GAO

United States
General Accounting Office
Washington, D.C. 20548

General Government Division

B-255691

November 30, 1993

The Honorable Bruce Lehman
Assistant Secretary and
Commissioner of Patents and Trademarks
U.S. Department of Commerce

Dear Mr. Lehman:

This letter responds to your request for information on U.S. companies' views of the U.S. Patent and Trademark Office (U.S. PTO) compiled for our report Intellectual Property Rights: U.S. Companies' Patent Experiences in Japan (GAO/GGD-93-126, July 12, 1993). Specifically, we analyzed responses pertaining to U.S. PTO obtained from a mail survey we conducted of U.S. companies about their patent experiences in Japan, Europe, and the United States. In addition, we have attached various tables showing the companies' views of U.S. PTO by company type (see enc. I), as well as specific comments that U.S. company representatives and private patent attorneys made to us regarding U.S. PTO (see enc. II).

APPROACH

In our report to Senators John D. Rockefeller IV and Dennis DeConcini, and former Senator Lloyd Bentsen, we reviewed patent protection for U.S. products in Japan as compared with that in the United States and Europe. To obtain this information, we sent a mail survey in 1992 to 346 U.S.-based companies that were the leading patent holders in the biotechnology, chemical, and semiconductor sectors. We received responses from 87 percent of the companies.[1]

[1]For a more complete description of the survey methodology, see pages 18-21 of Intellectual Property Rights: U.S. Companies' Patent Experiences in Japan. Also, a profile of the responding companies can be found

As authorized by Senators Rockefeller and Bensten, we told companies that we interviewed and that responded to our survey that the information they provided to us would be treated as business confidential. Therefore, we are unable to provide the names of companies that gave us information for our review.

SUMMARY OF U.S. COMPANIES' VIEWS OF U.S. PTO FROM GAO MAIL SURVEY

Our survey results indicated that companies' views of U.S. PTO varied most depending on the company's size and the sector in which it was active in filing.[2] For example, over two-thirds of the companies with 10,001 or more employees reported being "very satisfied" or "generally satisfied" with their overall experience with patent prosecution through U.S. PTO, while 46 percent of companies with 1,000 or fewer employees said they were satisfied with their overall prosecution experience. For companies active in filing in biotechnology, about one-half said they were satisfied with their overall patent prosecution experience, while three-quarters of the companies actively filing in semiconductors reported overall satisfaction with U.S. PTO.

U.S. Companies' Overall Level of Satisfaction

Sixty-two percent of the companies responding to our survey were satisfied with their overall patent prosecution experience in the United States, while only 13 percent were dissatisfied. We asked companies about their level of satisfaction with various aspects of patent prosecution in the United States. The companies' views are shown in table 1.

---

on pages 23-25 of the report.

[2]Throughout this letter, reference to a company's "sector" describes the sector in which it was "active in filing" at the time the survey was filled out, not the sector that "best described" the company's activities.

Table 1: Percent of U.S. Companies Satisfied With Certain Aspects of Patent Prosecution Through U.S. PTO

Aspects of patent prosecution	Very/generally satisfied	Neither satisfied nor dissatisfied	Very/generally dissatisfied
Quality of examination	61	20	19
Extent of disclosure required to support claims	74	18	8
Clarity of office actions	55	30	15
Overall experience with prosecution	62	24	13

Source: GAO survey of U.S. companies.

Analysis of Company Views by Size and Sector

U.S. companies' level of satisfaction with prosecuting patents through U.S. PTO varied according to company size, with large companies tending to be more satisfied overall. For example, 68 percent of companies with more than 10,000 employees were satisfied with their overall patent prosecution experience through U.S. PTO, while 46 percent of those with fewer than 1,000 employees were satisfied. Similarly, almost 70 percent of the companies with more than $1 billion in 1991 worldwide sales were satisfied with patent prosecution through U.S. PTO, while 48 percent of those with sales under $100 million were satisfied.

In addition, the companies' level of satisfaction with U.S. PTO differed particularly between the biotechnology and semiconductor sectors. Fifty-one percent of the companies active in filing in biotechnology expressed satisfaction with their overall prosecution experience through U.S. PTO, while 75 percent of the companies filing in semiconductors said they were satisfied with their overall experience. Sixty-four percent of chemical filers said they were satisfied with their overall experience at U.S. PTO.

Assessing the clarity of U.S. PTO's office actions, 43 percent of biotechnology filers expressed satisfaction,

while the majority of semiconductor (69 percent) and chemical filers (55 percent) said they were satisfied. The differences in U.S. companies' experiences with the quality of examination were best demonstrated by their level of dissatisfaction. Twenty-eight percent of biotechnology filers were dissatisfied with the quality of U.S. PTO's examinations, while 20 percent of chemical and 14 percent of semiconductor filers were dissatisfied.

Various types of firms reported problems with an overly narrow scope of claims granted by U.S. PTO. By sector, 25 percent of biotechnology filers said the scope of claims granted to their company by U.S. PTO was "much too narrow" or "too narrow"; 9 percent of chemical and 6 percent of semiconductor filers said that the scope granted by U.S. PTO was overly narrow. Of the companies that had 1,000 or fewer employees, 26 percent said that the scope granted was much too narrow or too narrow, while 12 percent of companies with between 1,001 and 10,000 employees and 6 percent of companies with 10,001 or more employees responded similarly. Twenty-five percent of companies that were established between 1971 and 1979 responded that the scope granted by U.S. PTO was much too narrow or too narrow; 20 percent of companies established in 1980 or later and 8 percent of companies established in 1970 or earlier responded similarly.

U.S. Companies' Comments Regarding Their Experience With U.S. PTO

As previously mentioned, 62 percent of the companies were very or generally satisfied with their overall experience with patent prosecution through U.S. PTO, while only 13 percent were very or generally dissatisfied. Nevertheless, in response to open-ended questions, either in our mail survey or in face-to-face interviews, a number of U.S. companies commented on aspects of the U.S. patent system or U.S. PTO that were problematic for them (see enc. II for complete responses). For example, several U.S. company representatives commented on the quality of U.S. PTO's examinations. One company patent attorney said that the quality of examination has deteriorated significantly in recent years due to "pendency pressures" and the lack of experience and knowledge of examiners in some technology fields. Another attorney, citing the lack of training of examiners as one problem, said that among the U.S., Japanese, and European patent systems, U.S. PTO

examination results are the "most inconsistent."

Other corporate patent attorneys commented on patentability standards at U.S. PTO. For example, one attorney said it is too easy to obtain patents on trivial or obvious inventions. In his view, this situation has resulted in patent flooding by U.S. companies. Another patent attorney noted that some patents are found to be valid even though they contribute minimally to the technology.

- - - - -

Please contact me at (202) 512-4812 if you or your staff have any questions concerning this letter. Copies will be made available to others upon request. The information in this letter was developed by Curtis F. Turnbow, Assistant Director; Elizabeth J. Sirois, Project Manager; and Mary M. Park, Evaluator.

Sincerely yours,

Allan I. Mendelowitz

Allan I. Mendelowitz, Managing Director
International Trade, Finance, and Competitiveness

Enclosures

TABLES REGARDING U.S. COMPANIES' VIEWS OF U.S. PTO FROM GAO MAIL SURVEY[1]

Table I.1: Percent of Companies Satisfied With Patent Prosecution through U.S. Patent and Trademark Office (PTO), by Sector in Which They Are Active Filers

Satisfaction by sector	Biotechnology	Semiconductor	Chemical
Quality of examination			
Satisfied	55	61	62
Neither satisfied nor dissatisfied	17	25	18
Dissatisfied	28	14	20
Extent of disclosure to support claims			
Satisfied	67	76	77
Neither satisfied nor dissatisfied	18	18	16
Dissatisfied	15	6	6
Clarity of office actions			
Satisfied	43	69	55
Neither satisfied nor dissatisfied	36	23	29
Dissatisfied	22	8	16
Overall experience with prosecution			
Satisfied	51	75	64
Neither satisfied nor dissatisfied	28	18	23
Dissatisfied	21	7	13

Source: GAO survey of U.S. companies.

[1]The complete mail survey and responses appear in appendix I of Intellectual Property Rights: U.S. Companies' Patent Experiences in Japan (GAO/GGD-93-126, July 12, 1993), beginning on page 80. In addition, appendix I indicates the number of companies that responded to each question in the survey.

Table I.2: Percent of Companies Satisfied With Patent Prosecution Through U.S. PTO, by Number of Employees

Satisfaction by number of employees	1,000 or fewer employees	1,001-10,000 employees	10,001 or more employees
Quality of examination			
Satisfied	51	64	64
Neither satisfied nor dissatisfied	26	12	21
Dissatisfied	23	24	15
Extent of disclosure to support claims			
Satisfied	65	68	82
Neither satisfied nor dissatisfied	21	22	15
Dissatisfied	15	11	4
Clarity of office actions			
Satisfied	43	56	62
Neither satisfied nor dissatisfied	33	30	27
Dissatisfied	23	14	11
Overall experience with prosecution			
Satisfied	46	66	68
Neither satisfied nor dissatisfied	35	22	20
Dissatisfied	19	12	12

Source: GAO survey of U.S. companies.

Table I.3: Percent of Companies Satisfied With Patent Prosecution Through U.S. PTO, by Amount of Sales

Satisfaction by amount of sales	Less than $100 million	$100 million-$1 billion	Over $1 billion
Quality of examination			
Satisfied	54	61	64
Neither satisfied nor dissatisfied	22	16	20
Dissatisfied	24	23	16
Extent of disclosure to support claims			
Satisfied	70	64	82
Neither satisfied nor dissatisfied	17	22	15
Dissatisfied	13	15	3
Clarity of office actions			
Satisfied	46	61	59
Neither satisfied nor dissatisfied	35	29	28
Dissatisfied	19	11	13
Overall experience with prosecution			
Satisfied	48	63	69
Neither satisfied nor dissatisfied	31	27	19
Dissatisfied	20	11	11

Source: GAO survey of U.S. companies.

Table I.4: Percent of Companies Satisfied With Patent Prosecution Through U.S. PTO, by Age of Company

Satisfaction by age of company	Company established in 1970 or earlier	Company established in 1971-1979	Company established in 1980 or later
Quality of examination			
Satisfied	66	42	52
Neither satisfied nor dissatisfied	17	29	25
Dissatisfied	17	29	23
Extent of disclosure to support claims			
Satisfied	80	54	63
Neither satisfied nor dissatisfied	15	21	25
Dissatisfied	5	25	13
Clarity of office actions			
Satisfied	59	42	46
Neither satisfied nor dissatisfied	26	50	34
Dissatisfied	14	8	20
Overall experience with prosecution			
Satisfied	67	46	52
Neither satisfied nor dissatisfied	22	33	30
Dissatisfied	11	21	18

Source: GAO survey of U.S. companies.

Table I.5: Percent of Companies That Experienced Very Great/Great Patent Problems in the United States, by Sector in Which They Are Active Filers

Patent problems by sector	Biotechnology	Semiconductor	Chemical
Length of time to obtain a patent	10	5	2
Scope of claims granted	9	3	3
Cost of obtaining a patent (prosecution)	19	12	12
Ability to obtain a patent for a pioneering invention	15	3	6
Experienced at least one of the above problems	30	13	15

Source: GAO survey of U.S. companies.

Table I.6: Percent of Companies That Experienced Very Great/Great Patent Problems in the United States, by Number of Employees

Patent problems by number of employees	1,000 or fewer employees	1,001-10,000 employees	10,001 or more employees
Length of time to obtain a patent	13	4	2
Scope of claims granted	14	3	2
Cost of obtaining a patent (prosecution)	19	7	11
Ability to obtain a patent for a pioneering invention	16	6	3
Experienced at least one of the above problems	30	10	14

Source: GAO survey of U.S. companies.

Table I.7: Percent of Companies That Experienced Very Great/Great Patent Problems in the United States, by Amount of Sales

Patent problems by amount of sales	Less than $100 million	$100 million-$1 billion	Over $1 billion
Length of time to obtain a patent	15	2	3
Scope of claims granted	11	4	2
Cost of obtaining a patent (prosecution)	13	12	11
Ability to obtain a patent for a pioneering invention	18	0	4
Experienced at least one of the above problems	26	14	14

Source: GAO survey of U.S. companies.

Table I.8: Percent of Companies That Experienced Very Great/Great Patent Problems in the United States, by Age of Company

Patent problems by age of company	Company established in 1970 or earlier	Company established in 1971-1979	Company established in 1980 or later
Length of time to obtain a patent	2	13	13
Scope of claims granted	2	13	14
Cost of obtaining a patent (prosecution)	11	17	16
Ability to obtain a patent for a pioneering invention	3	20	13
Experienced at least one of the above problems	13	21	30

Source: GAO survey of U.S. companies.

Table I.9: Percent of Companies That Said the Scope of Patent Coverage Granted in the United States Is Too Broad or Too Narrow, by Sector in Which They Are Active Filers

Scope	Biotechnology	Semiconductor	Chemical
Too broad	2	7	2
About right	73	87	88
Too narrow	25	6	9

Source: GAO survey of U.S. companies.

Table I.10: Percent of Companies That Said the Scope of Patent Coverage Granted in the United States Is Too Broad or Too Narrow, by Number of Employees

Scope	1,000 or fewer employees	1,001-10,000 employees	10,001 or more employees
Too broad	5	4	4
About right	70	84	90
Too narrow	26	12	6

Source: GAO survey of U.S. companies.

Table I.11: Percent of Companies That Said the Scope of Patent Coverage Granted in the United States Is Too Broad or Too Narrow, by Amount of Sales

Scope	Less than $100 million	$100 million-$1 billion	Over $1 billion
Too broad	6	5	3
About right	69	82	90
Too narrow	25	13	7

Source: GAO survey of U.S. companies.

Table I.12: Percent of Companies That Said the Scope of Patent Coverage Granted in the United States Is Too Broad or Too Narrow, by Age of Company

Scope	Company established in 1970 or earlier	Company established in 1971-1979	Company established in 1980 or later
Too broad	3	8	7
About right	89	67	73
Too narrow	8	25	20

Source: GAO survey of U.S. companies.

ENCLOSURE II

NARRATIVE RESPONSES REGARDING U.S. PTO, FROM GAO MAIL SURVEY AND STRUCTURED INTERVIEWS

COMMENTS FROM CORPORATE PATENT COUNSEL AND CORPORATE OFFICIALS[2]

Quality of Examination

-- U.S. PTO examination results are the most inconsistent of the three patent systems. This situation is probably due to the lack of training of examiners. In biotech, there are battles over what can be claimed.

-- The Japanese Patent Office (JPO) tends to give brief examinations (based on the company's limited experience). U.S. PTO's process is more uneven; examinations differ based on the examiner. The European Patent Office (EPO) has more uniform standards of examination; however, the quality of its searches varies.

-- In the United States, the quality of examination has significantly deteriorated in recent years due to (1) pendency pressure, (2) incentive and productivity pressure on examiners, and (3) examiners' lack of experience and knowledge of technology fields. U.S. PTO issues too many marginal claims that impede research or commercialization by others. This problem is exacerbated by the high costs of litigation in the United States.

-- The quality of prior art searches by JPO and EPO is better than U.S. PTO's.

-- U.S. PTO should try to send out office actions on the merits of applications within 1 year after the filing date. This procedure would help in decisions about whether to file in Europe and Japan.

-- U.S. PTO should hire more experienced examiners, pay them more, and try to retain them.

-- U.S. PTO has hired many Vietnamese examiners who have poor English language skills.

-- The company believes that EPO has the best examination

---

[2]This enclosure includes all comments we received regarding U.S. PTO. They have been edited for grammatical structure only, not for content.

process because the examiners are (1) multilingual, (2) competent in the technology, and (3) well paid. EPO examiners tend to make their job a career; in fact, many move from the private sector to EPO. The opposite occurs with U.S. PTO and JPO.

Cost of Filing

-- U.S. PTO has broken its promise that higher fees would be accompanied by better service. Now the company finds higher fees and worse service--it takes longer to receive rejections, and protection is narrower. U.S. PTO has increasingly added restrictions to claims and forced divisionals, placing an economic burden on small companies. The company believes U.S. PTO is abusing these refiling requirements to generate more fees and thus help meet U.S. PTO's new mandate to be self-sufficient. U.S. examinations are getting "rote" in nature, i.e., not thoughtful. Also, U.S. PTO seems to be "getting strange" in biotech examinations, apparently moving toward requiring clinical trials as proof of enablement. This requirement is a Japanese-like approach and narrows the scope of patent coverage.

-- EPO has been very good; it has a successful patent process. The respondent is distressed about the costs at U.S. PTO, which "have gone up tremendously since the early 1980s." Many good inventions will be lost due to the high cost of filing.

Patentability Standards

-- The U.S. patent system has its problems. Some patents are found to be valid even though they contribute a small amount to the technology. U.S. PTO is taking a harsher (too harsh) view of some applications in response to criticism of lax reviews, high litigation costs, and the length of time to resolve conflicts.

-- In the United States, it is too easy to obtain patents on trivial or obvious engineering inventions. The result is patent flooding by U.S. companies, a problem that is worsening. U.S. PTO needs to define "obvious" and go back to a "no invention-no patent" concept.

Patent Term

-- U.S. PTO should limit the time period for enforcement so that inventors who filed more than 20 years ago cannot

sue for infringement. The company is in favor of a strict 15- or 20-year rule.

-- The use of continuation-in-part can extend the life of a U.S. patent for many years beyond the 17-year life of a patent from its year of grant. This procedure has caused problems for the company.

Miscellaneous Comments

-- Fifteen to 20 interferences are filed with U.S. PTO on every U.S. application. This procedure adds too much cost and unnecessarily delays the process. The uncertainty created by these interferences works against attracting investors. In the company's view, U.S. PTO sometimes declares an interference, not because of a conflict, but because the examiner does not understand the prior art and uses the battle between the two companies to explain it to him.

-- U.S. PTO should consider patent publication after 2 years. In many cases, companies develop technology not knowing that there are pending cases for the same technology (e.g., laser technology). This situation is especially problematic for cases that have long pendency.

-- The U.S. government should facilitate access to patent information and split U.S. PTO into three regional offices to help retain qualified examiners and possibly reduce costs. U.S. PTO should not be so rushed to adopt EPO or JPO's system because our system recognizes the value of the individual inventor.

PRIVATE PATENT ATTORNEYS' COMMENTS ON U.S. PTO

-- Lengthy U.S. PTO office actions have been more problematic than short JPO actions. In the biotech area, U.S. PTO has 150 "hotshot scientists" (with little patent experience) who write 20-25 pages of boilerplate language. Also, U.S. PTO's standard of obviousness is much higher for biotech (category 180) than for organic chemistry (category 120). Therefore, attorneys always write their applications so they will be sent to the organic chemistry group.

-- It is harder to get software patents in the United States than in Japan or Europe. U.S. PTO has had

complaints about issuing too many software patents, leading it to change its view and restrict future patents (for example, U.S. PTO will not patent mathematical algorithms). Also, U.S. PTO uses a tougher set of rules to establish the patentability of software than the U.S. courts; therefore, applicants must usually go to court to get a software patent in the United States. However, only large corporations can afford the cost of appealing U.S. PTO's decisions to the courts. Finally, it is more costly to get a software patent "on file" in the United States than in Japan.

(483624)