# Pharmaceutical, Chemical Firms Report in Survey

BY MARILYN ZIEMER*

*Hoffman-LaRoche study involving 130 companies explores many aspects of licensing*

The survey presented in this paper was conducted for Hoffmann-LaRoche by the Department of Interfunctional Management within the Graduate School of Management at Rutgers University. This survey, which was sent to 130 chemical and pharmaceutical companies in 1988, explores the process of licensing as it is affected by organizational structure, mechanisms for identifying and evaluating targets, decision making and evaluation of the results of concluded contracts. The results provide a useful insight for anyone involved in the licensing process.

Since the survey results are clearly presented and self-explanatory, little more need be said than to extend sincere appreciation to Hoffmann-LaRoche for making this survey available for the benefit of LES members.

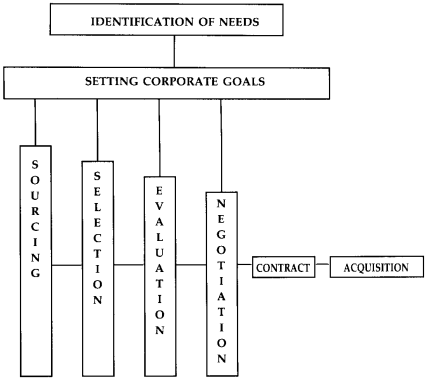
Included in the information provided with the survey when it was mailed out was the attached schematic for the in-licensing process and definition of stages within the process. These were provided to guide interpretation of the questions. The companies surveyed are listed, followed by the survey and results.

## COMPANIES SURVEYED

Abbott Laboratories
Air Products & Chemicals, Inc.
Alcon Laboratories, Inc.
Allergan, Inc.
Alpha Therapeutic Corp.
Altana, Inc.
Alza Corp.
American Cyanamid
American Hoechst Corp.
American Home Products Corp.
Amoco Corp.
Anaquest
Arco Chemical Co., Inc.
Aristech Chemical Corp.
Ashland Chemical Co.
Ashland Oil, Inc.
Atlantic Richfield Co.
Ayerst Laboratories
BP Chemicals Americas, Inc.
Betz Laboratories, Inc.
Block Drug Co., Inc.
Boehringer Ingelheim Corp.
Boots Pharmaceuticals, Inc.
Borg-Warner Chemicals, Inc.
Bristol laboratories
Bristol Myers Co.
Burroughs Wellcome Co.
California Biotechnology, Inc.
Celanese Corp.
Chemlink Petroleum
Chevron Corp.
Chevron Research Co.
Ciba-Corning Diagnostics Corp.
Ciba-Geigy Corp.
Conoco Inc.
Cosden Technology, Inc.
Dow Chemical Co.
Drew Chemical Corp.
Dupont Company
Eastman Kodak Co.
Eastman Pharmaceutical
Exxon Chemical Co.
Fisons, Inc.
Fluor Corp.
FMC Corp.
GAF Corp.
Genetech, Inc.
Glaxo, Inc.
Glaxo Canada Inc.
B.F. Goodrich Chemical Co.
W.R. Grace & Co.
Hoechst Celanese Corp.
Hoechst Roussel Pharmaceutical, Inc.
Hoffmann-LaRoche Inc.
Hybritech, Inc.
Johnson & Johnson
Johnson & Johnson Products, Inc.
ICI Americas, Inc.
Kerr-McGee Chemical Corp.
Lawrence Livermoore Natural Lab.
Eli Lilly and Company
Lederle Laboratories
M & T Chemicals Inc.
Marathon Oil Co.
Marion Laboratories Inc.
McNeil Pharmaceutical
Merck and Co., Inc.
Merck, Sharp & Dohme
Merrell Dow Pharmaceutical Inc.
Miles Inc.
Miles Laboratories
Monsanto
Monsanto Chemicals Co.
Morton Chemical Division
Nalco Chemical Co.
Newport Pharmaceuticals, Inc.
Norwich Eaton Pharmaceuticals, Inc.
Occidental Chemical Corp.
Olin Corporation
Organon Inc.
Ortho Pharmaceutical Corp.
Pennwalt Corporation
Pfizer Inc.
Philco International Corp.
Procter and Gamble Co.
The Purdue Frederick Co.
Quantum Chemical Corp.
Raychem Corp.
Reed & Carnrick Pharmaceuticals
Reichhold Chemicals, Inc.
Revlon Vision Care
Richardson-Vicks, Inc.
A.H. Robins Company, Inc.
Rohm and Haas Co.
Rorer Group Inc.
Ross Laboratories
Ruetgers-Nease Chemical Co.
Sandia National Labs
Sandoz Pharmaceuticals Corp.
R.P. Scherer Corp.
Schering-Plough Corp.
G.D. Searle & Co.
Seragen, Inc.
Serono laboratories, Inc.
Shell Development Co.
Shell Canada Limited
SmithKline Beckman Corp.
E.R. Squibb & Sons, Inc.
Standard Oil Chemical Co.
Stauffer Chemical Co.
Sterling Drug, Inc.
Sun Refining & Marketing Co.
Syntex Corporation
Texaco Development Corp.
3M Company
Triton Biosciences, Inc.
Union Carbide Corporation
Union Oil of California
Uniroyal, Inc.
Uplohn Company
Upsher-Smith Labs
USI Chemicals
U.S. Philips Corp.
Varian Associates, Inc.
Voet Pharmaceuticals
Wallace Laboratories
Warner-Lambert Company
Westwood Pharmaceuticals
Witco Chemical Corporation
Wyeth Laboratories

*Director, Licensing, Bristol-Myers Squibb Company, Princeton, New Jersey.

## SCHEMATIC OF IN-LICENSING DECISION PROCESS




**The above schematic divides the in-licensing decision process into stages.**

**Identification of Need**
Evaluating established product markets and current of internal product development to identify areas of strength and weakness.

**Setting Corporate Goals**
Business divisions define strategic goals for targeting desired markets/-products, based on corporate need.

**Sourcing**
Tracking of external developments by licensing department through scientific journals, seminars, university, company and government contracts, intra-company contacts, information systems, unsolicited offers, etc.

**Selection**
Identification by licensing department of candidates which fit with strategic goals.
Preliminary information sent to internal specialists for evaluation.

**Evaluation**
Evaluation criteria are used to assess candidates. Licensing department acts as a catalyst to bring about timely decisions at the appropriate management levels.

**Negotiation**
Positive evaluation leads to final acquisition negotiations, throughout which licensing department is actively involved.

**Contract**
Execution of acquisition agreement.

**Acquisition**
Licensing department monitors implementation of agreement and continuing relations with licensor.

*This schematic may not be representative of an organization's decision process, but respondents where asked to use it as a frame of reference while answering the questionnaire. Since all decisions are dependent on the features of a particular candidate, respondents were asked to use a composite picture of the company's in-licensing process, rather than a typical case.*

## AGGREGATE DATA FOR ALL COMPANIES

Means are listed to the side or above question. YES = 1 and No = 0.

### YOUR LICENSING ORGANIZATION

1. Does your company license-in products, science/technology, processes and/or materials?
a. YES ____ 1.00
b. NO ____ (Please skip to Question #27

2.A. Check "YES" for each of the following which are involved in your company's licensing process. If there is more than one, please indicate number.

| | YES | NO |
|---|---|---|
| a. Licensing Director | ____ .46 | ____ |
| b. Licensing Department | ____ .81 | ____ |
| c. Licensing Committee | ____ .28 | ____ |
| d. Licensing Task Forces/ Project Teams | ____ .70 | ____ |
| e. Champion/Key Supporter | ____ .61 | ____ |
| f. Project Manager | ____ .49 | ____ |

B. If you indicated in Q2A. that your company uses committees, task forces or teams for licensing activities, please indicate which departments are represented.

| | YES | NO |
|---|---|---|
| a. Licensing | ____ .87 | ____ |
| b. Marketing | ____ .80 | ____ |
| c. R&D | ____ .96 | ____ |
| d. Finance | ____ .42 | ____ |
| e. Legal | ____ .79 | ____ |
| f. Regulatory | ____ .40 | ____ |
| Other _____ | ____ .62 | ____ |

3.A. Please indicate where in-licensing responsibilities are performed within the company?

| | YES | NO |
|---|---|---|
| Corporate | ____ .82 | ____ |
| Subsidiary/Division | ____ .87 | ____ |

B. Please Indicate number of people in company's total licensing function: 8.52

C. What percentage of total activities spent on licensing is devoted to in-licensing only? 66.84%

4. How many levels are there in company's hierarchy between Licensing Director and CEO? 1.93

### IDENTIFICATION OF NEEDS AND SOURCING

5.A. How important are strategic plans in identifying your company's in-licensing needs to fill current and/or future gaps?

| Not at all Important | | | | Extremely Important | |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 4.25 |

B. How else does your company identify its in-licensing needs?

| | Tally |
|---|---|
| • React to opportunities | 6 |
| • Input from R&D | 6 |
| • Strategic Plan | 5 |
| • Need/Gap | 5 |
| -patent interference | |
| -target areas | |
| -technological fit | |
| -division survey | |
| -line extension | |
| • Through Marketing and R&D | 4 |
| • Monitoring of literature, contacts, etc. | 4 |
| • Through Marketing | 2 |

6. How important are each of the following sources to your company in keeping abreast of and tracking new/potential in-licensing prospects? *(Circle the appropriate number)*

| | Not at all | | | | Extremely | |
|---|---|---|---|---|---|---|
| Scientific Journals | 1 | 2 | 3 | 4 | 5 | 3.47 |
| Commercial Search Firms | 1 | 2 | 3 | 4 | 5 | 1.69 |
| University Contacts | 1 | 2 | 3 | 4 | 5 | 3.05 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Government Contacts | 1 | 2 | 3 | 4 | 5 | 2.33 |
| Industry Contacts | 1 | 2 | 3 | 4 | 4 | 4.43 |
| Intra-Company Contacts | 1 | 2 | 3 | 4 | 5 | 3.80 |
| R&D/Marketing Staff Input | 1 | 2 | 3 | 4 | 5 | 3.57 |
| Databases | 1 | 2 | 3 | 4 | 5 | 2.90 |
| Professional and Technical Organizations | 1 | 2 | 3 | 4 | 5 | 2.95 |
| Meetings, Fairs, Conventions | 1 | 2 | 3 | 4 | 5 | 2.97 |
| Inventor Agents | 1 | 2 | 3 | 4 | 5 | 1.88 |
| Unsolicited Offers | 1 | 2 | 3 | 4 | 5 | 2.12 |
| Other _____ | 1 | 2 | 3 | 4 | 5 | 3.57 |

## DECISION MAKING

9. Indicate how licensing decisions, in general, are discussed. *(Circle the appropriate number)*

| | Within licensing group | | | | | | | Between licensing group and other departments | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Never | | | | | Always | | Never | | | | | Always | |
| | | | | 3.15 | | | | | | | 3.92 | | | |
| a. Formally, at scheduled meetings. | 1 | 2 | 3 | 4 | 5 | | | 1 | 2 | 3 | 4 | 5 | | |
| b. Informally, impromptu | 1 | 2 | 3 | 4 | 5 | | | 1 | 2 | 3 | 4 | 5 | | |
| | | | | 3.68 | | | | | | | 3.48 | | | |

10. How centralized is your corporation's in-licensing process?

| Not at all | | | | | Completely | |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | | 3.17 |

## CRITERIA FOR EVALUATION

7. In choosing prospective in-licensing candidate, which are the five most important criteria used at each stage? *(For each state, check the appropriate line of the 5 most important criteria).*

| | Sourcing | Selection | Evaluation | Negotiation |
|---|---|---|---|---|
| MARKET FACTORS | | | | |
| a. Potential market size | .51 | .62 | .58 | .49 |
| b. New market category not currently served | .15 | .25 | .12 | .03 |
| c. Market category compatible with existing product lines | .61 | .38 | .25 | .17 |
| d. Potential for FDA approval | .20 | .35 | .47 | .29 |
| e. Projected Market Share | .12 | .20 | .45 | .34 |
| COMPANY FACTORS | | | | |
| f. Fits strategic goals | .85 | .75 | .38 | .37 |
| g. Complements present in-house research | .25 | .37 | .13 | .07 |
| h. Supplements present in-house research | .15 | .20 | .10 | .05 |
| i. Fit with present manufacturing capability | .12 | .12 | .18 | .07 |
| j. Technological/scientific fit | .49 | .45 | .23 | .25 |
| k. Stage of product development | .36 | .38 | .25 | .34 |
| l. Needs of overseas subsidiaries | .08 | .07 | .07 | .12 |
| m. New/Unique technologcial opportunity | .47 | .32 | .18 | .47 |
| FINANCIAL FACTORS | | | | |
| n. IRR/Hurdle Rate/Net Present Value | .08 | .17 | .45 | .49 |
| o. ROI | .12 | .12 | .37 | .39 |
| p. Projected Capital Investment | .07 | .07 | .40 | .24 |
| q. Pay-back Period | .02 | .07 | .30 | .17 |
| r. Break-even Analysis | .00 | .03 | .07 | .05 |
| s. Minimum Sales Quantity | .02 | .08 | .08 | .20 |
| t. Risk-Analysis | .08 | .12 | .27 | .34 |
| Total Checks | 5 | 5 | 5 | 5 |

8. How important are standardized criteria in evaluating in-licensing candidates at each stage? *(Check the appropriate number)*

| | Standardization Not At All Important | | | | Standardization Extremely Important | |
|---|---|---|---|---|---|---|
| 1 Sourcing | 1 | 2 | 3 | 4 | 5 | 2.32 |
| 2 Selection | 1 | 2 | 3 | 4 | 5 | 3.02 |
| 3 Evaluation | 1 | 2 | 3 | 4 | 5 | 3.20 |
| 4 Negotiation | 1 | 2 | 3 | 4 | 5 | 2.88 |

11. In actual practice, how much influence do each of the following have in approving/rejecting licensing prospects at each stage? *(Write the appropriate number on each line)*

Not at all Complete
1 2 3 4 5

*(Note: If position is not at all involved in the licensing decision, please cross out.)*

| | Sourcing | Selection | Evaluation | Negotiation |
|---|---|---|---|---|
| CEO/Board of Directors | 1.69 | 1.80 | 2.04 | 3.55 |
| Licensing Department | 4.00 | 3.82 | 3.57 | 3.95 |
| Marketing Department | 2.26 | 2.85 | 3.40 | 2.77 |
| Clinical/Medical Department | 2.02 | 2.51 | 3.28 | 1.55 |
| Pre-Clinical Department | 2.27 | 2.51 | 3.28 | 1.55 |
| Regulatory Department | 1.23 | 1.53 | 2.60 | 1.45 |
| Formulation Department | 1.30 | 1.61 | 2.34 | 1.15 |
| Other R&D Department | 2.28 | 2.56 | 3.07 | 1.85 |
| Project Management Group | 2.07 | 2.44 | 2.93 | 2.26 |
| Strategic Planning Department | 2.20 | 2.20 | 2.22 | 2.00 |
| Finance Department | 1.17 | 1.21 | 2.40 | 2.59 |
| Legal Department | 1.28 | 1.58 | 2.46 | 3.46 |
| Manufacturing/Q.A. | 1.30 | 1.41 | 2.48 | 1.64 |
| Sales Department | 1.44 | 1.29 | 1.77 | 1.16 |
| Licensing Committee/Task Force | 3.14 | 3.27 | 3.24 | 3.54 |
| Champion/Key Supporter | 3.05 | 3.24 | 3.21 | 2.78 |
| International Marketing | 1.95 | 2.19 | 3.04 | 2.44 |
| Subsidiary | 1.55 | 2.30 | 2.88 | 2.32 |
| Consultants | 1.58 | 1.61 | 1.88 | 1.06 |
| Other _____ | 1.00 | 1.08 | 2.04 | 2.6 |

12. How close to market are licensing prospects selected? *(Distribute 100% between the following categories.)*

| | |
|---|---|
| 7 1 year | 10.72% |
| 1-2 years | 23.02% |
| 3-5 years | 44.15% |
| 6-10 years | 21.34% |
| 8 10 years | 5.44% |
| Total | 100% |

## REACHING CONTRACT

13. On average each year, how many licensing prospects enter the Selection Stage? 76.3

*Using the number that enter the Selection Process as 100%, indicate, on average each year, the percentage of prospects from that 100% that:*

| | |
|---|---|
| 1. Selection | 100% |
| 2. Reach Evaluation? | 58.74% |
| 3. Reach Negotiation? | 23.32% |
| 4. Reach Contract? | 14.90% |

14. In the past ten years, how many licensing prospects have reached contract? 31.47

A. Of these, how many are still in development? 8.37

B. How many reached market or are contributing to products on the market? 7.85

C. How many have been terminated? 15.31

15.A. How often do you obtain option contracts for evaluating licensing candidates?

Never Always
1 2 3 4 5 3.37

B. If used, what is the average time period for the initial option contract? 10.71 Months

## LICENSING OVERVIEW

16. Of the licensing contracts which have reached market within the past 10 years (Q14.B.above), how many have made an average yearly sales volume of:

| | |
|---|---|
| under $2 million | 1.27 |
| $2mil.-$10 mil. | 1.89 |
| $10mil.-$25mil. | 2.14 |
| $25mil.-$50mil. | 1.21 |
| above $50mil. | 1.85 |
| | Total = Q16.B. |

17. A licensed product is considered successful if it meets a minimum ROS (return on sales) of: 33.52%.

18. What percentage of 1987 sales/profits were derived from products acquired or developed through licensing contracts?

| | |
|---|---|
| A. Sales revenue | 23.10% |
| B. Profits | 23.76% |

19.A. Of those licensing candidates that you wanted to acquire, what percentage did you actually contract? *(Circle the percentage which is closest to the actual figure)*

0%-------25-------50-------75-------100% 35.53

B. Of those that you acquired and marketed, what percentage met your initial expectations? *(Circle the percentage closest to the actual figure)*

0%-------25-------50-------75-------100% 56.20

20. Looking back on previous in-licensing decisions, to pursue or not pursue a licensing prospect, what percentage do you feel were correct? *(Circle the percentage which is closest to the actual figure)*

0%-------25-------50-------75-------100% 62.77

21. For your organization, how effective is in-licensing as compared to internal development, in obtaining marketable products?

Not at all Extremely
1 2 3 4 5 4.56

22. Of all in-licensing acquisitions made in the past 10 years, what percentage of the total have been "winners"? 45.94%

23. How do you define "successful" in-licensing?

**Tally**

Obtaining a product(s) which:

| | |
|---|---|
| • meets or exceeds sales and profit expectations | 9 |
| • is consistent with strategic plan | 7 |
| • holds no "surprises" and is developed on schedule | 4 |
| • gets to market | 4 |
| • exceeds $50 million in sales annually | 2 |
| • is compatible with existing product lines | 2 |

24. What is the size of your company/division?

| | |
|---|---|
| By: number of employees | 12004 |
| $ Sales volume (1987) | $2357 |

25.A. Of total R&D efforts, what percentage applies to:

| | |
|---|---|
| Research | 34.29% |
| Development | 70.30% |

B. What is the size of your company's total R&D facilities?

| | |
|---|---|
| By: Number of employees | 1138 |
| 1987 R&D expenditures as a percentage of sales | 12.43% |

## TOP 20 COMPANIES ACCORDING TO PARTICIPANT RANKINGS

1. Marion
2. Merck
3. Pfizer
4. Bristol Myers
5. SmithKline Beckman
6. Squibb
   Upjohn
7. Eli Lilly
8. Schering Plough
9. Johnson & Johnson
10. America Cyanamid/Lederle
    Dupont
    Hoffmann-LaRoche
11. American Home Products/
    Wyeth Labs
12. Ciba Geigy
13. Chevron
14. Shell
15. ICI
16. Syntex
17. Monsanto