a frequency of greater than 50 percent (ranging from 15 percent Industrial to 29 percent Univ/Gov, with 22 percent for "All" respondents). The next two deal contexts, companies outside North America 1 when two or more parties are involved exhibited similar results: again the most frequent response was 5-25 percent, ranging from 24 percent to 35 percent of respondents for outside North America and 12 percent to 28 percent for involving two or more parties. Only when asked for deal demise in cross license agreements and agreements with non-profits such as universities or government labs did a different category draw the most frequent responses: for cross license agreements the most frequent response category was 1-5 percent (ranging from 9 percent to 28 percent), with less than 5 percent indicating any category for 50 percent or greater of all such deals, and likewise 1-5 percent for non-profits (ranging from 23 percent to 30 percent), with less than 10 percent indicating any category for greater than 50 percent of all deals (except Industrial, which responded 15 percent).

These data are summarized for "all" responses in Fig. 2 below. Shown in the right most column is the sum of all the responses indicating greater than 50 percent of the corresponding type of transactions are likely to "go bad." Agreements with startups had the highest such percentage (22 percent), followed by agreements with two or more parties (14 percent). Large and small companies had similar results (11 percent and 10 percent, respectively), and the remaining transaction types—non-profits, entities outside North America, and cross license agreements—all exhibited less than 10 percent indicating that a likely of greater than 50 percent of such agreements "going bad."

Next, we asked with the benefit of hindsight, could this [the deals 'gone bad'] have been avoided [not 'gone bad'] by structuring the deal differently? The results are shown below in Fig. 3.

The most frequent response has to do with milestones, where more than 50 percent responded, far larger than any other category offered. Responses relating to deal scope, such as field-of-use restrictions and degree of exclusivity exhibited the next highest response rate (41 and 35 percent), closely followed by fee structure and payment amounts (34 and 31 percent). Essentially one-quarter (24 percent) of the responses indicated that problems could not have been avoided under any feasible deal terms. Although such response rate (24 percent) is lower than all but three categories (grant backs, MFN, and reach-through), it seems to be a notably high frequency. This may relate to responses to questions asked in earlier year's surveys that indicated a widespread belief that IP dealmaking is more complex than other kinds of comparable dollar deals (such as the sale of a physical asset), suggesting that not only is IP dealmaking more difficult in the first place, the road after the deal is not an easy one either.

In looking behind the overall responses of Fig. 3, we can see some segment differences. Large vs. small companies disagreed on several of the categories. Large companies (compared to small) ranked technical and business milestones 13 and 8 percentage points more important, respectively, than did small, as did large companies for terms of use and problems could not be avoided (by 8 and 7 points, respectively). One the other hand, large companies cited less frequently than small companies grant back provisions and payment amounts (by 10 and 12 points, respectively).

DICE differed the most of any segment from all respondents in most of the response categories. DICE more frequently cited payment amounts (16 points), duration of agreement (11 points), and to a

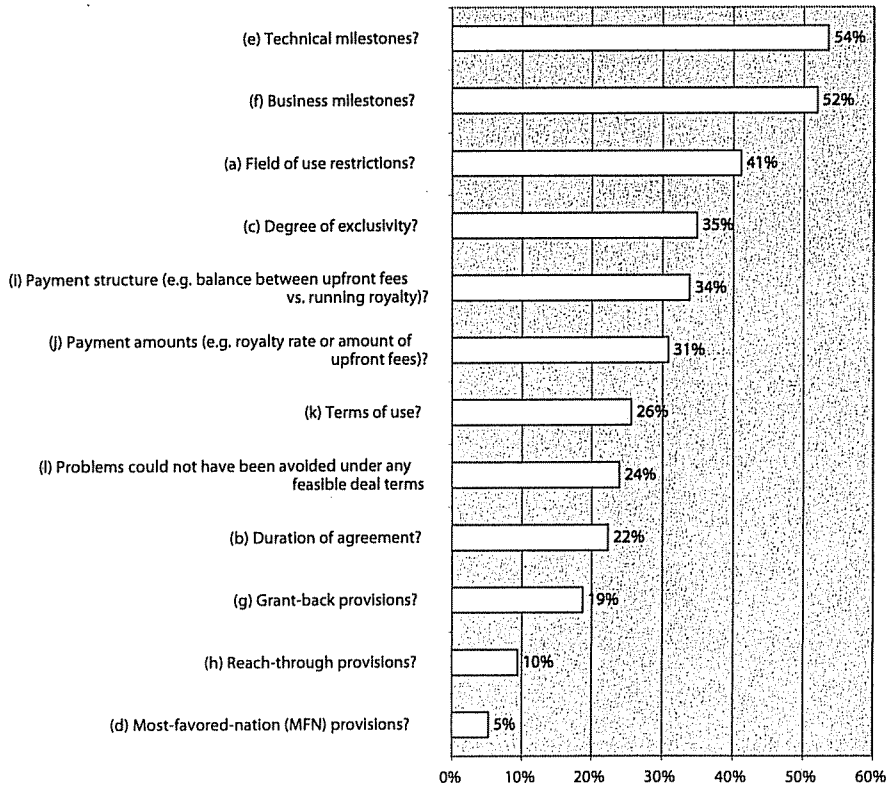
Figure 2

Q11: What fraction of the following types of deals are likely to 'go bad' in the sense of requiring substantial renegotiation, ending up in arbitration/litigation, or being effectively abandoned by one or more the parties involved?

	0%	1-5%	5-25%	25-50%	50-75%	75-99%	100%	> 50%
(a) Agreements with small enterprises (<500 employees)	3%	17%	34%	20%	9%	2%	.	11%
(b) Agreements with large enterprises (>500 employees)	2%	27%	31%	16%	8%	2%	.	10%
(c) Agreements with start-ups (privately funded firms that do not yet have substantial revenues)	3%	9%	24%	20%	14%	8%	0.2%	22%
(e) Agreements with entities located outside North America	3%	18%	30%	13%	4%	1%	0.2%	6%
(g) Agreements involving more than two parties	3%	14%	20%	16%	11%	2%	1%	14%
(d) Agreements with non-profits such as universities or govt labs	7%	26%	23%	9%	6%	1%	0.2%	7%
(f) Cross license agreements	6%	20%	14%	7%	2%	1%	.	3%

Figure 3

Q15: When deals have gone bad, with the benefit of hindsight, could this have been avoided by structuring any of the following contract characteristics differently?



lesser extent MFN (6 points). DICE less frequently cited technical milestones (18 points), degree of exclusivity (13 points), field of use restrictions (10 points), and terms of use (9 points). These differences are likely explained by the DICE industry doing more non-exclusive licensing.

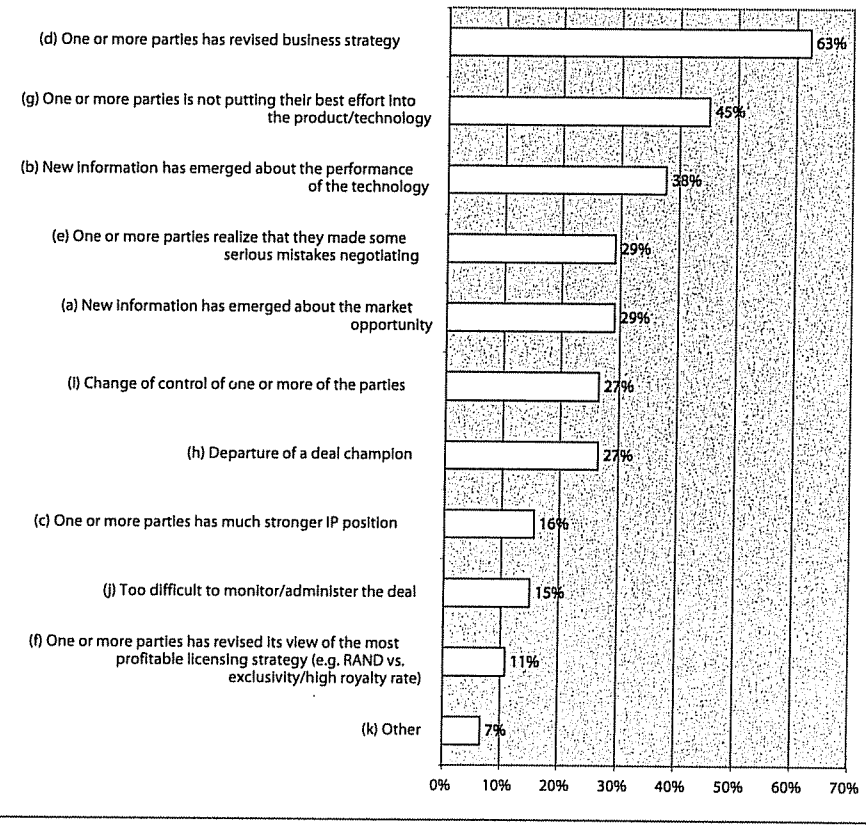
Finally, the differences between Industrial and All, and between Univ/Gov and All were quite similar. Both put more emphasis on business milestones (11 points more for Industrial compared to All, and 16 points for Univ/Gov compared to all), on technical milestones (6 points difference, and 7 points difference, respectively), could not have been avoided (13 and 7, respectively), and payment structure (6 and 7, respectively). Industrial put 14 points less emphasis on payment amounts compared to All.

Next we asked the three most common reasons why deals done end up in serious disputes.[11] The results are shown in Fig. 4 below.

Note that unlike the previous questions, we permitted only three responses. The clear 'winner' (perhaps 'loser' would be a better term) is one or more parties has revised its business strategy with nearly two-thirds of the responses (63 percent). Note that this is closely related to several other responses: one or more of the parties is not putting their best effort (45 percent), change of control (27 percent), and departure of a deal champion (27 percent). It is likely that any one of these latter three responses is at least partially the cause of the revised business strategy. New information about the technology (38 percent) and market (29 percent) were also highly cited, but these were cited much less frequently than the revised business strategy. Finally note that serious mistakes in negotiating received more than one-fourth of the responses (29 percent), as a reason why deals done are in serious disputes; there were only three factors cited more frequently than this (business strategy, not putting in best efforts, and new technology information).

Figure 4

Q16: In your experience, what are the three most common reasons why deals become the subject of serious disputes.



The relative importance of negotiation mistakes is further noted by the results that 61 percent of the responses indicated that a licensing deal in your organization has become the subject of a serious dispute in the last year. The (relative) good news here is that

11. A serious dispute implies that a conscious decision has been reached by your organization that some form of renegotiation or arbitration/litigation is necessary.

the resolution is primarily by means of renegotiation: the most frequent responses (23 percent) indicated that 50-75 percent and 23 percent that 75-99 percent of such agreements were or will be resolved through renegotiation compared to the most frequent response of 5-25 percent of the agreements being terminated, or 1-5 percent of the deals will be resolved by litigation, and least of all arbitration (a combined 56 percent indicated that arbitration was used on less than 5 percent of all such agreements).

Dealmaking Best Practices

The survey asked fill-in-the-blank questions for the three best and three worst practices before, during, and after the deal. Summarized here are the data obtained from the professional service providers (all the previous data in this article were from the technology owners/creators). It is believed that because such service providers are not themselves the owners of the IP being dealt, and may see many different kinds of deals because of the nature of their practice, could provide a better perspective on such best (or worst) practices.

1. Before the Deal. The predominant best practice observation can be summarized by do your homework. This was expressed by more than 100 phrases containing words like know, understand, research, due diligence, study, analyze, prepare, plan, identify, evaluate, develop, estimate, assess, define For example, 18 responses began with the word identify(ing), 26 with know(ing)/knowledge, 8 with prepare/preparation, 13 with research(ing), 34 with understand(ing). As might be expected, there was a variety of things that were identified as the object of to know/understand/etc. Although the market was the most frequent word mentioned in this context probably followed by valuation, the span of things do homework on was deep and wide: key decision makers, goals, walkaways, other party's needs, patent position, competitors, IP strengths, BATNA.

It should also be noted that there was frequent response of people issues: build a project team, "courtesy wins in the long, run, no matter how painful the interaction," face to face meetings, being flexible/creative, and the like.

Worst practices were in many ways the best practices turned upside down: no preparation and poor people skills. Common words that captured such lack of preparedness were assume(ing), cursory, ignorant(ance), unaware, sloppy, unclear. One response captured such unpreparedness as follows: "'make me an offer' (no preparation)." On people matters, words used were arrogance, bad faith, close minded, bluff, shoot from the hip.

2. During Negotiation (Dealmaking). Many of the responses captured the best practice idea of being wholly sentient, most often expressed by listening, but also including other forms of observation (body language). People issues were even more important here: be courteous, ethical, flexible, polite, respectful, patient, positive, discuss/don't argue, honesty, humor, open(ness). These practices relate to another common observation regarding the practice of flexibility, which may again point to he greater complexity of IP dealmaking than other kinds of business negotiations.

The worst practices included many references to assume (reflecting here perhaps more a lack of listening rather than as above a lack of preparation). Other worst practices included dirty little tricks, bait and switch, arguing, bullying, changing people on the negotiating teams, changing terms, delay, ego, getting insulted ("it isn't personal, stay positive"), nickel and diming.

3. After the Deal. The most common best practice centered on communicating(ion). Among the terms and phrases used in this regard were various forms of follow-up, maintain(ing), monitor(ing), manage(ing), staying connected.

For the worst practices, characteristic words used were complacency, assume(ing), failure to (follow-up, communicate, etc). On the people side, there was two particularly poignant pieces of advice of behaviors to avoid: continued antagonism, and it's opposite, crying over spilled milk—human feelings all too easily experienced from dealmaking that had limited degrees of freedom for one of the parties.

Anti-IP Environment?

IP and licensing issues are being regularly reported on by various business and even popular news sources. RIAA lawsuits regarding music downloads, such lawsuits now numbering more than 20,000, grandmothers included, is a regular news item for which popular opinion seems to be on the side of grandmothers rather than RIAA. The "open source movement" has, at times, an anti-IP tenor. The prices of pharmaceuticals, especially during election years, regularly leads to discourse about why U.S. citizens cannot acquire drugs at prices paid by citizens of countries who do not have or do not enforce drug patents. So, we again asked a question relating to perceptions of an anti-IP environment, specifically: Some argue that IP-protected product should be made available at prices below those for which they

are actually licensed or sold. Others argue that there should be no IP protection at all. Still others believe that some form of compulsory licensing should be available under certain conditions. To what extent do you see these forces as being a cause for concern with respect to you business?

The results from this question are shown in Fig. 5 below from the responses for the IP owners/creators.

The top row of data were for all respondents with respect to their current perceptions; the top row of the bottom box is for their current perceptions of how they would have answered the question three years ago. 61 percent of the responses indicated "strong" or "moderate cause for concern" today, whereas their present belief of their prior (three-ago) perceptions would have been 61 percent having "no" or "slight cause for concern." Further, it is interesting to note that the responses almost exactly move up a concern category going from three years ago to today, namely: 25 percent of the responses believed at the time of this survey that their perception three years ago would have been "moderate concern," but today its 26 percent as "strong" concern; three years ago 36 percent believed (they would have believed) it was "slight," today it's 35 percent "moderate;" three years ago it was 25 percent "no cause for concern," today it 23 percent "slight." Below the "All" data rows are shown the responses for the segments. Although one can note some variation, Health for instance exhibits a higher level of concern, but every segment showed 50 percent or greater response for moderate + strong concern at the time of the survey, ranging from a low of 50 percent to a high of 69 percent.

These data are quite similar to the results reported last year where 60 percent expressed "moderate" plus "strong" concern, whereas there then assessment of three years prior was 59 percent combined "no" and "slight cause for concern." So, year-over-year there does not appear to be a change in perceptions, but a confirmation of the same level of concern.

Those of us in LES have a deep appreciation for the importance of IP and the ability to license rights to IP in fair, and creative ways, and the importance of such outcomes in fostering, and rewarding, innovation. The cultural environment in which this

Figure 5

"Barbarians at the gate?"		No cause for concern	Mild cause for concern	Moderate cause for concern	Strong cause for concern	Strong + Moderate cause for concern
My assessment today	All	16%	23%	35%	26%	61%
	Large	16%	23%	38%	23%	61%
	Small	17%	22%	31%	29%	61%
	DICE	23%	27%	37%	13%	50%
	HEALTH	11%	20%	34%	35%	69%
	INDUSTRIAL	30%	20%	34%	16%	50%
	UNIV/GOV	17%	26%	37%	20%	57%
My assessment 3 years ago	All	25%	36%	25%	13%	39%
	Large	25%	37%	26%	12%	38%
	Small	25%	36%	25%	15%	40%
	DICE	33%	38%	21%	8%	30%
	HEALTH	19%	37%	28%	17%	45%
	INDUSTRIAL	40%	28%	21%	11%	32%
	UNIV/GOV	27%	39%	24%	11%	34%

takes place, however, is not entirely sympathetic to such perspective.

Future Plans

The Licensing Foundation is planning to conduct its 5th Annual Survey early in 2007. The responses of LES members to these surveys has been gratifying and, we hope, provided useful insights to us all. We believe the utility of such data and analysis will increase as the survey continues to improve and develop a further history. That will only happen with the continued thoughtful responses of the LES (USA & Canada) members.

Acknowledgements

The Licensing Foundation wants especially to recognize that its funding has been primarily the result of contributions made by LES (USA & Canada). We have also received limited financial contributions, and massive time and wisdom contributions from many different LES members. This is all gratefully acknowledged. The Licensing Foundation has a public purpose, namely: Advancing the understanding of licensing in fostering innovation for a knowledge economy. One of our programs for accomplishing this is such surveying and publishing activities.

We also wish to acknowledge the work of Professors Iain Cockburn and Ajay Agrawal who assisted the Foundation in developing the questionnaire and collecting the data, as they have done for all the surveys taken to date.

Most of all we want to acknowledge the effort made by each of you who responded to our request for participation in taking the survey, and hope that our degree of appreciation will expand in 2008 as even more of you join your colleagues in adding your data and wisdom to this effort. ☒

U.S./Canadian Licensing In 2005–Survey Results

*By Richard Razgaitis**

Initial Results of Survey Conducted in February/March 2006 by the Licensing Foundation of LES (USA & Canada) on behalf of the Licensing Foundation.[2]

Abstract And Summary Of Findings

The data reported here are from the third annual survey of "the licensing industry" of the United States and Canada taken by the Licensing Foundation in cooperation with LES (USA & Canada). The ambitious reference to "the licensing industry" is however confined to the perspective provided by the membership of LES (USA & Canada) who responded to faxed and emailed requests for participation in this project. The data obtained primarily in March 2006 were for the period 2005.[3]

Two related but distinct survey questionnaires were used, one for IP asset owners (buyers or sellers, licensors or licensees), and one for service providers such as outside law firms and consultants. The data obtained from IP asset owners is presented here in six segments: large and small companies,[4] based on the number of company's employees—greater or less than 500, and by four industry groups: Health, DICE (Digital Information Computers Electronics), Industrial, and University/Government.

For the second year we included two questions relating to perceived societal/environmental opposition to certain underlying values of licensing such as the right of an IP owner to protect and license, or not to license, its IP. As for the 2004 data, these 2005 data report a substantial concern, and one that appears to be growing by comparison of year-over-year responses.

The Foundation will continue its annual state of the licensing industry in 2007 (for the year 2006), and will again request members of LES (USA & Canada) to participate.

Introduction

Understanding what is here termed "the licensing industry" is both a challenging and important assignment. Its importance derives from the vastly increasing importance of IP itself, roughly synonymous with the accounting category of intangible assets, as an asset category in a company's balance sheet. It is widely recognized that in just a "patent lifetime" (e.g., 20 years), such balance sheets have been transformed from predominately tangible assets such as plants (factories), property (land), and equipment (so-called PPE), and other tangible assets such as cash and receivables, to being dominated by intangible assets. Estimates of the shift in relative importance of intangible assets using, for instance the S&P 500® index, suggests that tangible assets were about 70 percent of total assets just 20 years ago but today it is intangible assets that are about 70 percent of total assets. So, in just one patent lifetime, tangible and intangible assets have switched positions in terms of relative importance.[5]

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1. The Licensing Foundation is a wholly-owned 501c3 subsidiary of LES (USA & Canada). Additional information on the Foundation is available at: *www.licensingfoundation.org.*

2. The Licensing Foundation during 2006 was managed by its Board comprised of E.B. (Ted) Cross, Ada Nielsen, Patrick O'Reilley, Richard Razgaitis, James Sobieraj, and Art Rose, and assisted by Ken Schoppmann of the LES (USA & Canada) office.

3. There is some potential confusion as to survey periods and publications for these three Foundation surveys. The first survey was taken in early 2004, published in *les Nouvelles* December 2004 (p. 139ff) for data (responses) corresponding to the year 2003. Likewise the second and now the third survey were taken in early 2005 and 2006 and published in the December 2005 (p. 145ff) and now the 2006 issue of *les Nouvelles* corresponding to the data periods 2004 and 2005, respectively.

4. The term "company" is used as a generic reference to an IP asset owning entity, which was primarily represented by corporate entities but includes representation from universities, research institutes, and government laboratories.

5. The reference to "switch positions" does not mean to suggest that Company A in 1985 had (roughly) 70 percent of its assets in tangible form and in 2005 its assets were instead 70 percent intangible. Although such a transformation is perhaps possible, the primary cause of such dramatic shift in relative percentages is the shift from 1985 to 2005 in the kinds of companies present today in our economy, and the various indices of our economy, and their respective valuations. Companies such as Microsoft, Cisco, eBay, Amazon, and all manner of pharmaceutical and biotech companies, and even companies such as WalMart exhibit in 2005 high market valuations and significant relative percentages of intangible assets.

Although the term "knowledge economy" is often used in broader contexts than balance sheet considerations, there is clearly a connection between the term and intangible assets/IP such that being a knowledge economy is manifest at least in part by existence of substantial IP assets.

An obvious value of intangible assets and IP is how it provides competitive advantage to its owner, as reflected in revenues, earnings, and other performance metrics such as revenue per employee or return on investment. Another value of such IP assets is as a source of trade through licensing (including assignment, or sale, of such rights), a subject dear to the readers of this journal and the membership of LES. The challenge faced by anyone seeking to understand the scope and importance of such trade value of IP assets is the difficulty of finding data on this "industry of licensing."[6]

To this end, the Licensing Foundation has undertaken these annual surveys as an initial, small step to provide some further understanding of the licensing industry. Specifically, the objective of the Foundation's survey is as follows: provide an annual, synoptic perspective on key statistics, events, and trends in "the business of licensing" that can assist licensing professionals in understanding and advancing the business environment in which they operate and to which they contribute, and can be used by the public, academic researchers, and government policy analysts to grasp the issues and impacts of licensing business practices.

The data obtained by the Foundation's survey were derived by individual responses by some 1,000 LES (USA & Canada) members using an online survey instrument. Most of the data were collected in March 2006 for the calendar year 2005. Since such LES membership predominately reflects technology licensing of patents, know how, trade secrets, and copyrighted software–and relatively under-represents licensing of trademarks and copyrighted content, for example–the licensing industry so characterized by these data is primarily about technology licensing.

Survey Administration[7]

The survey was administered in the form of an online questionnaire accessed via the Internet. Over 6300 members of the Licensing Executives Society (U.S.A. & Canada), Inc. were invited in March 2006 to participate in the survey via several rounds of email from the Licensing Foundation. The web survey format was chosen to limit costs, maximize accuracy, and to be minimally intrusive. This type of survey also allows for "dynamic" serving of questions in response to users' input, minimizing the extent to which respondents are presented with irrelevant or redundant questions. When used for "closed" list-based samples such as the LES membership mailing list, web surveys have been shown to perform as well or better than traditional hard-copy mail-back survey instruments.

Separate versions of the survey were administered to the approximately 3,600 members identified as technology creator/users and to the approximately 2,700 identified as being providers of professional services (legal, consulting etc.)[8] The survey web site received more than 1,200 "hits" with 588 respondents completing at least one question on the Technology Creator/User Survey and 344 on the Professional Services Survey. Respondents were guaranteed anonymity, and no records linking their identity to the database of survey questionnaire responses have been retained.

Representativeness of sample

The degree to which the results presented here can be considered statistically representative of all technology licensing activity in the U.S. and Canada is difficult to assess. It is important to note that the LES membership list is a "convenience" sample, not a randomized quota-based or stratified sample designed to be statistically representative of an underlying population. However "frame bias" i.e. unrepresentativeness of the LES membership list compared to the population of all licensing professionals is unlikely to be a significant problem, unless there are large numbers of people engaged in technology licensing who are not members of LES, and who differ systematically from those who are.

"Response bias," i.e. systematic differences be-

6. It should be acknowledged that the Association of University Technology Managers, AUTM, has for more than 10 years published extensive data on the patenting and licensing activities of an important segment of the licensing industry, namely universities and research institutes.

7. The discussion here was provided by Prof. Iain Cockburn of Boston University who, along with Prof. Ajay Agrawal of the Univ. of Toronto were retained by the Licensing Foundation to assist in the development of the survey instruments, and collecting and validating the data.

8. LES members self-report, job title, company, professional status, and industry affiliation. However there is scope for errors in identifying "Technology Creator/User" versus "Professional Services." Approximately 1% of entries in the database were reclassified based on the name of their organization (e.g. "IP Valuation Associates LLP" unlikely to be a technology creator/user.)

tween the members in the sample who choose to respond and those who do not, is not possible to assess fully. The distribution of respondents across industry sectors approximates the distribution in the entire mailing list, with some over-representation of the Health and University/Government sectors. However since we lack information about other characteristics of non-respondents, such as the size of their organization, it is not possible to evaluate potential bias arising from different response rates across, e.g., large versus small entities.

Response Rate

Technology Creator/User Survey

Of the more than 800 visits to the web site for this version of the survey, 588 respondents completed at least one question. After eliminating records for respondents who appear to have moved through the questionnaire without answering more than a handful of questions, the final sample contains 524 usable records.[9] Of these, 502 answered most, or all, of the questions.

Response rates to specific questions were generally high, generally greater than 80 percent. Note that because the survey questionnaire "branched" at various points to ensure that respondents were only presented with relevant questions, the denominator for calculating response rates is not always 502. For example, of the total of 502 "core sample" records analyzed, only a 188 were presented with questions about "enforcement licensing" after answering "Yes" to Q16 ("In the past 12 months, has your organization entered into any licensing agreements in order to settle or avoid litigation, as opposed to being motivated by a business opportunity?), and 277 were presented with questions about in-licensing after indicating that their organization was engaged in this activity.

Though 524 responses from a sample frame of 3,600 (the estimated number of IP asset owning companies) may seem low, it is in line with similar voluntary surveys that typically have a 10-30 percent response rate. Note that because LES membership is individual, not corporate, a single organization can appear multiple times in the mailing list. The LES members identified as belonging to the Technology Creator/User category come from less than 1,200 distinct organizations, with only a handful of organizations generating multiple responses. We therefore achieved coverage of about 45 percent of the total number of Technology Creator/User organizations represented in the LES membership.[10]

Professional Services Survey

Approximately 2,700 LES members fall in the Professional Services category. About 10 percent of these do not appear to be actively involved in licensing, for example because they are professional staff recruiters. As with the Technology Creator/User category, the number of distinct organizations represented in the database is much less than 2,700, but because a large fraction do not report any organizational affiliation, it is very difficult to distinguish between employees of a professional firm and "sole proprietor" providers of professional services. Our best estimate is that about 800 distinct substantive professional firms are represented in this mailing list, and at least 1,000 sole-proprietor (or equivalent) entities.

Of the 344 visits to the web site for this version of the survey, 297 respondents completed at least one question. After eliminating records for respondents who appear to have moved through the questionnaire without answering more than a handful of questions, the final sample contains 258 usable records.

Because of the difficulty in identifying organizational affiliation of LES members who fall into the Professional Services category, "coverage" of the total number of entities represented in the LES membership list is hard to assess, as is the representativeness of this sample compared to the population of professional services providers.

Demographics Of The Survey Respondants

The IP asset owners responded on behalf of (a) a corporate licensing office, (b) a business unit/division licensing office, or (c) a standalone subsidiary. The average across all segments was 66 percent corporate, 32 percent business unit, and 2 percent subsidiary. The DICE (Digital Information Computing Electronics) segment had the highest corporate and subsidiary percentage: 78 percent corporate, 17 percent division, and 6 percent subsidiary (which totals above 100 percent because of rounding). The Industrial segment exhibited the largest decentralization: 61, 36, and 4 percent, respectively. Standalone subsidiary percentages varied from a low of 0.4 percent (Health) to a high of 5.6 percent (DICE), with,

9. 524 respondents worked through the first two sections of the survey, but 20 then dropped out.

10. The figure is approximate since individual members do not always identify their organization to LES.

interestingly, a higher percentage for Small companies, 3.5 percent, than for Large, 1.3 percent (the distinction is based on 500 employees).

Respondents were asked about the extent of their personal involvement in licensing, choosing between 0-1 years, 1-3, 3-5, 5-10, 10-20, and 20+. Every experience level in every segment reported not less than 3.6 percent for each experience level. The percentage of respondents with less than one year's experience ranged from 4.5 percent (Health) to 9.5 percent (Industrial); at the other extreme, the range for 20+ years was 3.6 percent (Industrial) to 13 percent (DICE). The mean value for all segments was 9.5 years, ranging from a low of 7.5 years (Industrial) to 10.4 years (University/Government, hereafter Univ./Gov't).

When asked whether they were "the most senior individual in the licensing function" 45 percent answered "yes." There was relative little variation across industry segments, with a low of 40 percent for Univ./Gov't, and a low of 48 percent for Health. Perhaps not surprisingly, 40 percent of respondents in large companies identified themselves as the most senior licensing person, whereas 54 percent did so for small companies.

The diversity of the licensing 'fraternity' is perhaps made most evident by the responses to the question on "what is your primary background outside the licensing field?" For the sample as a whole, the breakdown was 57 percent science/engineering, 20 percent general management, 19 percent legal, and 4 percent all other. As might be expected Univ./Gov't had the highest science/engineering percentages (62 percent, compared to 19 percent for general management, 16 percent legal, and 4 percent other, respectively), but high science/engineering percentages were also evident for Industrial (60, 18, 21, 1 percent, respectively) and Health (56, 20, 18, 6 percent, respectively; and Health had the largest percentage of "other," perhaps reflecting medical backgrounds). DICE had the largest legal representation, 26 percent, and general management, 30 percent, so its distribution was 41 percent science/engineering, 30 percent management, 26 percent legal, and 4 percent other. There was very little difference between Large and Small companies.

These broad distributions in industry, company size, organizational position, licensing experience level, and education backgrounds helps explain the range of interesting people one meets at LES events! One of the great values of the 'LES Campfire' is the experience from meeting, and learning from, people in the many varied educational and career journeys we have taken.

The raison(s) d'être of IP

One of the recurring questions of licensing is why does it occur? Does licensing represent a transactional 'stop loss' event, wherein a company seeks to get something for IP/technology it has developed but is not using or using fully?[11] One question asked: "How important are the following types of IP in creating competitive advantage for your organization?" with choices of patents, trademarks, copyrights, know-how, and trade secrets (where it was left to the respondent to distinguish the latter two choices) and four levels of response as to relative importance: not important (scored 1), mildly (2), moderately (3), or extremely (4). The mean for all segments was the highest, 3.7.[12] The next highest valued IP asset was know how at 3.4, followed by trade secrets at 2.6, trademarks 2.5, and copyrights 2.3. The relatively lower percentages for trademarks and copyrights is likely a reflection of the LES membership being less representative of industries or business processes where such forms of IP are valued and traded.[13] It is interesting that the respondents made a marked distinction between "know how" and "trade secrets," and ranked "know how" as more important (3.24 versus 2.6).

The distribution of scores for patents exhibited a very narrow range from a low of 3.6 (DICE, Industrial, and Univ./Gov't) to a high of 3.8 (Health), with no difference between Large and Small (3.7). Only a tiny percentage scored patents as "not important:" varying from a maximum of 2.1 percent (Univ./Gov't) down to 0.9 percent (Health). The distribution of scores for "know how", unlike "patents," varied over a large relative range: Industrial had the highest score, 3.7, followed by DICE (3.4),

11. Of course licensing occurs in other contexts, such as with inventing organizations such as universities, research institutes, and government labs, that by their innate purpose do not normally enter commerce, and by companies who find themselves in need of IP belonging to others to complement their R&D or provide freedom to practice.

12. Resulting from a distribution of 80% "extremely important," 13% moderately, 4% mildly, and 1% for not important.

13. Further, copyrights are viewed by LES respondents are likely further underweighted in the area of content copyrights (books, music, graphics, and such) as well as in the software arena. Furthermore, respondents were expressly directed to NOT include right-to-use software licenses in their responses, such as shrink wrap and other software product licenses.

Health (3.3), and Univ./Gov't (2.4). There was little difference between Large and Small: 3.1 versus 3.3, which perhaps surprisingly suggests that small companies place a higher value on know how.[14]

For "trade secrets" the high score was again Industrial (3.5), followed in the same order by DICE (3.2), Health (3.0), and Univ./Gov't (1.1); Small companies scored trade secrets more important than Large, 2.7 versus 2.4, as they did for "know how." It is interesting that trade secrets scored lower than know how in all six segments. Does this reflect a more narrow interpretation of what constitutes a trade secret, such as common reference to the legend of the Coca Cola formula locked in a vault for now more than 100 years? Or did survey respondents understand know how more broadly, for example as all the proprietary information/technology regardless of the extent of codification? Or only as- related business assets such as customer lists, actual and prospective, suppliers/vendors, channels of distribution, and business plans and processes? Or, all of the above? Whatever constitutes such know how in the minds of the respondents only an average of 5 percent said that know-how was "not important" and less than 14 percent said it was "mildly important;" so more than 80 percent ranked it as "moderately" or "extremely" important. The corresponding percentages for "patents" was: 1.2 percent (not important), 3.9 percent (mildly), and 95 percent (moderately or extremely).

The above responses were primarily in the context of competitive advantage derived from IP for an IP owner's business. A distinguishing question asked for the motivations that lead the respondent's company to develop such IP assets. Respondents were asked to rate nine options each at same four levels of importance (not important to extremely important). The responses for the overall results are shown in Exhibit 1. The two highest scoring reasons (3.0) were (c) generate licensing revenue and (e) use for strategic partnering and JV's. The higher scores for these two areas likely reflects the perspective of LES 'dealmakers' as opposed to their company's CEO/CFO, who perhaps would have put the highest scores on (b), (d), and (f).[15] The least important reasons were (i) improve bargaining strength in other business negotiations (2.3) and (f) making life difficult for competitors (2.1). As might be expected Small companies put a higher importance on using IP as a basis for strategic partnering and JV's than Large companies: 3.2 versus 2.9; yet, both segments put a high importance on this reason. Likewise, Small companies put a higher emphasis on signaling capabilities (g), 3.0 (Small) versus 2.5 (Large), improving bargaining strength in other business negotiations, (i) 2.6 (Small) versus 2.2 (Large), and (h) improving bargaining strength, 2.9 (Small) versus 2.6 (Large) Such data contradicts the idea that the use of IP is more important to large companies. Essentially all small companies aspire to be large, and these data appear to support the idea that IP is viewed to provide a greater advantage to smaller companies in such pursuit.

Litigation arising from IP disputes, principally patents but also know how and trade secrets, is often a newsworthy, one might say infamous, "licensing" outcome of IP ownership. The survey asked four related questions to this issue of IP used for litigation. The first such question asked whether in the previous year the respondent's organization entered into any licenses in order to settle or avoid litigation. The overall majority answer was "no," 62 percent, meaning not *any*. However, the responses by segment varied widely: 73 percent of Small said "no" compared to 55 percent of Large, 36 percent; DICE had the lowest response of "no," 76 percent, and Univ./Gov't had the highest, 76 percent. Clearly litigation was a much more common event in the DICE industry than Health (64 percent "no") or Industrial (51 percent "no"), which appears to correlate with the earlier observation that the DICE respondents had the highest percentage of legal backgrounds.[16]

A related litigation question asked for what percentage of licensing activity in the preceding year resulted from the respondent's company enforcing its IP rights against another party. As above, the mean response for all companies was low, namely 17 percent. However, here, Small companies re-

14. This may reflect lesser resources in developing an extensive patent portfolio, or a more nascent patent estate, or even, perhaps, a greater fear of the affordability of enforcing patents against perceived infringers (and, so, maintaining more of its IP in the form of know how).

15. One of the long-term objectives of the Foundation's surveying is to acquire responses from other perspectives, such as CEOs and CFOs.

16. So this raises the 'chicken and egg' question: is the higher frequency of litigation innate and thereby leads to the need for more licensing officers with a legal background, or is the higher percentage of such officers from a legal background causing a higher frequency of litigation? This is left to the reader as an unsolved mystery and point of contemplation.

Exhibit 1 (Q14): How important are each of these motivations for your organization to develop IP assets?

	N/A	Not important	Mildly important	Moderately important	Extremely important	Score (0-4) Mean	Std
(a) Manage litigation risk i.e. deter or avoid litigation or improve settlement outcomes	7.10%	15.90%	17.10%	23.60%	36.30%	2.7	1.3
(b) Realize higher margins on proprietary products	12%	12.30%	13.30%	17.70%	43.80%	2.7	1.5
(c) Generate licensing revenue	1.80%	7.70%	23.00%	27.40%	40.10%	3.0	1
(d) Prevent or slow down imitation of technology or products	9.70%	18.70%	16.70%	23.20%	31.70%	2.5	1.4
(e) Use as basis for strategic partnering and JVs	4.80%	4.20%	17.90%	33.70%	39.50%	3.0	1.1
(f) Make life difficult for competitors e.g. by blocking technology development, raising their R&D costs	16%	24.40%	18.70%	19.40%	21.60%	2.1	1.4
(g) Signal capabilities to investors, partners, customers, prospective employees etc.	4.60%	10.90%	22.60%	32.90%	29.00%	2.7	1.1
(h) Improve bargaining strength in negotiations or disputes over IP	5.80%	9.30%	20.80%	33.10%	31.00%	2.7	1.2
(i) Improve bargaining strength in other business negotiations with customers or suppliers	11%	14.80%	23.20%	30.10%	20.80%	2.3	1.3

ported a higher percentage than Large, 19 percent versus 16 percent, perhaps explained by a relatively smaller number of total licenses. As above, DICE leads all other segments, 38 percent, followed by Industrial (18 percent), Health (11 percent), and Univ./Gov't (8 percent). Another question asked the same question from the defensive side, namely what percentage of licensing was driven by settling or avoiding litigation threatened or initiated by another party. Here the average for all respondents was even lower, 10 percent, and Large companies gave higher values than Small (11 percent versus 7 percent), and DICE, again, had the highest segment score (15 percent), but closely followed by Industrial (11 percent), Health (9 percent), and Univ./Gov't (4 percent).

The final question in this litigation series asked about who the threatening or suing party was that resulted in the just above quoted responses. The most common threat (or suit) was from a direct competitor (33 percent of time, varying from a high of 50 percent for Industrial to a low of 22 percent for DICE, (not considering for this comparison the 4 percent response for Univ./Gov't). The next most common proactive adversary was described as "an entity apparently created to exploit a specific piece of IP" (so worded in a conscious attempt to avoid the perhaps pejorative, and limiting, term "troll"): 18 percent was the overall average, lead by DICE (32 percent), then Univ./Gov't (25 percent), Health (14 percent), and Industrial (6 percent), and Large exhibited almost double the frequency of Small (21 percent versus 12 percent).[17] The next most common proactive adversary was a party in a different industry: 17 percent was the overall average, again lead by DICE (25 percent), then Univ./Gov't (29 percent), Health (12 percent), and Industrial (10 percent), but here Small exceeded Large by a small margin (18.1 percent versus 16.8 percent). The least

17. Such data may support the belief that a greater legal background is pertinent to DICE because of the adverse litigious environment.

likely proactive adversary was an upstream entity creating technology/tools used by the respondent's organization: the overall average was 12 percent, but this time lead by Univ./Gov't (19 percent), followed by Health (13 percent), Industrial (7 percent), and DICE, here, being the lowest (6 percent); there was little difference between Large and Small (12 percent versus 11 percent).

The respondents were also asked about its perception of the merits of the adversary's argument, specifically: did it appear that such adversary was "unlikely to prevail if litigation was pursued to the bitter end (shere "unlikely" was defined as less than a 30 percent chance of success)." Here the responses ranged from 28 percent (Health) to 52 percent (Univ./Gov't), with DICE and Industrial in between at 44 percent and 43 percent, respectively. The overall average was 39 percent, and Large exceeding Small (40 percent versus 36 percent). Clearly the respondents believed that a significant percentage of agreements made to settle or avoid litigation were not the result of a highly meritorious case by the proactive adversary.[18]

Know How Licensing

As discussed above, know how was a highly rated form of IP. When asked about licensing such know how, namely in the past year "has your organization entered into any agreements that licensed know how," the response was highly affirmative, ranging from a low of 58 percent (Health) to a high of 82 percent (Industrial), with an overall average of 64 percent. Here there was a notable difference between Large and Small: 69 percent versus 57 percent.

Patents are typically included in such know-how licenses. When asked "were licenses for know-how combined with formal IP such as patents" (in the past year) the average response was 68 percent of the time, with responses of all segments in a narrow range from a low of 53 percent (DICE) to a high of 73 percent (Health). When asked how frequent were licenses *only* for know how (i.e., no "formal IP"), the data were consistent with the above observations: only 10 percent of the time was the overall average answer, ranging from a low of 6 percent (Univ./Gov't) to a high of 18 percent (DICE), with a small difference between Large (9 percent) and Small (11 percent).

Impediments To Licensing

The above data were for deals actually done. As all licensing professionals know, there are not only good deals and bad deals and 'in between deals,' there are also "no deals." Between a deal aspiration and any kind of an outcome, including the outcome "no deal," there are challenges of various kinds to be overcome. The survey asked a series of questions about the nature of deal impediments.

The first such question sought to identify if the impediments were more numerous, or more onerous, for a licensing transaction than compared to one for an tangible asset such as leasing real estate or contracting for the use of a specialized production facility. To concretize this question, respondents were asked to consider a $10 million value transaction. Did respondents believe that there are fewer potential buyers/sellers for IP than for a tangible asset, choosing from don't know, strongly disagree, disagree, agree, and strongly agree? The overall answer was a highly affirmative "yes," with 84 percent[19] responding "strongly agree" or "agree" Interestingly, all the segments provided a "yes" answer with DICE respondents the most affirmative at 90 percent (strongly agree plus agree) and Health the least at 77 percent, with Large and Small very similar, 85 percent versus 83 percent.

The next question in this series that received the most "yes" votes (as throughout this discussion, "yes" means the relative percentage of "agree" plus "strongly agree") was the following: is due diligence *much more* difficult/costly for the IP deal? The overall answer was 79 percent "yes," led again by DICE at 88 percent with Industrial the lowest at 73 percent; here Small had a higher percentage than Large: 81 percent versus 78 percent.

Did such IP deals require more attention from top management? The answer was again an affirmative "yes," but less strongly so than for the above questions: the overall "yes" was 72 percent, now lead by Health at 78 percent and trailed by Univ./Gov't at 64 percent; here Small was substantially more affirmative than Large, 78 percent versus 69 percent, likely because such a transaction would be more material for a smaller company. Are IP deals more difficult to bring to closure? "Yes" again: 76 per-

18. Another deep question for the reader to ponder: is this just human nature expressing the belief that it's not me that's at fault? Jean Renoir famously said, "The real hell of life is that everyone has his reasons." And, from one of the oldest extant texts, Book of Proverbs from the Bible, ca. 900 BC: "The first to present his case seems right, till another comes forward and questions him." (Prov. 18:17, New International Version).

19. This calculation was done by *not* including answers of "don't know."

cent, with DICE being the most affirmative at 83 percent. Addressing the closure difficulty question another way, the survey asked is an IP deal more likely to end up not being licensing or sold to *anyone*? Answer: 66 percent "yes," so the 'no deal with anyone' outcome is notably more likely with IP as opposed to tangible assets, with Univ./Gov't experiencing this most strongly at 80 percent, and Health least strongly at 58 percent. Is the IP deal more likely to be part of other, parallel negotiations? "Yes" at 64 percent, lead by Health at 70 percent, and Small (69 percent) more affirmative than Large (61 percent).

So for those feeling a little beaten down in terms of IP deal flow statistics, we can all take some collegial comfort from what is a widely common experience in all segments for every one of these impediments questions.

One different type of impediment is an organization's unwillingness to license (or sell) certain 'off limits' IP. The survey asked several questions on the nature of IP it was unwilling to license to others: thinking about your organizations entire inventory of IP, approximately what percentage would NEVER be licensed voluntarily? The overall average answer was 31 percent, ranging from a high of 39 percent (Industrial) closely followed by Health (37 percent) to a low of 19 percent (Univ./Gov't); Large exceeded Small by a large margin: 35 percent versus 27 percent.

When asked why such IP was not to be licensed, the most prevalent answer was because it was "core technology" (42 percent overall, but 63 percent for Industrial, and 45 percent for Large versus 37 percent for Small). The next most prevalent reason was that it was "strategically vital" to retain exclusive access: overall 32 percent, led now by DICE at 49 percent followed by Industrial at 46 percent. The least important reason was perceived minimal value: is it too costly to market outside the organization relative to anticipated returns? The overall response was 24 percent reporting very consistent answers ranging between 21 percent and 27 percent.

Related to willingness to license is a belief that a licensing campaign for a particular IP package is likely to succeed in a worthwhile deal. When asked what percentage of all IP that is available, in the sense of the asset owner's willingness to sell, is *unlikely ever* to be transacted: the overall average was 37 percent, led by Univ./Gov't at 54 percent with Health the lowest at 26 percent, and Large exceeding Small by 41 percent versus 32 percent. When asked why was such IP unlikely to be transacted, the most common, and sad, answer was in response to the choice "has no discernable demand from end-users:" 42 percent overall, led by Univ./Gov't (54 percent), and Large (47 percent) exceeding Small (35 percent). The next most affirmed choice was "only useful in conjunction with IP that are exclusive to your organization:" 26 percent overall, lead by DICE at 46 percent, with Small (30 percent) exceeding Large (24 percent). The least affirmed explanation, of the three choices provided, was "not effectively protectable" as IP: 19 percent overall, lead by 25 percent for DICE, with Small (21 percent) exceeding Large (18 percent).

Deal Failure

As if the difficulties of licensing IP wasn't challenging enough, there is the situation where IP is available for licensing, is marketed, leading to direct negotiations, and yet no deal was closed. When asked how often potential licensees/licensors were identified for which no substantive negotiations were started, the overall answer was 33 percent,[20] lead by Industrial (40 percent). The survey then asked for the percentage of deal success once substantive negotiations had begun: 53 percent overall, lead by Univ./Gov't (65 percent) and trailed by DICE (42 percent), with Large (56 percent) exceeding Small (49 percent).

When deal failure occurs, after substantial negotiations, the leading cause was financial terms: overall respondents identified this for 31 percent of cases, led by DICE (42 percent) with Univ./Gov't (21 percent) reporting the lowest percentage; Small (31.8 percent) was slightly greater than Large (30.2 percent). However, inability to reach agreement on acceptable non-financial terms was also important: responsible for 25 percent of deal failures overall, with all segments reporting over a narrow range (22 to 29 percent). The other nine deal failure explanations scored much lower: better alternative emerged for one or more parties (14 percent overall), due diligence revealed problems with enforceability/validity of IP (12 percent overall), inability to agree on appropriate scope of IP to be included (9 percent overall), ego/hubris (8 percent), lack of trust/bad faith (8 percent), poor negotiating skills (7 percent), too many parties at the table (5 percent), clock ran out (5 percent), legal/regulatory problems (3 percent). So, although there can be many reasons for deal failure, and the ones surveyed were not mu-

20. Meaning that two-thirds of the time substantive negotiations did occur.

tually exclusive, the leading ones were the issues of money and primary deal terms, which supports the best practice of early use of term sheets in negotiations, summarizing deal terms sought.

Anticipating money agreement issues, the survey asked for a series of responses as why mutually acceptable financial terms could not be reached. The most important reasons, of the four choices given, was disagreement on basic facts or assumptions underlying valuation: 33 percent overall, with all segments in a narrow range (30-38 percent) except Industrial (25 percent). The next most prevalent explanation was irreconcilable differences on amounts to be paid within an agreed structure (e.g. royalty rate or amount of upfront fees): 27 percent, led by DICE (37 percent). Next was irreconcilable differences on the financial structure itself (balance between upfront payment and running royalties, paid-up versus contingent payments etc.): 23 percent overall, here led by Health (26 percent), but all segments were in a narrow range (19 to 26 percent). The lowest scoring answer was "no financial model:" 12.6 percent overall with all respondents between 11 and 13 percent.[21]

Closely related to the above series of responses were questions related to the preparation of a financial model and its effect upon dealmaking. Did having such a model improve the terms of the deal? Affirmatively "yes" (72 percent overall), led by DICE (85 percent). Did it increase the likelihood of a deal getting done? Still the overall answer was "yes" (58 percent) but notably less affirmative than the previous response. Did it shorten the dealmaking time? Less than half of all reporting (45 percent) said that it did, though DICE (62 percent) and Industrial (55 percent) had more than a majority say "yes." Did it reduce the total costs of reaching agreement? No segment reported more than 50 percent "yes" (though Industrial had the highest affirmative response at exactly 50 percent), with an overall average of 34 percent. So the survey suggests the primary benefit of having a financial model was that it improved the deal itself, a clearly important objective, but not primarily that it increased the likelihood of deal consummation, or reduced the negotiating time or costs.

21. These questions were also asked in the Foundation's first survey of this kind in 2004, and this year's responses closely track the earlier findings. The robustness of these results indicates that pricing licensing deals is a serious challenge for all participants.

Trend Data For Dealmaking

The survey also asked several deal trend questions. Has the level of interest in using licensing to realize value from technology increased? The overall response was dramatically emphatic with 65 percent saying it has increased versus 5 percent decrease (25 percent said it stayed the same); DICE and Health lead this observation, 72 percent increased versus 3 percent decreased (DICE), and 70 percent increased versus 4 percent decreased (Health); so the response for "increase" was more than 10 times (10x) that for "decrease." Has the percentage of IP you want to license but can't, with at least one potential licensee, gone up or down over the past three years? The overall response was favorable, 29 percent saying it increased versus 8 percent saying it decreased (and 63 percent saying it stayed the same). Here the "increase" vs. "decrease" response was about 3.5x. Has the percentage of deals closed once substantive negotiations were started increased? Overall 31 percent said closure increased compared to 5 percent decreased, lead by DICE (40 percent increase versus 8 percent decreased); here "increase" was greater than "decrease" by about 6x.

Such reported positive increases in dealmaking mirrored organizational changes over the past three years. Has your organization become more open to licensing as a way to exploit or gain access to IP? 69 percent overall said yes, with Industrial, DICE, and Health reporting 79 percent, 79 percent, and 75 percent respectively. Has your organization invested significantly in developing internal skills, capabilities, and business processes supporting/licensing? Overall 60 percent said yes, with all segments reporting in a surprisingly narrow range (60 to 61 percent). Has reorganizing or restructuring your licensing organization made you more effective? Less than 50 percent saw increased effectiveness (46 percent overall), with Health (40 percent) least affirmative, and only Industrial (55 percent) had a favorable view of the effect. Has your organization become more focused on generating easily licensable IP? Again the overall response was less than 50 percent (44 percent) responding affirmatively, only DICE (at 54 percent) was above 50 percent. Finally, has your organization placed more reliance on outside counsel or consultants in conducting licensing transactions? Here the answer was substantially weighted toward "no:" overall 25 percent responded with "yes," lead by DICE (38 percent).

Deal Structures And Remorse

Buyer's remorse is a well-known phenomenon

Exhibit 2 (Q42): Thinking about licensing agreements entered into in the last 12 months, with the benefit of hindsight, which if any of the following contract characteristics would you now restructure?

	Checked
(a) Field of use restrictions?	
All	43.10%
D/I/C/E	38.20%
Health	38.90%
Industrial	39.10%
Univ/Gov	53.20%
Large	48.60%
Small	34.90%
(b) Duration of agreement?	
All	22.40%
D/I/C/E	20.60%
Health	23.60%
Industrial	29.00%
Univ/Gov	17.10%
Large	23.00%
Small	21.50%
(c) Degree of exclusivity?	
All	33.20%
D/I/C/E	17.60%
Health	36.30%
Industrial	36.20%
Univ/Gov	31.50%
Large	34.20%
Small	31.50%
(d) Most-favored-nation (MFN) provisions?	
All	14.00%
D/I/C/E	29.40%
Health	14.00%
Industrial	13.00%
Univ/Gov	9.90%
Large	12.20%
Small	16.80%
(e) Technical milestones?	
All	40.20%
D/I/C/E	32.40%
Health	40.80%
Industrial	33.30%
Univ/Gov	45.90%
Large	42.30%
Small	36.90%
(f) Business milestones?	
All	43.70%
D/I/C/E	23.50%
Health	40.80%
Industrial	37.70%
Univ/Gov	57.70%
Large	49.10%
Small	35.60%

	Checked
(g) Grant-back provisions?	
All	22.90%
D/I/C/E	29.40%
Health	24.80%
Industrial	18.80%
Univ/Gov	20.70%
Large	23.00%
Small	22.80%
(h) Reach-through provisions?	
All	9.70%
D/I/C/E	8.80%
Health	12.10%
Industrial	7.20%
Univ/Gov	8.10%
Large	7.20%
Small	13.40%
(i) Payment structure (e.g. balance between upfront fees vs. running royalty)?	
All	32.10%
D/I/C/E	52.90%
Health	29.30%
Industrial	31.90%
Univ/Gov	29.70%
Large	32.90%
Small	30.90%
(j) Payment amounts (e.g. royalty rate or amount of upfront fees)?	
All	35.00%
D/I/C/E	41.20%
Health	40.10%
Industrial	36.20%
Univ/Gov	25.20%
Large	31.10%
Small	40.90%
(k) Terms of use?	
All	14.30%
D/I/C/E	29.40%
Health	12.10%
Industrial	17.40%
Univ/Gov	10.80%
Large	14.90%
Small	13.40%
(l) Any other terms?	
All	8.10%
D/I/C/E	2.90%
Health	7.00%
Industrial	11.60%
Univ/Gov	9.00%
Large	7.20%
Small	9.40%

Exhibit 3 (Q43): What are the three most commons reasons why you would restructure some of last year's deals if you could? (Check up to 3 of the following)

(a) New information has emerged about the market opportunity

	N	Checked
All	380	38.90%
D/I/C/E	36	55.60%
Health	166	40.40%
Industrial	68	29.40%
Univ/Gov	110	37.30%
Large	226	40.30%
Small	154	37.00%

(b) New information has emerged about the performance of the technology

	N	Checked
All	380	33.20%
D/I/C/E	36	13.90%
Health	166	38.60%
Industrial	68	26.50%
Univ/Gov	110	35.50%
Large	226	31.90%
Small	154	35.10%

(c) Stronger IP position today

	N	Checked
All	380	16.80%
D/I/C/E	36	22.20%
Health	166	19.30%
Industrial	68	16.20%
Univ/Gov	110	11.80%
Large	226	13.70%
Small	154	21.40%

(d) Revised business strategy

	N	Checked
All	380	40.50%
D/I/C/E	36	50.00%
Health	166	41.60%
Industrial	68	54.40%
Univ/Gov	110	27.30%
Large	226	42.00%
Small	154	38.30%

(e) Realize that you made mistakes negotiating

	N	Checked
All	380	28.40%
D/I/C/E	36	19.40%
Health	166	22.30%
Industrial	68	30.90%
Univ/Gov	110	39.10%
Large	226	28.30%
Small	154	28.60%

(f) Revised your view of the most profitable licensing strategy (e.g. RAND vs. exclusivity/ high royalty rate)

	N	Checked
All	380	20.00%
D/I/C/E	36	27.80%
Health	166	16.90%
Industrial	68	22.10%
Univ/Gov	110	20.90%
Large	226	21.20%
Small	154	18.20%

(g) The other side is not putting their promised effort into the product/ technology

	N	Checked
All	380	52.90%
D/I/C/E	36	36.10%
Health	166	45.80%
Industrial	68	48.50%
Univ/Gov	110	71.80%
Large	226	55.80%
Small	154	48.70%

(h) Other

	N	Checked
All	380	5.00%
D/I/C/E	36	5.60%
Health	166	5.40%
Industrial	68	4.40%
Univ/Gov	110	4.50%
Large	226	2.70%
Small	154	8.40%

in ordinary transactions. The survey asked respondents to identify elements of a deal, in hindsight, which they would now restructure. The data are shown in Exhibit 2 showing overall results and the data for each of the six segments. The leading areas of remorse were field of use restrictions (43 percent), milestones (business 44 percent, technical 40 percent), payments (amounts 35 percent, structure of payments 32 percent), and degree of exclusivity (33 percent). Least common concerns were reach-through provisions (10 percent), terms of use (14 percent), most-favored nation provisions (14 percent, overall, though DICE claimed 29 percent), duration (22 percent) and grant-backs (23 percent). Overall 8 percent indicated that there were other terms not identified in the survey that was a cause for retrospective concern.

Next the survey asked for the most common reasons why any element of remorse has occurred. The respondents were asked to identify the three most common reasons from a list of eight choices. The results are shown in Exhibit 3. The most common factor is a reflection of disappointment in the partner's post-deal level of effort namely, "the other side is not putting their promised effort into the product/technology:" this was cited 53 percent of the time by the overall respondents, led by Univ./Gov't (72 percent). Next in frequency of response was a revised business strategy. 40 percent overall cited this explanation, lead by DICE (50 percent). The next most important factor was the emergence of new information about the market opportunity, cited by 39 percent overall, but 56 percent by DICE. Next was new information about the performance of the technology, cited by 33 percent overall, lead now by Health (39 percent) with DICE (14 percent) being the lowest citer of this factor. Next was the recognition of mistakes made in negotiating, which was cited by 28 percent overall, led by Univ./Gov't (39 percent), with DICE (19 percent) scoring the lowest of the segments. Notably less frequently cited was a revised view of the most profitable licensing strategy (20 percent), a stronger IP position today (17 percent), and any other reason (5 percent). These data show some interesting reversals between the Large and Small segments. Large more frequently cited the effect of changes in market opportunity (difference of 3.3 points), revised business strategy (3.7 points), revised view of most profitable licensing strategy (3.0 points), and the other side is not putting their promised effort (7.1 points, the largest differential); whereas Small cited more frequently the effect of changes in the performance of the technology (3.2 points), changes in the strength of its IP position (7.7 points, the largest differential), and other (5.7 points). As to mistakes made, Large and Small cited this explanation with essentially identical frequency (0.3 points differential).

The IP Environment

The survey again sought to determine the level of concern with regard to forces and opinions that are generally adverse towards IP and licensing. Specifically, the respondents were asked: "Some argue that IP-protected products should be made available at prices below those for which there are actually licensed or sold. Others argue that there should be no IP protection at all. Still others believe that some form of compulsory licensing should be available under certain conditions. To what extend do you see these forces as being cause for concern with respect to your business?" The second part of this question asked for the respondent's assessment "today" (beginning of 2006) and for what he or she believed would have been their response three years previous. The results are shown in Exhibit 4 for each segment and the overall response. The right-most two columns shown in italics present the data in two ways: the sum of moderate and strong concern, and the differential from "today's" perception versus "today's" perception of three years prior.

Looking at the "today" data, every segment reported greater than 50 percent moderate or strong concern, with the overall result of 60 percent, led by Health (66 percent). In contrast, the data for one's perception three years earlier was below 50 percent for every segment, whereas the "today" data was all greater than 50 percent. The difference between "today" versus three years prior was 22 points overall, lead by DICE (30 points). No segment reported less than a 15 point increase in concern.

Another point of comparison is the "today" data taken for exactly this question in last year's survey compared to the current data. The data taken in early 2005, the overall moderate + strong cause for concern data was 55 percent, where Large (61 percent) showed somewhat greater concern than Small (53 percent), perhaps because companies in the Small segment have many other causes for concern (such as companies in the Large category). The early 2006 data for "today" has shown an increase by 5 points, with Small (60.8 percent) now exceeding (slightly) Large (60.3 percent), suggesting perhaps that companies in the Small segment are experiencing what the ones in Large saw earlier.

Exhibit 4 (Q5): Some argue that IP-protected products should be made available at prices below those for which they are actually licensed or sold. Others argue that there should be no IP protection at all. Still others believe that some form of compulsory licensing should be available under certain conditions. To what extent do you see these forces as being cause for concern with respect to your business?

	No cause for concern	Mild cause for concern	Moderate cause concern	Strong cause for concern	Moderate + Strong Concern	Today–3 Years Ago
My assessment 3 years ago						
All	22.7%	38.3%	26.0%	13.0%	39.0%	
D/I/C/E	22.6%	47.2%	22.6%	7.5%	30.1%	
Health	20.6%	33.5%	27.5%	18.3%	45.8%	
Industrial	30.1%	32.5%	27.7%	9.6%	37.3%	
Univ/Gov	21.6%	46.0%	23.7%	8.6%	32.3%	
Large	22.0%	38.2%	26.7%	13.2%	39.9%	
Small	23.9%	38.6%	24.9%	12.7%	37.6%	
My assessment today						
All	10.4%	29.1%	38.1%	22.4%	60.5%	21.5%
D/I/C/E	17.0%	22.6%	43.4%	17.0%	60.4%	30.3%
Health	8.0%	26.3%	35.3%	30.4%	65.7%	19.9%
Industrial	11.9%	35.7%	38.1%	14.3%	52.4%	15.1%
Univ/Gov	10.7%	32.1%	40.7%	16.4%	57.1%	24.8%
Large	8.9%	30.8%	37.1%	23.2%	60.3%	20.4%
Small	12.6%	26.6%	39.7%	21.1%	60.8%	23.2%

Future Plans

The Licensing Foundation will conduct its 4th Annual Survey of the Licensing Industry in early 2007 covering calendar year 2006. We will again rely on the generous spirit of LES members in taking time from fighting impediments to dealmaking, overcoming barriers to intangibles marketing and negotiations, dealing with deal remorse, and overcoming increasing concerns about adverse forces in the IP and licensing environment to once again participate in this surveying process. In addition we will begin posting the extensive data that the Foundation has collected during these past three years which has only been summarized in the respective year's *les Nouvelles* articles. The reader should check on the Licensing Foundation's Web site in early 2007: *www.licensingfoundation.org*. Finally, the Foundation is considering supplementing this member-survey by also developing a company-specific survey as part of an overall index of annual company activities by industry segment.

Acknowledgements

The Licensing Foundation wants especially to recognize that its funding has been primarily the result of contributions made by LES (USA & Canada). We have also received limited financial contributions, and massive time and wisdom contributions from many different LES members. This is all gratefully acknowledged. The Licensing Foundation has a **public** purpose, namely: *Advancing the understanding of licensing in fostering innovation for a knowledge economy.* One of our programs for accomplishing this is such surveying and publishing activities.

We also wish to acknowledge the work of Professors Iain Cockburn and Ajay Agrawal who assisted the Foundation in developing the questionnaire and collecting the data, as they have done for all three surveys taken to date.

Most of all we want to acknowledge the effort made by each of you who responded to our request for participation in taking the survey, and hope that our degree of appreciation will expand in 2007 as even more of you join your colleagues in adding your data and wisdom to this effort. ■

U.S./Canadian Licensing In 2004: Survey Results

BY RICHARD RAZGAITIS*
On behalf of the Licensing Foundation of LES (USA & Canada)

Initial Results of a Survey Conducted in January/February 2005 by the Licensing Foundation of LES (USA & Canada),[1] on behalf of The Licensing Foundation.[2]

Abstract And Summary Of Findings

Reported here is the survey data obtained by The Licensing Foundation of LES (USA & Canada) during January and February 2005 for the year 2004. Such results derive from the second annual licensing survey sponsored by The Licensing Foundation (TLF) of (USA & Canada).

The primary focus of this year's survey was the motivation for licensing. The level of response was sufficiently large that we are able to present data representing four discrete industry groups (Health, Digital Information Communications and Electronics, Industrial [including transportation and chemicals], and University/Government) for two distinct company sizes (Small with less than 500 employees, and Large with more than 500 employees).

These data show us interesting ways in which all the sizes and sectors are similar (in the importance, for instance, they place on the different forms of IP), and how they are differ from one another (in the primary motivations to in or out license). The presence of both strong similarities and notable differences supports the idea of the LES "campfire" ...all of us in licensing do indeed have common interests, despite coming from highly disparate licensing contexts, and yet we bring different perspectives and learnings that we can share to each other's benefit. If we were all and only the same in our experiences and priorities, or all and only different, the LES campfire would be either too boring to enlighten or too chaotic to cohere.

Introduction

The Licensing Foundation (*www.licensingfoundation.org*) is a 501C3, not–for-profit corporation founded by LES (USA & Canada) in 2001 for the purpose of public education and service regarding licensing. The emergence of the licensing profession in the 40 years since the founding of LES in 1965 is generally recognized as being one important indicator of the growth in trade of intangible assets in all its many forms. Yet the extent and character of this business of trade in intellectual property has not been as well studied as the industry segments in which licensing occurs, such as the pharmaceutical and communications industries, or other forms of trade such as merger and acquisitions.

In the December 2004 issue of *les Nouvelles*, The Licensing Foundation (TLF) presented the results of its first survey of LES (USA & Canada) Members taken in January and February 2004 covering the period 2003 (2004 Survey).[3] In the present paper, the result of the second of such annual surveys is reported. The long-term aspiration of such surveying initiative sponsored by TLF was and remains to:

Provide an annual, synoptic perspective on key statistics, events, and trends in the business of "Licensing" that can assist licensing professionals in understanding and advancing the business environment in which they operate and to which they contribute, and can be used by the public, academic researchers, and government policy analysts to grasp the issues and impacts of licensing business practices.

The data provided here were again derived by electronically surveying LES (USA & Canada) Members, during the period January and February 2005, with most questions directed to the respondents' experience over the then ending 12 months, essentially the year 2004. The reader is referred to the 2004 Survey for further background for TLF's motivation for inaugurating such licensing survey, the overall survey methodology, and a literature review of other survey and research information.

A key aspect of TLF survey was the desire to focus on licensing matters primarily involving corporate IP asset owners who are members of LES (USA & Canada) and, thereby, more readily accessible to TLF, and which conduct both out- and in-licensing

1. *www.licensingfoundation.org*. The Licensing Foundation is a wholly-owned 501c3 subsidiary of LES (USA & Canada).
2. The Licensing Foundation during 2005 was managed by its Board comprised of Louis Berneman, Ted Cross, Kathleen Denis, Ada Nielsen, Richard Razgaitis, and Art Rose, on behalf of the Board of LES (USA & Canada).

3. Razgaitis, Richard, "U.S./Canadian Licensing in 2003: Initial Results of a Survey Conducted in January 2004," *les Nouvelles*, Volume XXXIX No. 4, pp139-151.

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despite being (normally) capable of directly commercializing such IP assets and in-licensing despite (normally) having its own R&D/ product development capabilities. To simplify the scope of the survey we excluded licensing activities from the following areas: Right-to-Use licensing (sometimes known as "shrink wrap" licenses), copyrighted content licensing (music, text, and the like), and trademark licensing. Though we did ask some questions about cross-licensing, this practice was not a major focus of the survey. Further, because our database of respondents were members of LES (USA & Canada) we asked for data and perspectives for licensing activities in North America only.

Assisting TLF in preparing the survey instrument, conducting the survey, and participating in the analysis of the data was again Professors Iain Cockburn of Boston University and Ajay Agrawal of the Queen's University in Kingston Ontario, Canada. Prof. Cockburn contributed to this paper in the below estimates of the size of the licensing industry and the description of the survey methodology. Both their contributions are gratefully acknowledged.

How Big Is The Licensing Industry?

Before considering TLF survey data, it is useful to gain a perspective on the extent of annual technology licensing in the U.S. and Canada. Developing a reliable estimate of the volume of technology licensing continues to be hindered by a lack of comprehensive data on licensing activity. Where these data are currently collected by statistical agencies, reported data are either highly aggregated (e.g. patent licensing fees and royalties bundled with payments for use of trademarks, for copyrighted creative works, for mineral rights, for franchising etc.) or appear to suffer from reporting issues (sampling based on plant-level establishments, with weights based on employment) leading to misclassification or under-reporting of corporate functions and activities such as IP management.

Nonetheless, some sense of the magnitude of the licensing "industry" can be gleaned from data reported in sector aggregations by the U.S. Internal Revenue Service (IRS). The most recent IRS analysis of corporate tax returns reports $115 billion of "royalty" income in 2002 for active U.S. corporations.[4] Unfortunately this total aggregates payments for "industrial royalties" (patents, trademarks, trade secrets, goodwill, franchises, know-how, and similar rights) with royalties on copyrighted creative works and natural resources. However the IRS also provides royalty data by industry segment which permits at least approximate estimations of, technology licensing royalties. Royalties received for copyrighted creative works seem likely to be largely reported in the publishing and broadcasting industries, for example, while franchise fees are likely to be concentrated in accommodation and food services. Royalties received for technology licenses are likely to be concentrated in sectors such as manufacturing ($73 billion; $20 billion of which is in "chemicals," and $23 billion in "computer and electronic manufacture"), and scientific and technical services ($4.7 billion). The data for the information sector ($13 billion), which includes companies in publishing, movies, broadcasting, Internet, telecommunications, and internet service provision, is likely dominated by copyright royalties but with a significant quantity of technology royalties.

Other indicators of licensing also point to very substantial levels of activity. Considering only patented technology, various studies suggest that of the order of 10 percent of patents may be licensed or cross-licensed. A survey sponsored by IPO of a small sample of large U.S. manufacturers reported that, on average, these companies out-licensed 19 percent of their patent portfolios.[5] A much larger scale EU-sponsored study surveyed inventors of over 9,000 EPO patents issued in the mid-1990s and found that 13 percent of such patents were being exploited through licensing.[6] Though these ratios are likely to be biased upwards (IPO member companies are not representative of the population of U.S. corporations, and inventors of less significant or "dormant" patents may be less likely to respond to a survey) they nonetheless imply a very large annual volume of licensing transactions. In 2004, there were more than 160,000 U.S. patents issued as reported by the USPTO, so even if only seven percent are licensed on an annual basis, such "deal flow" would correspond to 10,000 patents licensed per year.[7]

Although neither the estimate of annual payments for licenses to technology IP, nor the number of associated transactions, is known with any precision, such above figures suggest a large and important economic activity. The economic significance of these IP transactions to the licensees in their respective products and markets adds to such estimates.

Survey Administration

The survey was administered in the form of an online questionnaire

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4. "Returns of Active Corporations, Form 1120," Statistics of Income, IRS/US Department of the Treasury, *http://www.irs.gov/taxstats/bustaxstats/index.html*, accessed 10/12/05.

5. Cockburn, I. and Henderson, R. (2004) "The 2003 Intellectual Property Owners Association Survey On Strategic Management Of Intellectual Property," Intellectual Property Owners Association, Washington, DC.

6. Giuri, P., Mariani, M., et al. (2005) "Everything You Always Wanted to Know About Inventors (But Never Asked): Evidence from the PatVal-EU Survey," *LEM Working Paper 2005/20*, Sant'Anna School of Advanced Studies, Pisa.

7. Such figure would not reflect a like number of separate agreements as any single agreement could grant rights to many patents. Further, the data for the percentage of issued patents out-licensed is likely to include agreements whereby new patents are automatically included in previously executed licenses. On the other hand, there are a significant number of licenses that are non-exclusive (40 percent according to the 2004 Survey), and which do not involve any patents (25 percent according to the referenced IPO Survey), both factors that would increase any estimate of licensing activity. Finally, including data for Canada would also tend to increase such figure.

accessed via the Internet. Just over 6,200 members of the Licensing Executives Society (U.S.A. & Canada), Inc. were invited in January and February 2005 to participate in the survey via several rounds of e-mail from TLF. The Web survey format was chosen to limit costs, maximize accuracy, and to be minimally intrusive. This type of survey also allows for "dynamic" serving of questions in response to users' input, minimizing the extent to which respondents are presented with irrelevant or redundant questions. When used for "closed" list-based samples such as the LES membership mailing list, web surveys have been shown to perform as well or better than traditional hardcopy mail-back survey instruments. Separate versions of the survey were administered to the approximately 3,658 members identified as technology creator/users and to the 2,530 identified as being providers of professional services (legal, consulting etc.). The survey Web site received a total of 1,273 visits, 798 for the Technology Creator/User Survey and 485 for the Professional Services Survey. Respondents were guaranteed anonymity, and no records linking their identity to the database of survey questionnaire responses have been retained.

A complete copy of the survey instructions and questions is available at the Licensing Foundation Web site: *www.licensingfoundation.org*.

Response Rate

This paper reports results for the Technology Creator/User Survey. Of the 798 visits to the survey web site, 526 respondents completed at least one question. After eliminating records for respondents who appear to have moved through the questionnaire without answering more than a handful of questions, the final sample contains 473 usable records.

Response rates to specific questions were generally high, generally greater than 80 percent. Note that because the survey questionnaire "branched" at various points to ensure that respondents were only presented with relevant questions, the denominator for calculating response rates is not always 473. For example, of the total of 473 usable records, only a maximum of 255 could contain answers to questions about in-licensing. (99 respondents identified their organization as primarily engaged in in-licensing, and 156 as engaged in both in-and out-licensing.)

The degree to which the results presented here can be considered statistically representative of all technology licensing activity in North America is difficult to assess. It is important to note that the LES (USA & Canada) membership list is a "convenience" sample, not a randomized quota based or stratified sample designed to be statistically representative of an underlying population. "Frame bias," i.e. the fact that the membership of LES (USA & Canada) can generally be assumed to be reasonably representative of the population of all licensing professionals is unlikely to be a significant problem, unless there are large numbers of people engaged in technology licensing who are not members of LES (USA & Canada), and who differ systematically from those who are. "Response bias," i.e. systematic differences between the members in the sample who choose to respond and those who do not, is not possible to assess fully. The distribution of respondents across industry sectors approximates the distribution in the entire mailing list, with some over-representation of the Healthcare and University/Government sectors. However, since we lack information about other characteristics of non-respondents, such as the size of their organization, it is not possible to evaluate potential bias arising from different response rates across, e.g., large versus small entities.

Though 526 responses from a sample frame of 3,658 may seem low, it is in line with similar voluntary surveys that typically have a 10-30 percent response rate. Note that because LES (USA & Canada) membership is individual, not corporate, a single organization can appear multiple times in the mailing list. The 3,658 members identified as belonging to the Technology Creator/User category come from fewer than 1,200 distinct organizations, with few organizations generating multiple responses. We therefore achieved coverage of about 35 to 40 percent of the total number of Technology Creator/User organizations represented in the LES membership.[8]

Characteristics Of Respondent's Organizations

Respondents come from a wide range of organizations. The breakdown of the sample by industry sector of the respondent's organization was 45 percent Healthcare, 24 percent University/Government Labs, 12 percent Electronics (including communications, telecom, Internet), 10 percent Energy, chemicals, petrochemicals, polymers, and allied industries, four percent Transportation and Mechanics, three percent Software, and two percent Food and Beverage. Just over half (53 percent) of these organizations were "Small" i.e. have 500 employees or less, with 43 percent of the total reporting 100 employees or less. Average sales (based on center points of response categories) were $3.1B, and average R&D spending was $237M. However, these averages derive from a very wide underlying range, with 16 percent of the sample reporting sales of less than $1M and 8 percent more than $10B, and 18 percent reporting R&D expenditure of less than $1M and nine percent more than $1B. Sixty percent of respondent's organizations operated internationally. Two-thirds of the organizations claimed they were engaged in performing basic research and three-fourths were engaged in developing new products, though only 45 percent sold to end-users.

For purposes of reporting the survey data, we found it useful to segment our data into eight groups distinguished by two size populations, "Large" and "Small" demarked by 500 employees, and

8. The figure is approximate since individual members do not always identify their organization to LES, and do not necessarily use identifiable corporate e-mail addresses.

Exhibit 1. Who Have We Surveyed?

Size of respondent's organization		# Employees N	# Employees Mean	Sales $MM N	Sales $MM Mean	R&D Budget $MM N	R&D Budget $MM Mean
HEALTH	Large	81	8358.0	80	7514.7	78	512.8
	Small	130	92.2	124	72.5	124	50.5
DICE	Large	32	15250.0	32	11893.8	30	655.2
	Small	38	123.8	38	68.2	37	51.6
INDUSTRIAL	Large	49	11648.0	49	7347.7	44	314.3
	Small	29	100.5	28	434.7	27	12.4
UNIVERSITY/ GOVERNMENT	Large	49	5699.0	44	1223.6	44	338.0
	Small	64	34.1	64	31.3	56	135.2

Table entries are derived from the midpoints of categorical response ranges

100X 10X 1X Order of Magnitude

Exhibit 2. Which of the Following Activities in the Industry Value Chain Does Your Firm/Business Unit Perform?

		N	Basic R&D	New Product Development	Manufacturing	Marketing to End-users
HEALTH	Large	81	75%	99%	84%	83%
	Small	130	62%	86%	36%	34%
DICE	Large	31	39%	97%	71%	61%
	Small	33	55%	73%	45%	61%
INDUSTRIAL	Large	48	44%	90%	88%	73%
	Small	29	48%	93%	34%	48%
UNIVERSITY/ GOVERNMENT	Large	48	98%	33%	4%	2%
	Small	62	84%	50%	5%	19%

Table entries are the fraction of respondents answering any of these questions who checked that option

four "sectors," Health (healthcare including biotechnology, pharmaceuticals, and medical devices), DICE, for Digital Information Communication, and Electronics (including telecommunications, Internet, and software), Industrial (transportation and mechanics, food and beverage, energy, chemicals, petrochemicals, polymers, and allied industries), and University/Government (including government laboratories and research hospitals). The characteristics of each of these eight groups by number of employees, annual sales, and R&D budgets is shown in Exhibit 1.

Exhibit 1. Who Have We Surveyed?

For the Health sector, Large companies evidence approximately two orders of magnitude more employees (a mean of 8,358 vs. 92) and annual sales ($7.5 B vs. $72 M), but one order of magnitude greater R&D expenditure ($513 M vs. $51 M), strongly suggestive of a greater R&D intensity with Small companies. Interestingly, the same relationship is also evidenced with the DICE sector, namely two orders of magnitude difference between Large and Small with respect to employees and annual sales, but one order with respect to R&D budget. For the Industrial sector, the difference in an-

Exhibit 3. How Important Are the Following Types of IP in Creating Competitive Advantage?

		N	Patents	Trademarks	Copyright	Know-how	Trade Secrets
HEALTH	Large	81	3.8	3.0	2.3	3.5	3.2
	Small	130	3.8	2.5	2.0	3.5	3.0
DICE	Large	32	3.5	3.2	3.0	3.5	3.4
	Small	37	3.6	2.8	2.5	3.3	2.9
INDUSTRIAL	Large	49	3.4	2.9	2.1	3.6	3.6
	Small	29	3.6	2.9	2.2	3.7	3.5
UNIVERSITY/ GOVERNMENT	Large	49	3.5	2.0	2.6	2.7	1.5
	Small	63	3.8	2.1	2.8	2.8	1.8

Table entries are mean scores on a 1-4 response scale (1=Not Important, 4=Extremely Important)

nual sales is only approximately one order of magnitude.

The respondents were asked to identify how they participate in the product creation value chain by indicating whether they participated in Basic R&D, New Product Development, Manufacturing, and/or Marketing to End-Users. The percentage of respondents who gave affirmative answers is shown in Exhibit 2 for the eight groups (Large and Small in each of four Sectors).

Exhibit 2. Which of the Following Activities in the Industry Value Chain Does Your Firm/Business Unit Perform?

Here we can see some differences among the groups. With respect to Basic R&D, Large Health companies do more of it, in contrast with DICE and Industrial sectors where the Small size companies claim they do more of such R&D (although with the Industrial sector the difference may not be statistically different). For Health, DICE, and Industrial sectors the Large companies participate substantially more in manufacturing than the Small; interestingly, the Large Health and Industrial manufacturing percentages are nearly alike, as are the corresponding figures for the Small. Health and Industrial Large companies are substantially more involved in marketing to end-users than the corresponding Small companies, whereas for the DICE sector the percentages for Large and Small were identical. These results for manufacturing and marketing to end-users suggest that Small companies are likely to be more dependent on licensing out than Large companies, further supported in the case of DICE and Industrial by Small companies claiming to do more basic R&D than their large sector counterparts. Interestingly, Health, DICE, and Industrial groups, Large and Small, are all active in New Product Development where the reporting percentages all exceeded 90 percent except for Small DICE (73 percent). Although not surprising, the data for University/Government supports the common expectation, namely that they are the most active in basic R&D, do comparatively less new product development than the other sectors and very little manufacturing or marketing to end-users.

We asked respondents to ascribe relative importance on a four point scale, 1 being not important to 4 being extremely important, of creating competitive advantage for each of five forms of IP rights as shown in Exhibit 2.

Exhibit 3. How Important Are the Following Types of IP in Creating Competitive Advantage?

These data suggest that these Sectors are closely similar in their perspectives. All eight groups ranked patents as most important, with the lowest group mean score 3.4 and the highest group mean score 3.8. Also highly important for all six groups in Health, Dice, and Industrial was Know How (all group mean scores between 3.3 and 3.7), closely followed by Trade Secrets (2.9 to 3.6). In the case of Univ/Gov the importance of Know How was substantially less than patents, presumably because of the earlier stage nature of their R&D, and the importance of Trade Secrets was low, presumably because of practice of publishing research. Recognizing the very significant differences between Large and Small companies seen in Exhibit 1, and the significant difference between the markets served by each of these Sectors it is remarkable how similar is the importance ascribed to each of these forms of IP rights.

Finally, we sought to understand how these eight groups compared in terms of the volume of "in- and out-licensing" agreements and payments/revenues, and normalizing such payments (or revenues) by R&D spending and annual sales, respectively. These data are provided in Exhibits 4 and 5.

Exhibit 4. Volume of In-Licensing

Exhibit 5. Volume of Out-Licensing

Examining the mean licensing

Exhibit 4. Volume of In-Licensing

		Number of In-License Agreements		In-Licensing Payments $MM		In-Licensing Payments as fraction of R&D	
		N	Mean	N	Mean	N	Mean
HEALTH	Large	64	41.30	61	126.19	60	0.11
	Small	86	8.65	84	11.51	78	0.11
DICE	Large	18	49.44	10	303.15	7	0.12
	Small	16	18.19	14	61.55	14	0.10
INDUSTRIAL	Large	31	28.55	28	63.18	27	0.07
	Small	14	9.61	13	5.17	12	0.07
UNIVERSITY/ GOVERNMENT	Large	2	75.00	0		0	
	Small	6	6.25	6	0.06	6	0.08

Exhibit 5. Volume of Out-Licensing

		Number of Out-License Agreements		Out-Licensing Revenues $MM		Out-Licensing revenue as a fraction of sales	
		N	Mean	N	Mean	N	Mean
HEALTH	Large	35	24.20	34	48.14	33	0.05
	Small	91	14.83	89	11.38	84	0.42
DICE	Large	24	51.40	16	165.23	16	0.12
	Small	29	30.84	27	17.26	28	0.47
INDUSTRIAL	Large	33	38.62	31	42.49	32	0.06
	Small	25	25.20	25	11.75	24	0.32
UNIVERSITY/ GOVERNMENT	Large	48	58.60	46	10.23	40	0.15
	Small	61	46.35	61	18.55	60	0.49

revenue data in both Exhibits (payments in Exhibit 4 and revenues in Exhibit 5), the higher corresponding value is shown by underlining. So for Large Health, Large and Small DICE, and Large Industrial, there were greater in-licensing payments than out-licensing revenues. For Small Industrial and both Large and Small Univ/Gov the out licensing revenues exceed the in-licensing payments. (In the case of Small Health the two corresponding dollar figures were essentially identical.) Given the substantial difference in size between Large and Small (seen in Exhibit 1), the corresponding difference in payments and revenues suggests that Small companies are more licensing intensive. The ratios expressed in the right most column of Exhibit 4 and 5 are for the purpose of seeing whether there exists a common measure of license payment or revenue intensity. Interestingly, for all seven groups for which there were data, group mean in-licensing payments ranged from seven to 12 percent of R&D spending, which seems to be a very small difference considering the dramatic differences in size and markets. The corresponding data for out-licensing revenues as a percentage of sales is much more disparate: from a low of five percent to a high of nearly 50 per-

Exhibit 6. Is Licensing Mainly About Litigation?

		N	Mean
HEALTH	Large	80	0.22
	Small	130	0.10
DICE	Large	32	0.27
	Small	37	0.25
INDUSTRIAL	Large	48	0.19
	Small	29	0.11
UNIVERSITY/ GOVERNMENT	Large	49	0.09
	Small	63	0.05

cent. But even here there appears to be some meaning. The Small group in Health, DICE, and Industrial were much more highly dependent on licensing revenues as a percentage of their sales—group means of 42, 47, and 32 percent, respectively, than the corresponding Large group—5, 12, and 6 percent, respectively. These data tend to highlight the difference between Large and Small company populations but again tend to show strong similarities across sectors (not including the special case of the University/Government sector).

Survey Data Relating To Big Licensing Issues

In the 2004 Survey we reported data on the impediments of licensing including aspects of buyer's (and seller's) remorse looking retrospectively at deals done. In the current survey we sought to examine the motivations for licensing (or not licensing). In the first such question we sought to assess the importance of litigation-motivated licensing by asking what fraction of activities were motivated by settling, or avoiding, litigation as opposed to some voluntary pursuit of a business opportunity. The results are shown in Exhibit 6.

Exhibit 6. Is Licensing Mainly About Litigation?

The data here are capable of a glass half-full or half-empty interpretation. Is litigation a major motivator? It is more so for Large than Small companies (Health, DICE, and Industrial), but even so it is for a small percentage of activities: averaging 19 to 27 percent for Large, 10 to 25 percent for Small, and less than 10 percent for University/Government. So, more than 70 percent of the time the motivation for licensing is a business opportunity not driven by litigation. But some might well conclude that 20 percent or more of the transactions being in the context of litigation is a large percentage. (It would be interesting to know the relative dollar value or time intensity associated with such respective percentages; such data may be a better overall measure of the relative importance of litigation-based licensing). Again these data tend to suggest the groups are more similar than they are different. The exception is Small DICE companies; they are more commonly involved in litigation than their Small counterparts in Health or Industrial.

A deeper question than the litigation issue is why even have IP assets? For what purpose or purposes did our respondents claim as the purpose of its IP. The answer is given in Exhibit 7. As before a score of 1 represented not very important, and 4 extremely important. We asked each respondent to score the relative importance of its IP with respect to the nine different motivations shown in the column headings.

Exhibit 7. How Important Are Each of the Following Motivations to Develop IP Assets?

The first motivation, manage litigation risk, connects these data with that of Exhibit 6. The group that ascribed the most importance to managing such risk was Large DICE (it was the highest score for that group), which was also the group that reported the highest average percentage (27 percent) of licensing activity motivated by settling or avoiding litigation. So for that group having IP was the single most important reason (score of 3.4), and it was related to nearly as high scores (3.3) for Stop Imitation and Patent Bargaining, both of which are related to litigation matters; however, it also scored 3.3 for Higher Margins which may be a value distinct from litigation matters. For Large Health, the highest priority was Higher Margins (3.7), followed by Stop Imitation (3.3), Manage Litigation Risk (3.1) and Patent Bargaining and Partner/JV (both at 3.0); for Small Health, Partner/JV came first (3.5), followed by Higher Margins and Stop Imitation (both at 3.2) and Licensing Revenue and Signal Capabilities (both 3.1). Consistent with earlier data, these data suggest that Small companies are more licensing intensive, and dependent. Small DICE companies placed the highest importance on Licensing Revenue (3.4) of any of the six non-University/Government groups. Small and Large Industrial companies Exhibited similar priorities: Higher Margin (3.5 and 3.4, respectively) followed by Stop Imitation (3.3 and 3.4, respectively). Clearly for University/Government the motivation was Licensing Revenue (3.4 and 3.6) and Partner/JV (3.1 and 3.0). One other notable observation is that there are many motivations for having IP. For the six Health, DICE, and Industrial groups, the lowest score was 2.5 for any of the nine columns/motivations, which is only a little more than one scoring point below the highest reported score (3.7). (In contrast, the University/Government groups showed a dynamic range of scoring from 1.3 to 3.6.)

Exhibit 7. How Important Are Each of the Following Motivations to Develop IP Assets?

		N	Manage Litigation Risk	Higher Margins	Licensing Revenue	Stop Imitation	Partner/ JV	Raise Rivals Costs	Signal Capabilities	Patent Bargaining	Other Bargaining
HEALTH	Large	81	3.1	3.7	2.6	3.3	3.0	2.8	2.5	3.0	2.6
	Small	130	2.7	3.2	3.1	3.2	3.5	2.7	3.1	2.9	2.7
DICE	Large	32	3.4	3.3	2.9	3.3	2.7	2.9	2.5	3.3	2.8
	Small	38	3.0	2.9	3.4	2.9	2.8	2.3	2.8	2.9	2.7
INDUSTRIAL	Large	49	2.9	3.4	2.4	3.4	2.7	3.0	2.5	2.7	2.5
	Small	29	2.7	3.5	3.1	3.3	3.3	2.7	2.7	2.7	2.8
UNIVERSITY/ GOVERNMENT	Large	49	1.9	1.8	3.4	1.7	3.1	1.3	2.8	2.2	2.0
	Small	63	2.1	2.1	3.6	1.9	3.0	1.5	2.7	2.4	2.0

Table entries are mean scores on a 1-4 response scale (1=Not Important, 4=Extremely Important)

Exhibit 8. In What Fraction of In-Licensing Agreements Were the Following a Significant Goal?

		N	Avoid Licensor Litigation	Avoid 3rd Party Litigation	Minimize Licensing Payments	Compensate for lack of R&D	Utilize Mfg Capacity	Utilize Marketing Capacity	Options for future development	Exploit foreign technology	Influence Competitors	Develop a standard	Promote diffusion	Expand IP Estate	Partner/ JV	Learn about partner	Explore unfamiliar technology
HEALTH	Large	74	0.19	0.19	0.29	0.39	0.15	0.36	0.44	0.22	0.17	0.13	0.12	0.27	0.36	0.19	0.20
	Small	83	0.11	0.13	0.21	0.39	0.10	0.19	0.40	0.18	0.21	0.13	0.14	0.32	0.41	0.16	0.13
DICE	Large	20	0.17	0.22	0.40	0.28	0.11	0.23	0.22	0.13	0.18	0.28	0.29	0.30	0.30	0.15	0.18
	Small	16	0.17	0.23	0.30	0.31	0.10	0.12	0.37	0.12	0.24	0.19	0.23	0.36	0.31	0.21	0.29
INDUST.	Large	33	0.13	0.12	0.17	0.28	0.14	0.15	0.31	0.17	0.20	0.09	0.13	0.26	0.23	0.12	0.19
	Small	14	0.13	0.10	0.29	0.17	0.05	0.10	0.32	0.16	0.23	0.04	0.16	0.32	0.34	0.13	0.04
UNIV./ GOV.	Large	3	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.38	0.25	0.13	0.13	0.13	0.25
	Small	7	0.00	0.06	0.00	0.15	0.00	0.05	0.25	0.00	0.03	0.03	0.31	0.20	0.35	0.15	0.29

Drilling deeper into motivations, in Exhibit 8 we show the relative frequency that in-licensing agreements were done with respect to 15 different goals given by the column headings (shown in three panels of data for each of the eight groups).

Exhibit 8. In What Fraction of In-Licensing Agreements Were the Following a Significant Goal?

Here the data suggest some important difference in the relative priorities for in-licensing among the eight groups. For Large Health the top priority was Options for Future Development (this group reported that on average 44 percent of their agreements had this as the significant goal), followed by Compensate for Lack of R&D (39 percent; which perhaps is just the half-empty

Exhibit 9. In What Fraction of Out-Licensing Agreements Were the Following a Significant Goal?

		N	Maximize Licensing Revenue	Fully Exploit R&D capability	Access to Mfg Capacity	Access to Marketing Capacity	Access to foreign markets	Influence Competitors	Develop a Standard	Promote diffusion	Minimize Enforcement Costs	Partner/JV	Learn about partner	Learn about new markets
HEALTH	Large	41	0.61	0.46	0.16	0.19	0.19	0.14	0.15	0.25	0.26	0.36	0.15	0.16
	Small	89	0.62	0.59	0.13	0.16	0.24	0.15	0.20	0.36	0.22	0.52	0.19	0.21
DICE	Large	28	0.69	0.45	0.08	0.14	0.19	0.19	0.30	0.36	0.28	0.30	0.08	0.13
	Small	33	0.75	0.39	0.14	0.14	0.26	0.30	0.26	0.33	0.33	0.45	0.28	0.28
INDUSTRIAL	Large	36	0.57	0.38	0.11	0.10	0.21	0.24	0.17	0.18	0.17	0.28	0.17	0.15
	Small	26	0.51	0.41	0.17	0.13	0.29	0.27	0.26	0.38	0.19	0.41	0.13	0.14
UNIV./GOV.	Large	49	0.56	0.73	0.03	0.07	0.08	0.02	0.16	0.54	0.31	0.33	0.16	0.12
	Small	63	0.55	0.63	0.05	0.05	0.08	0.03	0.16	0.47	0.32	0.39	0.14	0.16

way of expressing the same Options value idea), and Partner/JV and Utilize Marketing Capacity (both at 36 percent). For Small Health the highest motivation was Partner/JV (41 percent), closely followed by Options for Future Development (40 percent) and Compensate for Lack of R&D (39 percent). Although the percentages are smaller the order of priorities for Industrial Large and Small mirror those corresponding in size to Health, namely: the highest priority for Large Industrial is Options for Future Development (31 percent) whereas for Small it is Partner/JV (34 percent). Overall, Options for Future Development was the highest ranked motivation for three groups (Large Health, Small DICE, and Large Industrial), and Partner/JV was the highest priority for Small Health and Small Industrial. Paralleling the results of Exhibit 7, the data of Exhibit 8 generally show that there are a wide range of motivations for licensing transactions (here in-licensing). For Large Health companies there were eight motivations expressed with an average frequency of 20 percent or more. For Small Health there were six at 20 percent or more. For Large DICE there were nine, for Small DICE seven. For Industrial there were fewer above the 20 percent frequency: just five for both Large and Small.

In Exhibit 9, the corresponding data as to motivations for out-licensing is presented in two panels.

Exhibit 9. In What Fraction of Out-Licensing Agreements Were the Following a Significant Goal?

The number one motivation for all six Health, DICE, and Industrial groups was Maximize Licensing Revenue (averaging from 51 to 75 percent of out-licensing agreements). Also important to these groups was to Fully Exploit R&D Capability (38 to 59 percent), and Partner/JV (28 to 52 percent). The Small company groups all put a higher priority on Partner/JV than their Large peers: 52 percent vs. 36 percent for Health, 45 percent vs. 30 percent for DICE, and 41 percent vs. 28 percent for Industrial. The large dynamic range of reporting data here for out-licensing suggests a narrower range of motivations than was the case for In-licensing.

In a final pair of questions we sought to determine at what stage companies prefer to license, considering the relative trade-offs. Exhibits 10 and 11 show these data.

Exhibit 10. In Trading Off Licensing Fees Against Development Costs, at What Stage Do you Prefer to In-License?

Exhibit 11. In Trading Off Licensing Revenue Against Development Costs, at What Stage Do You Prefer to Out-License?

The winning answer here is "later," for Large and Small companies, in all sectors, for both "in- and out-licensing." The exception is again the special case of University/Government where they would prefer to out-license earlier, which appears to support the common perception of "the gap" problem, namely: the difference between the level of development that universities tend to bring their technology and the level of development desired by their licensees. In preparing this question it was thought there could be differences between Small and Large companies because it is implicit that licensing-in later means a more-costly transaction. Everyone, it seems, wants to reduce their in-licensing risk and time-to-market, and is willing to pay a premium to do so. When out-licensing the motivation for the preference to do it later is less clear. Is it because out-licensing

Exhibit 10. In Trading Off Licensing Fees Against Development Costs, at What Stage Do you Prefer to In-License?

		N	Earlier	Indifferent	Later
HEALTH	Large	48	31%	21%	48%
	Small	73	38%	14%	48%
DICE	Large	19	16%	32%	53%
	Small	11	36%	27%	36%
INDUSTRIAL	Large	24	21%	17%	63%
	Small	14	21%	36%	43%
UNIVERSITY/ GOVERNMENT	Large	3	33%	33%	33%
	Small	6	17%	33%	50%

Exhibit 11. In Trading Off Licensing Revenue Against Development Costs, at What Stage Do You Prefer to Out-License?

		N	Earlier	Indifferent	Later
HEALTH	Large	41	24%	24%	51%
	Small	81	19%	15%	67%
DICE	Large	22	23%	32%	45%
	Small	24	29%	29%	42%
INDUSTRIAL	Large	29	17%	28%	55%
	Small	21	33%	29%	38%
UNIVERSITY/ GOVERNMENT	Large	42	45%	19%	36%
	Small	51	51%	20%	29%

is more of a last resort after a final decision has been made not to go into manufacturing?

Are There (IP/Licensing) 'Barbarians At The Gate?'

Articles and stories, published and oral, over the past year appear to deal more frequently with core IP rights issues. In some cases the published perspective expresses the view that such rights "should" be reduced, even ignored, in some way, sometimes couched in some higher moral principle, sometimes under some kind of new world/age argument. One domain of such debate is the sharing of digital expressions of music, movies, and other content. Another is of avoiding proprietary software products by advocating/using public domain alternatives. Yet another area deals with so-called gray market attacks against an IP owner's attempt to maintain territorial product rights. Exhibit 12 shows the data we obtained when we asked what level of concern the respondents had to such attacks on the established norm of IP rights and licensing.

Exhibit 12. To What Extent Did You See These Forces [Attacks on IP/Licensing Rights] as Being Cause for Concern with Respect to Your Business 3 Years Ago? And Today?

Of course the first question, perceptions three years ago being asked in the present does not carry the same weight as if we had actually the question back then. But, nonetheless, there appears to be a clear belief that the concern is greater today than would have been expressed just three years ago. In every one of the eight groups a greater fraction of respondents reported a greater combined Moderate and Strong Cause for Concern today compared to their belief as to what their response would have been three years ago: Large Health (74 percent today vs. 51 percent three years ago), Small Health (60 percent vs. 53 percent), Large DICE (58 percent vs. 36 percent), Small DICE (43 percent vs. 34 percent), Large Industrial (44 percent vs. 37 percent), Small Industrial (44 percent vs. 34 percent), Large University/ Government (50 percent vs. 42 percent), and Small University/

Exhibit 12. To What Extent Did You See These Forces [Attacks on IP/Licensing Rights] as Being Cause for Concern with Respect to Your Business 3 Years Ago? And Today?

			N	No cause for concern	Mild cause for concern	Moderate cause for concern	Strong cause for concern
Concern for 3 Years Ago	HEALTH	Large	58	12%	36%	17%	34%
		Small	101	23%	35%	25%	18%
	DICE	Large	28	29%	36%	18%	18%
		Small	30	40%	27%	17%	17%
	INDUSTRIAL	Large	35	37%	26%	20%	17%
		Small	27	41%	26%	30%	4%
	UNIVERSITY/ GOVERNMENT	Large	43	28%	30%	26%	16%
		Small	52	29%	40%	19%	12%
			N	No cause for concern	Mild cause for concern	Moderate cause for concern	Strong cause for concern
Concern for Today	HEALTH	Large	59	5%	20%	32%	42%
		Small	101	17%	24%	32%	28%
	DICE	Large	28	18%	25%	29%	29%
		Small	30	30%	27%	13%	30%
	INDUSTRIAL	Large	36	33%	22%	22%	22%
		Small	26	31%	23%	38%	8%
	UNIVERSITY/ GOVERNMENT	Large	44	16%	34%	25%	25%
		Small	53	17%	38%	23%	23%

Government (46 percent vs. 31 percent). The Health companies share the largest concern, followed by DICE, and Industrial among the six non-University/Government groups. In the case of Large Health respondents, only five percent reported No Cause for Concern.

TLF is concerned about the public discourse on the subject of IP and licensing rights. Defenders of such rights are commonly positioned as defenders of incumbency and greed. Reasoned viewpoints supporting such rights appear to have more difficulty getting time and space in such discourse and are often driven to consuming their allotment by defending against charges of being company public relations automatons. TLF is interested in continuing to assess this issue in future surveys and, more importantly, presenting in a positive way the societal benefits of licensing.

What's Next: Future Surveys

These 2004 survey data add, we believe, to our collective understanding of the motivations for licensing, in and out. The significantly larger number of respondents in this year's survey enabled us to consider the eight groups we have reported on here. Additional data from this 2004 survey may be made available at TLF Web site: *www.licensingfoundation.org*.

TLF intends to conduct its third annual survey of the licensing industry in January and February 2006. We will seek to repeat certain questions to enable year-over-year trend analysis, but we also wish to expand our understanding by asking some new questions. We are open to your suggestions. Please e-mail your advice and counsel to: survey@licensingfoundation.org.

Acknowledgements

TLF wishes to acknowledge the assistance of the Board of Directors of LES (USA & Canada) in providing counsel and testing of the survey, and its support and use of the LES e-mail directory. TLF also wishes to express thanks to Professors Cockburn and Agrawal for their services in preparing the survey, making it available in electronic form, providing the raw output, and assisting in the interpretation and perspective of the results. Most of all TLF thanks the more than 1,200 respondents who participated in the survey, especially those who worked their way to the end.

U.S./Canadian Licensing In 2003: Survey Results

BY RICHARD RAZGAITIS*

Initial Results of a Survey Conducted in January/February 2004 by the Licensing Foundation of LES (USA & Canada),[1] on behalf of The Licensing Foundation.[2]

ABSTRACT AND SUMMARY OF FINDINGS

The results are reported of a Web-based survey of licensing practices of LES (USA & Canada) members. Such survey was sponsored and conducted by the Licensing Foundation of LES (USA & Canada) (*www.licensingfoundaton.org*). It was conducted in January and February of 2004 by contacting 5,349 member e-mail addresses and providing a link to the online survey.

The focus of the survey and the analysis of the results was on companies who are intellectual property owners and who engage in out-licensing despite their ability, in principle, to directly commercialize their IP or in in-licensing despite their general ability to develop their own technology through internal R&D. 229 respondents to this survey fit this profile. These were further separated into "large" and "small" using the demarcation of 1,000 employees.

The results reported here are related to the business process "trade," or dealmaking, involving technology-based IP. Such dealmaking process was surveyed for three time periods: getting to the point of substantive negotiations, consummating such negotiations, and living with the deal done.

From these data it appears that only a small portion of what is believed to be licensable IP actually is licensed within the time frame of a respondent's experience. A substantial number of factors contribute to deal breakdown both during the period when potential licensees are identified as well as during substantive negotiations, and it is not always about "the money." Finally, looking back on deals done within the past year, the survey suggests that a substantial number of such agreements would have been done differently with respect to various deal terms used in the agreement.

INTRODUCTION

"Licensing" is, literally, the first word of LES, and the single-word appellation of the business process that best describes our Society's primary interest and what most of us designate as our profession (industry) and craft (technê). Yet, the industry of licensing,[3] unlike almost every other business, is both difficult to define or encompass.

A legal perspective of licensing focuses on the forms and protections of intellectual property (IP) rights, contractual vehicles by which such rights can be conveyed, and the applicability of governing law to the behaviors and misbehaviors of individuals and legal entities. A financial perspective leads to an analysis of the value of IP rights as they may be packaged in various forms and with other assets so they may be subjects of commercial transactions ("licenses"). The perspective of a business owner or manager views licensing, and IP, as mechanisms by which investments made can be realized, or the investments of others acquired, all as part of the competitive context of successfully satisfying the needs of its customers, present and future. The licensing expanse, almost like the heavens themselves, seems to cover an earthful (and earful) of activities and interests:

- Internal Research & Development (IR&D), contract R&D,
- Entrepreneurship, innovation, inventions, discoveries, creations,
- Patents, trade secrets, copyrights, trademarks,
- Valuation, pricing, royalties, equity/warrants, minimums, changes of IP rights, supply/purchase commitments,
- Agreements (deals), deal-marketing, negotiation, dealmaking,
- Spinouts, Joint Ventures/Partnerships, research collaborations, startups/NEWCOs, M&As (Mergers & Acquisitions),
- Infringement/IP-theft litigation/negotiation/settlement,
- Government policy related to IP law and policy, economic development, and trade.[4]

1. *www.licensingfoundation.org*. The Licensing Foundation is a wholly-owned 501c3 subsidiary of LES (USA & Canada).
2. The Licensing Foundation in January 2004 was managed by its Board comprised of Louis Berneman, Todd Dickinson, Mel Jager (President), Dwight Olson, Richard Razgaitis, Art Rose, and Jim Soberaj, on behalf of the Board of LES (USA & Canada).
3. Some have characterized the licensing "industry" as the "market for knowledge." The classical Greek term technê, commonly translated craft or art, and perhaps in our context and times could be best translated as "know how," is more appropriate than "knowledge." Although we use "licensing industry" as subject of study, it could perhaps be more comprehensively defined as the "market for owned/protected *technê*."

*Richard Razgaitis, President of the Licensing Foundation (2004/5).

The final word in the above list, trade, references a basic, essential business activity that dates from antiquity and one that has had enormous societal impact. Licensing, albeit a very specialized form of trade, has become in the last half of the 20th Century a vibrant, and extremely important part of business and society. LES, which came into existence less than 40 years ago, has grown to 13,000 members worldwide, 5,800 of which are in the U.S. and Canada. Other associations closely related to licensing, such as AIPLA, AUTM, and IPO, have similarly evidenced significant growth and interest. U.S. patents, which date from 1790 (a year when there were just three patents issued), have likewise shown a dramatic level of growth in the past 40 years: from 62,857 issued by the USPTO in 1965 to 169,028 in 2003.[5] Software (including firmware and middleware) was virtually non-existent as an industry 40 years ago but has become a major element in our economy,[6] affecting even our rights to write, print, and transmit articles such as this one.

It is of interest to grasp and characterize the extent and key issues of the business and profession of licensing. This interest has attracted the attention of numerous individuals and groups. The U.S. Patent and Trademark Office (USPTO) makes available detailed statistics on patents applied for and granted. The Intellectual Property Owners (IPO) Association has recently published results of its survey of its member's activities. Since FY 1990, AUTM has published an annual report of its survey results of its member institutions (primarily universities) that include not only data on R&D funding and the resulting invention disclosures and patents but also data on license agreements entered into and royalties and other IP payments received.[7] For many years Battelle has performed annual surveys to provide forecasts of annual R&D spending in both industry and government.[8]

In 2003 LES reported on the results of a survey of compensation for licensing professionals.[9] Other LES groups, such as its Intellectual Capital Management Committee have conducted surveys of licensing metrics relating to best practices. "An International Survey on Technology Licensing Practices" has been completed in draft form on behalf of LES International (LESI), LES (USA & Canada), and LES France.[10] This as yet unpublished survey analyzes 160 written questionnaires regarding 297 technology licensing agreements primarily in Europe, Japan, U.S.A., and Canada. Other such licensing process/issues surveys done by LES members (and others) include Degnan,[11] McGavock,[12] McGavock,[13] and the Corporate Legal Times.[14]

Royalty rate and other IP payments have been widely surveyed by many. Public filings of license agreements that represent material transactions have been useful source data for IP payments and in certain respects for deal structures, particularly in the healthcare industry (pharmaceuticals and biotechnology) and have been compiled into databases by commercial vendors.[15] Razgaitis has summarized numerous such royalty rates and other financial surveys, some dating back to 1975.[16]

Except for the AUTM and Battelle surveys, and the U.S. Patent Office statistics, most of the other survey information has been ad hoc and reflects the particular interests of the surveying group.

One core measure of an industry's significance is total annual revenue for all segments by all participants, and an understanding of such industry's structural taxonomy. There have been multiple sources who have claimed that in the U.S., the licensing industry has $100 billion annual "royalty licensing revenues," which appears to include all forms of IP patents including running royalties;[17] however, there does not appear to be a research foundation for this (or any other) estimate. If such revenues are indeed expressed in nine-figures (> $100 bil-

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4. Note than the terms "license" or "licensing" do not explicitly appear in any of such bulleted list, although licensing is commonly an important, directly-related business practice.

5. *http://www.uspto.gov/web/offices/ac/ido/oeip/taf/reports.htm#by_hist.*

6. U.S. software only revenues (which arguably could be considered as substantially *all* licensing revenue) in 2001 are estimated to be $69 billion with an additional $100 billion in sales outside the U.S.; Service Annual Survey, *http://www.census.gov/svsd/www/sas511.pdf*

7. AUTM Licensing Survey: FY 2002, The Association of University Technology Managers, 2003.

8. *http://www.battelle.org/news/04/1-22-04 R&D%20Funding.stm*

9. *2003 Compensation Survey Report*, Licensing Executives Society (U.S. and Canada), 2003.

10. "An International Survey on Technology Licensing Practices; The Diversity of Technology Licensing Agreements and their Clauses," Eric Brousseau (coord.), Camille Chasserant, Christian Bessy; FORUM, Université de Paris X, *http://forum.u-paris10.fr.*

11. Degnan, Stephen A., *The Use of Conjoint Analysis to Establish the Most Important Evaluation Factors in Technology Transfer and Patent Licensing Negotiations*, Ph.D. Dissertation, Golden State University School of Business, June 2002.

12. McGavock, D.M. and Lasinski, M.J., "IP Survey Finds Gap in Information," *les Nouvelles*, Sept. 1998, p. 107-116.

13. McGavock, D.M. and Haas, D.A., "Licensing in the Real World: A Survey of Those Who Know," *Licensing Law and Business Report*, Vol. 13, No. 1, May-June 1990, p. 146-156.

14. Andersen, Steve, "The Evolving IP Counsel, The Inaugural Survey of Chief IP Counsel, *Corporate Legal Times*, June 2002, p. 1.

15. Such as, Recombinant Capital (*http://www.recap.com/*) and Windhover (*http://www.windhover.com*) which focuses on the pharmaceutical/biotech industry.

16. Razgaitis, R., *Valuation and Pricing of Technology-Based Intellectual Property*, John Wiley & Sons, 2003, Chapter 4.

17. Such statistic has been cited for "retail" licensing (primarily trademark licensing): "Licensing is a $100 billion retail market worldwide, with $70 billion in business in North America alone, says Murray Altchuler, executive director of the International Licensing Industry Merchandisers' Association (LIMA)." [Citation at: *http://www.entrepreneur.com/article/0,4621,226781,00.html*]. And $100 billion/year is also cited for technology licensing revenues: "The IP licensing market has grown an estimated 700 percent, from $15 billion in 1990 to well over $100 billion in 1998. Patent licensing revenue is predicted to top half a trillion dollars annually by 2005." [Citation at: "The Basics of Financing Intellectual Property Royalties, Part III: What is the Market?," by Licent Capital, July 2, 2001, *http://www.cafezine.com/Index_article.asp?id=412&deptId=3*]

lion), then licensing would indeed represent a major industry joining other nine-figure segments such as computers/electronic products ($350 billion),[18] telecom ($425 billion),[19] pharmaceuticals, and R&D itself ($284 billion).[20]

In this context, the Licensing Foundation commissioned an initial survey of licensing activity in U.S. for the purpose of contributing to the above available information resources but also, perhaps, to inaugurate a regular, systemic investigation to complement and expand the understanding of licensing as an industry and as business practices. The long-term aspiration of such surveying initiative was and remains:

Provide an annual, synoptic perspective on key statistics, events, and trends in the world of "Licensing" that can assist licensing professionals in understanding and advancing the business environment in which they operate and to which they contribute, and can be used by the public, academic researchers, and government policy analysts to grasp the issues and impacts of licensing business practices.

Based on this background and long-term objective, the Foundation prepared a Request for Proposal (RFP) which was sent to some 30 organizations including leading MBA and entrepreneurship academic programs and other entities known for their interest in this or related areas. After a review of several proposals that responded to the RFP, the team of Professors, Iain Cockburn of Boston University and Ajay Agrawal of the University of Toronto, was selected.

A key aspect of the survey was the desire to focus on licensing matters primarily involving corporate IP asset owners who are members of LES (USA & Canada), since participants were more readily accessible and likely to be responsive to the Licensing Foundation, and which conduct out-licensing despite being (normally) capable of directly commercializing such IP assets and in-licensing despite (normally) having its own R&D/product development capabilities. Such IP owners can be considered to be "OEMs" of licensing. Although the survey was inclusive of all members of LES (USA & Canada) with an e-mail address (5,349 e-mail addresses associated with approximately 2,669 unique organizations), and so included numerous IP service providers (1,401 of such 2,669 unique organizations were such as outside legal counsel and IP valuation organizations), the primary interest was the perspectives of such licensing OEMs (1,268, the difference between 2,699 and 1,401). Such a survey would also reach IP inventor/creator organizations such as universities and research institutes that (normally) lack the means to directly commercialize its own IP opportunities; AUTM-type respondents (universities and institutes) were included in the results reported here (albeit in small numbers). Other survey analysis which we have tested, such as royalties collected as a percentage of EBIT, used only data from commercial firms; so data from AUTM-type respondents were excluded in such calculations. Such EBIT percentage calculations are not reported here because the number and diversity of respondents does not make such analysis statistically reliable. The industry classification used by LES (USA & Canada) to group its membership was also used to classify the survey responses.

To simplify the scope of the survey we excluded licensing activities from the following areas: Right-to-Use licensing (sometimes known as "shrink wrap" licenses), cross-licensing (although we did ask some questions related to the practice), copyrighted content licensing (music, text, and the like), and trademark licensing. Further, because our database of respondents were members of LES (USA & Canada) we asked for data and perspectives for licensing activities in North America.

SURVEY FORMAT[21]

The survey was implemented as an online questionnaire accessible by Web browser, rather than in the traditional format of a hardcopy mail-back questionnaire. The survey was administered in January and February of 2004 by faxing a letter to the membership of the LES (USA and Canada), followed by individualized e-mails containing a link to the survey site explaining the objective of the survey. Web surveys of this type have recently been found to have comparable response rates to mail-based surveys.[22] Web surveys also have obvious advantages over the traditional format in terms of speed, lower printing and distribution costs, and reduced data entry errors. Many individuals find that the "task burden" of responding to a Web-based survey by clicking boxes or choosing among a menu of alternatives is significantly lower than for paper questionnaires, so this format also minimizes intrusiveness and time cost. This "closed" list-based sampling frame, made up of individuals who can safely be assumed to have access to the Internet and a high level of familiarity with using Web browsers, is relatively immune to the problems with sample selection, coverage, and response biases that have been identified with some Web surveys that attempt to draw conclusions about larger and more heterogeneous populations.

Multiple iterations of the survey were tested with various volunteers who provided focus panel counsel. Such counsel resulted in significant reductions in the scope and complexity of the questions in the interest of increasing the likelihood of a larger response. Substantial dis-

18. 2002 U.S. annual revenues as defined by U.S. Census Bureau, 2002 Economic Census, *http://www.census.gov/econ/census02/advance/TABLE1.HTM*

19. U.S. Census Bureau, 2002, Op cit.

20. Battelle R&D Forecast 2004, citing 2003, U.S., *http://www.battelle.org/news/04/1-22-04R&D%20Funding.stm*

21. This section and the one following is substantially the contribution of Prof. Iain Cockburn, whose assistance is gratefully acknowledged.

22. Kaplowitz, M.D., Hadlock, T.D., Levine, R. (2004) "A Comparison of Web and Mail Survey Response Rates." *Public Opinion Quarterly*. 68(1):94-102.

cussion took place regarding the balance between questions that asked for subjective opinion ("strongly agree," "agree," etc.) versus a greater (or total) focus on quantitative responses (dollars, numbers, "facts"). The resulting survey was designed to minimize any need for research numbers (to increase response rate), to be completed in not more than 20 minutes, and to be done with complete anonymity[23] by any or multiple members of any given licensing OEM. This approach precluded the capacity to have OEM data from, say, each of the top ten pharmaceutical companies.

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23. Though e-mails to respondents were tracked with a randomly generated serial number to prevent us from reminding people who had already participated in the survey, and to maintain database integrity if respondents visited the survey web pages multiple times, no identifying information about respondents was retained after the survey was closed.

The Web based format also allowed us some flexibility to address the heterogeneity of the LES membership, whose involvement with various aspects of licensing varies greatly, and who belong to quite different kinds of organizations. The questionnaire was structured to serve up questions tailored to respondents answering for an entire company versus business unit, and for those engaged largely in out-licensing, largely in in-licensing, significant amounts of both activities, or indirectly involved as consultants or legal advisors. This prevented respondents from being asked redundant or irrelevant questions, speeding up the process of completing the questionnaire and further reducing the task burden.

Respondents were alerted to the general content of the questionnaire in the faxed invitation letter and follow-up e-mails, and were guaranteed anonymity. Two rounds of "reminder" e-mails were sent during the month long period that the survey was administered.

It is important to distinguish between surveys designed to elicit useful descriptive information about a phenomenon from volunteer respondents, and those designed to precisely measure population statistics. The latter requires strict "probability sampling" i.e. draw a random sample from the population of interest (e.g. dialing random digits to poll the U.S. population) and to get good results may often need "quota sampling" based on population strata and stringent controls to minimize response bias. This makes them both expensive and intrusive, and difficult to implement when key individuals with specialized information must be contacted and persuaded to willingly provide responses including confidential information. The former can usefully be done from "convenience samples" like ours, particularly when targeted at a list such as the

Exhibit 1. Stage 1 Dealmaking Challenges: Getting to Substantive Negotiations

	OVERALL		LARGE ORGANIZATIONS		SMALL ORGANIZATIONS	
QUESTION	Number	Mean	Number	Mean	Number	Mean
Thinking about intellectual assets that could have been licensed in the last fiscal year but weren't, for what percentage were potential licensees identified?	127	26%	54	21%	73	30%
Where potential licensees were identified, for what percentage were negotiations ever started?	121	27%	52	29%	69	27%
Of all the times you entered into substantive licensing negotiations in the last fiscal year, what percentage did not result in a successfully executed agreement? (Organizations engaged in significant in- and out- licensing activity only)	38	43%	16	47%	22	40%
If you had unlimited staff resources to market and negotiate additional licensing deals (above and beyond those your company has already done), what percentage more revenue do you think your company could generate?	143	45%	59	45%	84	45%

"LARGE" organizations defined as those with more than 1,000 employees.

LES (USA & Canada) membership made up of well-informed professionals with an interest in the outcome. But this type of information is vulnerable to response bias (those who choose to answer may not be representative of the sample) and to "frame bias" (the sample is not representative of the population it is drawn from).

A complete copy of the survey instructions and questions is available at the Licensing Foundation Website: *www.licensingfoundation.org*.

RESPONSE RATE

799 unique visitors to the Web site containing the questionnaire were recorded. Of these, 350 proceeded to complete at least part of the questionnaire. Of these 350 respondents, 121 were involved in licensing primarily as consultants or legal advisors, and are excluded from the following analysis. Of the remaining 229 respondents, 117 were engaged primarily in out-licensing activity, 45 primarily in in-licensing activity, and 67 were involved in significant amounts of both in- and out-licensing.

Sample selection has not yet been assessed. The "core" sample of 229 respondents is a small fraction of the total LES membership and in particular the 5,349 with e-mail addresses (as of the time period of the Survey: January 2004). However LES members are affiliated with only 2,669 distinct organizations, of which 1,401 are law firms, consulting companies, banks, or other professional service firms, and are therefore excluded from consideration here. This leaves just over 1400 "target" organizations that can be considered as the survey target OEMs of licensable IP and employ one or more LES members. Results reported here should therefore be thought of as a 15 percent sample from this reference.

It should be recognized that some of the questions posed in the survey received very low numbers of responses (50 or fewer) and the conclusions that can be drawn from these data are obviously very limited. This response rate is low, but not unusual for surveys of this nature. Studies that obtain higher response

Exhibit 2. Stage 1 Dealmaking Breakdowns: Potential Licensees Identified but Negotiations Never Started

	OVERALL		LARGE ORGANIZATIONS		SMALL ORGANIZATIONS	
QUESTION	Number	Mean	Number	Mean	Number	Mean
For *out-licensing*, where potential licensees were identified but negotiations never started, for what percentage of these cases was it due to:						
Insufficient resources for the licensing function?	110	28%	48	28%	62	29%
Difficulty in getting internal approval to enter into negotiations?	106	14%	46	15%	60	13%
Valid IP but difficult for potential licensee to enforce?	107	12%	47	9%	60	14%
Legal/regulatory obstacles (national security, anti-trust, etc.)?	105	6%	45	9%	60	5%
For *in-licensing*, where potential licensors were identified but negotiations never started, for what percentage of these cases was it due to:						
Difficulty in getting internal approval to enter into negotiations?	26	27%	15	26%	11	29%
Insufficient resources for the licensing function?	26	14%	15	10%	11	20%
Valid IP but difficult for potential licensor to enforce?	25	12%	15	15%	10	7%
Legal/regulatory obstacles (national security, anti-trust, etc.)?	25	7%	15	10%	10	2%

"LARGE" organizations defined as those with more than 1,000 employees.

Exhibit 3. Stage 2 Dealmaking Breakdowns: Negotiations Started, but Successful Agreement Never Reached

	OVERALL		LARGE ORGANIZATIONS		SMALL ORGANIZATIONS	
QUESTION	Number	Mean	Number	Mean	Number	Mean
Of all the times you entered into substantive *out-licensing* negotiations in the last year, what percentage did not result in a successful agreement due to:						
Inability to arrive at mutually acceptable financial terms?	93	26%	42	26%	51	26%
Inability to arrive at mutually acceptable non-financial terms?	91	23%	43	19%	48	26%
Delay in reaching agreement?	86	20%	41	20%	45	20%
Inconsistent positions of internal stakeholders?	81	17%	38	14%	43	19%
Too many parties in the negotiation (multiple licensors/licensees)?	79	5%	36	4%	43	7%
IP only being useful if bundled with other technology/IP that was not available?	80	4%	36	4%	44	5%
Licensee/licensor's IP rights disputed by a third party?	80	7%	37	5%	43	8%
Of all the times you entered into substantive *in-licensing* negotiations in the last year, what percentage did not result in a successful agreement due to:						
Inability to arrive at mutually acceptable financial terms?	63	32%	30	31%	33	32%
Inability to arrive at mutually acceptable non-financial terms?	64	17%	30	21%	34	14%
Delay in reaching agreement?	58	11%	28	13%	30	10%
Inconsistent positions of internal stakeholders?	58	15%	28	17%	30	12%
Too many parties in the negotiation (multiple licensors/licensees)?	56	9%	27	12%	29	5%
IP only being useful if bundled with other technology/IP that was not available?	54	3%	25	3%	29	2%
Licensee/licensor's IP rights disputed by a third party?	57	4%	26	4%	31	3%

"LARGE" organizations defined as those with more than 1,000 employees.

rates typically use costly (and intrusive) methods such telephone calls to non-responding members of the sample frame.

CHARACTERISTICS OF SURVEY RESPONDENTS

The respondents' organizations varied in size from less than $1 million in annual revenues and 10 employees to more than $50 billion and 20,000 employees. On average they employed 7,863 people, had sales of $5.6 billion, and annually invested $676 million in R&D. To aid in understanding the effect of organization size, responses were analyzed separately for organizations with more than 1,000 employees (hereafter "large") versus those with less ("small"). The average global metrics of the 96 "large" responding organizations were 18,000 employees, $13 billion in revenues, and just under $1.5 billion in R&D spending, compared to the 133 "small" organizations with 147 employees, $53 million revenues, and $41 million in R&D.

Respondents were asked whether they preferred to answer on behalf of their entire company (CO) or for a specific business unit (SBU) or division: 65 percent did respond on behalf of the CO, and 35 percent for a specific SBU.

Respondents belong to ten of the eleven LES industry categories: the largest category of respondents were in healthcare (29 percent CO respondents, 31 percent SBU), which includes biotechnology, pharmaceuticals, and biology. Approximately 22 percent of the respondents were from the combination of electronics (six percent CO respondents, zero percent SBU), energy (five percent CO & SBU), software (three percent CO, two percent SBU) transportation and mechatronics (three percent CO, two percent SBU), and "other" (seven percent CO, 12 percent SBU). The balance of respondents included university and government laboratories (14 percent CO, 21 percent SBU), and service sectors, primarily and approximately evenly divided between legal and consultants.

SURVEY DATA RELATING TO LICENSE DEALMAKING

Considering "trade" as a core element of "licensing," one of the major areas surveyed were aspects of such dealmaking that are believed to be important or critical. Data were obtained relating to the impediments/difficulties of

Exhibit 4. Stage 3 Dealmaking Concerns: Look Back at Out-Licensing Deals Done

	OVERALL		LARGE ORGANIZATIONS		SMALL ORGANIZATIONS	
QUESTION	**Number**	**Mean**	**Number**	**Mean**	**Number**	**Mean**
Thinking about your *out-licensing* agreements executed during the last fiscal year, with the benefit of hindsight which of the following contract characteristics would you now, on average, structure differently?						
Field-of-use restrictions	82	21%	36	31%	46	13%
Duration of agreements	82	16%	36	14%	46	17%
Geographic restrictions	82	11%	36	17%	46	7%
Degree of exclusivity	82	27%	36	22%	46	30%
Most-favored-nation (MFN) provisions	82	6%	36	11%	46	2%
Technical milestones	82	24%	36	19%	46	28%
Business milestones	82	44%	36	44%	46	44%
Grant-back provisions	82	22%	36	17%	46	26%
Reach-through provisions	82	10%	36	8%	46	11%
Fee schedule (i.e., payment structure)	82	55%	36	64%	46	48%
Payment amount	85	34%	38	34%	47	34%
Terms of use	82	20%	36	25%	46	15%

"LARGE" organizations defined as those with more than 1,000 employees.

dealmaking at various stages: (1) getting to the point of substantive negotiations, (2) consummating such substantive negotiations, and (3) living with the deal (which may include buyer/seller remorse).

The data shown in Exhibit 1 show survey responses for both Small and Large organizations, and for both in- and out-licensing (except where noted) relating to the first two dealmaking stages. Considering Stage 1, getting to substantive negotiations, these data suggest another kind of 25 percent rule: of IP assets that (in the respondent's opinion) could have been licensed (in the past year) only (approximately) 25 percent had been developed to the stage where potential licensees were identified, and of those assets where potential licensees were identified only ca. 25 percent reached Stage 2, initiating substantive negotiations. This result suggests that one out of eight opportunities believed to be licensable became part of serious buyer-seller discussions. In Stage 2, these data show that less than half (43 percent average of Large and Small data sets) reached consummation of a license. Coupled with the earlier stage erosion of dealmaking opportunities, this suggests that the percentage of asset opportunities that reach agreement is in the single-digits, perhaps even less than five percent. Yet, when asked what the effect would have been of unlimited staff resources, the respondents' mean response was 45 percent more revenue than that which actually occurred. From an absolute dollars perspective, 45 percent is a significant number, but from a perspective of the large reported deal opportunity erosion, there must be other important factors than solely additional staff resources.

Considering the large disparity in size between the average Large and Small companies (the Large ones on average have nearly 250 times the annual revenue of the Small), the

Exhibit 5. Stage 3 Dealmaking Concerns: Look Back at In-Licensing Deals Done

	OVERALL		LARGE ORGANIZATIONS		SMALL ORGANIZATIONS	
QUESTION	Number	Mean	Number	Mean	Number	Mean
Thinking about your *in-licensing* agreements executed during the last fiscal year, with the benefit of hindsight which of the following contract characteristics would you, now on average, structure differently?						
Field-of-use restrictions	33	30%	18	33%	15	27%
Duration of agreements	33	12%	18	11%	15	13%
Geographic restrictions	33	3%	18	6%	15	0%
Degree of exclusivity	33	15%	18	11%	15	20%
Most-favored-nation (MFN) provisions	33	9%	18	6%	15	13%
Technical milestones	33	27%	18	33%	15	20%
Business milestones	33	27%	18	39%	15	13%
Grant-back provisions	33	15%	18	11%	15	20%
Reach-through provisions	33	18%	18	17%	15	20%
Fee schedule (i.e., payment structure)	33	46%	18	28%	15	67%
Payment amount	33	49%	18	44%	15	53%
Terms of use	33	18%	18	11%	15	27%

"LARGE" organizations defined as those with more than 1,000 employees.

Exhibit 6. Out-Licensing Dealmaking Provisions (Tools)

	OVERALL		LARGE ORGANIZATIONS		SMALL ORGANIZATIONS	
QUESTION	Number	Mean	Number	Mean	Number	Mean
What percentage of your overall number of ***out-licensing*** agreements was for a single lump sum license fee (not contingent on sales)?	102	13%	49	17%	53	9%
For those *out-licensing* deals that did include running royalty payments, what percentage used a per-unit royalty as opposed to a royalty determined as a percentage of net sales?	99	15%	48	14%	51	15%
What percentage of your ***out-licensing*** agreements involved milestone payments?	101	41%	48	35%	53	47%
For your *out-licensing* agreements executed during the last fiscal year, please check which of the following provisions were routinely used:						
Field-of-use Restrictions	150	75%	63	86%	87	68%
Limited Duration	150	51%	63	59%	87	46%
Geographic Restrictions	150	49%	63	54%	87	46%
Exclusivity	150	61%	63	56%	87	64%
Semi-Exclusivity (fixed number of licensors/licensees)	150	13%	63	19%	87	8%
Non-Exclusivity	150	51%	63	65%	87	41%
Non-Discriminatory (same terms for all licensees)	150	11%	63	11%	87	10%
"Most-favored-nation" (MFN) provisions	150	9%	63	13%	87	7%
Technical milestones	150	47%	63	46%	87	48%
Business milestones	150	57%	63	60%	87	54%
Onus of enforcement of IP placed on the licensee	150	33%	63	35%	87	32%
Grant-back provisions (rights to use improvements made by licensee)	150	41%	63	51%	87	34%
Reach-through provisions (royalties on sales of future products developed through use of the licensed technology)	150	31%	63	25%	87	34%

"LARGE" organizations defined as those with more than 1,000 employees.

Exhibit 7. In-Licensing Dealmaking Provisions (Tools)

QUESTION	OVERALL		LARGE ORGANIZATIONS		SMALL ORGANIZATIONS	
	Number	Mean	Number	Mean	Number	Mean
What percentage of your overall number of ***in-licensing*** agreements was for a single lump sum license fee (not contingent on sales)?	62	16%	29	17%	33	15%
For those ***in-licensing*** deals that did include running royalty payments, what percentage used a per-unit royalty as opposed to a royalty determined as a percentage of net sales?	59	6%	28	9%	31	4%
What percentage of your ***in-licensing*** agreements involved milestone payments?	61	44%	28	50%	33	39%
For your *in-licensing* agreements executed during the last fiscal year, please check which of the following provisions were routinely used.						
Field-of-use Restrictions	42	79%	18	78%	24	79%
Limited Duration	42	48%	18	56%	24	42%
Geographic Restrictions	42	55%	18	56%	24	54%
Exclusivity	42	62%	18	56%	24	67%
Semi-Exclusivity (fixed number of licensors/licensees)	42	14%	18	17%	24	13%
Non-Exclusivity	42	38%	18	50%	24	29%
Non-Discriminatory (same terms for all licensees)	42	5%	18	6%	24	4%
"Most-favored-nation" (MFN) provisions	42	2%	18	22%	24	17%
Technical milestones	42	55%	18	56%	24	54%
Business milestones	42	60%	18	56%	24	63%
Onus of enforcement of IP placed on the licensee	42	33%	18	22%	24	42%
Grant-back provisions (rights to use improvements made by licensee)	42	45%	18	39%	24	50%
Reach-through provisions (royalties on sales of future products developed through use of the licensed technology)	42	36%	18	33%	24	38%

"LARGE" organizations defined as those with more than 1,000 employees.

difference in response to the questions in Exhibit 1 is small, but in some cases it may be significant. Small companies appear to have had more difficulty finding potential licensees (can't get the attention of the right parties?), and Large ones more difficulty in consummating negotiations (because they're more demanding?). On the question of the effect of unlimited resources, and getting from identified potential licensees to the start of negotiations, the Large and Small companies report the same percentages.

The responses of Exhibit 2 look more closely at the inability to get from the point of potential licensee identification in Stage 1 to onset of Stage 2 (negotiations). For out-licensing, the number one factor was insufficient licensing resources reported by 28 percent of the respondents, with, interestingly, no difference between Large and Small entities. For in-licensing (for which we are dealing with very small datasets), the number one impediment was internal approvals (27 percent) with again little if any difference between Large and Small companies. Getting internal approvals was the 2nd most important factor for out-licensing (14 percent), but apparently half as common a problem than finding necessary resources. Concerns about the licensee's ability to enforce the IP was also a relatively low concern (in frequency) but occurs more often for Small companies than for Large. This result may be due to Small companies having earlier and less developed IP. Regulatory concerns were the least important of these four factors for both size categories and of lesser importance to Small companies than to Large. Concerns about IP enforceability of the IP owner/licensor in in-licensing contexts show that Large companies appear to give this far more weight than small companies. This is an approximate reversal of the reported percentages in an out-licensing context, where Small companies report a substantially higher frequency of concern regarding the licensee's ability to enforce.

Exhibit 3 shows dealmaking breakdown within Stage 2, namely the inability to consummate negotiations that have begun. For out-licensing, the top four factors, ranging in frequency of citation from 17 to 26 percent were the inability to arrive at mutually acceptable financial and non-financial terms, with financial barriers slightly more important, and the effect of delays and inconsistent positions of internal stakeholders. So the common tagline of dealmaking failure—"show me the money!"—appears to be somewhat valid (it was the highest cited factor), but there were three other factors almost as important. For Small companies, the non-financial terms and inconsistent position of internal stakeholders were more commonly cited than for Large companies. Of far lesser importance for both Small and Large companies, ranging in frequency of cause of breakdown from four to seven percent, were the effects of too many entities in the negotiation (such as a three-way, or more, deal participants), the unavailability of other useful IP, and IP rights disputed by a third party. For in-licensing contexts, the data are similar with the notable exception that nearly one third of the time the negotiation difficulties were really about the money, for both Small and Large companies. All other factors were substantially lower in importance. Also an interesting difference was a reversal of the perceptions of Large and Small companies with respect to non-financial terms in comparison to out-licensing contexts: in out-licensing, the issue of non-financial terms was cited more frequently by Small companies, but in in-licensing, it was cited more by Large companies. This is likely due to the prevalence of Small companies more engaged in out-licensing (relatively speaking) and Large in in-licensing. Another factor for which such reversal is observed is the adverse effect of inconsistent positions of internal stakeholders, likely for the same reason: the buyer-seller roles are reversed.

Moving to Stage 3, living with the deal done, Exhibit 4 and 5 show the survey's results for out-licensing and in-licensing, respectively. In both contexts the question sought to examine near term, less-than-one year post-deal, satisfaction with the deal done. This presented a kind of JD Powers "how are you liking your new car?" perspective. When considering these data we should be reminded that deals are not (normally) like victories, where there is literally a winner-take-all outcome. Deals require by their nature a mutuality of agreement, which casts a shadow, and sometimes a pall, over one's aspirations. The parties usually recognize this situation by feeling somehow that the deal was a tie, not a victory, and yet both sides are benefited by the outcome compared to no deal. Put another way, in some ways dealmaking exhibits the famous five phases popularized by Elisabeth Kübler-Ross associated with grieving, even bereavement: denial, anger, bargaining, depression, and (finally) acceptance. If so, one would think that dealmakers looking back on less than year-old deals would exhibit a high degree of acceptance, expressed by low frequency responses as to provisions or characteristics that they would now "on average structure differently." Yet, the data of Exhibit 4 and 5 show a relatively high frequency identification of deal characteristics that the respondent would now do differently, presumably because of both a more detached perspective away from the negotiating table and also the availability of new information from both sides of the deal.[24]

Looking at Exhibit 4, hindsight perspectives of out-licensing deals done, responses to 12 factors show double-digit frequencies for 11 of these factors. Only MFN provisions are in single digits, and eight of the factors are reported at percentages

24. Another possible explanation is that these data include the perspective of deals that were done but not with the participation of the respondent. In such cases, because deals are compromises not victories, it would not be unexpected that a respondent would have a generally-critical perspective, not having been at the table and faced with the necessary horse-trading to reach an agreement.

of 20 percent or greater. Three of the factors are at percentages above 33 percent, and one was greater than 50 percent. This does not look like Kübler-Ross phase-5 "acceptance;" it is more like phase-4 "depression," which does indeed sometimes follow "bargaining." The top three factors reported at percentages from 34 to 55 percent all relate to "show me the money!": fee schedule (55 percent), business milestones (44 percent), and payment amount (34 percent). It looks like the seller is most unhappy about the timing of payments, then perhaps the business events that trigger such payments, and is also quite unhappy about the magnitude of the payment, all from a less-than-one-year perspective. Given the time period of the question such disappointment is unlikely to be about royalty payments. Is it sublicensing activities and splits there from? Is it lack of licensee implementation? Next are six factors with reported frequencies ranging from 16 to 27 percent: degree of exclusivity (27 percent), technical milestones (24 percent), grant-back provisions (22 percent), field-of-use restrictions (21 percent), terms of use (20 percent), and duration of agreements (16 percent). The technical milestone concerns are likely related to the payment triggering events associated with the top three factors, but it is interesting that business milestones were a greater concern than technical milestones (44 percent vs. 24 percent) by almost a two-to-one ratio. Concerns regarding exclusivity, field-of-use, duration, terms of use, and grant-back may all relate to a form of seller remorse whereby the loss of what has been sold is more keenly felt than had been expected; perhaps this is a dealmaking version of "absence makes the heart grow fonder," or the aphorism that the only time you'll ever miss something is just after you tossed it out. The final three factors ranged from a low of six percent (MFN provisions) to ten percent (reach-through provisions) and 11 percent (geographic restrictions).

These data of Exhibit 4 also show a dramatic difference between Large and Small companies. For two of the factors there is a 16 and 18 point difference between the two category responses. Concerns about field-of-use restrictions and fee schedule where of greater importance to Large companies by 18 and 16 point differences, respectively. There were six additional factors where the difference in response by Large and Small companies was between eight and 10 points: three where Large companies were more concerned (geographic restrictions, MFN, and terms of use), and three that Small companies cited significantly more often (degree-of-exclusivity, technical milestones, and grant-back provisions).

Exhibit 5 provides parallel data to Exhibit 4 but for in-licensing. As with other in-licensing questions, there were substantially fewer respondents, making interpretation more problematic. In the highest frequency category were also fee schedule and payment amount, but here payment amount was the #1 factor at nearly 50 percent (49 percent), and fee schedule was close behind at 46 percent. With respect to out-licensing, the payment amount had been cited substantially less often, 34 percent, reflecting perhaps the difference in perception between paying and being paid. The next most frequent cluster ranging between 27 and 30 percent were business and technical milestones (both at 27 percent) and field-of-use restrictions (30 percent). Business milestones appear to be less of a frequent concern for in-licensing (27 percent) than out-licensing (44 percent), again perhaps reflecting on who is wearing what shoes. In the range of 12 to 18 percent were duration (12 percent), degree of exclusivity and grant-backs (15 percent), and reach-through and terms of use (18 percent). The responses concerning geographic restrictions (three percent) and MFN (nine percent) were in single digits.

Again the differences between Large and Small companies are striking with respect to certain factors. Small companies cited fee schedule concerns 67 percent of the time compared to 28 percent for Large companies, a difference of 39 points. On the other hand Large companies cited business milestone 26 points more often than Small. The only other double-digit spreads were 13 points regarding technical milestones (also more of Large company concern) and a 16 point spread for terms of use (more of a Small company concern).

DEALMAKING PROVISIONS (TOOLS)

Provisions, a common term of dealmaking art, somewhat like "provisions" as used in an expeditionary sense, are used to give the deal a designed life, anticipating the future and sometimes long-term needs and expectations of the respective parties. Switching metaphors, in pragmatic terms, provisions are really dealmaker tools. Well, what tools do our respondents use? Exhibit 6 and 7 give the frequency of use three common IP payment forms and 13 dealmaking provisions for out-licensing and in-licensing, respectively.

Perhaps most surprising from these data is the frequency of use of both grant-back and reach-through provisions, 41 percent and 31 percent, respectively, for out-licensing and even somewhat greater percentage for in-licensing (45 and 36 percent). Perhaps also a little surprising is the frequency of geographic restrictions: in this small/one-world, spaceship earth, global economy, internationalization era about half the agreements (49 percent for out-licensing and 55 percent for in-licensing) evidence geographic restrictions.

One of the interesting issues innate to dealmaking is the question of the licensee's unbounded commercial application of the subject technology. Normally, licensee's want the unfettered use of the licensed subject matter so that it can follow the market like a sunflower the sun, productizing and re-shaping the opportunity in whatever way the market values. The data of Exhibit 6 and 7 suggest that such unbounded freedom is granted by the seller far less often: 75 and 79 percent of the time there are field-of-use restrictions, for out-licensing and in-licensing, respectively.

Not shown in these data are some notable differences in respondents for the "healthcare" industry versus, say, electronics, with respect to the use of single lump sum license fees. As might be expected, the healthcare industry makes comparatively less use of paid up licenses, whereas paid up licenses have been commonly done in the electronics industry. In a similar fashion, the healthcare industry commonly uses royalty rates expressed as a percentage of sales whereas (for example) the electronics industry when it does make use of running royalties it more-frequently does so on some form of per-unit basis. Following this trend, the use of milestone payments is very common in healthcare, and relatively uncommon in electronics. This is believed to reflect the longer time-to-market and perhaps also the ready demarcation of various FDA stage approvals in the health care sector.

WHAT'S NEXT: FUTURE SURVEYS

Returning to the introductory discussion, our data for 2003 simply was not sufficiently extensive to even hint at the answer to the question of the size of the licensing industry. As stated at the outset, we surveyed only the members of LES (USA & Canada) with e-mail addresses. We made no attempt to singularize the reporting for any given company (i.e., making sure we were not double counting revenues) or assuring that every company of reasonable size reported (under confidence) their data. These tasks would be difficult to accomplish.[25] Further, our sample set was useful, we believe, for the observations made here, but insufficient to make statistically reliable inferences about aggregate licensing activity.

A more expansive report of these 2004 results is expected to be published. The Foundation Web site will provide updated information on the availability of such additional information: *www.licensingfoundation.org*.

The original long-term objective of the Foundation's initial attempt was to catalyze a more comprehensive understanding of this important industry, to capture not only its scale, but also its dynamism. We asked the respondents in the subject survey what questions we should have asked and did not, and we received many interesting responses, such as:

- "What percent of your IP do you present license-out? Being the licensing professional in our business I always try to maximize this while [S]BU people try to minimize it."
- "How do you market your technology for licensing?"
- "What was the value of the deals that were done? What clinical phase were the products at the time of the license?"
- "Royalty rates paid or negotiated."
- "How long between when the technology was licensed and when the first commercial application was released?"
- "What was the value of the competitive advantage provided by the new licensed technology?"
- "For most of these deals, the post deal management aspect is overlooked."
- "What state of readiness for commerce when the technology that were investigated? Transacted?"
- "How often did you use reference materials on royalty rates? How often did you use [various] valuation techniques and what techniques were employed most often?"
- "Percentage of out-licensing based on enforcement (stick) versus enticement (carrot)?"
- "Questions related to industrial sectors involved? (There is a big difference)."
- "Splits between patents, trademarks, copyrights, and trade secrets [licensing]?"
- "Use of reverse engineering to increase your licensing odds?"
- "Uncovered reasons for stalling in negotiations and letting deals die on the vine."

This all, of course, leads to another survey. It is the Foundation's plan to conduct in January and February 2005 a second survey built on the learnings of this one. We hope these results contribute to further understanding of certain aspects of our profession and industry and ask that everyone give strong consideration and support of the next survey to make next year's results better. There is another trade at work here: your help in exchange for a better understanding of your industry. Is it a deal?

ACKNOWLEDGEMENTS

The Foundation wishes to acknowledge the assistance of the Board of Directors of LES (USA & Canada) in providing counsel and testing of the survey, and its support and use of the e-mail directory. The Foundation also wishes to express thanks to Professors Cockburn and Agrawal for their services in preparing the survey, making it available in electronic form, providing the raw output, and assisting in the interpretation and perspective of the results. Most of all the Foundation thanks the nearly 800 respondents who participated in the survey, especially those who worked their way to the end.

25. Although we did not attempt to constrain reporting to one-respondent/one-company, there were in fact no detectable duplicates; however, such duplicates could have occurred because invisible SBU-parent relationships.

BioPharmaceutical Royalty Rates & Deal Terms Report

Licensing Executives Society (U.S.A. & Canada), Inc.

June 2008

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L E S

Introductory Letter

The LES (USA & Canada) HealthCare Sector is pleased to present the first "*LES BioPharmaceutical Royalty Rates and Deal Terms Survey*". This landmark report is one of the many benefits of LES (USA & Canada) membership and reflects the organization's objective to provide its members with relevant, cutting edge licensing educational information.

We believe you will find this report contains many gems on some of the most important areas of deal making in our industry.

We would like to specifically acknowledge and relay our appreciation to each survey contributor. We applaud their efforts and willingness to share their deal-related information. It is because of you that we have this survey report to issue. **Thank you, and your companies, for your participation.**

LES (USA & Canada) was assisted in this effort by Veris Consulting, a survey research firm in the Washington DC area, specializing in studies for industry and professional associations. The Veris survey instruments ensured the confidentiality of all company and deal information reported. We appreciate their fine work in assisting with the design, implementation and tabulation of the survey results.

Finally, we want to acknowledge the contributions of the Survey Committee members (listed below). It was their aggregate efforts that made the survey a reality for the professional benefit of LES (USA & Canada) members. If you have any suggestions on the survey, or would like to be involved in the future, please contact any of us at info@les.org.

Jake Schaible
Chair, HealthCare Sector, 2007-2008

Jim McCarthy
Survey Committee, Chairperson

2008 LES Survey Committee

2008 LES BioPharmaceutical Royalty Rates and Deal Terms Survey Committee Members

Start to Finish
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Introduction

The Licensing Executives Society (U.S.A. and Canada), Inc. (LES) is a professional society representing nearly 6,000 members engaged in the transfer, use, development, manufacture and marketing of intellectual property. With the growing economic importance of intellectual property, LES membership has increased to encompass business, technical and legal professionals in a broad range of industries.

This report summarizes the results of a targeted survey to LES members in the Health Care (Biotechnology and Pharmaceutical) Sector, in an attempt to benchmark important areas of deal-making for licensing professionals.

In particular, this report illustrates detailed analysis on fixed royalties, tiered royalties, valuation, and therapeutic areas. It provides a more current perspective on licensing royalty rates and deal terms than the Freedom of Information (FOI) approach allows. Actual survey results are also summarized in aggregate form, presented in Appendix A.

The last LES survey of this kind was performed in 1992. We hope that this report is useful to LES members and others who are interested in the dynamically expanding field of licensing and intellectual asset management.

All responses to this survey have been kept strictly confidential and at no point will anyone other than select Veris Consulting, LLC (Veris) employees be granted access to respondents' submissions.

If you have any questions or comments on this report, please send them to info@les.org.

Report Highlights

Profile and Composition of Responses

- 230 total deal responses were submitted. Of these deals, 157 responses were complete. The report presented here incorporates 155 complete deals, while excluding 2 outliers.
- Respondent Deal Composition: 28% Pharmaceutical Companies, 26% Biotech Companies, 35% Academic Institutions, and 11% Other.
- Respondent Organization Composition: 36% Pharmaceutical Companies, 37% Biotech Companies, 13% Academic Institutions, and 15% Other.

Deal Statistics

- 77% of the submitted deals were completed in 2006 or 2007.
- 70% of reported deals were reported by the licensors.
- Close to 50% of deals were related to Small Molecule.
- Anticancer, CNS, and Other deals were the most prevalent therapeutic area types submitted.

Report Highlights

Deal Statistics (continued)

- Close to 60% of all deals submitted were still in the Preclinical stage of development.
- 88% of deals were categorized as exclusive.
- Over 90% of licenses included the U.S. and close to 70% of licenses were considered "worldwide" in scope.
- 57% of deals represented peak U.S. Annual Sales of < $100.0 million.

Fixed and Tiered Royalties

- Of the 155 deals, 83 deals were of the fixed royalty type, 54 were of the tiered royalty type, and 18 did not have any royalty components.
- 59% of fixed royalty deals were in the Preclinical stage while 50% of Tiered royalty deals were in the same stage.

Valuation

- Net Present Values were calculated for only 19% of the deals reviewed.
- While "upfront payment" was the most frequently indicated financial component (80%), "sales milestones" displayed the greatest average amount ($56,387,000) and median ($15,000,000).
- Significant differences in deal terms are noted in the academic deals compared to Biotech and Pharma Deals.

Methodology

In the spring and summer of 2007, Veris staff coordinated with the Licensing Executives Society and a specially selected committee of LES members to develop a survey instrument that would help determine royalty rate and deal terms benchmarks for the Licensing Industry. The survey was designed to focus on the Health Care Sector of the Licensing Industry, specifically the Biotechnology and Pharmaceutical segments and collect data on deals from the previous 3 years.

After multiple planning meetings, Veris drafted and tested the survey instrument with the help of the LES Royalty Rate Survey Committee. Veris incorporated edits and changes based on this exercise to construct and refine the final online survey instrument.

Veris worked with the committee to create a survey package that included:

1. Survey promotions;
2. The online, web-based survey instrument, and
3. Scheduled reminder emails.

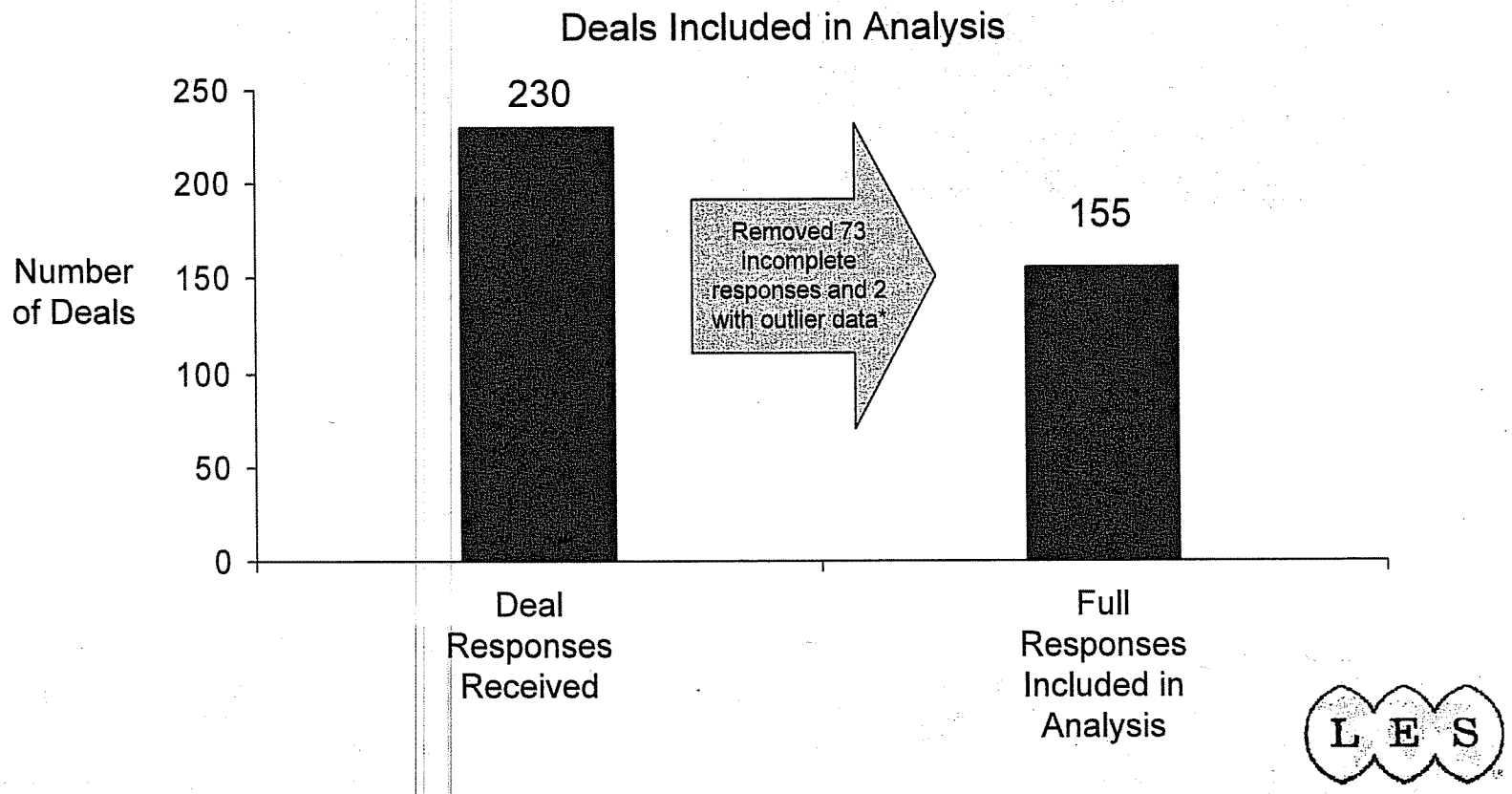
During the LES (USA & Canada) annual meeting in October 2007, LES officially announced the survey to all appropriate LES members. In late October, LES provided Veris with a list of 1,569 email addresses that identified the senior LES member for each company with LES membership . Veris emailed each company a unique survey account on November 1, 2007. All companies were sent updates of their progress and reminders to continue throughout the survey collection phase. In order to garner further participation, the LES Royalty Rate Committee personally contacted the top 50 Pharmaceutical companies.

The survey ended on January 2, 2008 with 230 total respondents. Based on the responses, a majority of the participants represented the Biotechnology and Pharmaceutical industries. During the Chicago meeting in May 2008, the LES Royalty Rate Committee presented the survey's preliminary findings. A final report in electronic format was provided to LES members June 2008.

A Profile of Responses

A Profile of Responses
Deals

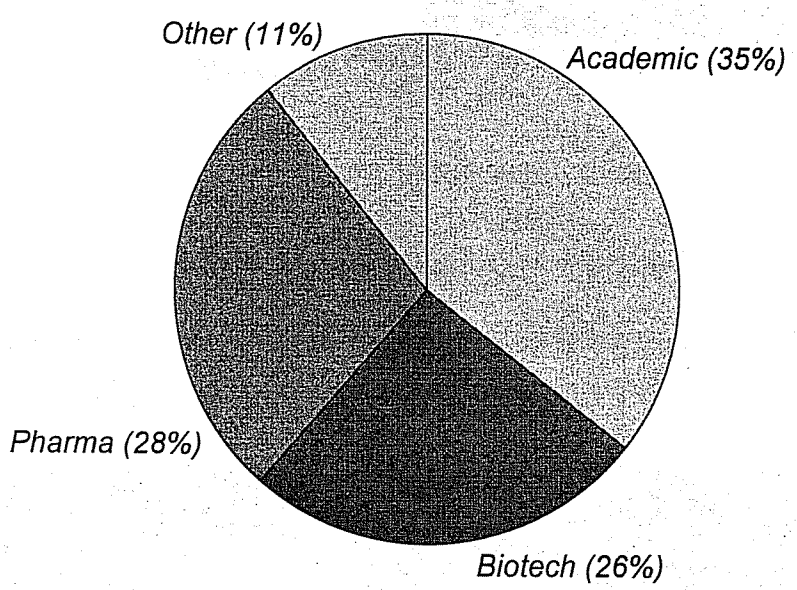
There were 230 deal responses with some information. After a review of the information provided, 155 deals were included in the analysis.



A Profile of Responses
Deals

The <u>number of deals</u> was relatively evenly split among types of respondents. Approximately half of the deals included were provided by pharmaceutical or biotech companies and one-third by "academic"

Responses Included
in Analysis
(n=155 deals)

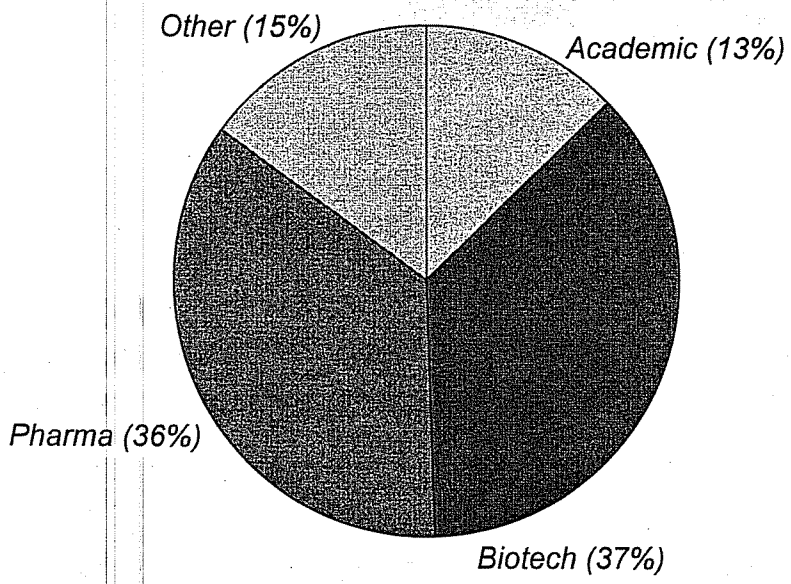


Profile Question A) What type of Organization are you?

A Profile of Responses
Organizations

Several organizations reported multiple deals. From an organization view, there is a higher concentration in the number of pharma and biotech organizations represented.

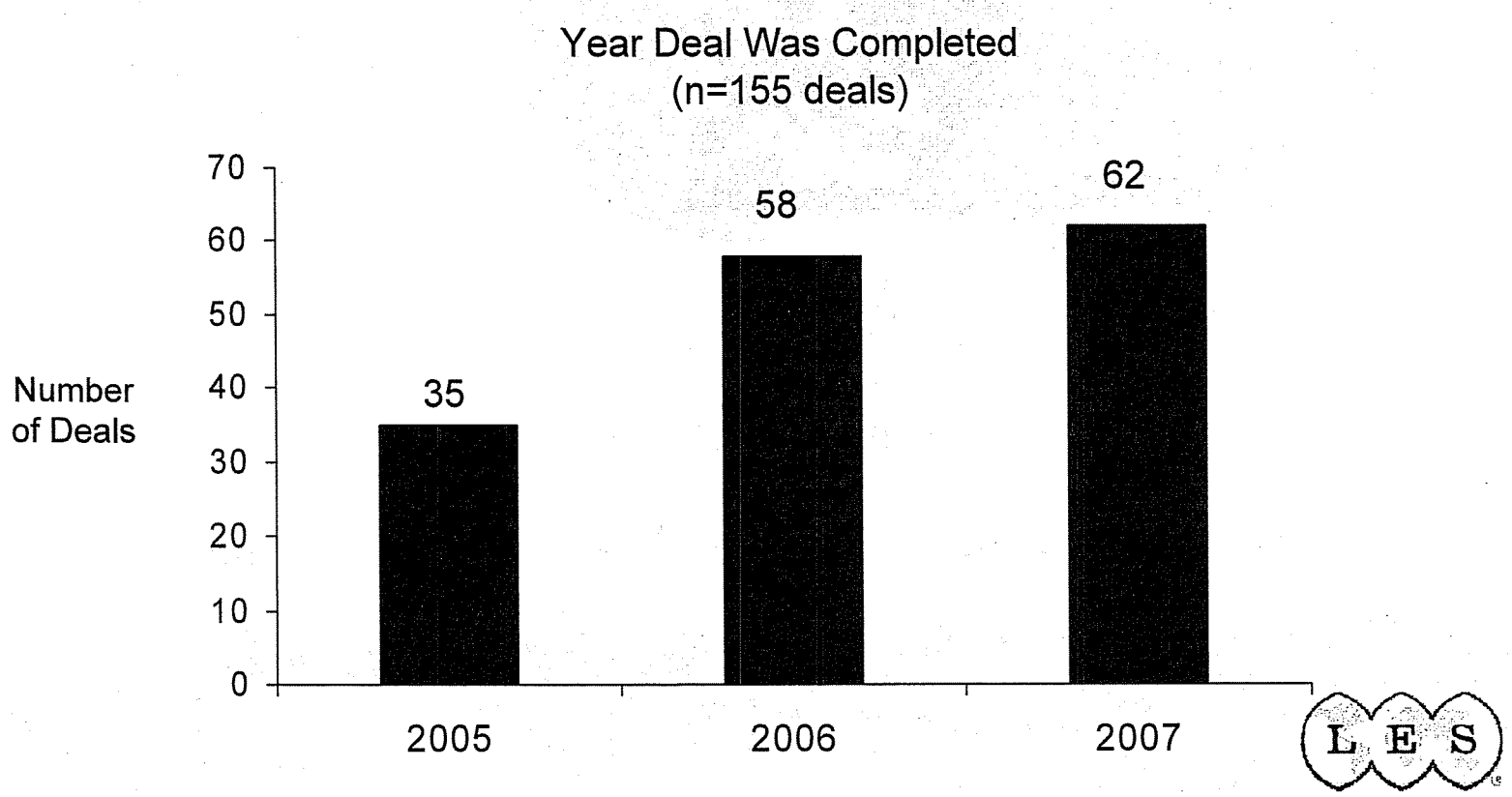
Responses Included in Analysis
(n=86 Organizations)



Profile Question A) What type of Organization are you?

A Profile of Responses
Year of Deal

There was a bias toward more recent deals. 77% of the deals included in the analysis were completed in 2006 or 2007.

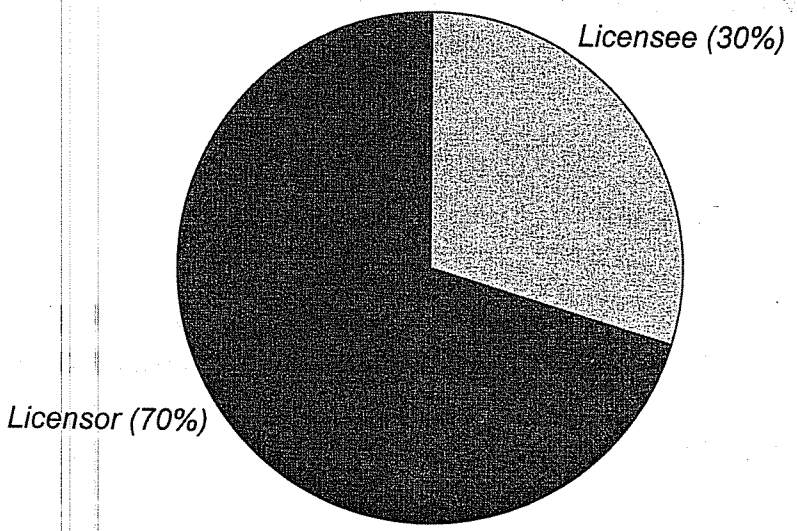


Q1. What year did deal take place?

A Profile of Responses
Role in Deal

There were a greater number of deals reported by licensors than licensees.

Responses Included
in Analysis
(n=155 deals)



Q2: Were you the Licensor or Licensee?

A Profile of Responses
Partnering Organization

Approximately 70% of the deals were reported by the licensor. In over 80 % of cases the partner was a biotech or pharma company.

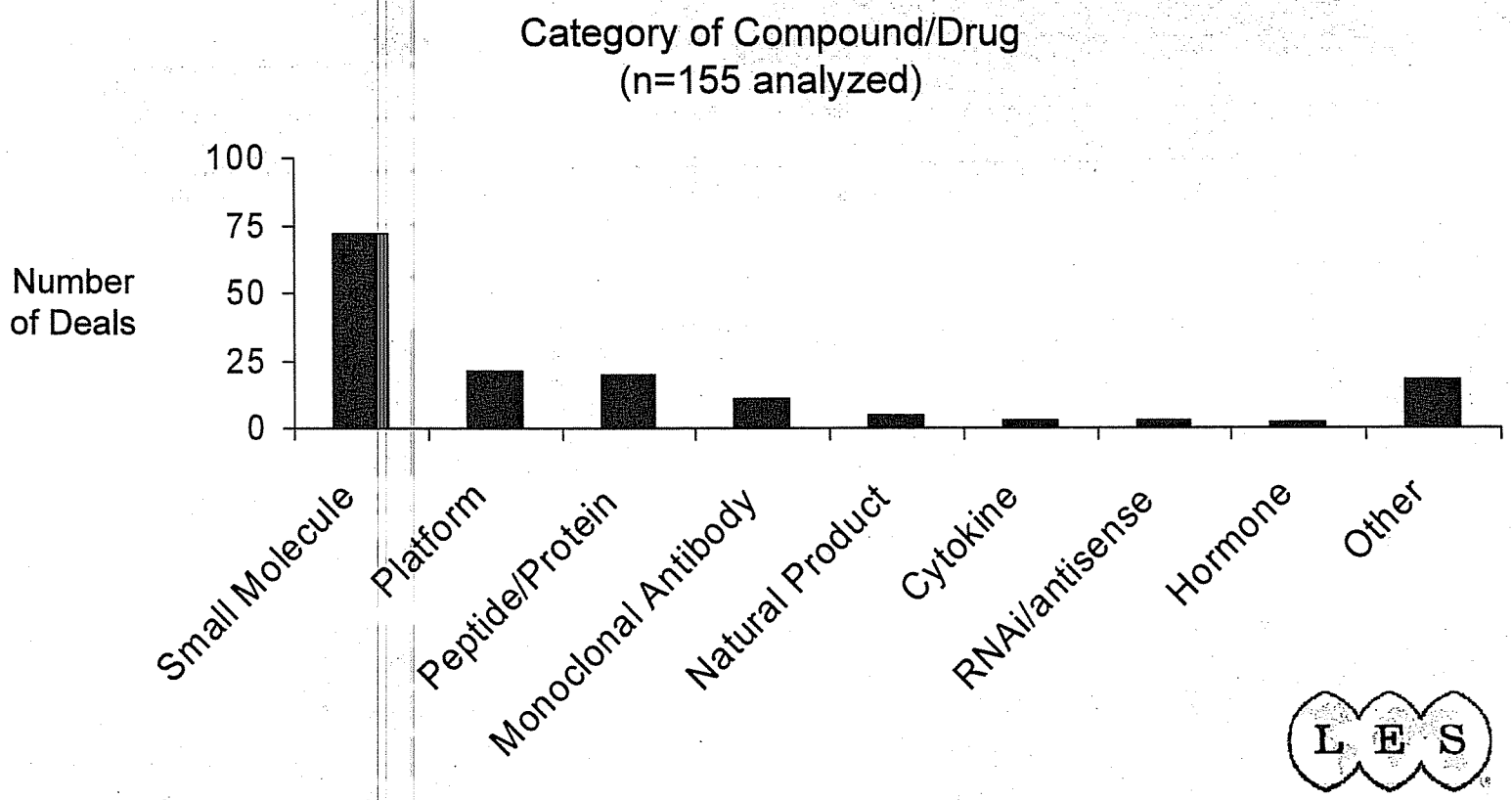
Licensor Reporting Company	Partner Organization: Academic	Biotech-nology	Pharma	Other	Total
Academic	1	26	23	5	55
Biotechnology	2	11	10	0	23
Pharma	1	2	13	0	16
Other	0	8	1	6	15
Total	4	**47**	**47**	11	**109**

Licensee Reporting Company	Partner Organization: Academic	Biotech-nology	Pharma	Other	Total
Academic	0	0	0	0	0
Biotechnology	5	7	4	1	17
Pharma	4	5	18	0	27
Other	0	0	2	0	2
Total	9	**12**	**24**	1	**46**

Q3. Type of Partnering Organization?

A Profile of Responses
Type of Product

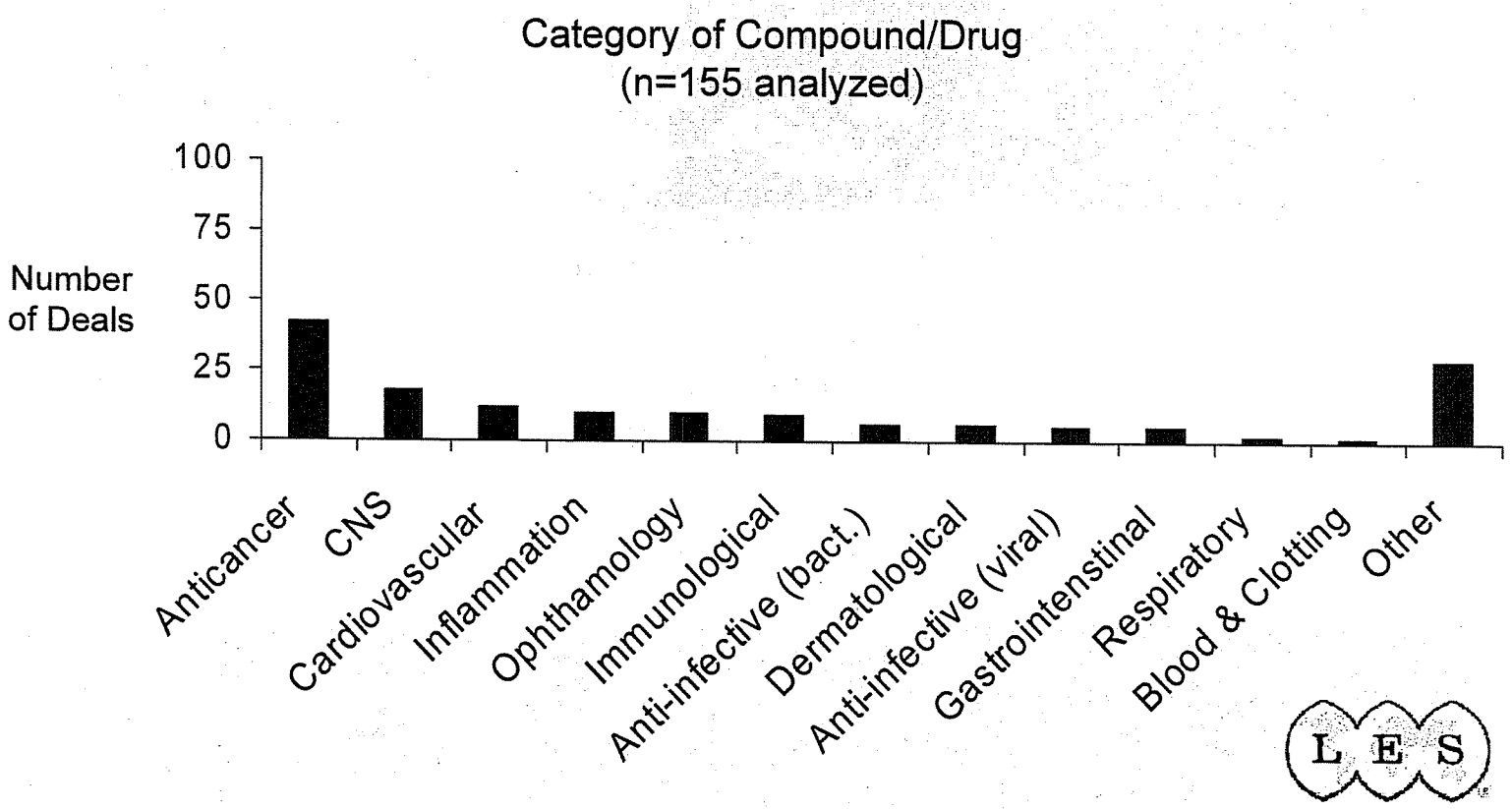
Small molecules represented approximately half of the deals received and analyzed.



Q5: Type or Category of Compound / Drug?

A Profile of Responses
Therapeutic Area

Anticancer deals comprised almost one third of the reported and analyzed deals.

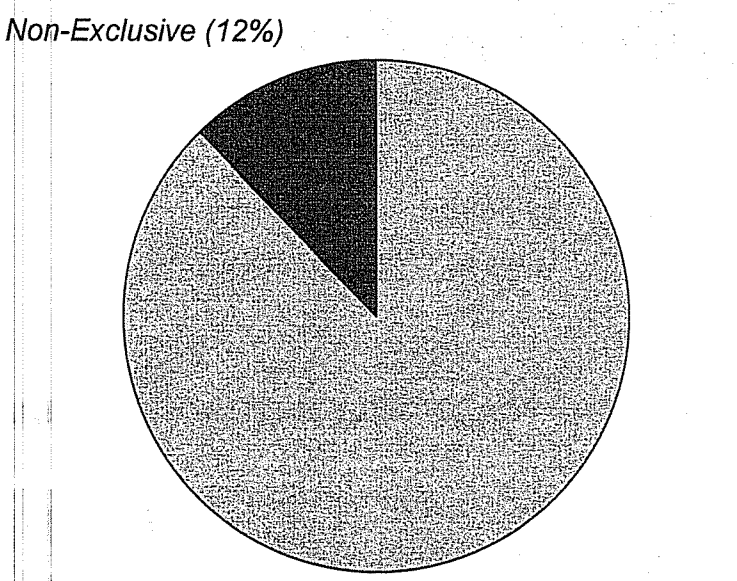


Q6: Principle Therapeutic Area for License?

A Profile of Responses
Exclusivity

A strong majority of the deals reviewed were exclusive.

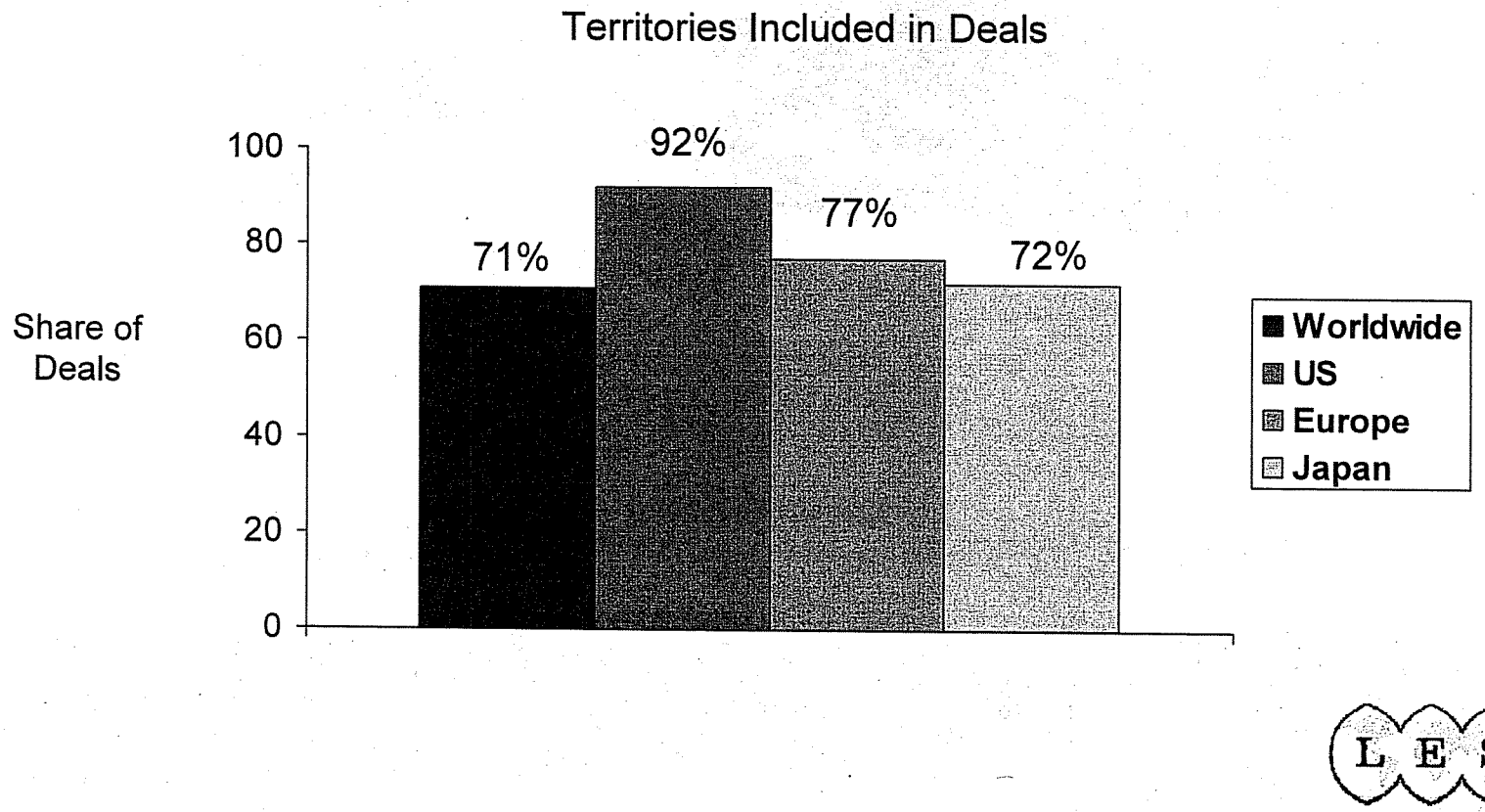
Responses Included
in Analysis
(n=155 deals)



Q8: Exclusive or Non-Exclusive License?

A Profile of Responses
Territories

More than 90% of the deals included at least the US and approximately 70% covered worldwide rights.

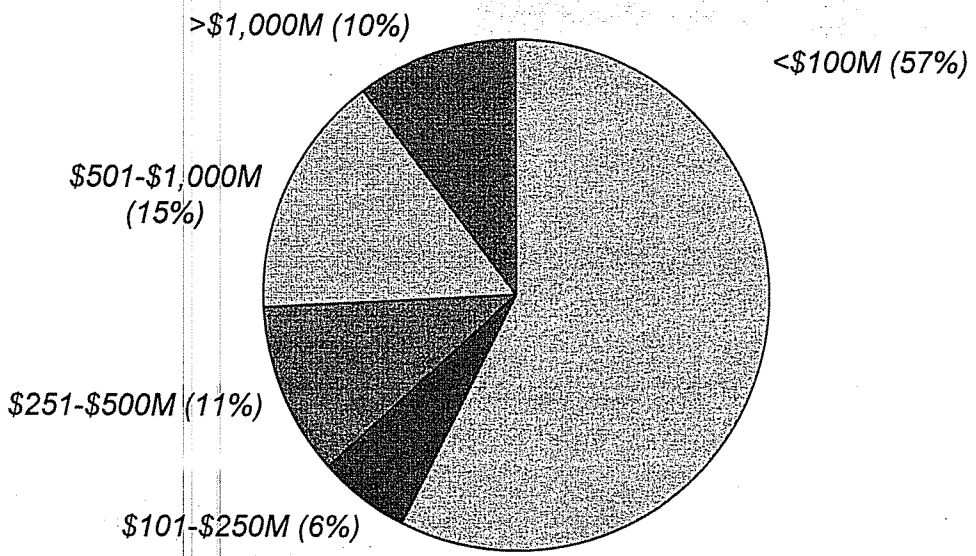


Q9 Which Territories Included

A Profile of Responses
Peak US Sales

Just over half of the deals were for products with estimated peak US sales of less than $100M, while one-fourth were for greater than $500M

Analyzed Deals Reported
(n=155 deals)

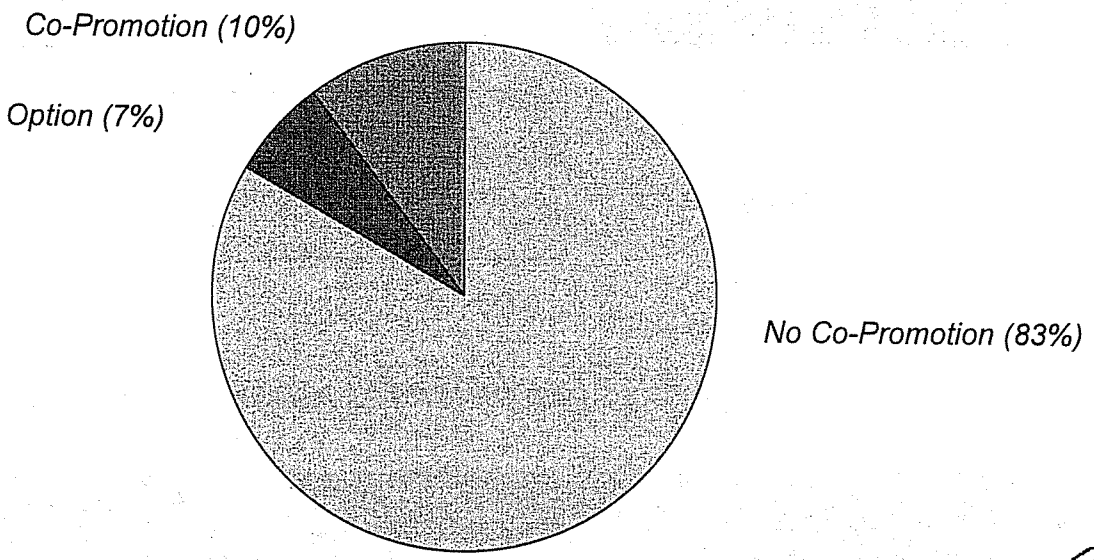


Q10: Estimated Peak U.S. Annual Sales?

A Profile of Responses
Co-Promotion/Co-Marketing

Only approximately 10% of deals included co-promotion or co-marketing.

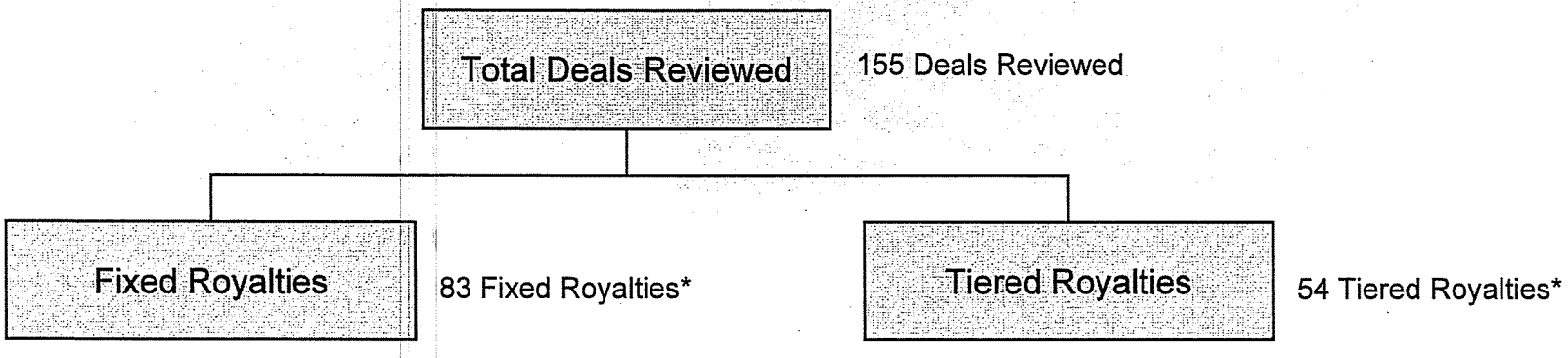
Responses Included
in Analysis
(n=155 deals)



Q11: Deal Include Co-Promo or Co-Marketing Rights?

A Profile of Responses
Royalty Type

The Royalty Analysis draws from a balanced set of deals

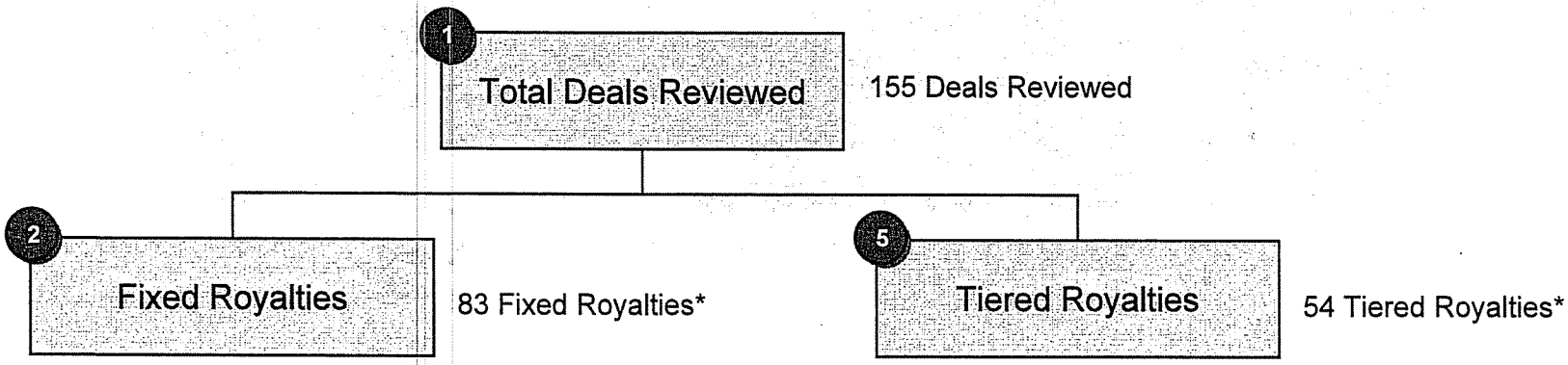


*18 deals had no royalty component.

Fixed Royalties

Fixed Royalties
Introduction

The discussion of fixed royalties draws from the values reported for 83 deals.

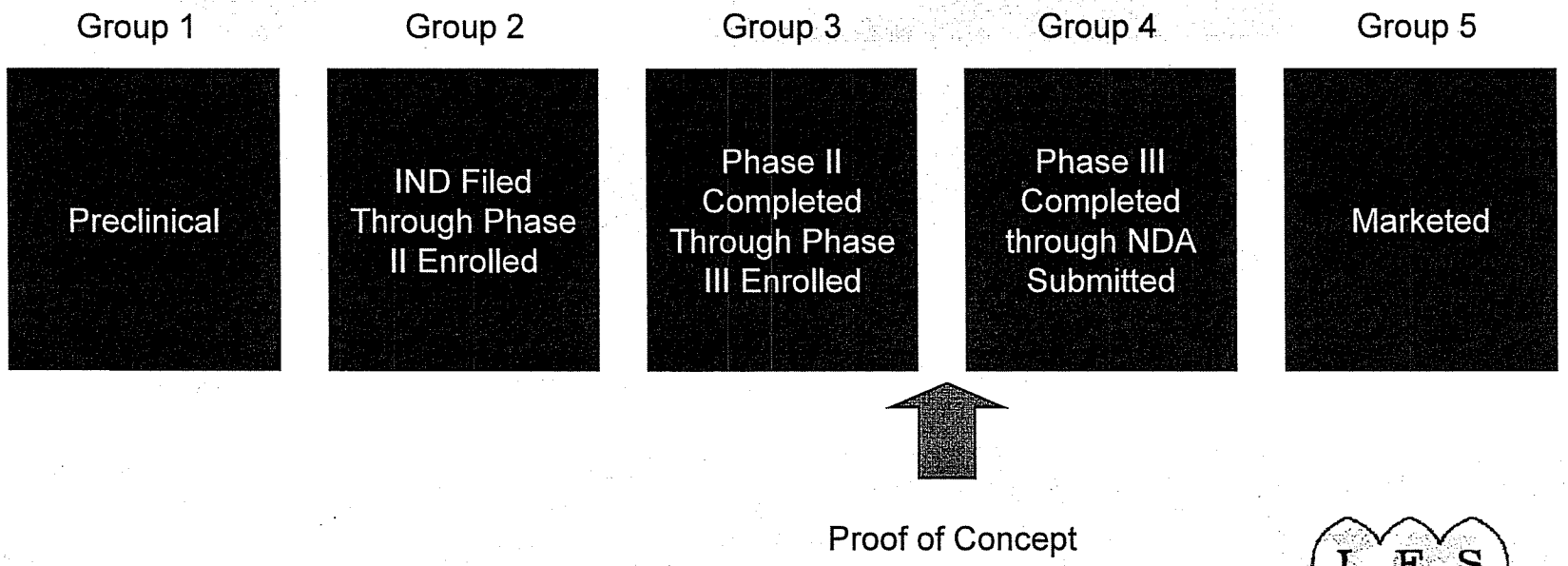


*18 deals had no royalty component.

Fixed Royalties
Introduction

At several points in this analysis, we have grouped the observations according to key points in development.

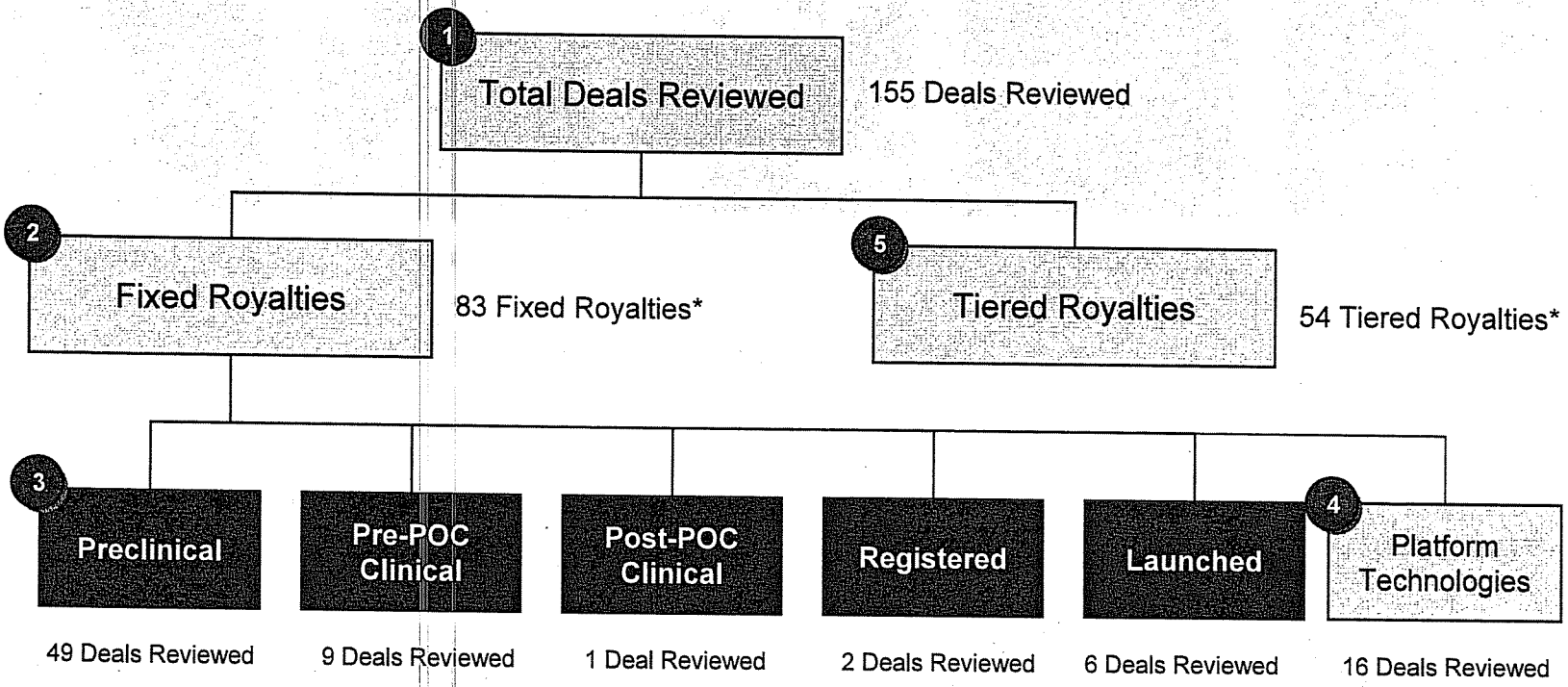
Definitions of Groups



Note: See Survey Question #7, Appendix A: "What Stage of Development for Principal Indication?"

Fixed Royalties
Introduction

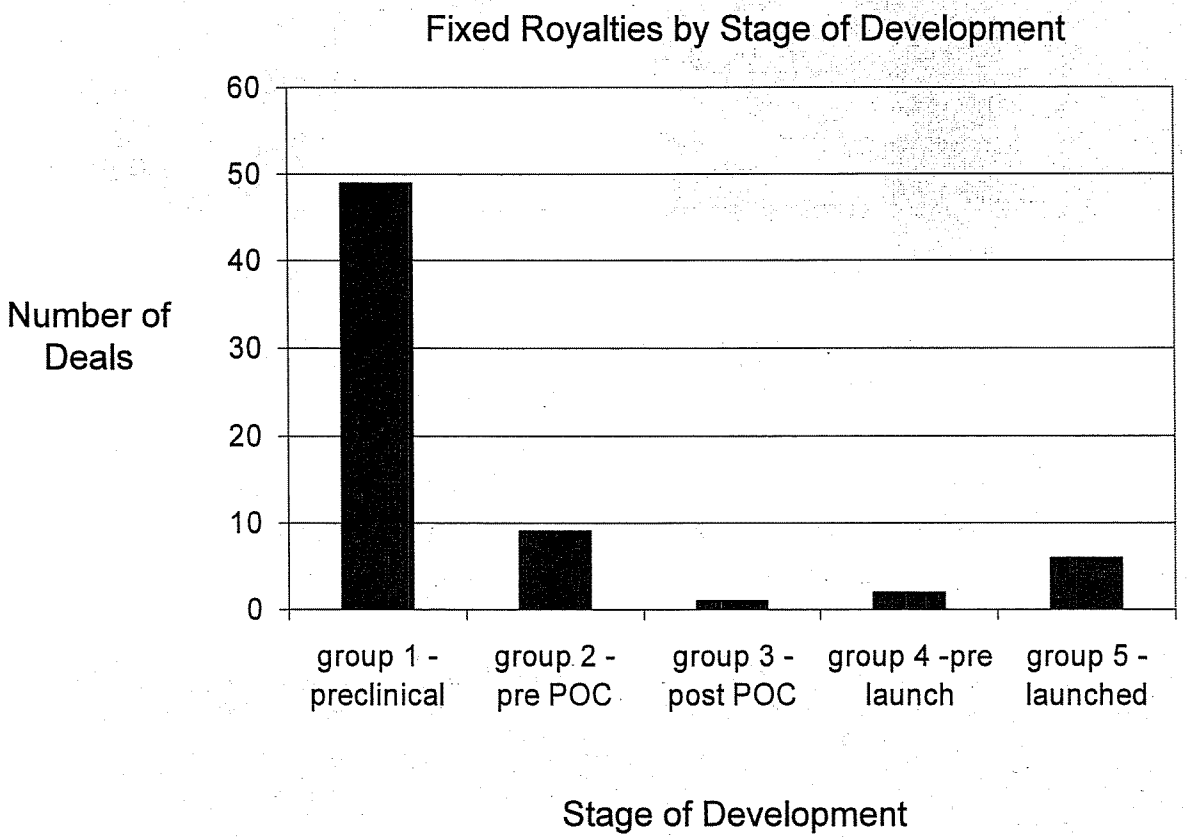
For our review of fixed royalties, we look first at deals that did not involve platform technologies.



*18 deals had no royalty component.

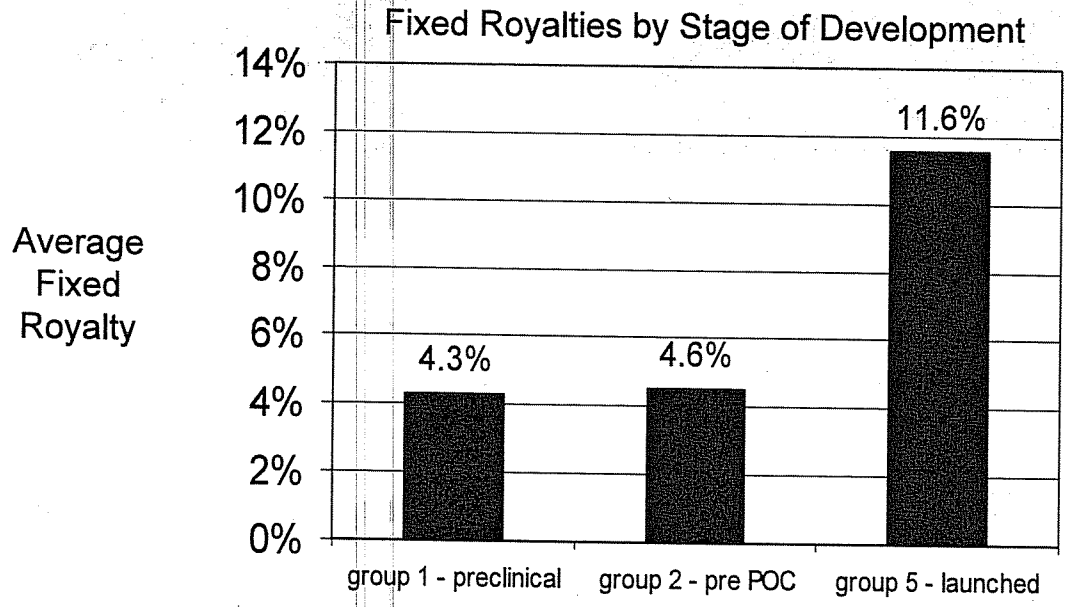
Fixed Royalties
Number of Deals by Stage of Development

The majority of deals with fixed royalties are for <u>preclinical</u> products



Fixed Royalties
Average Royalty by Stage of Development

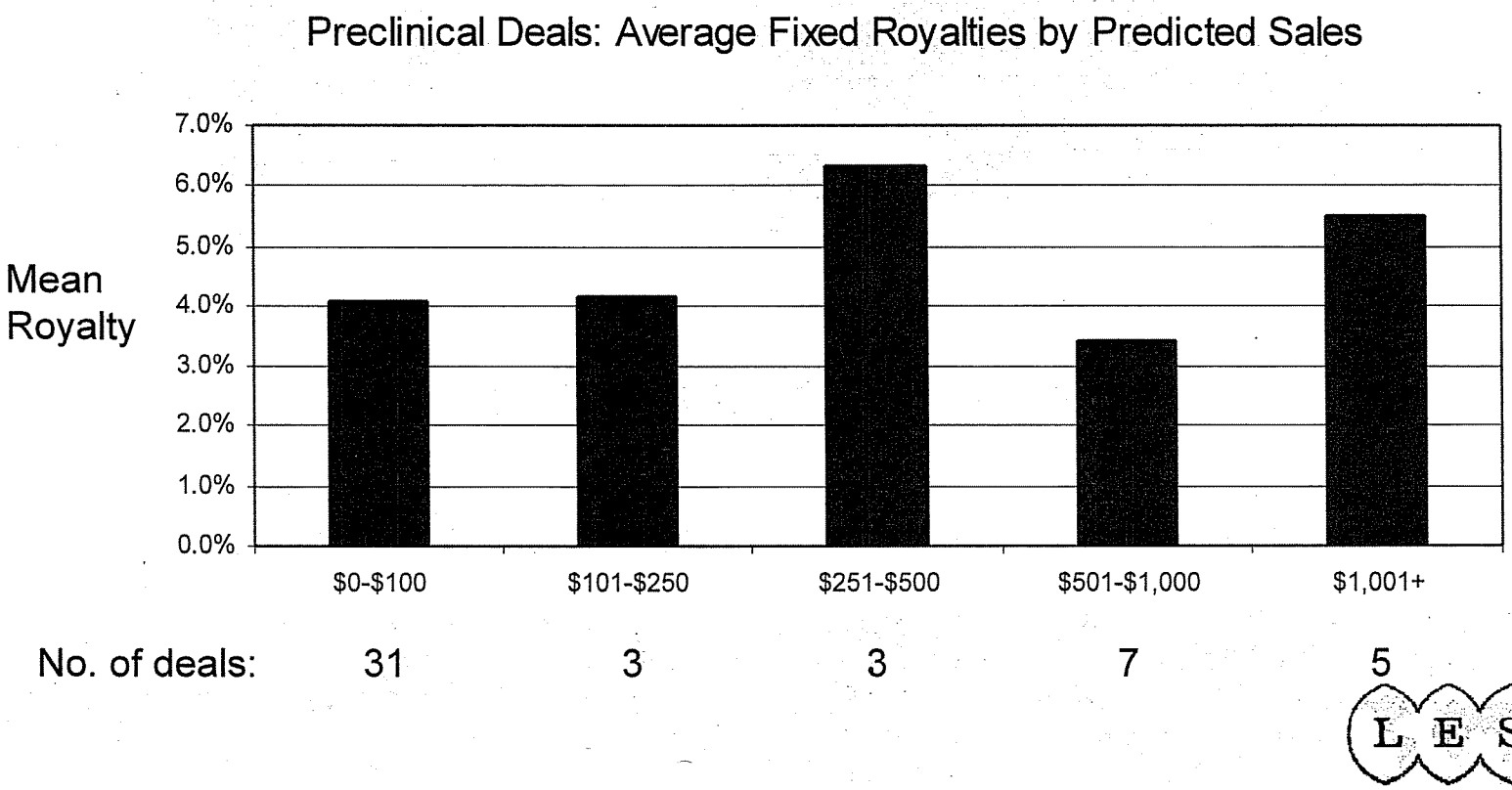
We observed negligible difference between mean preclinical and pre-POC fixed royalties, although median values highlighted difference. Both the min and the max for preclinical deals were extremes compared to pre-POC group.



	group 1 - preclinical	group 2 - pre POC	group 5 - launched
No. of deals	49	9	6
Median	**3.5**	**5**	**7.5**
Min	0.3	2	5
Max	25	8	27.5

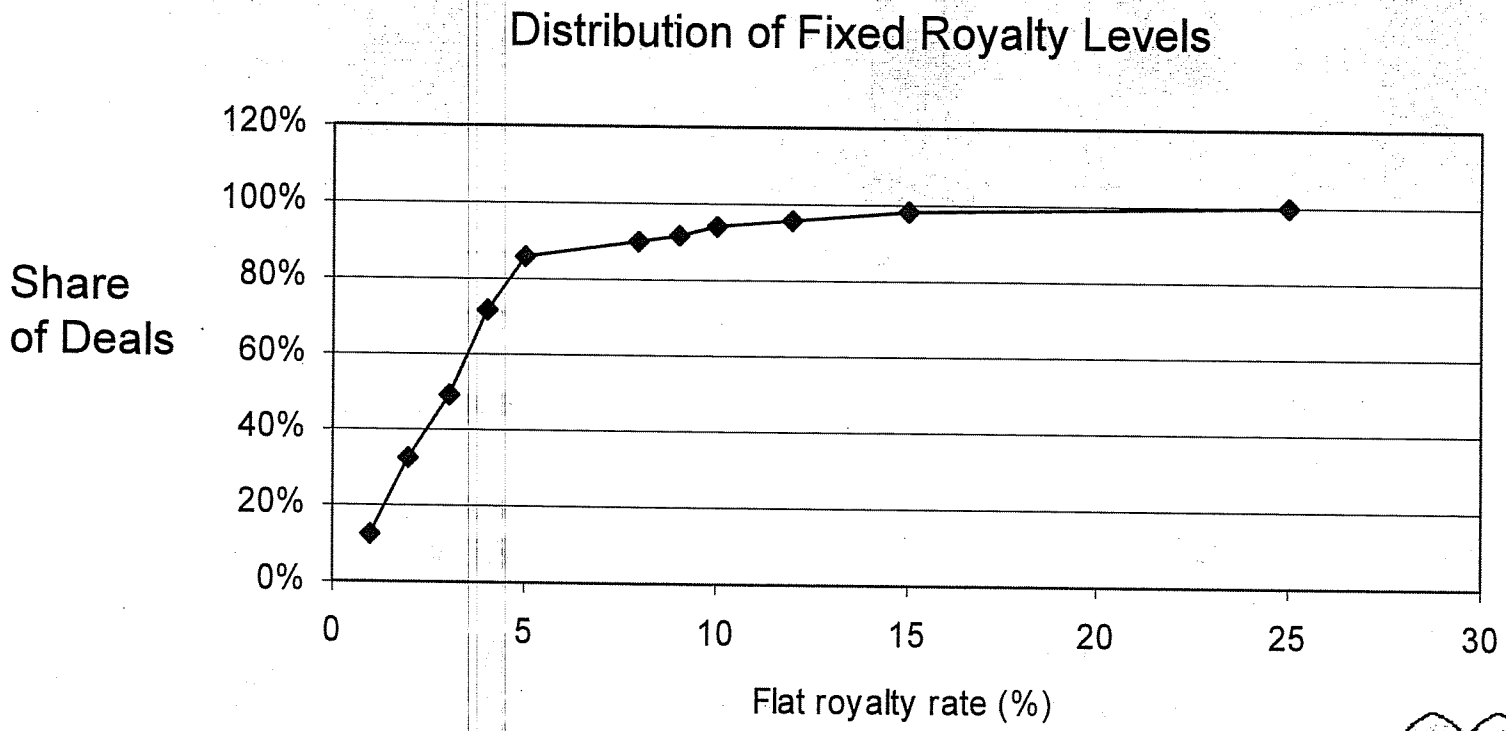
Fixed Royalties
Royalties vs. Estimated US Revenue

No clear trend between fixed royalty and predicted sales for preclinical products.
Majority of preclinical products predicted to have peak sales <$100 M



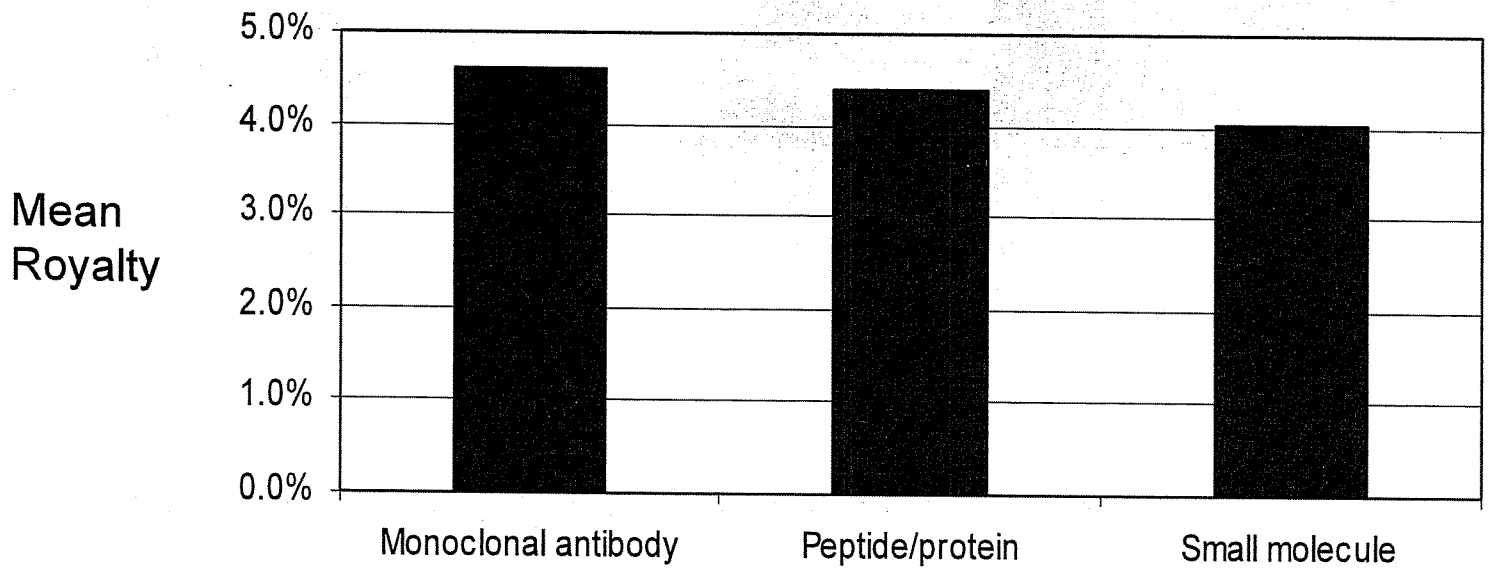
Fixed Royalties
Distribution of Fixed Royalty Levels

86% of preclinical fixed royalty deals had a royalty rate of <5%. 49% of deals had a fixed royalty rate of <3%.



Fixed Royalties
Fixed Preclinical Royalty by Product Type

In the sample of <u>preclinical</u> deals, biological products were observed to attract slightly higher royalty rates than small molecules

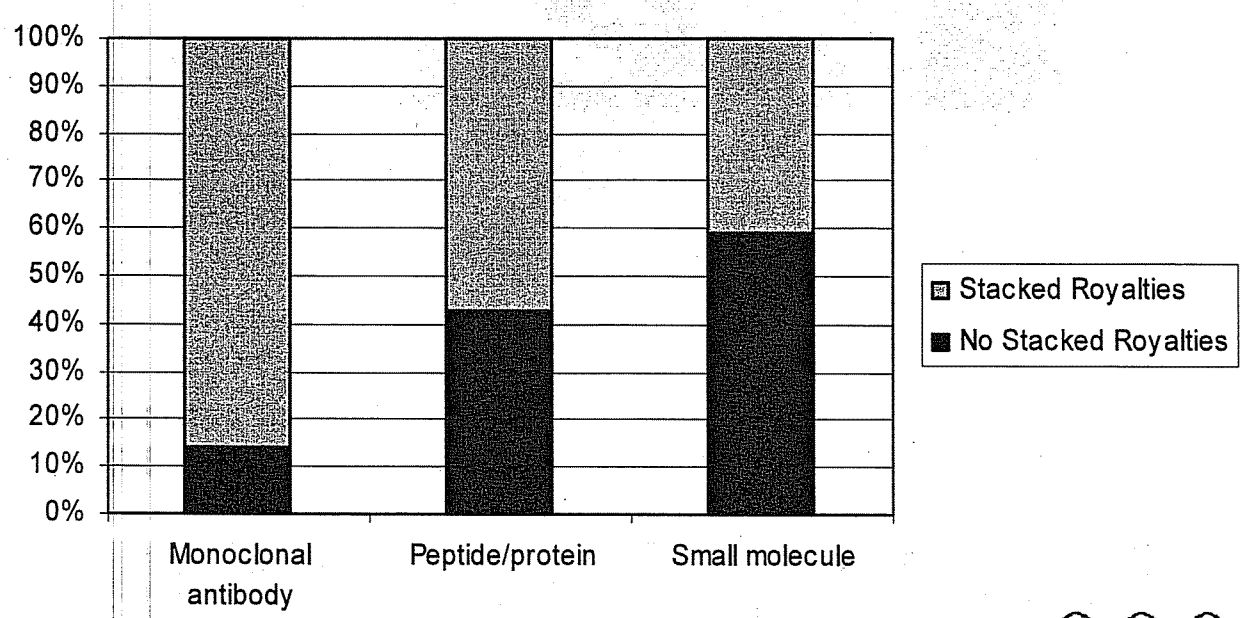


No. of deals:	7	14	17

Fixed Royalties
Fixed Preclinical Royalty by Product Type

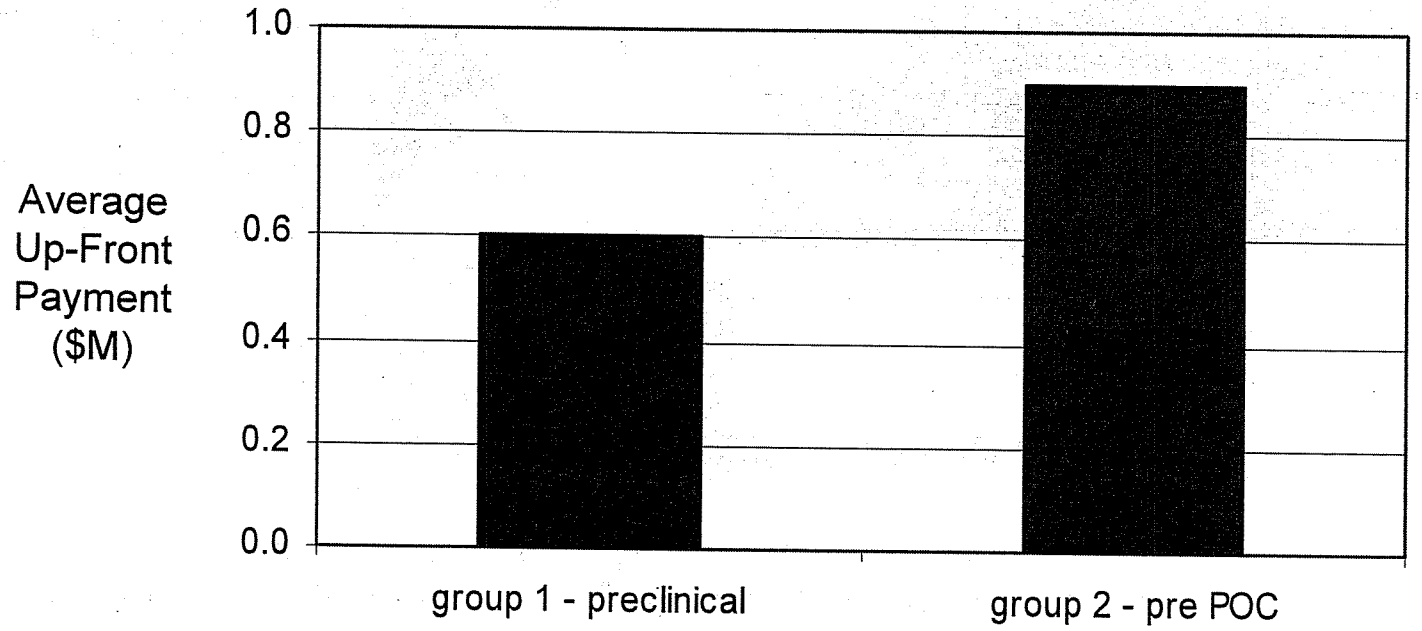
Deals for biological products tend to involve stacked royalties.

Share of Deals with Stacked Royalties



Fixed Royalties
Up-Front Payments for Early Stage Deals

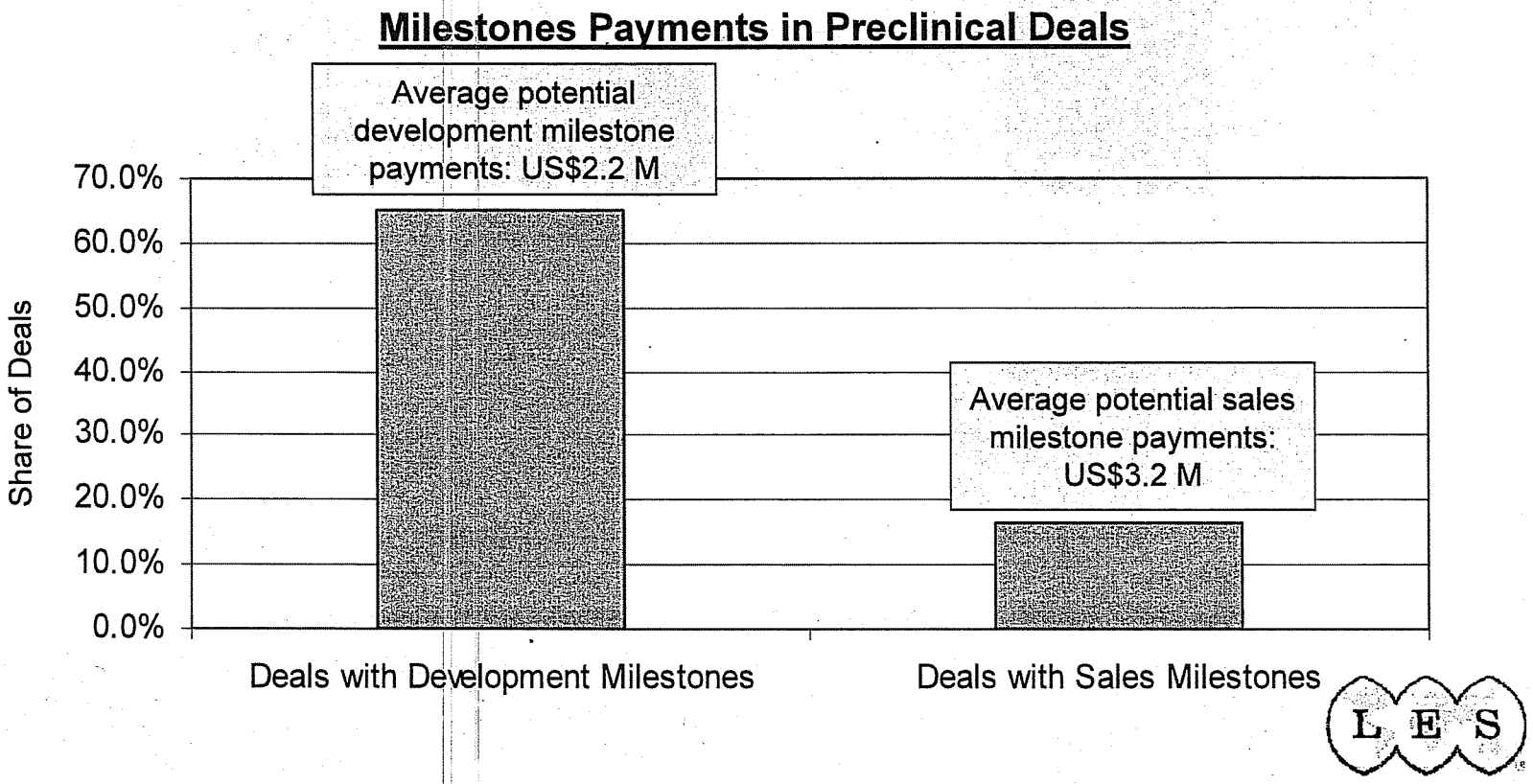
Upfront payments for these <u>early stage</u> deals with <u>fixed royalties</u> averaged below one million dollars.



	group 1 - preclinical	group 2 - pre POC
No. of deals	33	9
Median	0.075	0.1
Min	0.005	0.025
Max	11	6.5

Fixed Royalties
Up-Front Payments for Early Stage Deals

A majority of the preclinical deals with fixed royalties include development milestone payments. Few of the deals include sales milestones.



Fixed Royalties
Platform Technology Deals

Number of Deals	16
Mean	5.1%
Median	4%
Minimum	1%
Maximum	17%

Fixed Royalties
Profile of Preclinical Fixed Royalty Deals

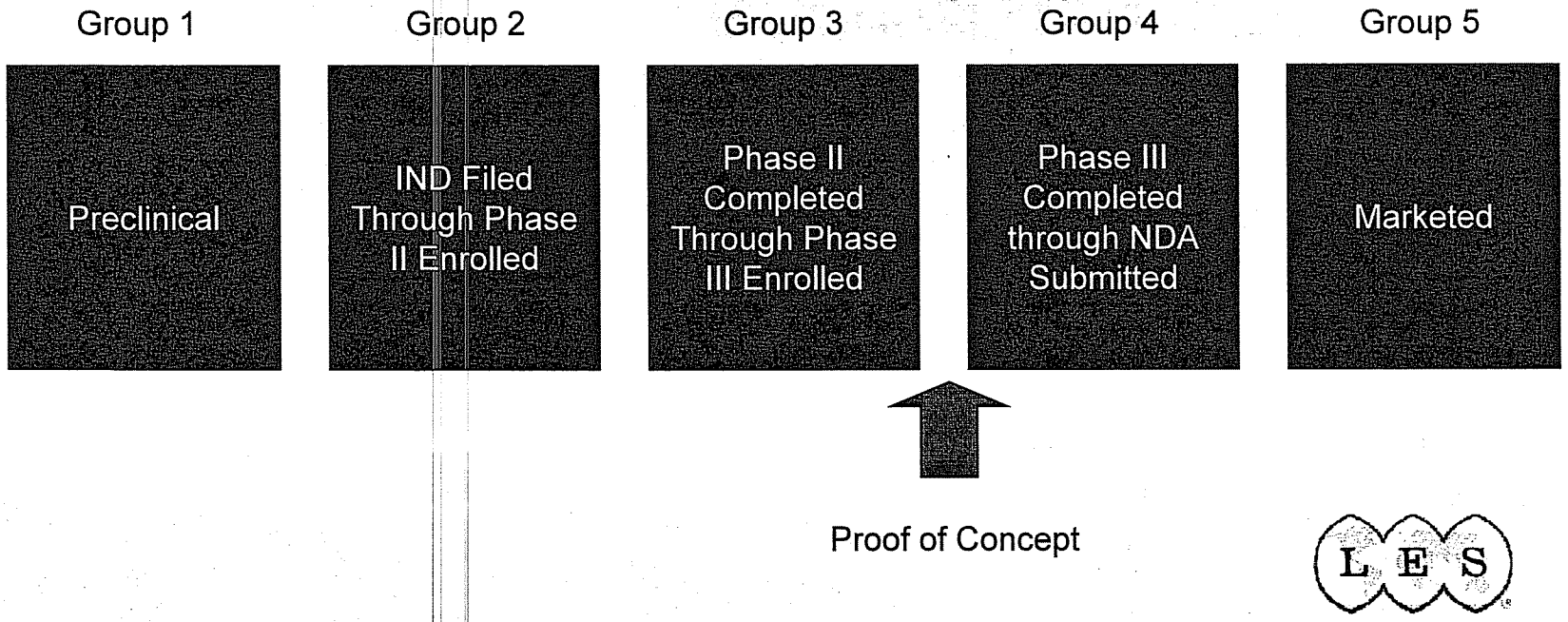
	Proportion of deals (%)	Average (US$ M)	Median (US$ M)	Range (US$ M)
Upfront	67.3	0.6	0.075	0.005-11
Research Funding	8.2	3.3	3.3	0.2-25
Development Milestones	65.3	2.2	0.9	0.2-16.9
Sales Milestones	16.3	3.2	1.3	0.1-17.5
Royalties	-	4.3%	3.5%	0.3-25%

Tiered Royalties

Tiered Royalties
Introduction

At several points in this analysis, the observations are <u>grouped</u> according to key points in development.

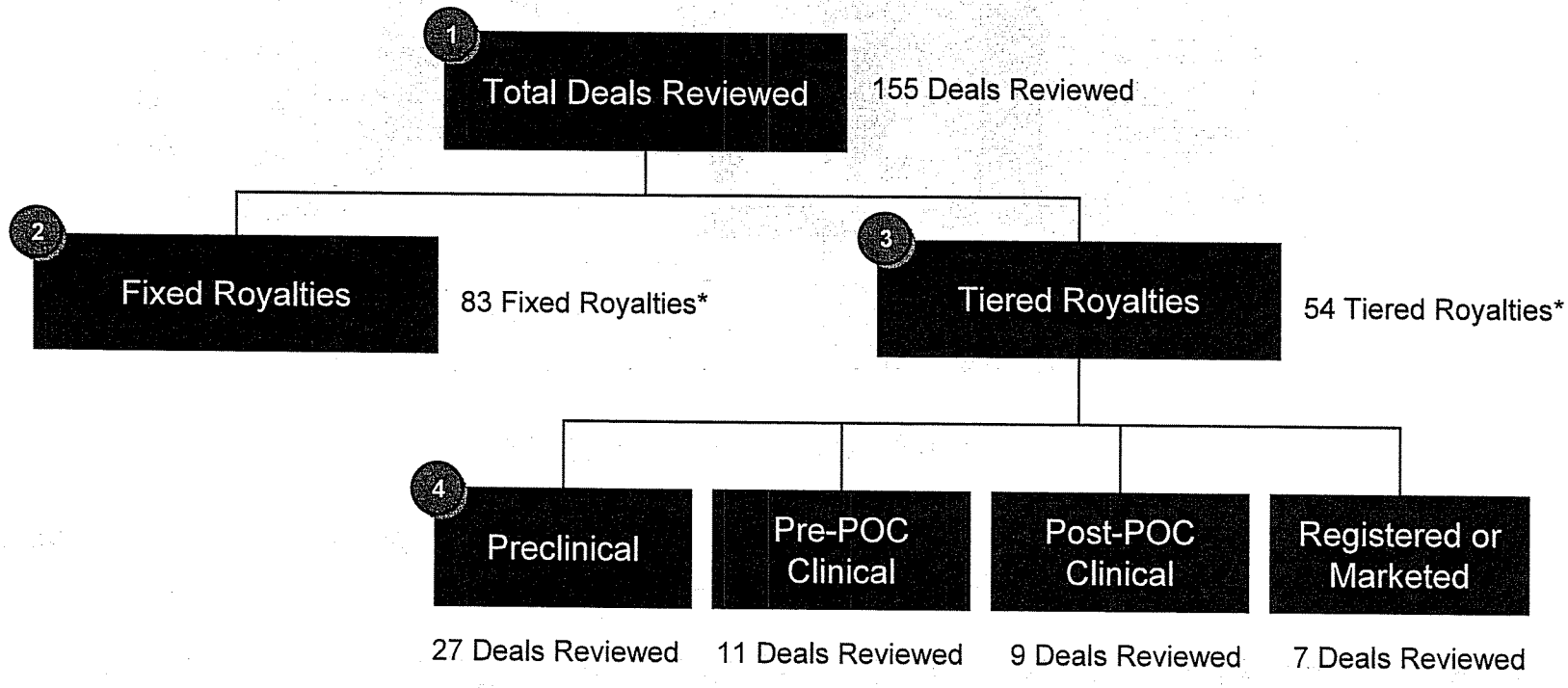
Definitions of Groups



Note: See Survey Question #7, Appendix A: "What Stage of Development for Principal Indication?"

Tiered Royalties
Introduction

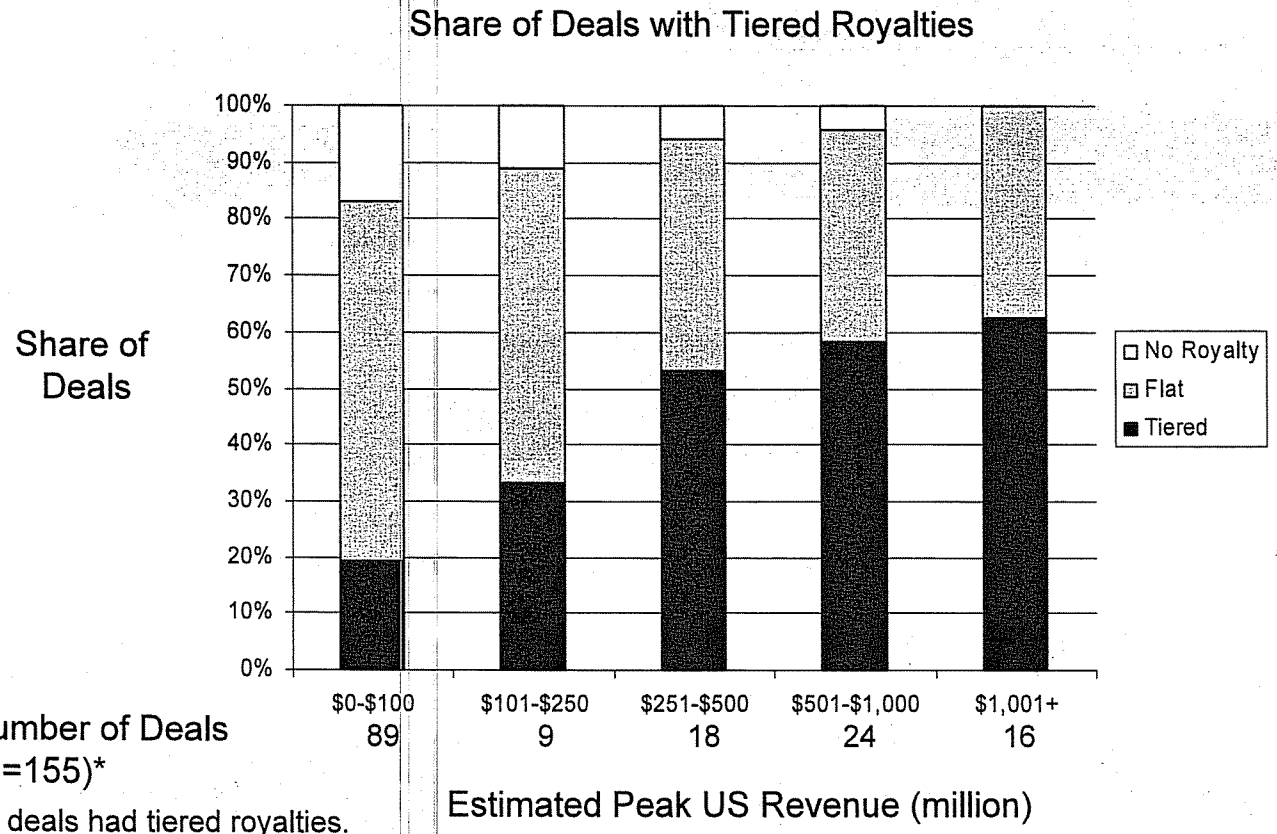
We organize our discussion of tiered royalties according to the development categories.



*18 deals had no royalty component.

Tiered Royalties
Deals with Tiered Royalties

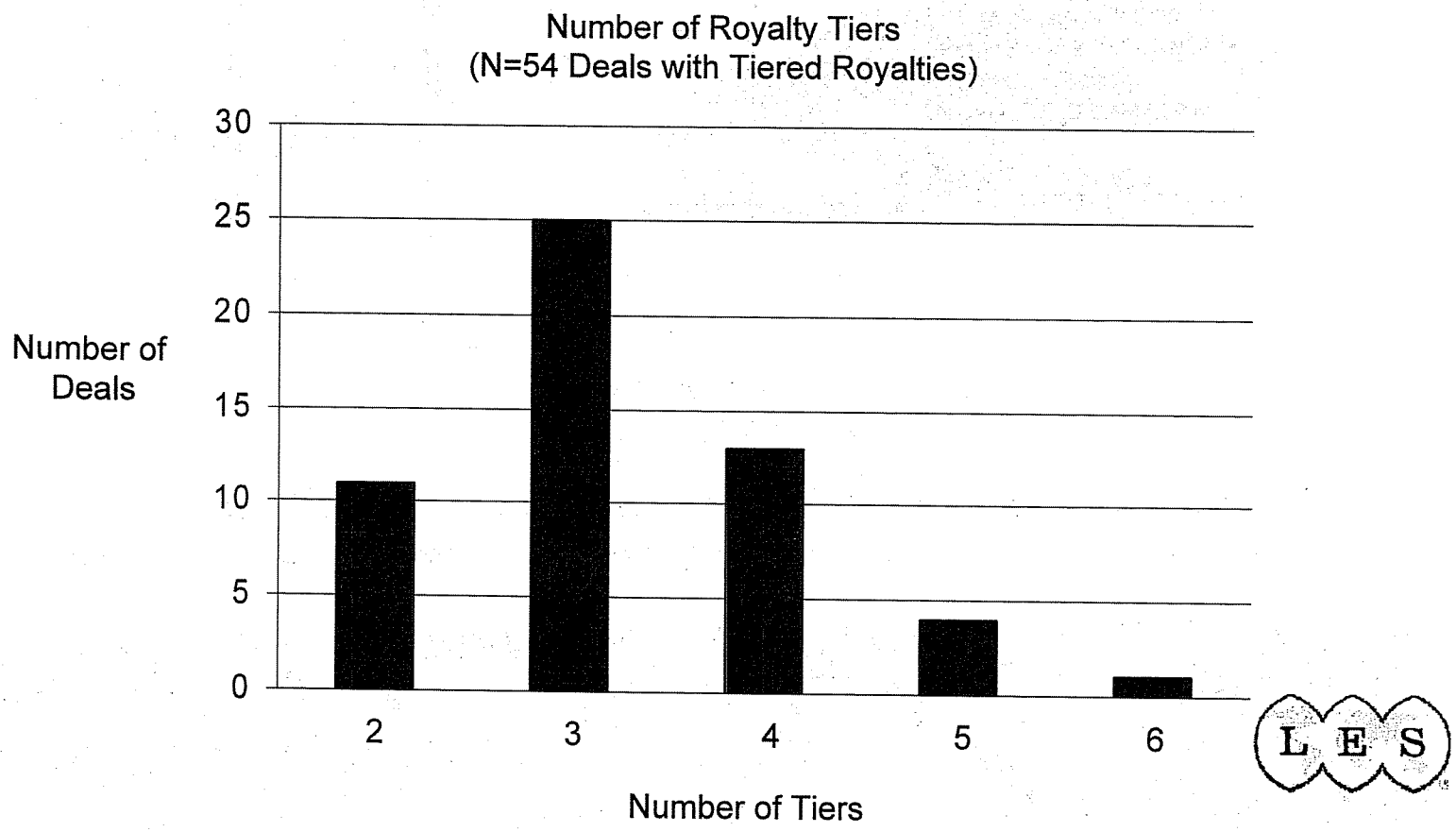
In this sample, the use of a tiered royalty structure increased as the estimated peak sales volume increased.



*54 deals had tiered royalties.

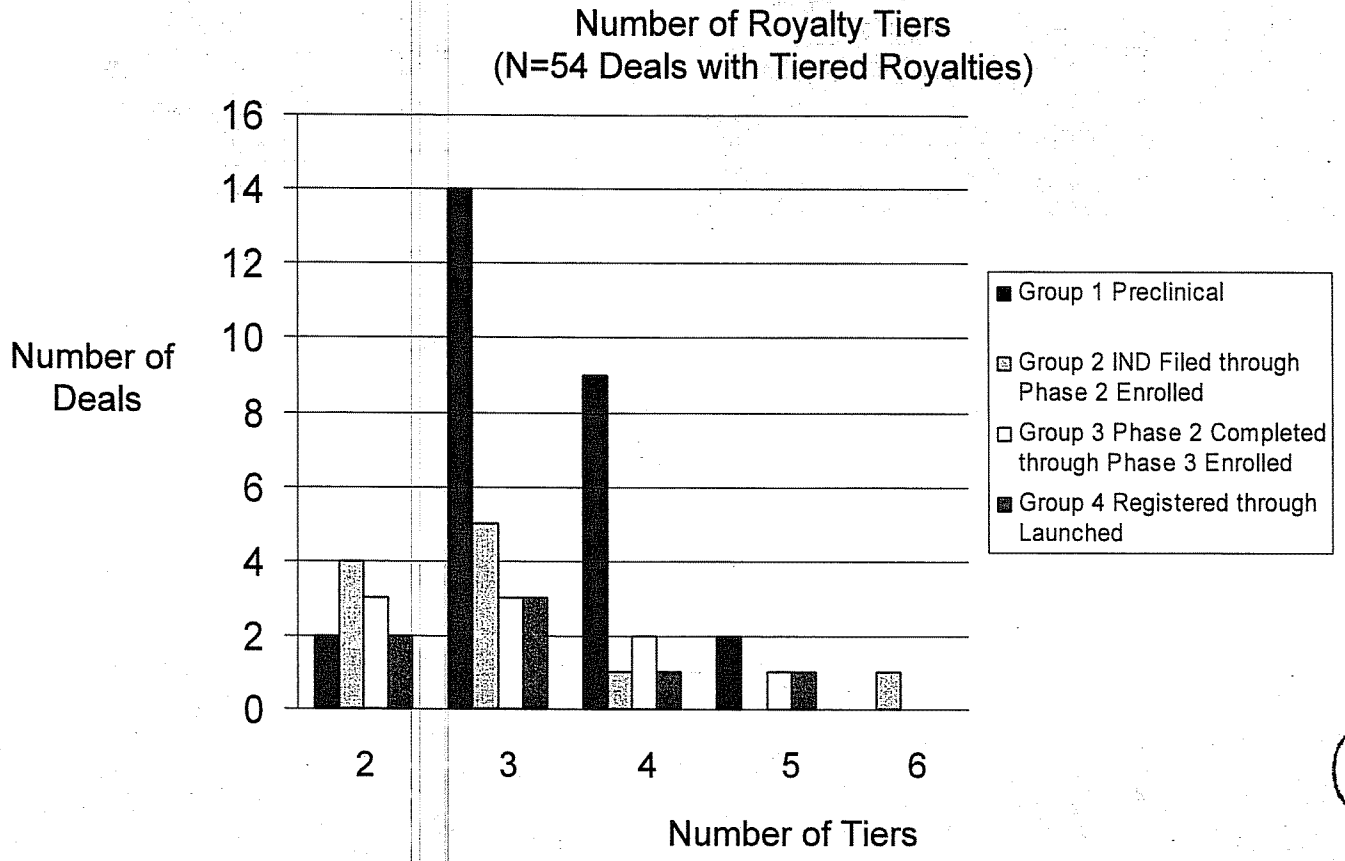
Tiered Royalties
Number of Tiers

Deals most frequently had three royalty tiers.



Tiered Royalties
Number of Tiers

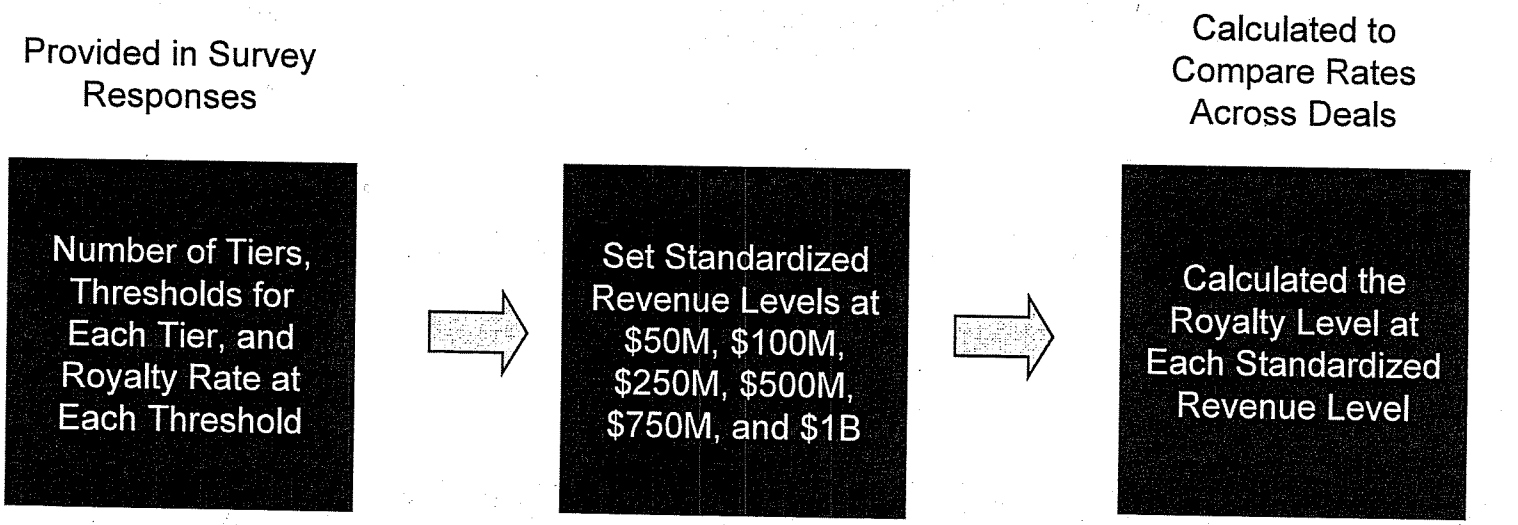
While the most frequently observed number of tiers was three, it is interesting to observe that many preclinical deals were fairly complex with four or five tiers.



Tiered Royalties
Approach to Comparing Tiers

Because different thresholds were used for changing rates, we used six standardized revenue levels to compare royalties.

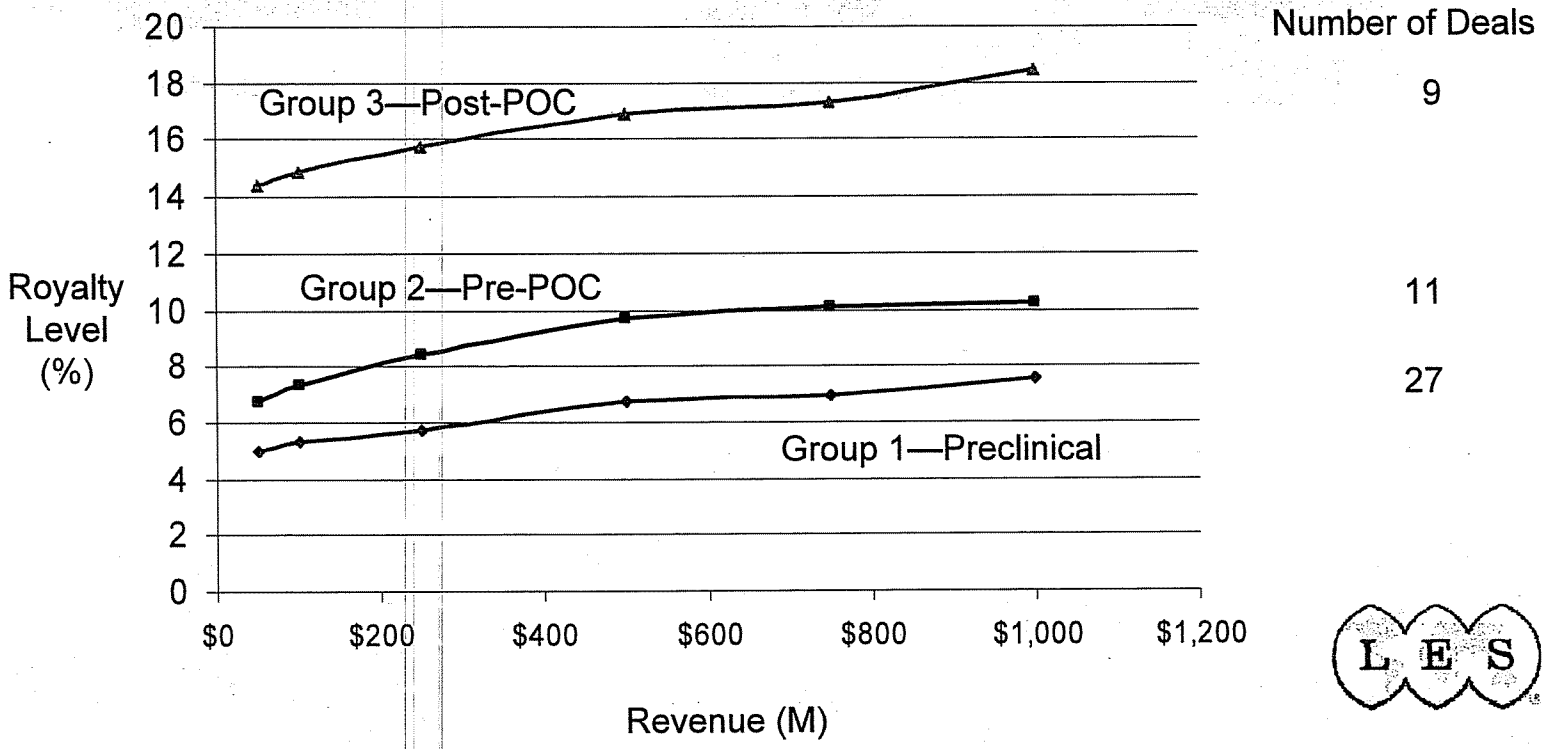
Approach for Comparing Tiered Royalty Levels



Tiered Royalties
Tiered Royalties by Stage of Development

The results are consistent with expectations, but interesting in the detail they provide.

Royalty Level vs. Revenue for Deals with Tiered Royalties



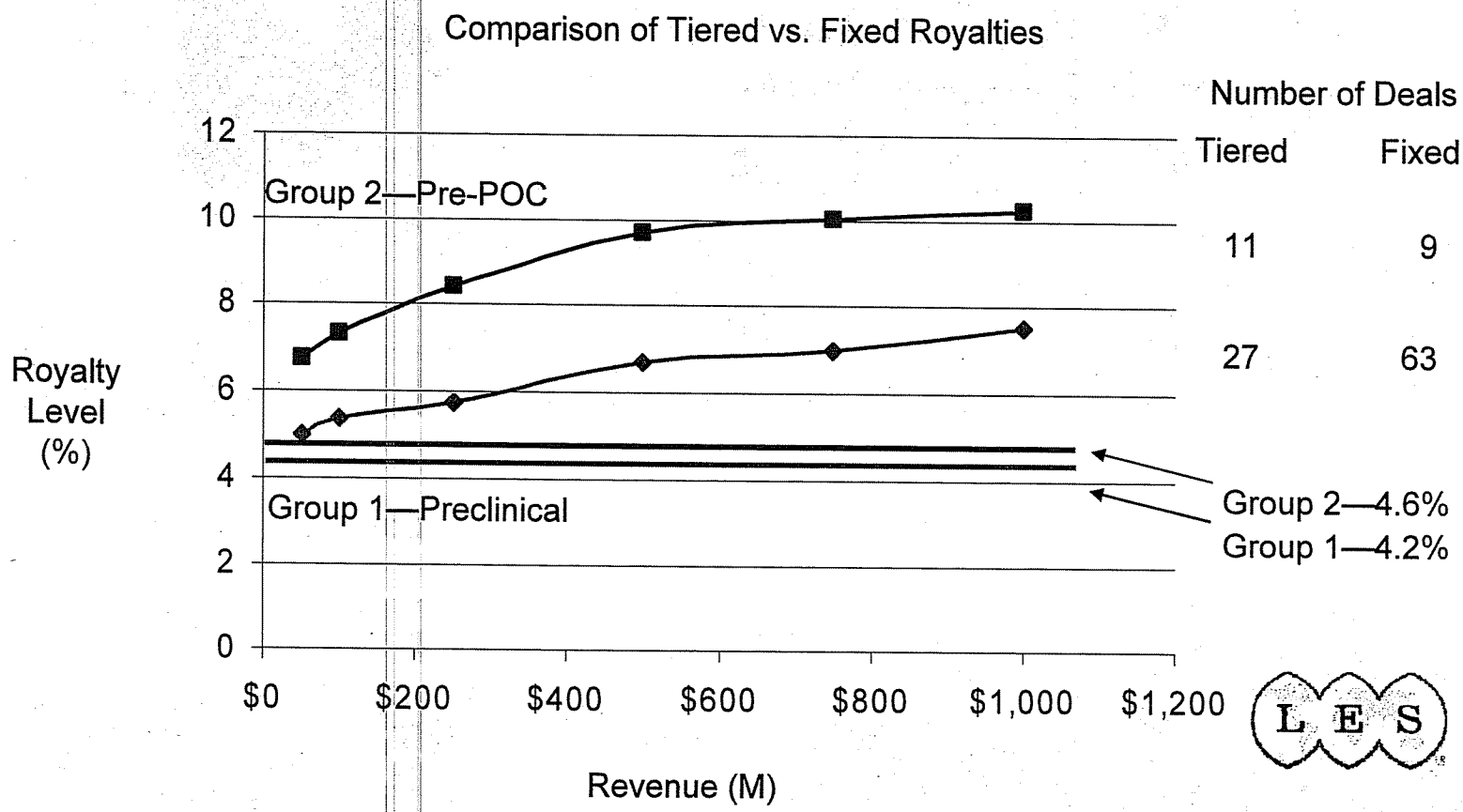
Tiered Royalties
Tiered and Fixed Royalties

Because of data limitations, we were only able to compare tiered and Fixed royalties for Groups 1 and 2.

	Group 1—Preclinical	Group 2—Pre-POC	Group 3—Post-POC	Group 4—Phase III Through Filed	Group 5—Launched	Total
Fixed Royalty	63	9	2	3	7	84
Tiered Royalty	27	11	9	2	5	54
Total	88	21	11	5	12	138

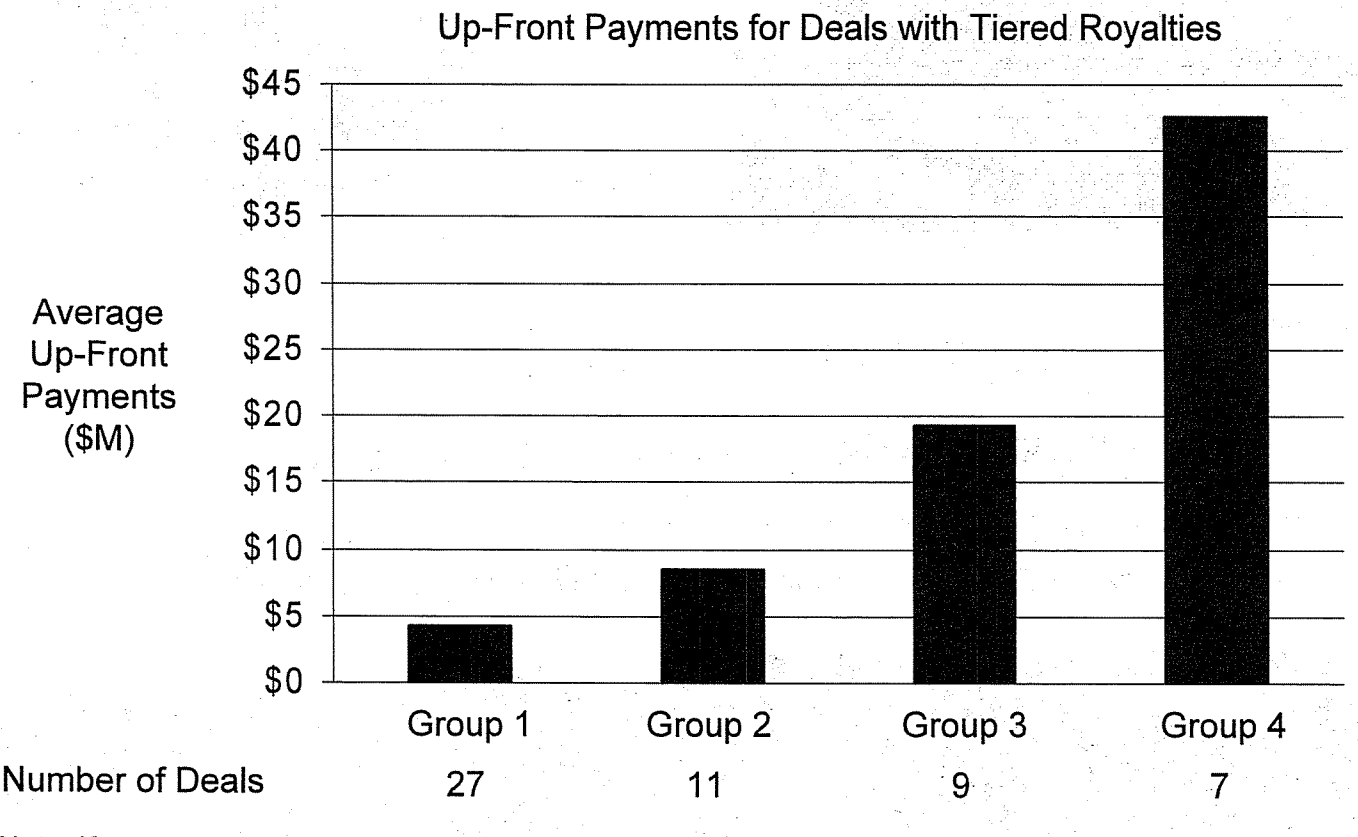
Tiered Royalties
Tiered and Fixed Royalties

Within groups, mean fixed royalty levels were below the values for tiered royalties.



Tiered Royalties
Up Front Payments

Not surprisingly, the up-front payments "increased" with the level of development progress for those deals with tiered royalties.

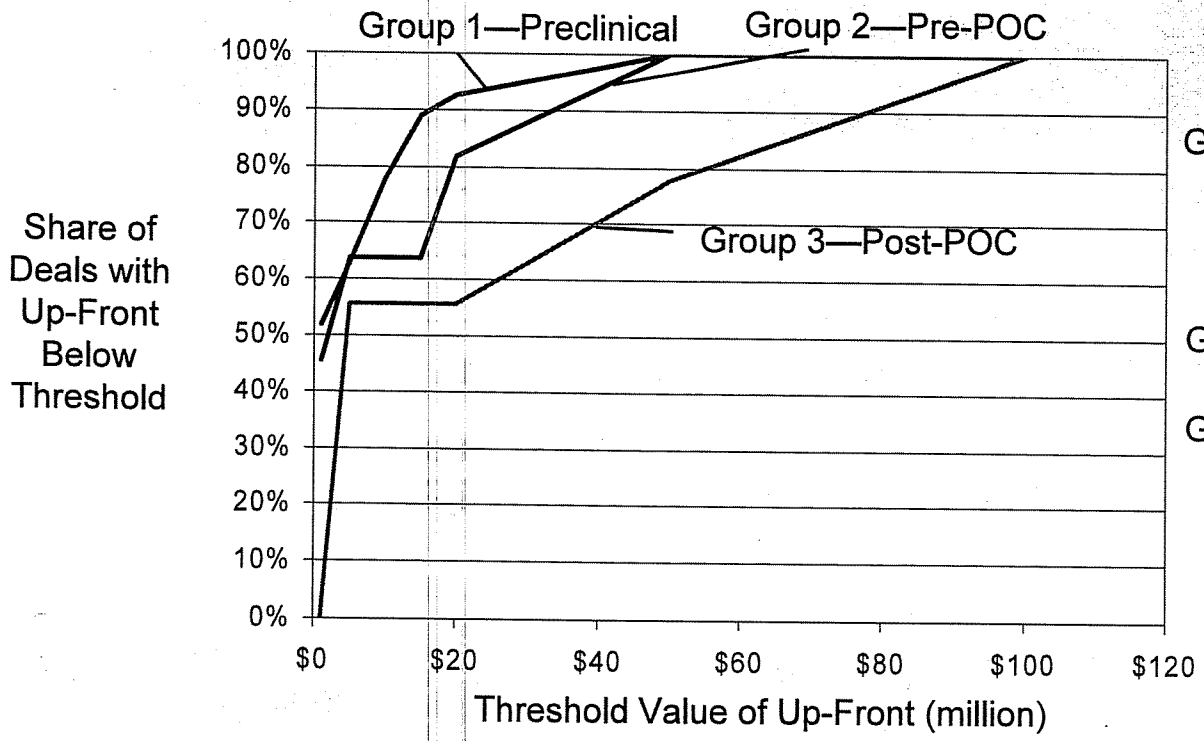


Note: If respondent left the answer to this question blank, a value of $0 was assumed.

Tiered Royalties
Up Front Payments

For each group reviewed, a large share of deals involved relatively low up-front payments. The spread in deal values is driven by the high-value deals.

Distribution of Up-Front Payments for Deals with Tiered Royalties



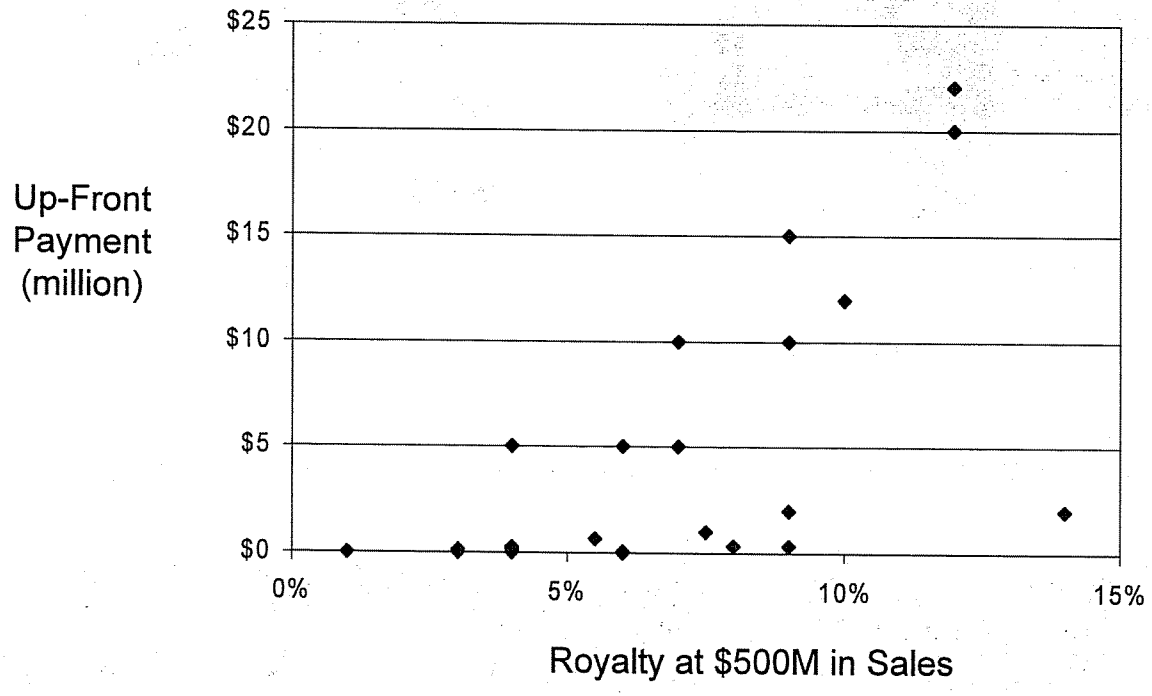
Number of Deals	
Group 1—Preclinical	27
Group 2—Pre-POC	11
Group 3—Post-POC	9

Note: If respondent left the answer to this question blank, a value of $0 was assumed.

Tiered Royalties
Up Front Payments

While some negotiators may be trading off up-front payments and royalty rates, highly valued assets appear to be licensed with terms on the high-end of both dimensions.

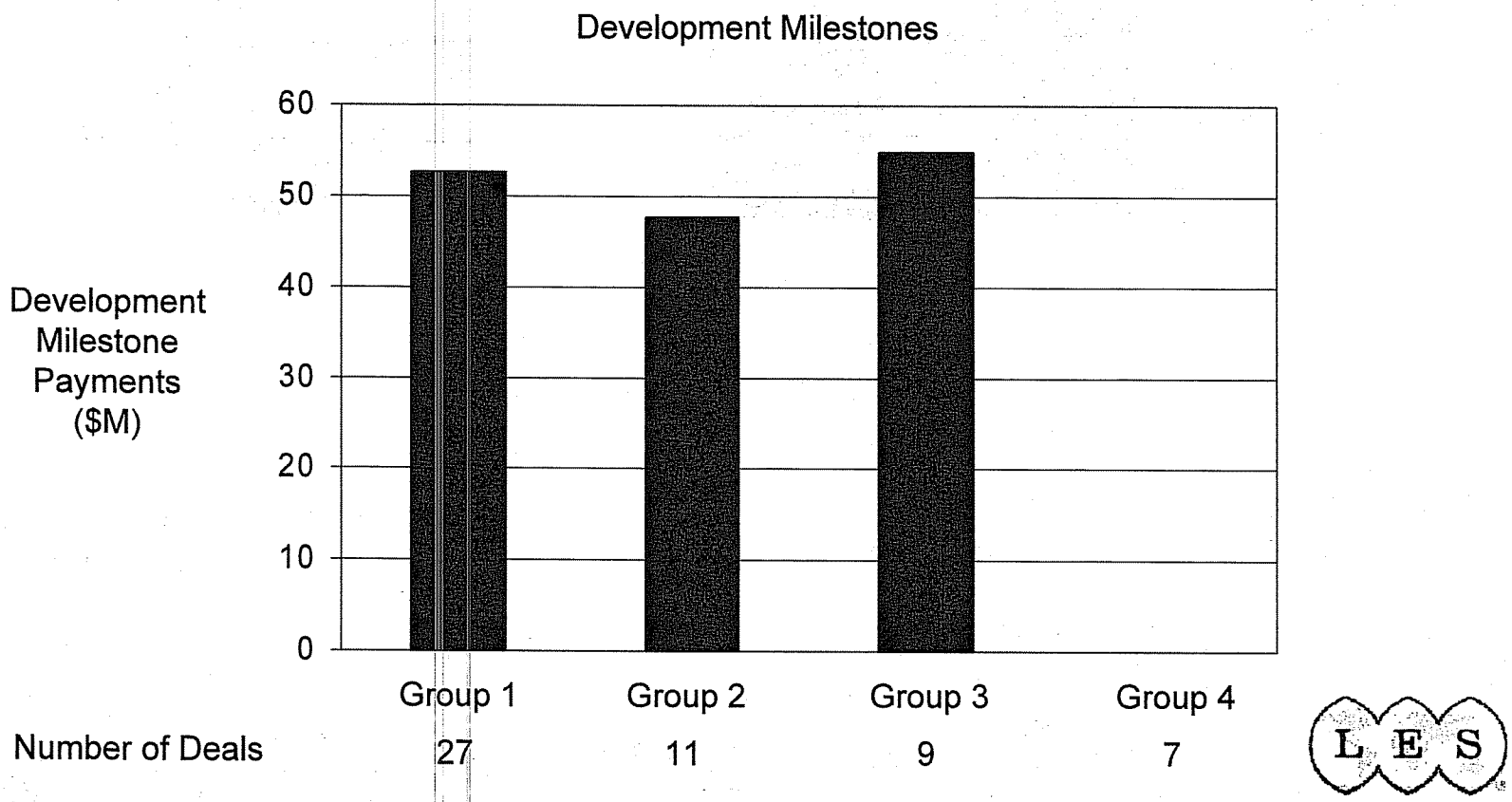
Comparison of Royalty Rate and Up-Front Payment
(**Preclinical Deals Only**, n=27)



Note: If respondent left the answer to this question about up-front payments blank, a value of $0 was assumed.

Tiered Royalties
Development Milestones

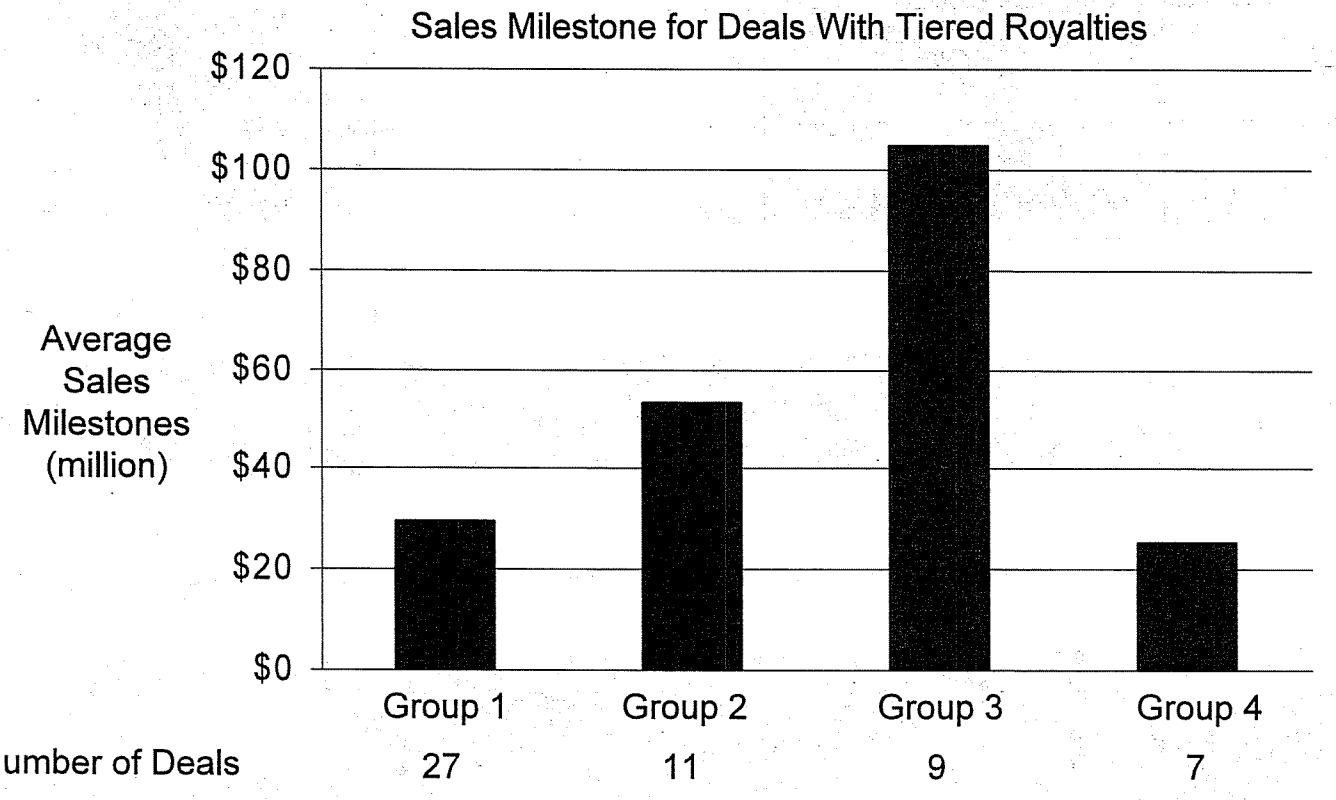
The average development milestone payments for this sample did not vary a great deal.



Note: If respondent left the answer to this question blank, a value of $0 was assumed.

Tiered Royalties
Sales Milestones

Reported sales milestones tended to be higher as development progress occurred, although Group 4 deals reflected modest sales milestones.



Note: If respondent left the answer to this question blank, a value of $0 was assumed.

Tiered Royalties
Summary

This set of deals indicated increasing financial returns associated with later points in development.

	Group 1—Preclinical	Group 2—Pre-POC	Group 3—Post-POC
Sample Size	27	11	9
Average Royalty Rate	~5% growing to ~8%	~7% growing to ~10%	~14% growing to ~18%
Up-Front Payment	$4M	$9M	$19M
Development Milestones	$53M	$48M	$55M
Sales Milestones	$29M	$53M	$105M

Tiered Royalties
Summary of Observations

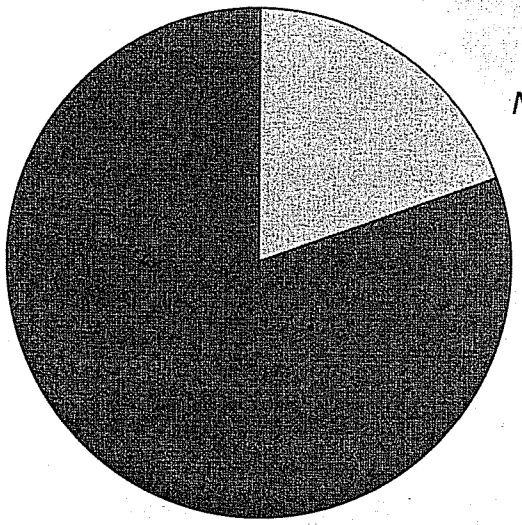
- As the estimated peak revenue increases, there is a greater likelihood that a tiered royalty structure will be employed.
- In this sample, the deals with tiered royalty structures had higher overall royalty levels than those with fixed royalties.
- Average values for upfront and milestone payments can be deceiving – a small number of deals with large payments have a large influence on the averages.
- The "Median" values and "overall" deal terms are important.
- Review data in the context of the overall deal.

Valuation

Valuation
Calculation of NPV

A NPV was computed in only 19% of the deals reviewed.

Whether NPV was Calculated
(n=145 deals)



NPV was calculated (19%)

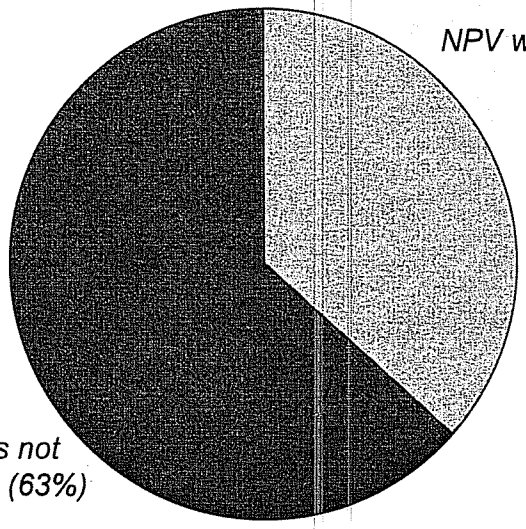
NPV was not Calculated (81%)

Notes:
1 Based on 145 total responses – excludes the 11 survey responses in which respondents did not answer the question, "Did you calculate an estimated net present value (ENPV) for this deal?"
2 Numbers in parentheses after descriptions in the legend represent numbers of responses.

Valuation
Calculation of NPV

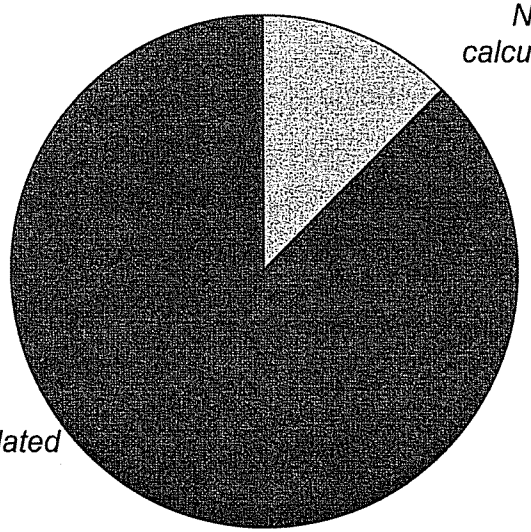
Licensees computed NPVs more frequently than licensors

Licensee Reported Deals
(n=41 deals)



Notes:
1 Based on 41 total responses – excludes the 6 survey responses in which respondents did not answer the question, "Did you calculate an estimated net present value (ENPV) for this deal?"
2 Numbers in parentheses after descriptions in the legend represent numbers of responses.

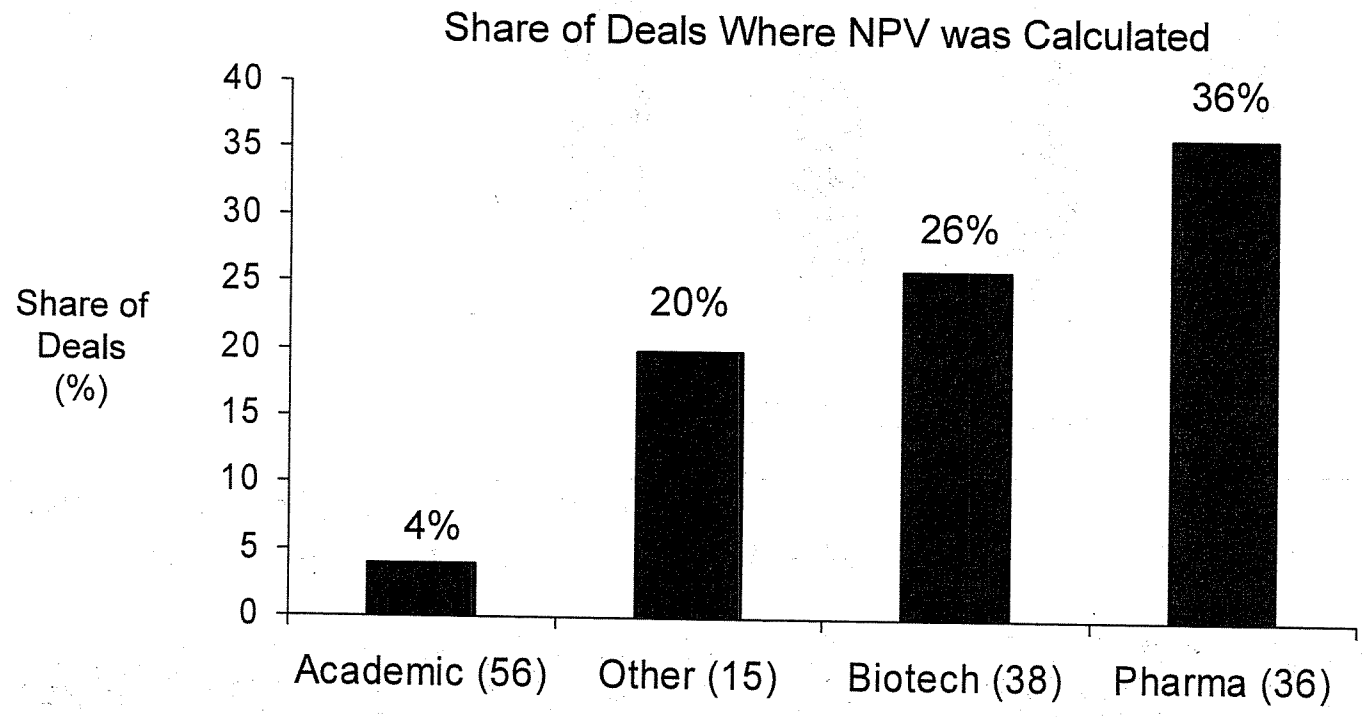
Licensor Reported Deals
(n=104 deals)



Notes:
1 Based on 104 total responses – excludes the 5 survey responses in which respondents did not answer the question, "Did you calculate an estimated net present value (ENPV) for this deal?"
2 Numbers in parentheses after descriptions in the legend represent numbers of responses.

Valuation
Calculation of NPV

NPVs were computed by biotech and pharma companies more frequently than by academic institutions



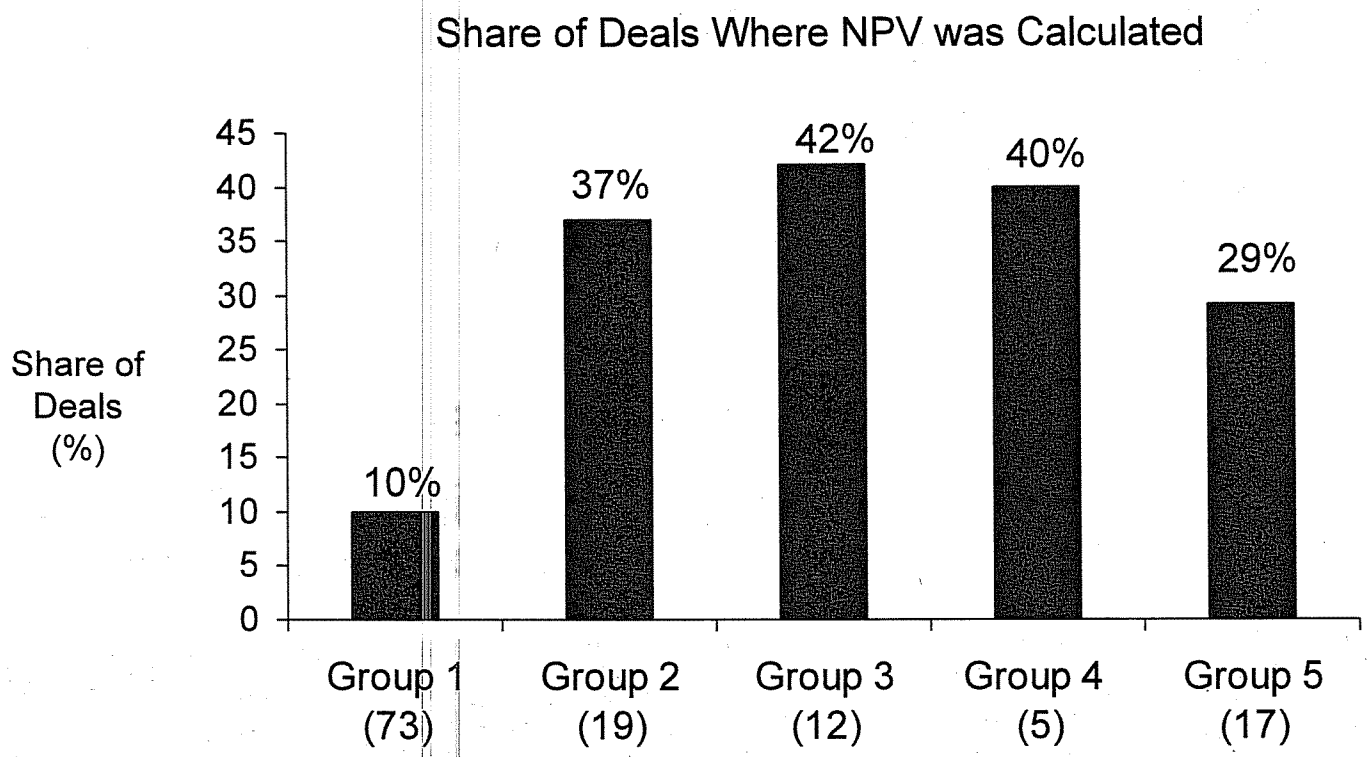
Notes:

1 Based on 145 total responses – excludes the 11 survey responses in which respondents did not answer the question, "Did you calculate an estimated net present value (ENPV) for this deal?"

2 Numbers in parentheses after X-axis data labels represent numbers of responses.

Valuation
Calculation of NPV by Stage of Development

The frequency of computing NPVs increases through the Group 3 stage of development, but then declines



Notes:

1 Based on 126 responses – excludes 30 responses either representing platform technologies or failing to answer the question, "Did you calculate an estimated net present value (ENPV) for this deal?"

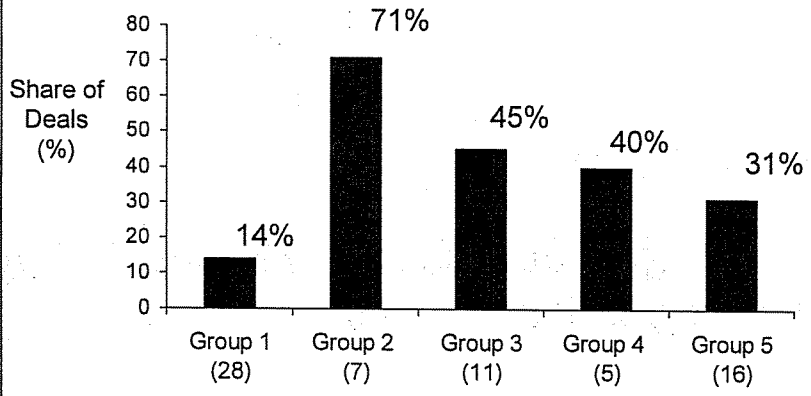
2 Numbers in parentheses after X-axis data labels represent numbers of responses.

Valuation
Calculation of NPV by Stage of Development

Some interesting results regarding the frequency at which companies computed NPVs at various stages of development...

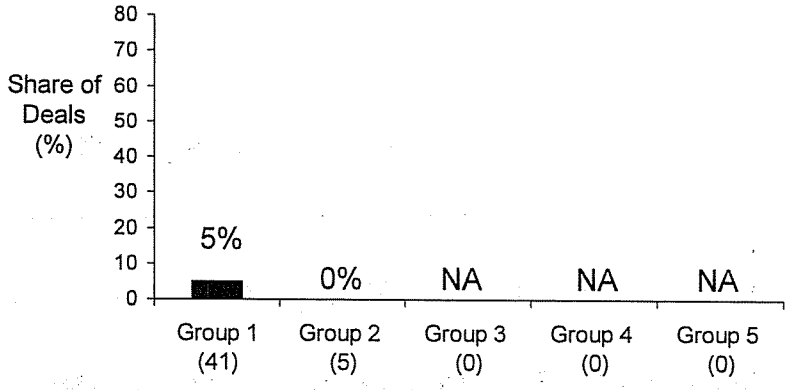
Share of Deals Where NPV was Calculated

Biotech and Pharma Deals



Notes:
1 Based on 67 responses – excludes responses either representing platform technologies or failing to answer the question, "Did you calculate an estimated net present value (ENPV) for this deal?"
2 Numbers in parentheses after X-axis data labels represent numbers of responses.

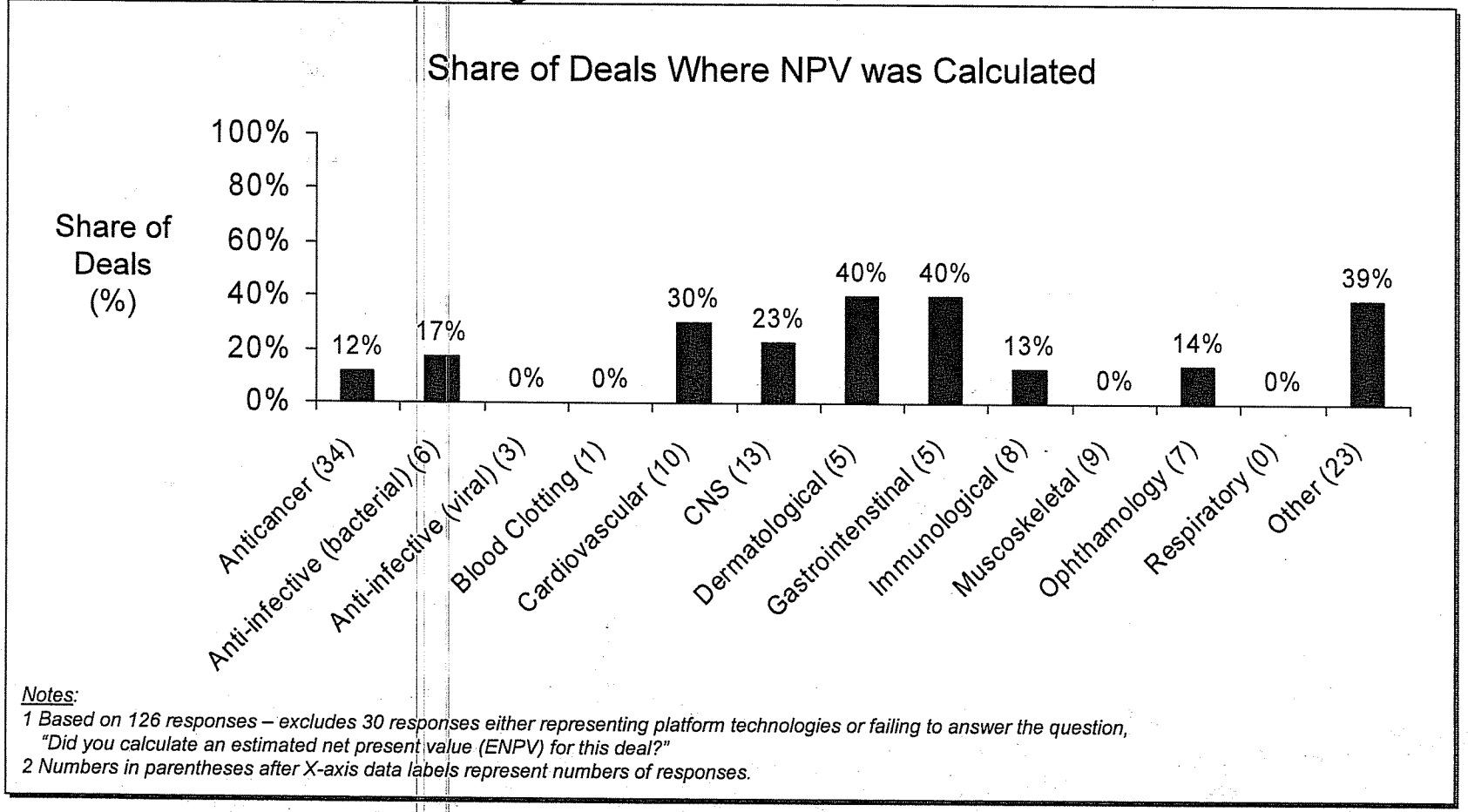
Academic Deals



Notes:
1 Based on 46 responses – excludes responses either representing platform technologies or failing to answer the question, "Did you calculate an estimated net present value (ENPV) for this deal?"
2 Numbers in parentheses after X-axis data labels represent numbers of responses.

Valuation
Calculation of NPV by Therapeutic Area

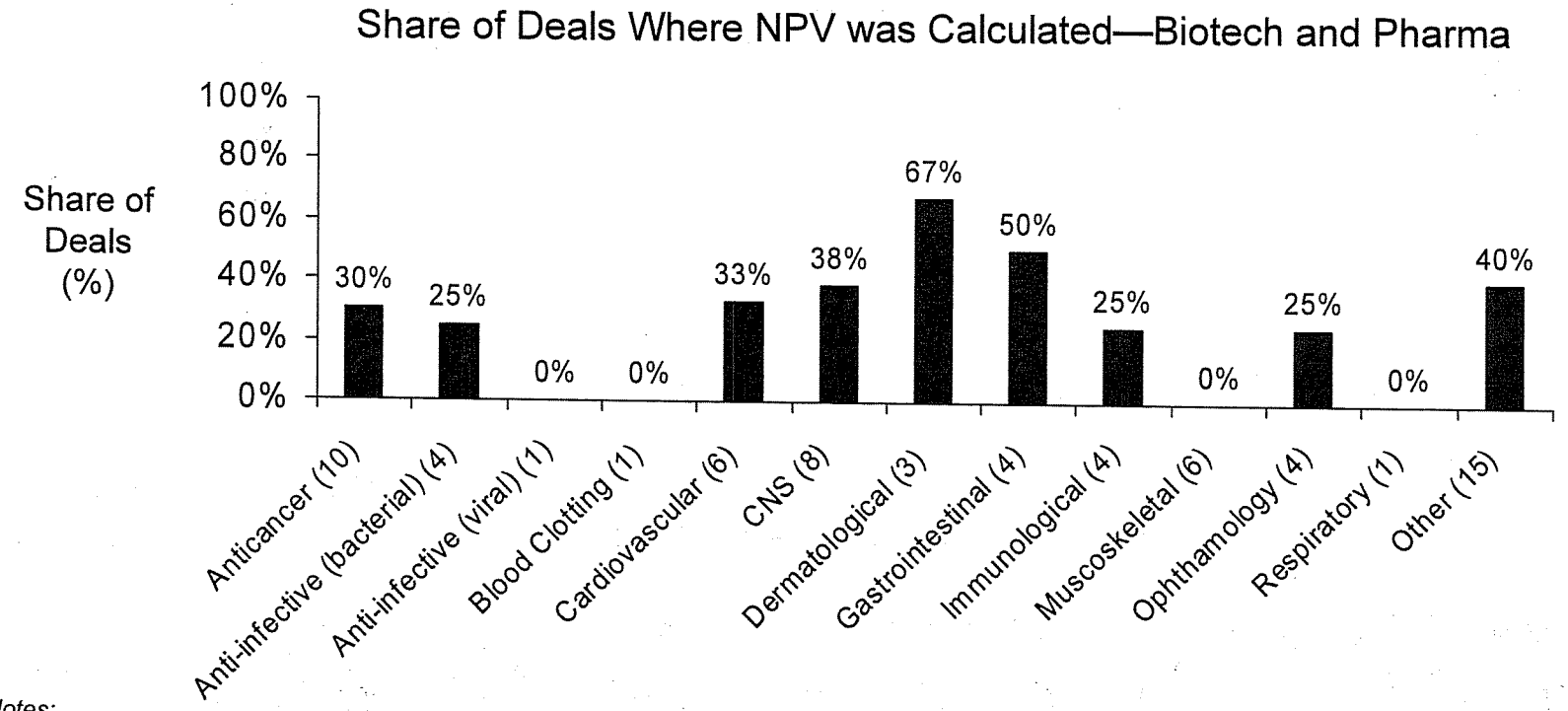
There were some large disparities between various therapeutic areas as to the frequency of computing NPVs.



Notes:
1 Based on 126 responses – excludes 30 responses either representing platform technologies or failing to answer the question, "Did you calculate an estimated net present value (ENPV) for this deal?"
2 Numbers in parentheses after X-axis data labels represent numbers of responses.

Valuation
Calculation of NPV by Therapeutic Area

Deals reported by biotech and pharma companies also have a large disparity in the frequency of computing NPVs by therapeutic area.



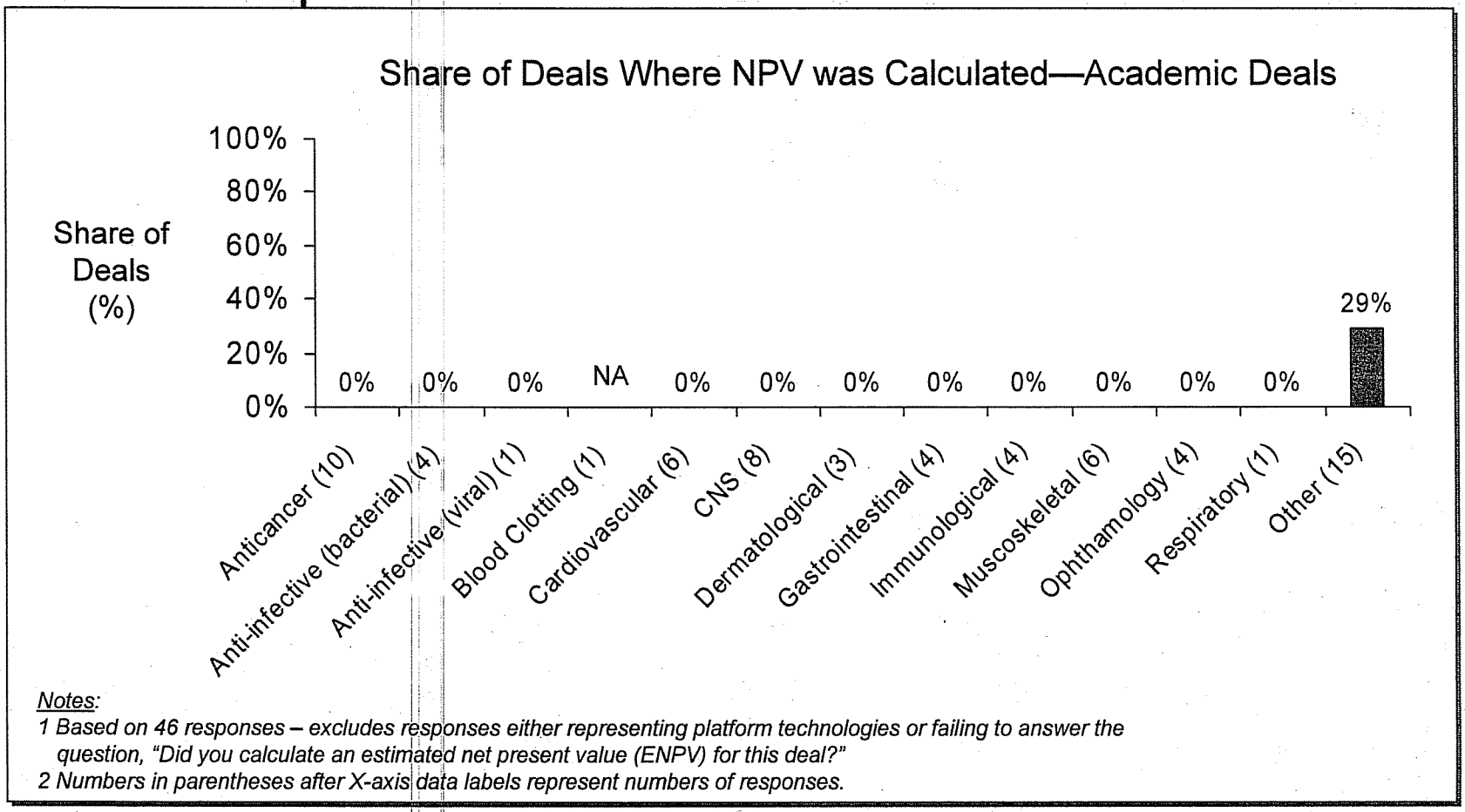
Notes:

1 Based on 67 responses – excludes responses either representing platform technologies or failing to answer the question, "Did you calculate an estimated net present value (ENPV) for this deal?"

2 Numbers in parentheses after X-axis data labels represent numbers of responses.

Valuation
Calculation of NPV by Therapeutic Area

NPVs were computed in very few deals reported by academic institutions across all therapeutic areas.



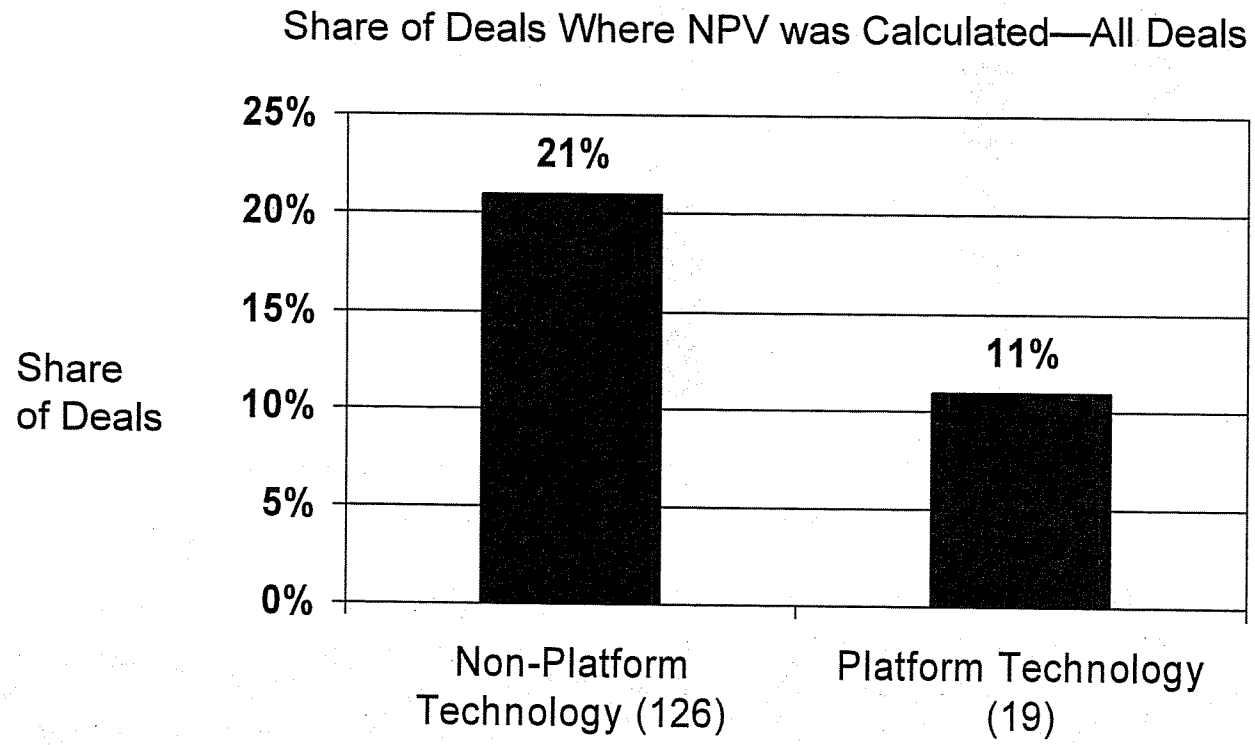
Notes:

1 Based on 46 responses – excludes responses either representing platform technologies or failing to answer the question, "Did you calculate an estimated net present value (ENPV) for this deal?"

2 Numbers in parentheses after X-axis data labels represent numbers of responses.

Valuation
Calculation of NPV for Platform Deals

NPVs were computed for non-platform technology deals more frequently than they were for platform technology deals



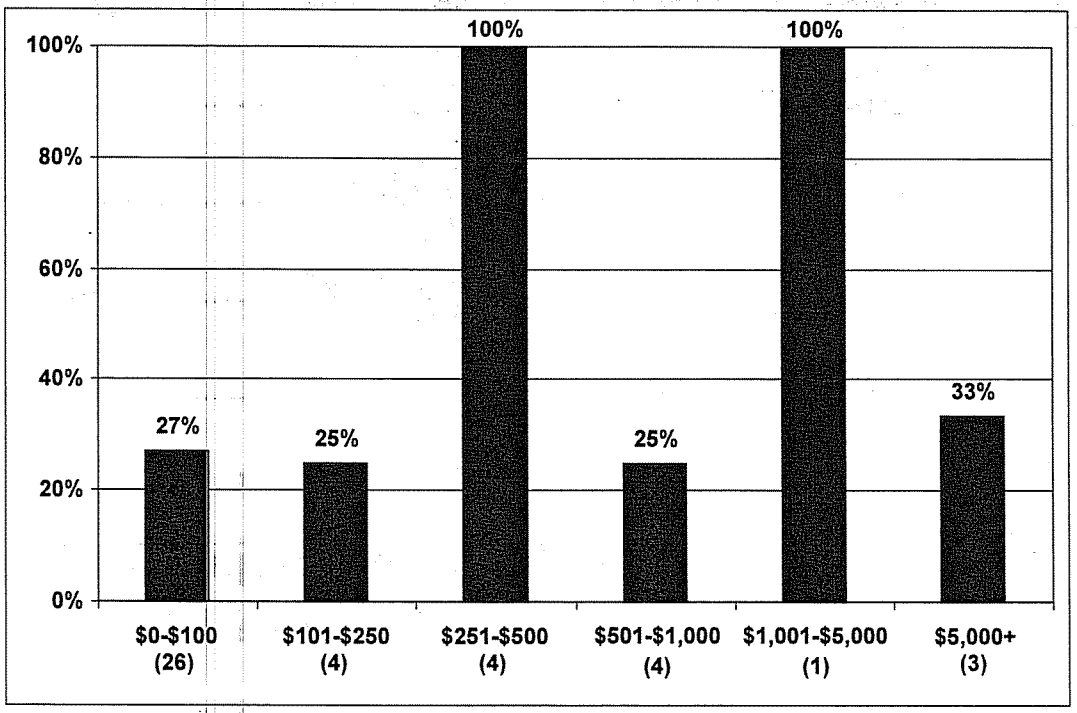
Notes:

1 Based on 145 total responses – excludes the 11 survey responses in which respondents did not answer the question, "Did you calculate an estimated net present value (ENPV) for this deal?"

2 Numbers in parentheses after X-axis data labels represent numbers of responses.

Valuation
Calculation of NPV by Company Size

The frequency of computing NPVs does not appear to be related to the size of the company.



Notes:

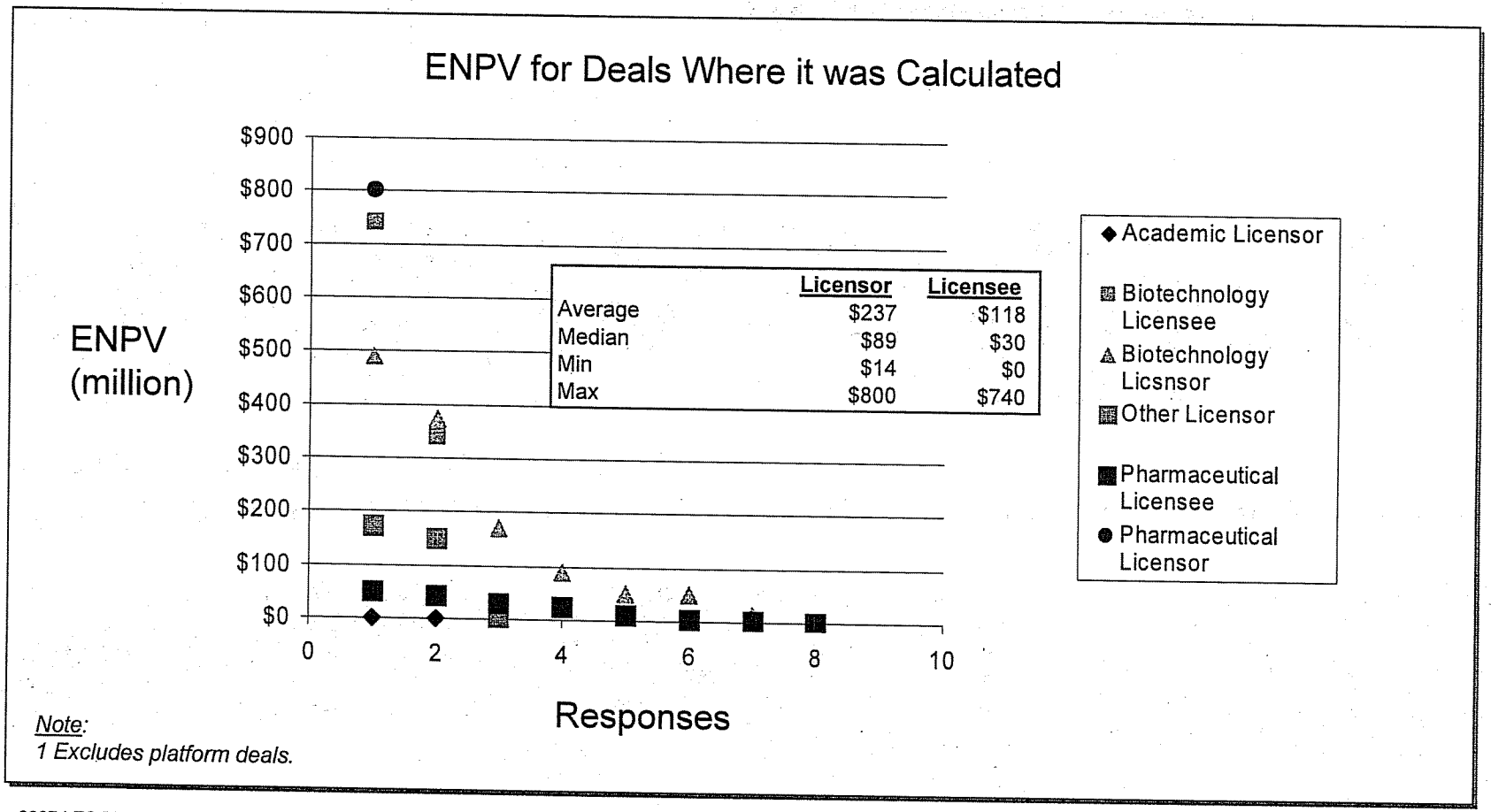
1 Excludes responses for platform technologies and responses failing to answer the question, "Did you calculate an estimated net present value (ENPV) for this deal?"

2 Numbers in parentheses after X-axis data labels represent numbers of responses where respondents answered the question, "Did you calculate an estimated net present value (ENPV) for this deal?" and reported their company size in terms of annual revenue. For example, for companies reporting annual revenue between $0 and $100 million, there were 26 responses to the question "Did you calculate an estimated net present value (ENPV) for this deal?" In 27% of these deals (or 7 of the 26 deals), respondents indicated they did calculate an NPV; in 19 of the 26 deals, respondents indicated they did not calculate an NPV.

3 Excludes deals where respondents answered, "Pre-commercial" to the question, "What was your 2006 annual pharmaceutical sales revenue? (US$ Millions)."

Valuation
Range in NPV Values

The majority of biotech and pharma reported NPVs are relatively low compared with the few, large NPVs reported.



Note:
1 Excludes platform deals.

Valuation

While upfront payments are the most prevalent, amounts are small compared with development and sales milestones

All Deals						
	Upfront Payment	Research Funding	Technology Access Fee	Develop-ment Milestones	Sales Milestones	Equity Investment
Share of Deals	80%	21%	4%	63%	33%	13%
Average	$9,823	$6,499	$2,067	$34,000	$56,387	$10,371
Median	$450	$5,000	$600	$3,000	$15,000	$5,000
Min	$3	$200	$50	$65	$100	$32
Max	$250,000	$50,000	$6,000	$420,500	$500,000	$75,000

($ in thousands)

Notes:
1 Excludes platform deals.
2 Blue font represents highest result; red font represents lowest result.

Valuation

Sales and development milestones comprise the majority of lump sum payments in deals reported by biotech and pharma companies.

Biotech and Pharma Deals						
	Upfront Payment	Research Funding	Technology Access Fee	Develop-ment Milestones	Sales Milestones	Equity Investment
Share of Deals	80%	29%	5%	56%	40%	16%
Average	$16,627	$7,530	$1,788	$64,949	$76,540	$14,085
Median	$2,000	$5,000	$550	$17,000	$26,250	$9,000
Min	$25	$200	$50	$75	$200	$225
Max	$250,000	$50,000	$6,000	$420,500	$500,000	$75,000

($ in thousands)

Notes:
1 Excludes platform deals.
2 Blue font represents highest result; red font represents lowest result.

Valuation

Development milestones are much more prevalent than sales milestones in deals reported by academic institutions.

Academic Deals	Upfront Payment	Research Funding	Technology Access Fee	Develop-ment Milestones	Sales Milestones	Equity Investment
Share of Deals	74%	9%	2%	68%	19%	9%
Average	$107	$329	$250	$1,625	$967	$1,615
Median	$25	$325	$250	$600	$750	$715
Min	$3	$215	$250	$65	$100	$32
Max	$1,050	$450	$250	$14,000	$3,000	$5,000

($ in thousands)

Notes:
1 Excludes platform deals.
2 Blue font represents highest result; red font represents lowest result.

Valuation

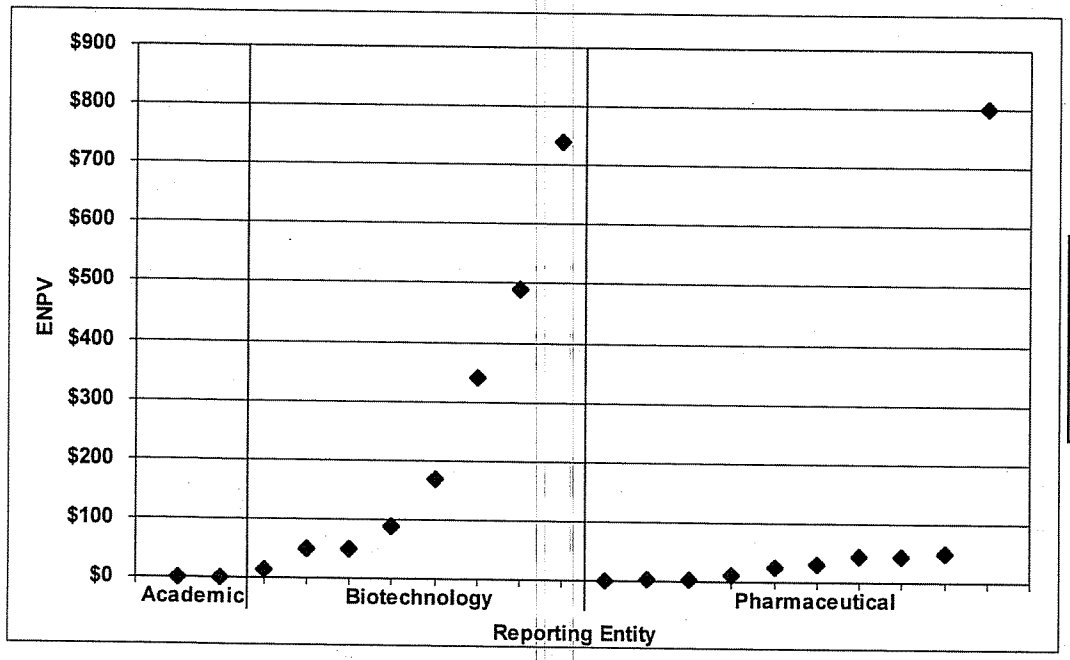
Highest ratios of up front payments to NPV were in "Group 1" deals.
All Deals: "Average" up front payment to NPV = 15% and "Median" of 7%

		Up Front Payments / NPV			
	# of Deals	Average	Median	Min	Max
All Deals	21	15%	7%	0%	80%
Biotech Deals	7	14%	8%	1%	40%
Pharma Deals	9	11%	4%	0%	33%
Group 1 Deals	7	26%	22%	1%	80%
Group 2 Deals	6	5%	4%	0%	13%
Group 3 Deals	5	16%	7%	4%	33%
Group 4 Deals	1	0%	0%	0%	0%
Group 5 Deals	2	5%	5%	0%	11%

Note:
1 Excludes 2 platform deals, 3 deals for which the NPV was not available, 1 deal with a reported NPV of $0, and 1 deal with an up front payment that greatly exceeded the NPV of the deal.

Valuation

The majority of the high NPV deals were biotech deals; the only 2 academic deals with a reported NPV were very small.

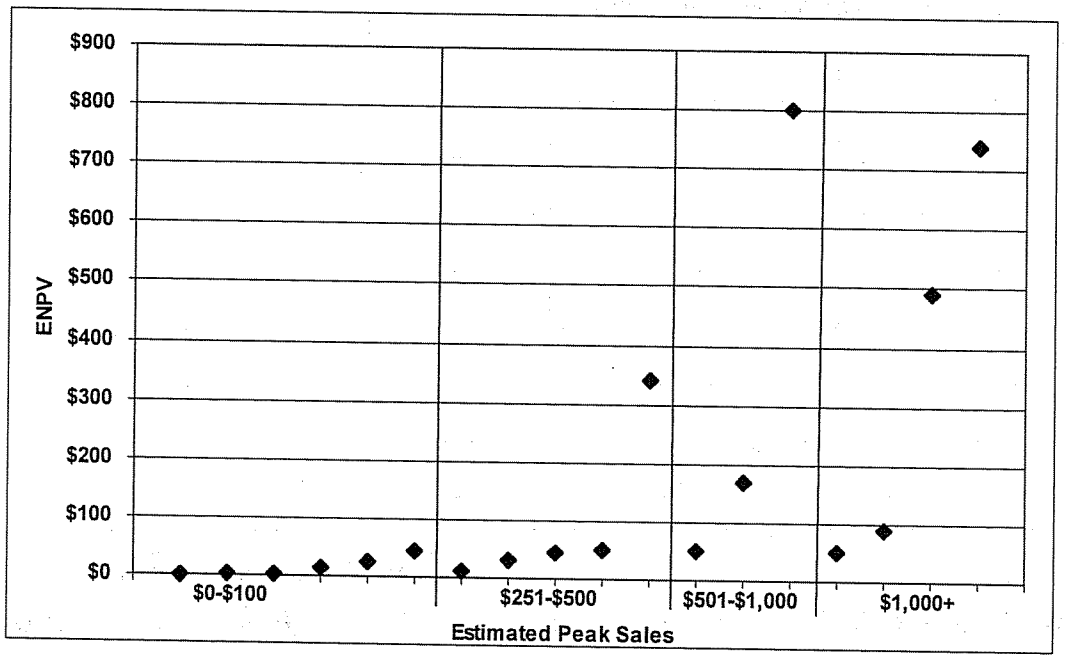


	Academic	Biotech	Pharma
Average	$0.14	$243	$101
Median	$0.14	$130	$28
Min	$0.01	$14	$0
Max	$0.27	$740	$800

Note:
1 Excludes platform deals.

Valuation

As expected, the higher the estimated peak sales, the higher the NPV

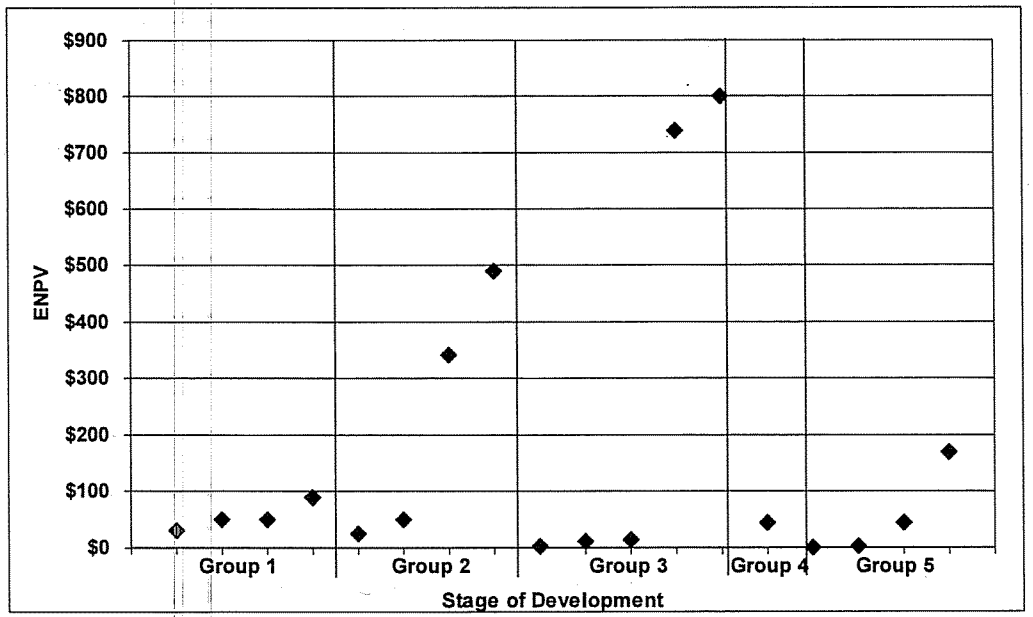


	$0-$100	$251-$500	$501-$1,000	$1,001+
Average	$15	$95	$340	$342
Median	$9	$45	$170	$289
Min	$0	$12	$50	$50
Max	$45	$340	$800	$740

Note:
1 Excludes platform deals; biotech and pharma deals only.

Valuation

The highest reported NPVs were for compounds or drugs that were at relatively early stages of development.



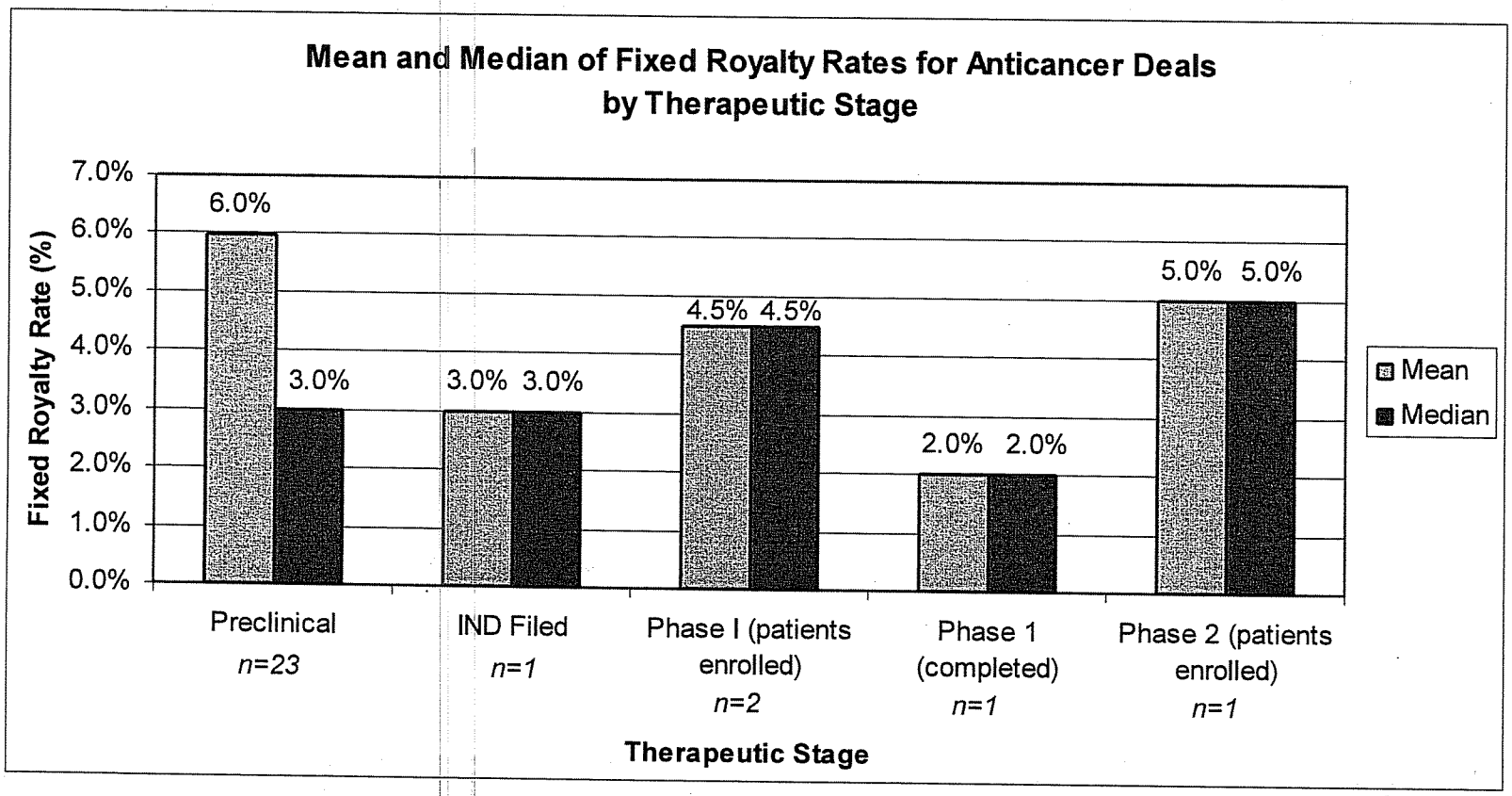
	Group 1	Group 2	Group 3	Group 4	Group 5
Average	$55	$226	$314	$45	$55
Median	$50	$195	$14	$45	$24
Min	$30	$25	$4	$45	$0
Max	$89	$489	$800	$45	$170

Note:
1 Excludes platform deals; biotech and pharma deals only.

Analysis of Therapeutic Areas

Royalty Rate & Upfront Payment

Analysis of Therapeutic Areas
Anticancer – Fixed Royalty Rates

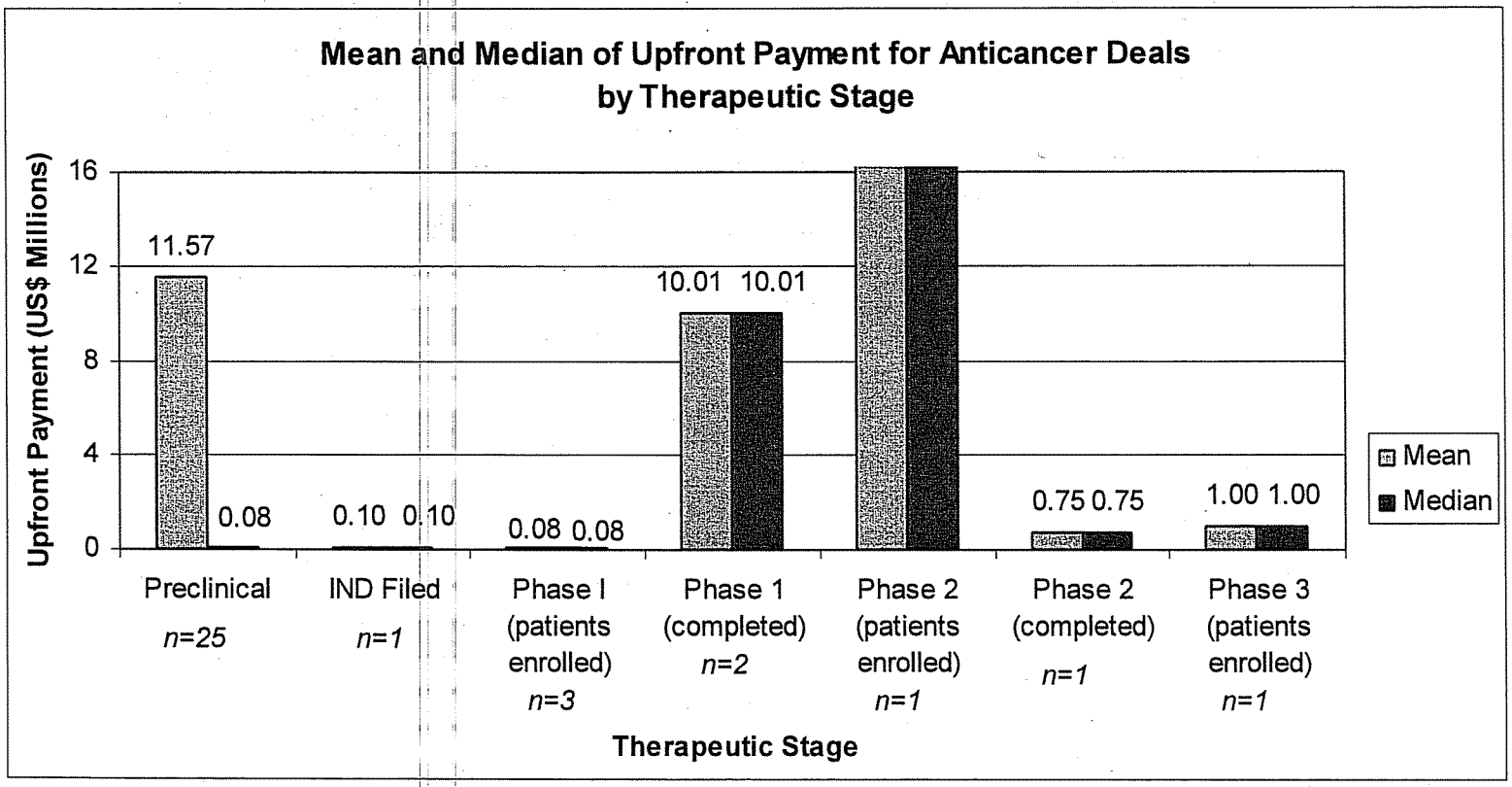


Accompanying data on following page.

Analysis of Therapeutic Areas
Anticancer – Type of Royalty Rate

Royalty Rates					
Anticancer	**# of Deals**	**Min**	**Median**	**Max**	**Mean**
Preclinical					
Fixed Royalty Rate	23	0.3%	3%	50%	6.0%
Tiered Royalty Rates	7				
No royalty component	4				
IND Filed					
Fixed Royalty Rate	1	3%	3%	3%	3.0%
Phase I (patients enrolled)					
Fixed Royalty Rate	2	2%	5%	7%	4.5%
Tiered Royalty Rates	1				
Phase 1 (completed)					
Fixed Royalty Rate	1	2%	2%	2%	2.0%
Tiered Royalty Rates	1				
Phase 2 (patients enrolled)					
Fixed Royalty Rate	1	5%	5%	5%	5.0%
Phase 2 (completed)					
No royalty component	1				
Phase 3 (patients enrolled)					
Tiered Royalty Rates	2				
Approved/Launched					
Tiered Royalty Rates	1				

Analysis of Therapeutic Areas
Anticancer – Upfront Payment



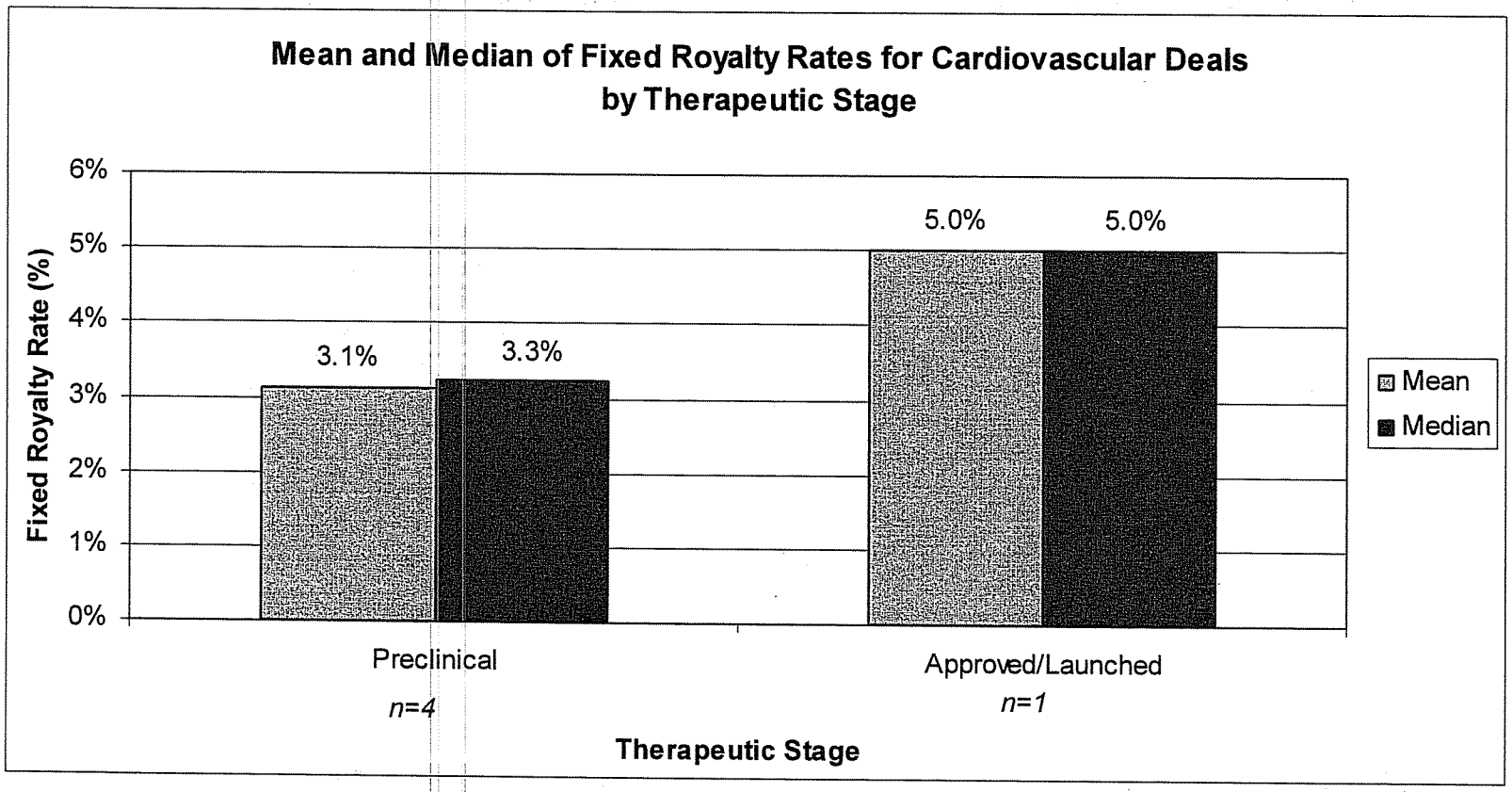
Accompanying data on following page.

Analysis of Therapeutic Areas
Anticancer – Upfront Payment

Upfront Payment (US$ Millions)					
Anticancer	**# of Deals***	**Min**	**Median**	**Max**	**Mean**
Preclinical	25	0.003	0.08	250.00	11.57
IND Filed	1	0.10	0.10	0.10	0.10
Phase I (patients enrolled)	3	0.01	0.08	0.15	0.08
Phase 1 (completed)	2	0.03	10.01	20.00	10.01
Phase 2 (patients enrolled)	1	200.00	200.00	200.00	200.00
Phase 2 (completed)	1	0.75	0.75	0.75	0.75
Phase 3 (patients enrolled)	1	1.00	1.00	1.00	1.00
Approved/Launched	0	no data	no data	no data	no data

* Deals with an upfront payment

Analysis of Therapeutic Areas
Cardiovascular – Fixed Royalty Rates

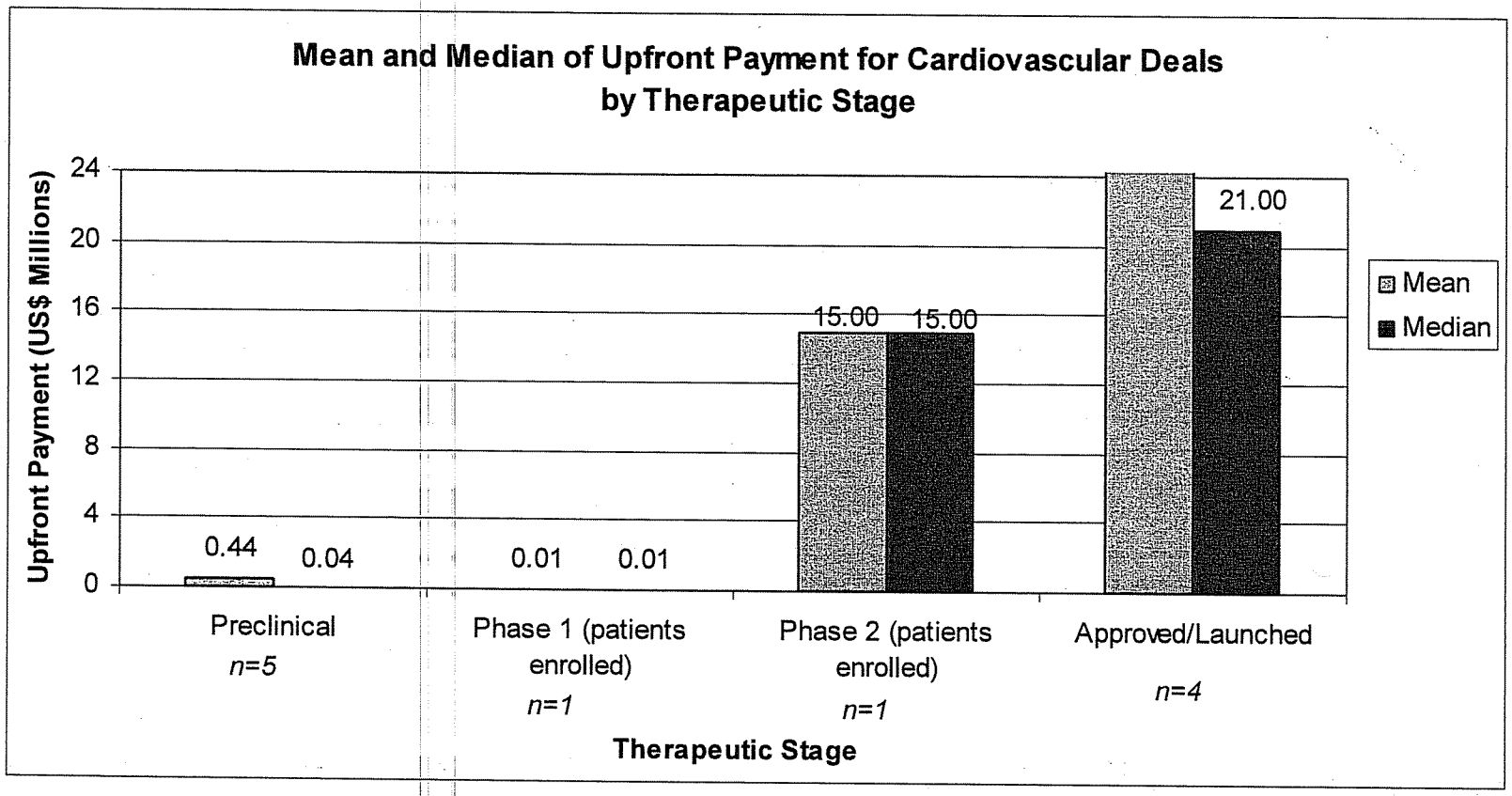


Accompanying data on following page.

Analysis of Therapeutic Areas
Cardiovascular – Type of Royalty Rate

Royalty Rates					
Cardiovascular	**# of Deals**	**Min**	**Median**	**Max**	**Mean**
Preclinical					
Fixed	4	2%	3%	4%	3%
Tiered	2				
Phase 1 (patients enrolled)					
Tiered	1				
Phase 2 (patients enrolled)					
Tiered	1				
Approved/Launched					
Fixed	1	5%	5%	5%	5%
Tiered	3				

Analysis of Therapeutic Areas
Cardiovascular – Upfront Payment



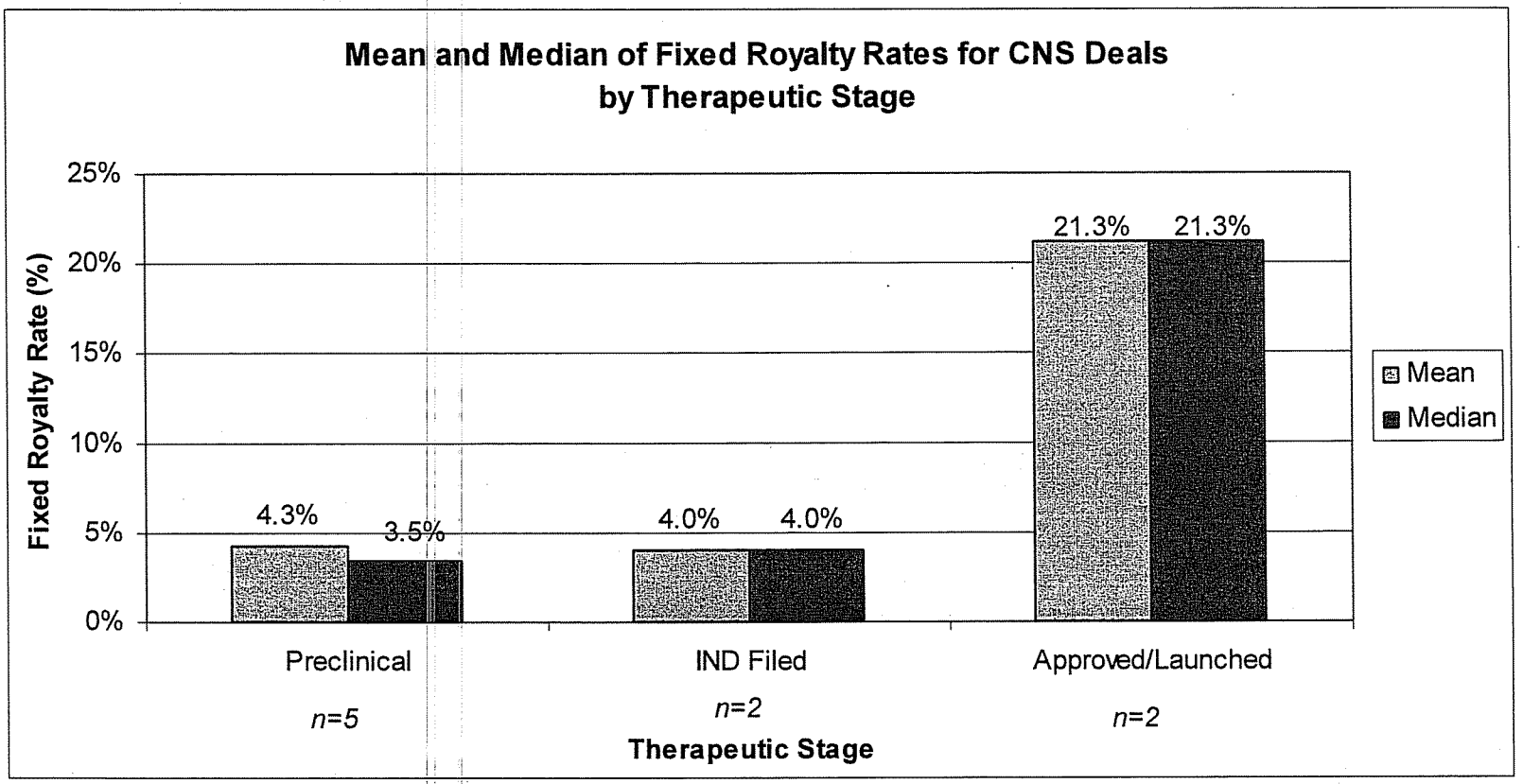
Accompanying data on following page.

Analysis of Therapeutic Areas
Cardiovascular – Upfront Payment

Upfront Payment (US$ Millions)					
Cardiovascular	**# of Deals***	**Min**	**Median**	**Max**	**Mean**
Preclinical	5	0.01	0.04	2.00	0.44
Phase 1 (patients enrolled)	1	0.01	0.01	0.01	0.01
Phase 2 (patients enrolled)	1	15.00	15.00	15.00	15.00
Approved/Launched	4	0.33	21.00	250.00	73.08

* Deals with an upfront payment

Analysis of Therapeutic Areas
CNS – Fixed Royalty Rates



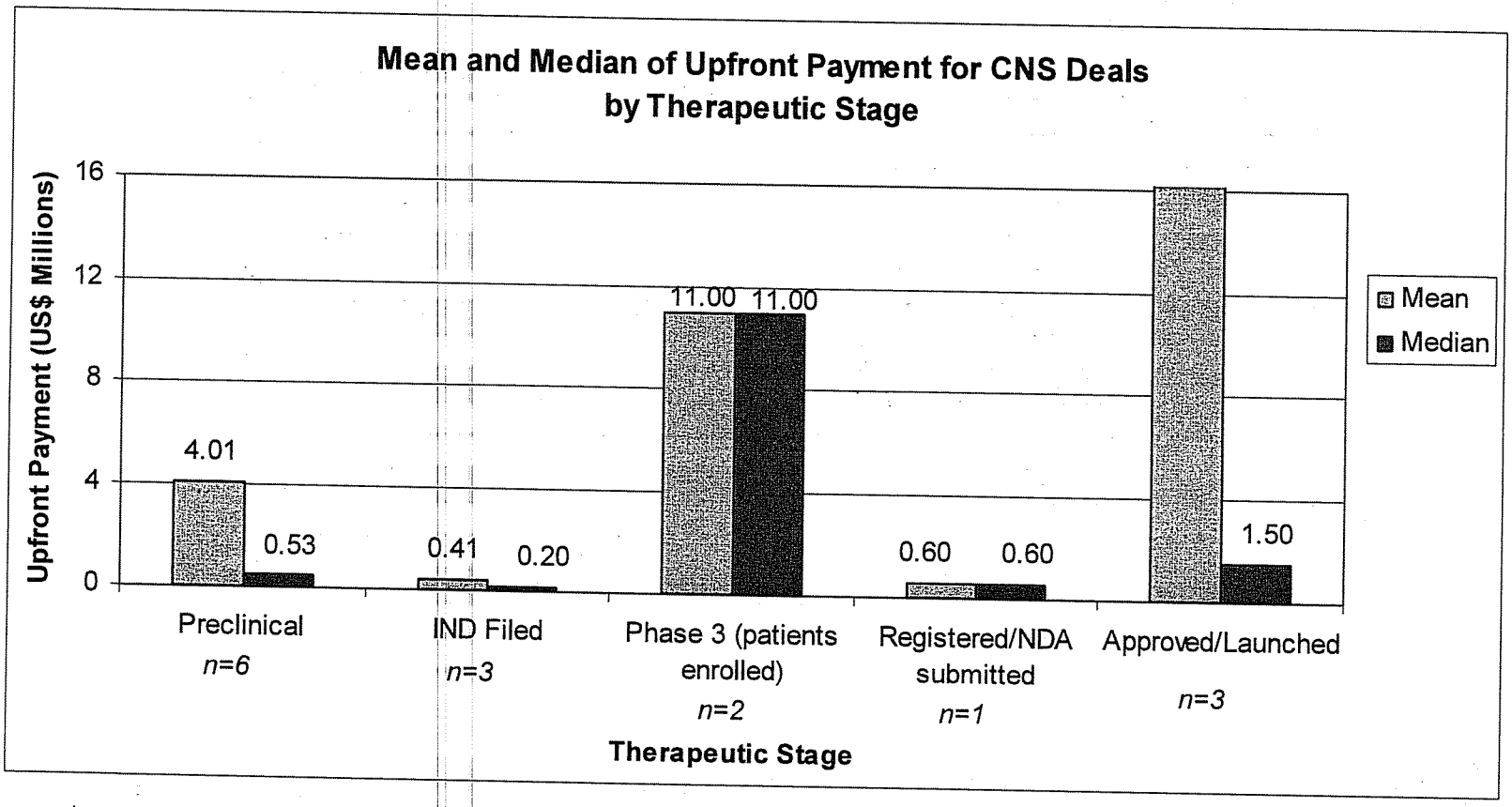
Accompanying data on following page.

Analysis of Therapeutic Areas
CNS – Type of Royalty Rate

Royalty Rates					
CNS	**# of Deals**	**Min**	**Median**	**Max**	**Mean**
Preclinical					
Fixed	5	2%	4%	10%	4%
Tiered	4				
IND Filed					
Fixed*	2	4%	4%	4%	4%
Tiered	2				
Phase 3 (patients enrolled)					
Tiered	2				
Phase 3 (completed)					
Tiered	1				
Registered/NDA submitted					
Tiered	1				
Approved/Launched					
Fixed	2	15%	21%	28%	21%
No royalty component	2				

* only 1 deal provided rate information

Analysis of Therapeutic Areas
CNS – Upfront Payment



Accompanying data on following page.

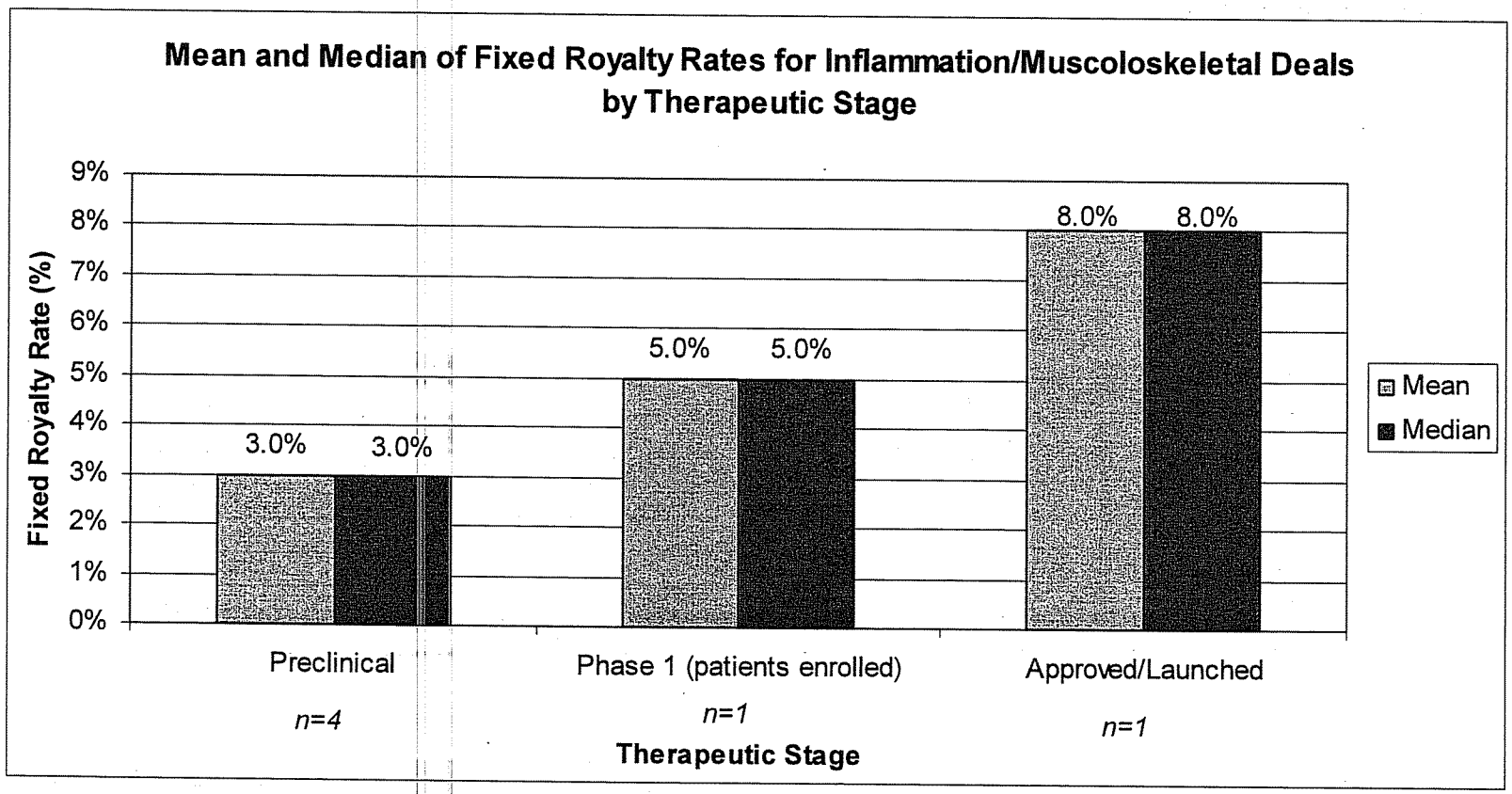
Analysis of Therapeutic Areas
CNS – Upfront Payment

Upfront Payment (US$ Millions)					
CNS	**# of Deals***	**Min**	**Median**	**Max**	**Mean**
Preclinical	6	0.01	0.53	22.00	4.01
IND Filed	3	0.04	0.20	1.00	0.41
Phase 3 (patients enrolled)	2	2.00	11.00	20.00	11.00
Phase 3 (completed)	no data	no data	no data	no data	no data
Registered/NDA submitted	1	0.60	0.60	0.60	0.60
Approved/Launched	3	1.00	1.50	105.00	35.83

* Deals with an upfront payment

Analysis of Therapeutic Areas

Inflammation/Musculoskeletal – Fixed Royalty Rates



Accompanying data on following page.

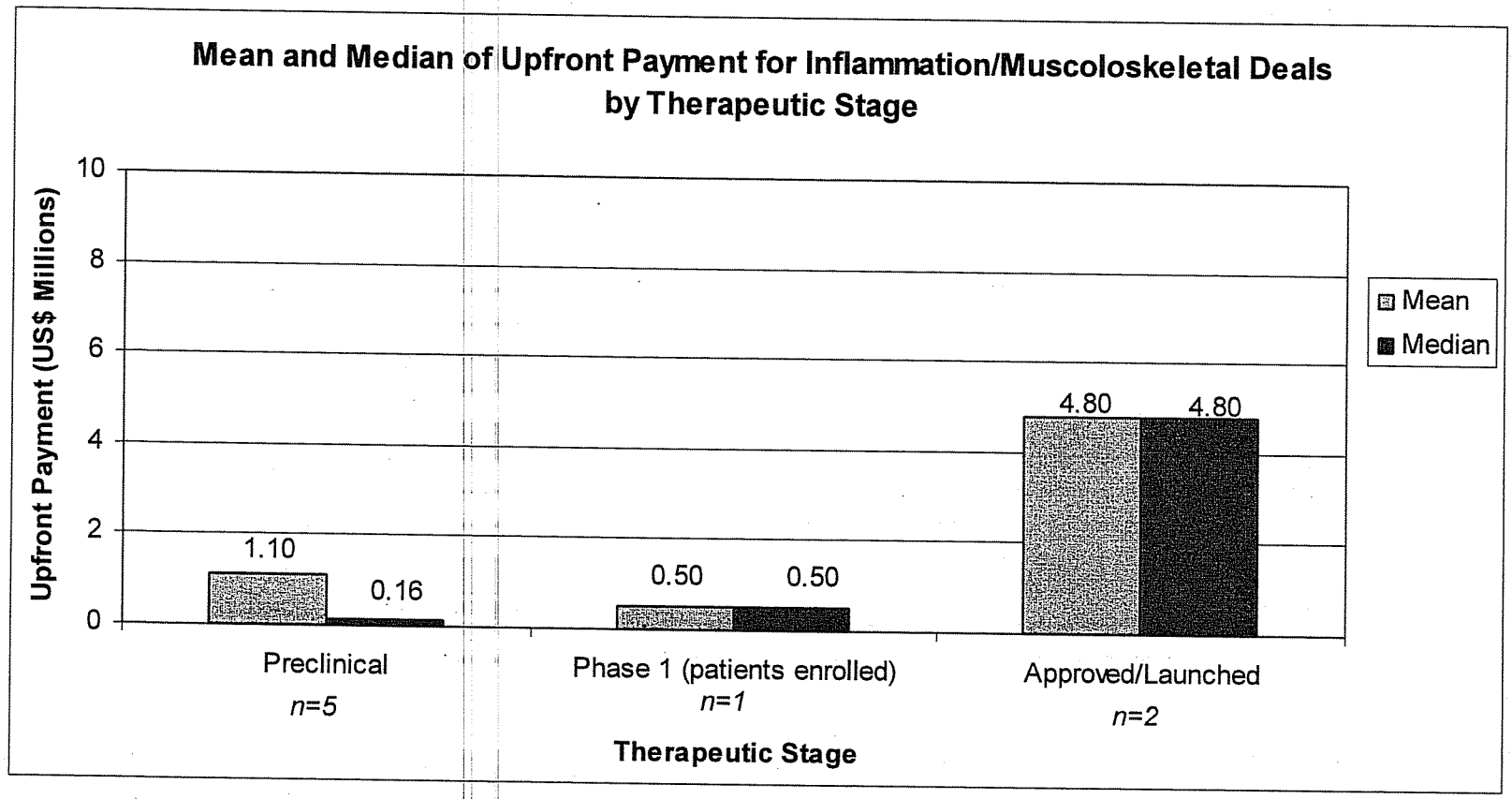
Analysis of Therapeutic Areas

Inflammation/Musculoskeletal – Type of Royalty Rate

Royalty Rates					
Inflammation/Muscoloskeletal	**# of Deals**	**Min**	**Median**	**Max**	**Mean**
Preclinical					
Fixed	4	1%	3%	5%	3%
Tiered	3				
No royalty component	1				
Phase 1 (patients enrolled)					
Fixed	1	5%	5%	5%	5%
Approved/Launched					
Fixed	1	8%	8%	8%	8%
Tiered	1				

Analysis of Therapeutic Areas

Inflammation/Musculoskeletal – Upfront Payment



Accompanying data on following page.

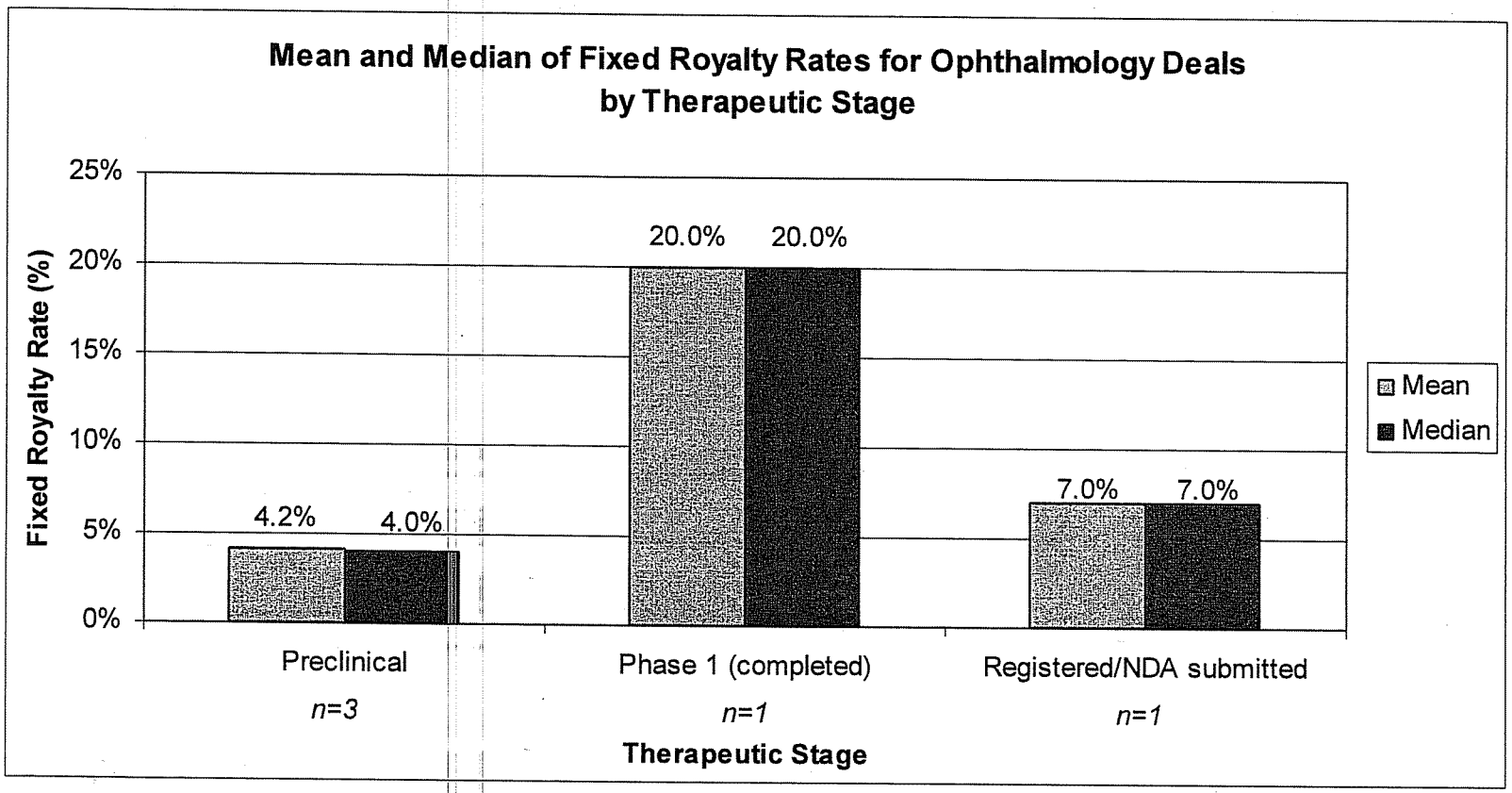
Analysis of Therapeutic Areas

Inflammation/Musculoskeletal – Upfront Payment

Upfront Payment (US$ Millions)					
Inflammation/Muscoloskeletal	**# of Deals***	**Min**	**Median**	**Max**	**Mean**
Preclinical	5	0.01	0.16	5.00	1.10
Phase 1 (patients enrolled)	1	0.50	0.50	0.50	0.50
Approved/Launched	2	4.60	4.80	5.00	4.80

* Deals with an upfront payment

Analysis of Therapeutic Areas
Ophthalmology – Fixed Royalty Rates

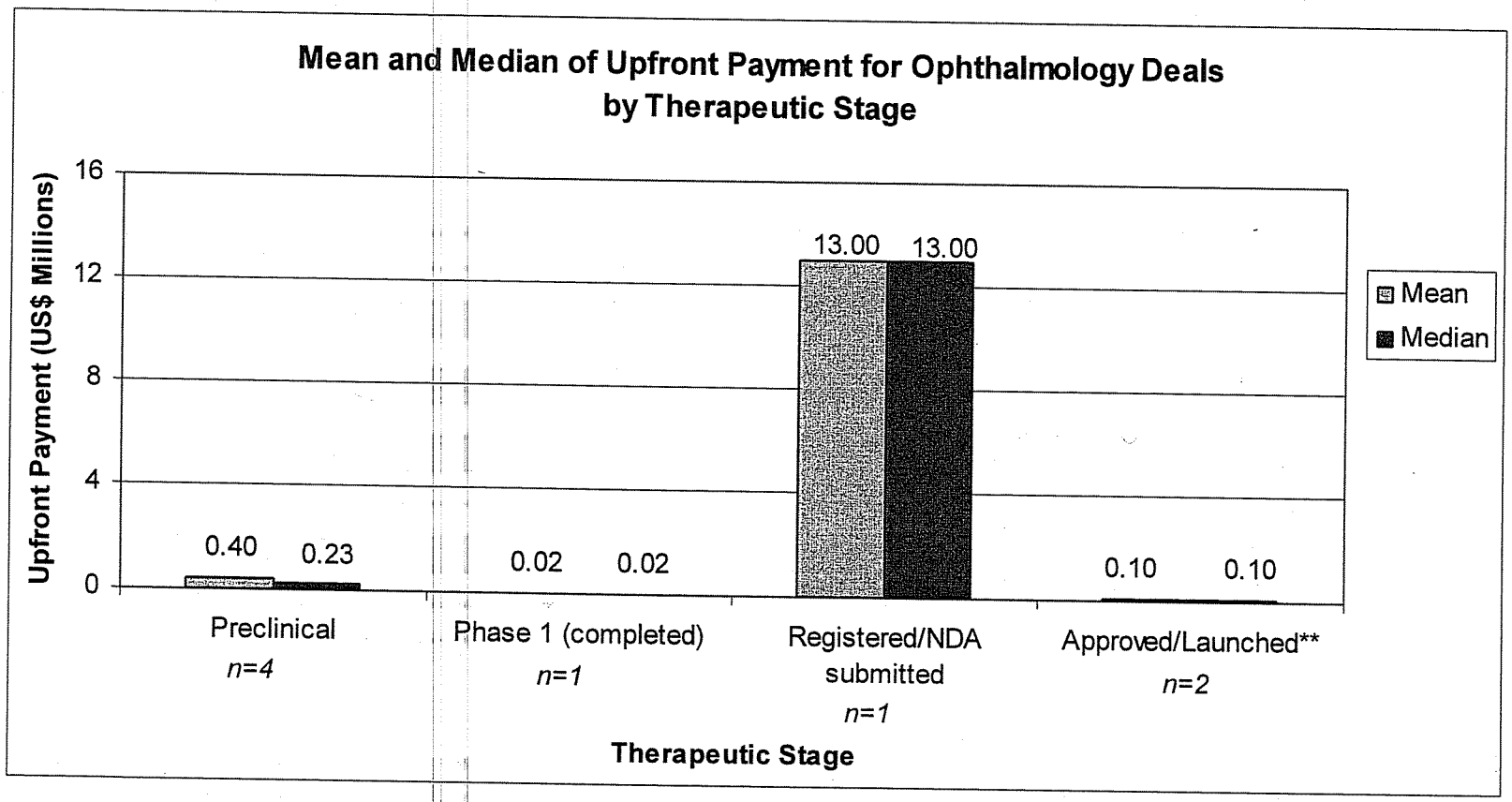


Accompanying data on following page.

Analysis of Therapeutic Areas
Ophthalmology – Type of Royalty Rate

Royalty Rates					
Ophthalmology	**# of Deals**	**Min**	**Median**	**Max**	**Mean**
Preclinical					
Fixed	3	4%	4%	5%	4%
Tiered	3				
Phase 1 (completed)					
Tiered	1				
Registered/NDA submitted					
Fixed	1	20%	20%	20%	20%
Approved/Launched					
Fixed	1	7%	7%	7%	7%
Tiered	1				

Analysis of Therapeutic Areas
Ophthalmology – Upfront Payment



Accompanying data on following page.

Analysis of Therapeutic Areas
Ophthalmology – Upfront Payment

Upfront Payment (US$ Millions)					
Ophthalmology	**# of Deals***	**Min**	**Median**	**Max**	**Mean**
Preclinical	4	0.15	0.23	1.00	0.40
Phase 1 (completed)	1	0.02	0.02	0.02	0.02
Registered/NDA submitted	1	13.00	13.00	13.00	13.00
Approved/Launched**	2	0.10	0.10	0.10	0.10

* Deals with an upfront payment

**Both deals had the same upfront payment.

Appendix A

Aggregate Survey Results by Question

Appendix A
Aggregate Survey Results

- QA. What type of Organization are you?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
22	69	30.0%	Academic
45	55	23.9%	Biotechnology
52	64	27.8%	Pharmaceutical
38	42	18.3%	Other *
Total	**230**	**100%**	

*Other organizations include BD & Advisory, Chemical Suppliers, CROs, Consulting, Executive Recruiters, Federal Contractors, Finance/Investment Banking, Medical Devices, Non-profit Research Institutes, Law Firms, Private Equity Funds, and Venture Capitals.

- QB. What were your 2006 annual Pharma sales revenues?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
48	96	41.7%	Academic organization/Not applicable
49	59	25.7%	Pre-commercial
33	43	18.7%	$0-$100
5	6	2.6%	$101-$250
5	5	2.2%	$251-$500
5	8	3.5%	$501-$1,000
3	3	1.3%	$1,001-$5,000
9	10	4.3%	$5,000+
Total	**230**	**100%**	

Appendix A
Aggregate Survey Results

- Q1. What year did deal take place?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
65	80	43.2%	2007
45	67	36.2%	2006
22	38	20.5%	2005
Total	**185**	**100%**	

- Q2. Were you the Licensor or Licensee?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
72	130	70.3%	Licensor
44	55	29.7%	Licensee
Total	**185**	**100%**	

- Q3. Type of Partnering Organization?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
16	16	8.6%	Academic
41	62	33.5%	Biotechnology
66	97	52.4%	Pharmaceutical
7	10	5.4%	Other*
Total	**185**	**100%**	

*Other partnering organizations include Antibody Products, Bio/Pharm, Holding Companies, Law Firms, Medical Devices, Nutraceuticals, and Research Tools.

Appendix A
Aggregate Survey Results

- Q4. Partnering Organization's Est. 2006 Pharma Sales?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
15	15	8.1%	Academic organization/Not applicable
31	64	34.6%	Pre-commercial
27	36	19.5%	$0-$100
7	8	4.3%	$101-$250
6	6	3.2%	$251-$500
8	10	5.4%	$501-$1,000
12	13	7.0%	$1,001-$5,000
29	33	17.8%	$5,000+
Total	**185**	**100%**	

- Q5. Type or Category of Compound / Drug?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
3	3	1.7%	Cytokine
3	3	1.7%	Hormone
8	12	6.8%	Monoclonal antibody
7	7	4.0%	Natural product
13	22	12.5%	Peptide/protein
14	21	11.9%	Platform Technology
3	3	1.7%	RNAi/antisense (or similar)
60	84	47.7%	Small molecule
16	21	11.9%	Other *
Total	**176**	**100%**	

*Other compound/drugs include anti-infective, artificial tear, assay, biodegradable nanoparticles, biomaterial, database/software, medical device, hyaluronic acid, oligodinucleotides, polyclonal, proprietary gene panel, unique human cell line, vaccine

Appendix A
Aggregate Survey Results

- Q6. Principle Therapeutic Area for License?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
26	47	26.7%	Anticancer
9	9	5.1%	Anti-infective (b
7	7	4.0%	Anti-infective (vi
2	2	1.1%	Blood & clotting
9	12	6.8%	Cardiovascular
16	21	11.9%	CNS
9	9	5.1%	Dermatological
5	5	2.8%	Gastrointenstin
6	9	5.1%	Immunological
9	11	6.3%	Inflammation/m
9	10	5.7%	Ophthalmology
2	2	1.1%	Respiratory
23	32	18.2%	Other *
Total	**176**	**100%**	

*Other areas include aging, anemia, anti-parasitic, cancer supportive care, cleansing lotion, diabetes, diagnostic, endocrine, hormonal, metabolic, nutraceutical, nutrigenomics screening, ob/gyn, obesity, post surgical adema, preeclampsia, research, surgical, urological, veterinary, and women's health.

Appendix A
Aggregate Survey Results

- Q7. Stage of Development for Principal Indication?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
60	108	61.4%	Preclinical
5	5	2.8%	IND Filed
4	6	3.4%	Phase 1 (patients enrolled)
7	7	4.0%	Phase 1 (completed)
5	5	2.8%	Phase 2 (patients enrolled)
5	5	2.8%	Phase 2 (completed)
8	9	5.1%	Phase 3 (patients enrolled)
4	4	2.3%	Phase 3 (completed)
3	3	1.7%	Registered/NDA submitted
17	24	13.6%	Approved/Launched
Total	**176**	**100%**	

- Q8. Exclusive or Non-Exclusive License?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
97	154	87.5%	Exclusive
14	22	12.5%	Non-exclusive
Total	**176**	**100%**	

Appendix A
Aggregate Survey Results

- Q9. Territories Included in the License?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
71	122	69.3%	Worldwide
96	160	90.9%	US
79	132	75.0%	Europe
75	127	72.2%	Japan
80	140	79.5%	Other
Total	**176**	**NA Total**	

- Q10. Estimated **Peak** U.S. Annual Sales?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
37	90	52.9%	$0-$100
10	11	6.5%	$101-$250
21	22	12.9%	$251-$500
26	27	15.9%	$501-$1,000
19	20	11.8%	$1,001+
Total	**170**	**100%**	

- Q11. Deal Include Co-Promo or Co-Marketing Rights?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
17	18	10.6%	Yes
79	141	82.9%	No
10	11	6.5%	Option to "opt-in"
Total	**170**	**100%**	

Appendix A
Aggregate Survey Results

- Q12. Who has ultimate responsibility for the following function?

	Licensor			Licensee		
	Companies	*Deals*	*Pct Selected*	*Companies*	*Deals*	*Pct Selected*
Research	50	67	39%	53	103	61%
Product development	32	39	23%	69	131	77%
Clinical trials	29	35	21%	74	135	79%
Regulatory	22	26	15%	80	144	85%
Manufacturing	30	36	21%	74	134	79%

- Q13. Deal Have Flat or Tiered Royalties?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
47	88	51.8%	Flat
54	64	37.6%	Tiered
14	18	10.6%	No royalty component
Total	**170**	**100%**	

- Q14. If this deal did not have royalties, was there a profit-sharing component?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
4	5	27.8%	Yes
10	13	72.2%	No
Total	**18**	**100%**	

Appendix A
Aggregate Survey Results

- Q15. What was the Flat Royalty Rate for this deal?

Number of Companies	45
Number of Deals	89
MIN	0.3%
1st QUARTILE	2.3%
MEDIAN	4.0%
3rd QUARTILE	7.0%
MAX	50.0%
MODE	5.0%
MEAN	6.6%
STD. DEV.	9.0%

- Q16. Please provide the royalty tier structure that most closely resembled your deal. For each tier (up to 6) enter the maximum sales to which this tier applied, and the royalty rate for that tier.
  (all results are located in Analysis and Results – Tiered Royalties section of the report)

- Q17. Did this deal have stacked royalties?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
26	52	37.7%	Yes
60	86	62.3%	No
Total	**138**	**100%**	

Appendix A
Aggregate Survey Results

- Q18. What was the value of the following financial components of the deal terms? (US$ Millions)

(A total of 150 deals entered data for at least 1 of the below components. The calculations below exclude blanks and zeroes.)

Financial Component	Number of Companies	Number of Deals	% of Deals with this Financial Component	MIN	FIRST QUARTILE	MEDIAN	THIRD QUARTILE	MAX	MODE	MEAN	STD. DEV.
Upfront payment	71	133	89%	0.003	0.1	0.3	4.6	250.0	0.1	10.3	36.6
Research funding	29	35	23%	0.10	0.4	5.0	10.0	100.0	5.0	9.6	18.5
Technology access fee	8	8	5%	0.05	0.1	0.6	2.0	6.0	NA	1.7	2.4
Total development milestone payments	60	99	66%	0.07	0.6	2.8	19.5	420.5	0.9	34.5	73.5
Total sales milestones payments	36	50	33%	0.10	1.5	13.5	57.5	500.0	1.0	51.5	96.4
Equity investment	19	24	16%	0.03	1.0	5.0	10.0	75.0	5.0	8.6	15.2

- Q19. When do the royalties from this deal stop?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
8	10	6.4%	After a set time period
44	71	45.2%	Expiry of last patent
9	9	5.7%	Expiry of key patent or patents
23	46	29.3%	Expiry of last patent or X years from the date of the first commercial sale, whichever is longest
13	21	13.4%	Other (Please specify) *Responses will be included in Appendix of Final Report.*
Total	**157**	**100%**	

Appendix A
Aggregate Survey Results

- Q20. Did you calculate an estimated net present value (ENPV) for this deal?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
24	30	20.4%	Yes
59	117	79.6%	No
Total	**147**	**100%**	

- Q20a. Please enter the ENPV in US$ millions.

Number of Companies	23
Number of Deals	26
MIN	0.005
1st QUARTILE	15
MEDIAN	50
3rd QUARTILE	173
MAX	800
MODE	50
MEAN	155
STD. DEV.	224

Appendix A
Aggregate Survey Results

- Q21. Did you calculate a deal split assessment of the overall value?

Number of Companies	*Number of Deals*	*Pct. Selected*	*Choice*
17	19	12.1%	Yes
73	138	87.9%	No
Total	**157**	**100%**	

- Q22. If yes, what was the deal split sharing?

	Licensor	Licensee
Number of Companies	18	18
Number of Deals	20	20
MIN	3	10
1st QUARTILE	40	40
MEDIAN	50	50
3rd QUARTILE	60	60
MAX	90	97
MODE	50	50
MEAN	50	50
STD. DEV.	19	19

Appendix B

LES BioPharmaceutical Royalty Rate and Deal Terms Survey

Appendix B
Survey Questionnaire

LES Pharmaceutical Royalty Rate & Deal Terms Survey

LES would like to gather as much information as possible about recently completed deals since January 2005. You will have the opportunity to submit as many deals as you would be willing to share. They may be entered all in one session or you may enter them gradually over the course of the data collection process. Please submit one deal at a time starting with your most recent.

A. What **type of organization** are you?
- Academic
- Biotechnology
- Pharmaceutical
- Other (Please specify) _____

B. What was your 2006 annual pharmaceutical sales revenue (US$ Millions)?
- Academic organization/Not applicable
- Pre-commercial
- $0 – $100
- $101 – $250
- $251 – $500
- $501 – $1000
- $1,000 – $5,000
- $5,000+

Appendix B
Survey Questionnaire

1. What **year** did this deal take place?
   2007
   2006
   2005

2. Were you the **licensor or licensee**?
   Licensor
   Licensee

3. What was the **type** of the **partnering organization**?
   Academic
   Biotechnology
   Pharmaceutical
   Other (Please specify) _____

4. What was the **partnering organization's** estimated 2006 annual pharmaceutical sales revenue? (US$ Millions)
   Academic organization/Not applicable
   Pre-commercial
   $0 – $100
   $101 – $250
   $251 – $500
   $501 – $1000
   $1,000 – $5,000
   $5,000+

Appendix B
Survey Questionnaire

5. Please choose the **type or category of compound/drug** that was the subject of this deal.
   Cytokine
   Hormone
   Monoclonal antibody
   Natural product
   Peptide/protein
   Platform Technology
   RNAi/antisense (or similar)
   Small molecule
   Other (please specify) _____

6. Please select the **principle therapeutic area** for which the product was licensed.
   Anticancer
   Anti-infective (bacterial)
   Anti-infective (viral)
   Blood & clotting
   Cardiovascular
   CNS
   Dermatological
   Gastrointestinal
   Immunological
   Inflammation/musculoskeletal
   Ophthalmology
   Respiratory
   Other (please specify) _____

Appendix B
Survey Questionnaire

7. What **stage of development** was the product at for the principle indication?
   Preclinical
   IND Filed
   Phase 1 (patients enrolled)
   Phase 1 (completed)
   Phase 2 (patients enrolled)
   Phase 2 (completed)
   Phase 3 (patients enrolled)
   Phase 3 (completed)
   Registered/NDA submitted
   Approved/Launched

8. Was this an **exclusive or non-exclusive** license?
   Exclusive
   Non-exclusive

9. Which **territories** were included in the license? Check all that apply. For worldwide deals select Worldwide.
   __ Worldwide
   __ US
   __ Europe
   __ Japan
   __ Other

Appendix B
Survey Questionnaire

10. What were the **estimated peak US annual sales** for this product? (US$ Million)
    $0 – $100
    $101 – $250
    $251 – $500
    $501 – $1,000
    $1,001+

11. Did this deal include **co-promotion or co-marketing rights**?
    Yes
    No
    Option to "opt-in"

12. Who has the **ultimate responsibility** for the following functions?

	Licensor	Licensee
Research	_____	_____
Product development	_____	_____
Clinical trials	_____	_____
Regulatory	_____	_____
Manufacturing	_____	_____

13. Did this deal have **flat or tiered royalties**?
    Flat (Skip to #15)
    Tiered (Skip to # 16)
    No royalty component

Appendix B
Survey Questionnaire

14. If this deal did **NOT** include royalties, was there a **profit-sharing component**? (Skip to #18)
Yes
No

15. What was the **flat royalty rate** for this deal? (%). (Skip to #17)
_____ %

16. Please provide the **royalty tier structure** that most closely resembled your deal.
For each tier (up to 6) select the maximum sales to which this tier applied, and the royalty rate for that tier. Tier 1 indicate the bottom tier.

Your TOP tier will not have maximum sale, so please provide the royalty and leave the maximum sales BLANK.

	Maximum Sales (US$ Millions)	Royalty for this Tier (%)
Tier 1		
Tier 2		
Tier 3		
Tier 4		
Tier 5		
Tier 6		

17. Did this deal involve **stacked royalties**?
Yes
No

Appendix B
Survey Questionnaire

18. What was the value of the following **financial components of the deal terms**? (US$ Millions)

Upfront payment	$_____million
Research funding	$_____million
Technology access fee	$_____million
Total development milestone payments	$_____million
Total sales milestone payments	$_____million
Equity investment	$_____million

19. When do the **royalties** from this deal **stop**?
    - After a set time period.
    - Expiry of last patent.
    - Expiry of key patent or patents.
    - Expiry of last patent or X years from the date of first commercial sale, whichever is longest.
    - Other (please specify) _____

20. Did you calculate an **estimated net present value** (ENPV) for this deal?
    - Yes (Please enter the ENPV in US$ millions) _____
    - No

21. Did you calculate a **deal split assessment** of the overall value?
    - Yes
    - No (Skip to # 23)

Appendix B
Survey Questionnaire

22. If yes, what was the **deal split sharing**?
    Licensor _____ %
    Licensee _____ %
    100%

23. Would you please submit another deal?
    Yes (You will be returned to the welcome page where you can add another deal.)
    No

LES plans to conduct this survey again in the future. What improvements or additional questions would you like to see in future iterations of this survey?

_____

Thank you again for participating in the first LES Pharmaceutical Royalty Rate & Deal Terms Survey!