1

LEOMA AND THE U.S. LASER INDUSTRY

Trade associations are funny things. They bring together companies of different sizes and shapes to address common issues. But unlike political parties or social networks, whose members also address common issues, trade associations bring together entities that not only compete with each other, but also often dislike and even distrust each other. Andrew Procassini, the long time executive director of the Semiconductor Industry Association, titled his book[1] *Competitors in Alliance*, and that is exactly what a trade association is: an uneasy, awkward alliance of often-fierce competitors.

The U.S. laser industry has historically been very competitive. The second major laser company created in the United States, Coherent—or "Coherent Radiation Labs" in those days—was formed in 1966 when Jim Hobart parted ways with the first company, Spectra-Physics, and set up his own shop developing and manufacturing carbon dioxide lasers. The personal animosity between Hobart and one of Spectra-Physics' founders, Herb Dwight, flavored the industry for many years.[2]

[1]Procassini, Andrew, *Competitors in Alliance*, Quorum Books, 1995.

[2]The animosity between the companies sometimes bordered on paranoia. In the late 1970s, when I was writing for *Laser Focus* magazine, I had occasion to visit the lab where Spectra-Physics was developing hard-sealed HeNe lasers. The engineer in charge told me the lab was located in the middle of the building because if the lab had windows, the Coherent engineers lurking in the bushes outside would be able to steal the processes Spectra was developing.

LEOMA and the U.S. Laser Industry: The Good and Bad Moves for Trade Associations in Emerging High-Tech Industries, First Edition. C. Breck Hitz.

Nonetheless, by the early 1980s, several issues were emerging that underlined the need for a trade association among U.S. laser manufacturers. Industry leaders were mulling over the logistics of launching some sort of trade association. A 1983 editorial[3] in *Lasers & Applications* magazine—at that time one of the leading trade publications in the industry—explicitly called for the creation of a trade association, citing several pressing issues.

Highest on the *Lasers & Applications* list was the need to disseminate information about lasers to the nation's manufacturing base. Although lasers could perform many tasks better than conventional tools, manufacturers in general were reluctant to adopt lasers because they were too unknown and unproven. A trade association could be more effective in moving laser techniques into widespread use than a loose and uncoordinated collection of manufacturers, each hawking its own products and often denigrating the products of its competitors.

Export controls, imposed on lasers because they have military as well as civilian applications, were a major hindrance to the growth of international sales in the 1980s. Individual companies lacked the resources required to launch a major revision of those controls, but a trade association, supported by the entire industry, might undertake such a task.

Legal matters and litigation were another important issue. Although the laser was invented in 1960, the U.S. Patent Office issued several basic patents two decades later. Attorneys for Gordon Gould, the inventor who had been awarded the patents, initiated a lawsuit against a small company, General Photonics. Burt Bernard, the president of that company, gave up in despair because he lacked the finances to mount a plausible defense. The lawsuit succeeded and General Photonics went out of business. Armed with that victory, the attorneys took aim at other lasermakers. "A laser trade association might facilitate a more equitable settlement of this dispute," *Lasers & Applications* said, "than the individual skirmishes now taking place."

Many trade associations act as spokesmen for their industries to the U.S. government, and here again a trade association could amplify the voice of the laser industry in matters ranging from safety and education to taxation and regulation.

At about the same time the *Lasers & Applications* editorial was published, one of the industry's professional societies, the Laser Institute of America (LIA), formed a subcommittee, christened the Laser Industry Council (LIC), to address industry concerns. One of the subcommittee's early meetings was held at the California home of Milton Chang (see Figure 1.1), then president of Newport Corporation. Glenn Sherman (see Figure 1.2), who was president of Laser Power Optics and was beholden to Chang for his investment in

[3]Hitz, Breck, *Lasers & Applications*, February 1983, p. 20.

FIGURE 1.1 Several of the earliest organization meetings that led to the creation of the Laser Association of America, and ultimately LEOMA, took place in Milton Chang's house.

Laser Power, was invited ("summoned" was the word Sherman used, chuckling, as he described events to me recently) to the meeting. When Sherman arrived, he was met by several key LIC players, including Dean Hodges of Newport and Dale Crane of Uniphase, who congratulated him on being the new president of the Laser Industry Council.

FIGURE 1.2 Glenn Sherman—shown here at the groundbreaking for his new company, Laser Power Optics—was the LAA's first president.

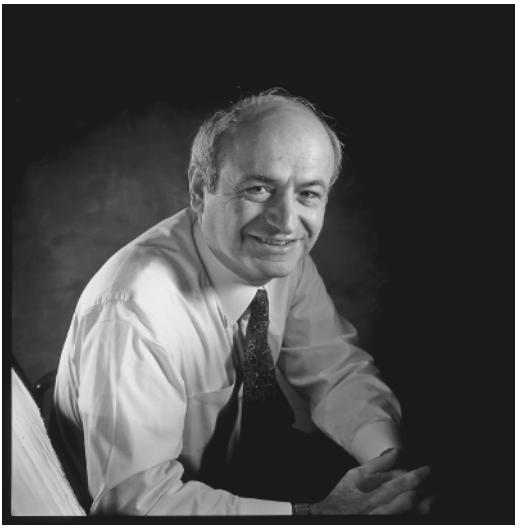

FIGURE 1.3 Hank Gauthier's decision to have Coherent join the LIC was critical in getting the organization started.

"It reminded me of the old joke about the sergeant asking for volunteers," Sherman told me. "Everybody but the new recruit took a step backward."

But Sherman took his new responsibility seriously, recalled Jerry Glen, who was the LIA's technical director at the time. There were many meetings at Chang's house, Glen told me, including one that lasted a whole weekend. One of Sherman's first tasks was to increase the membership beyond the few initial members. He realized that the LIC would never get any traction without the presence of the two industry giants, Spectra-Physics and Coherent. But the animosity between those two companies' leaders—Herb Dwight at Spectra and Jim Hobart at Coherent—seemed to preclude their working together within any organization.

Sherman's solution to this contretemps was to appeal to Coherent's second-in-command, Hank Gauthier (see Figure 1.3). There was no animosity between Gauthier and Dwight, and in fact Dwight had attempted to recruit Gauthier to Spectra years earlier, before Gauthier had joined Coherent. Gauthier liked the idea of an industry association, he recalled recently, because it could enhance the industry in general. "I always thought you had to develop markets first, market share second."

And Gauthier had no problem convincing Hobart, his boss, of the merits of the LIC. "Hobart could care less," he recalled. His boss's entire focus was on the technical development of new products; he wasn't interested in political issues like government regulations and trade associations.

Gauthier's concluding that an industry association could be more effective than individual companies at achieving needed reforms closed the deal, Sherman told me. Coherent joined the LIC, as did Spectra-Physics, and the LIC had achieved critical mass.

But the LIC faced obstacles in addressing industry problems because the LIA's status as a 501(c)(3) nonprofit prohibited lobbying or grassroots political activity, which is precisely what the LIC needed to do. At an LIC meeting in Los Angeles in January 1985, Moe Levitt, the publisher of *Laser Focus* magazine, and Dave Belforte of Belforte Associates argued that the LIC ought to separate from the LIA and become an independent 501(c)(6) nonprofit, whose political activities would not be restricted.

I was on the LIA Board of Trustees in 1985, and I recall a particularly stormy board meeting at the CLEO conference in Baltimore in May of that year. Milton Chang was LIA's president, and he and Hank Gauthier, another LIA board member, were in support of a motion to dissolve the LIC and create a separate entity, a 501(c)(6) nonprofit, in its place. The new corporation would not be hamstrung by the LIA's restriction on lobbying and other activities. It was a contentious issue, and several board members were strongly opposed to the concept because it would diminish LIA's involvement with the laser industry.

The LIA board meeting was simultaneous with the conference reception that evening, and it was deemed politically unwise for the entire board to skip the reception. So in the middle of the LIC debate, the meeting was suspended for an hour so that the participants could put in an appearance at the reception. When the board reconvened, the mood was mellower (wine and beer had been available at the reception) and the opposition to dissolving the LIC had lessened. The board approved the creation of a new entity, the Laser Association of America (LAA), which would apply to the IRS for 501(c)(6) nonprofit status. The LAA's initial officers were Glenn Sherman of Laser Power Optics as president, Ron Kirschner of the Institute of Applied Laser Surgery as secretary, and Kathy Laakmann of Laakmann Electro-Optics as treasurer. There were 16 founding members (see Table 1.1).

In 1986, I was executive editor and a partial owner of *Lasers & Applications* magazine—which by that time had changed its name to *Lasers &*

TABLE 1.1 Founding Members of the Laser Association of America

Apollo Lasers	Burleigh Instruments	Coherent
EG&G	Institute of Applied Laser Surgery	Laakmann Electro-Optics
Laser Focus	Laser Mechanisms	Laser Power Optics
Lasers & Applications	Laurin Publishing	Newport
Oriel	Quantronix	Spectra-Physics
Uniphase		

Optronics—and my colleagues and I were entertaining offers to sell the magazine. (We completed the sale a year later, and the entire editorial staff departed.) I was teaching my course, *Understanding Laser Technology*, frequently at laser companies, and working on several consulting contracts. But I was intensely aware of the LAA and its activities, and it seemed to me that it was floundering for lack of manpower. The all-volunteer LAA Board of Trustees, composed of people who all had full-time jobs running companies, lacked the time to effectively address all the issues on the table. Glenn Sherman, whose multiyear presidency began with the LIC and continued to the LAA, devoted so much time to that undertaking that his company suffered from his absence, he recalled in a recent conversation.

In August 1986, I phoned Jon Tompkins, an LAA board member whom I knew well from my years at *Lasers & Applications* and *Laser Focus*, and asked what he would think of my serving as part-time, paid staff for LAA. "Very positive," Tompkins responded. And that conversation marked the beginning of an undertaking that would occupy the next 20 years of my professional career.

My previous commitments to teaching and consulting prevented my starting at LAA before June 1987, and even then I had to restrict my involvement to half time. But at its January meeting that year, the LAA unanimously approved my appointment as executive director and raised dues significantly to cover the new expense. For large companies, annual membership went from $1200 to $5000, and for small companies, from $300 to $500, where "large" and "small" were defined as over $20 million in annual sales and under $600,000, respectively. Dues for companies between those extremes were raised similarly.

Probably the most-pressing issue for laser companies in early 1987 was the Gordon Gould laser patents. A decade earlier—but almost two decades after the laser had been invented—the U.S. Patent Office awarded two fundamental laser patents to an inventor named Gordon Gould. During the early years of the laser industry—the 1960s and 1970s—companies had been paying modest royalties to a patent held by Arthur Schawlow and Charles Townes, who had filed their claim in July 1958. Gould filed a claim in April 1959, which had been denied due to the earlier claim by Schawlow and Townes. But Gould pressed his claim, arguing that his notebook entries predated the work by Schawlow and Townes, and in 1977 the Patent Office awarded Gould a patent on optical pumping, one of two primary methods of energizing a laser. In 1979, the Patent Office awarded Gould a second patent, the so-called "use" patent, which covered virtually every use that a laser could be put to. Moreover, Gould had additional patents pending on collisional pumping—the other primary method of energizing lasers—and Brewster windows, a crucial optical element in many lasers.

During the ensuing years, battles raged over the laser patents, with the Patent Office reexamining the original Gould patents and countless appeals launched in courtrooms across the country. The stakes were huge: Gould and his associates demanded much larger royalties than had been paid on the original Schawlow–Townes patent, and laser companies' sales were many times greater than they had been in the early years.

Then, on July 11, 1986, a federal judge directed the Patent Office to issue Gould a patent on collisional pumping, raising the stakes for laser manufacturers even higher. And in November of the same year, the Patent Office Board of Appeals validated Gould's original patent on optical pumping, but rejected the "use" patent. Gould and his associates appealed the rejection, and launched a major effort to enforce the optical pumping patent.

So in January 1987, the members of the Laser Association of America were extremely concerned about the Gould patents. Richard Samuel, the president of Gould's patent-holding company, Patlex, addressed the April 1987 meeting of the LAA board, arguing that the years of legal battling were coming to an end, and advising the companies to accept the fact that they would soon be paying significant royalties to Gould.

There was talk of banding together under LAA to negotiate more favorable terms than could be obtained by individual companies. But the reality was that it was too late. In July 1987, the first major laser manufacturer—Lumonics, a Canadian company—signed an agreement with Gould and his associates to pay royalties on optically pumped lasers sold in the United States.

Another blow landed in August 1987, when the Patent Office announced it would not appeal the earlier court decision to authorize the issuance of the collisional pumping patent. Between the collisional pumping and optical pumping patents, Gould and associates now held patent rights on the vast majority of lasers manufactured in the United States.

Other companies began signing agreements to honor the Gould patents: Kodak, Amdahl, Chrysler, EverReady, and Union Carbide. And in a stunning development in December 1987, a major laser manufacturer—Control Laser of Orlando, Florida—lost the patent-infringement suit Gould and associates had brought against the company years earlier. Gould and his associates wound up with 54% of the company's stock, effectively taking control of the company.

Historians may never decide whether the Gould patents were truly appropriate.[4] But by the time LAA could begin addressing the issue, it was already too late to have any effect. The momentum against the industry was too great, and by August 1987, the LAA agreed that its only role would be educating the industry about the patents. At an industry-wide conference in January 1988,

[4]Bromberg, Lisa, *The Laser in America*, MIT Press, 1991, p. 75 ff.

LAA organized a seminar for companies where speakers discussed the inevitability of the Gould patents. During the ensuing months, virtually all the U.S. laser companies signed agreements honoring the Gould patents.

But the Gould patents were not the only issue facing the U.S. laser industry in 1987. Export controls, imposed by the government in the name of national security, were burdening the industry with tens of thousands of dollars in administrative costs, and were making U.S. lasermakers less competitive in the international market. Export controls had been a seminal issue in the formation of LIC, and were high on the priority list of the LAA in 1987. Chapter 5 is devoted to the industry's largely successful efforts over two decades to reform U.S. export controls on lasers and optics.

"Conference proliferation" was the catchphrase for the second major concern of laser and electro-optics manufacturers in 1987. As the number of universities and laboratories doing laser research grew, and as applications for lasers expanded, each of the laser-related professional societies expanded its conference schedule. Manufacturers felt compelled to participate in all the exhibitions held in conjunction with these conferences, lest an absence would be seen by potential customers as an indication of diminished competitiveness.

A single exhibition can cost a company tens of thousands of dollars in terms of personnel costs and shipping fees. From the manufacturers' perspective, it was far better to have a few large conferences/exhibitions in a year, than to have many small ones. But the trend was exactly the opposite: Each of the four professional societies was launching new, initially small conferences addressing different topics. Participation in all these exhibitions became a major expense in companies' annual budgets. Chapter 2 relates the tale of industry's dubious attempt during the next several years to alleviate this problem by consolidating many small conferences into one big conference.

But before either of these issues could be tackled, LAA membership had to be increased, and I was directed by the LAA board in June 1987 to make recruiting my first priority. Brochures were designed and printed, and board members were tasked to visit or telephone CEOs of nonmember companies to twist arms. And the promise of addressing two of the most pressing issues the industry faced was a potent recruiting argument. By the end of 1987, more than two dozen companies had joined the 16 LAA founders (Table 1.2).

By January 1988, I was able to increase my involvement to three-quarters time, and devoted my efforts to the three major LIC projects that year: recruiting, reform of export controls, and reduction of "conference proliferation." Members of the board were also heavily involved. John Wheeler, of Melles Griot, was named recruiting chair, and at the April 1988 LAA board meeting, set the goal of recruiting 25 new members, representing at least $25,000 in new revenue, during the year. By June, we had nearly a dozen new members, but after that the recruiting effort began to saturate. Five additional

TABLE 1.2 More Than Two Dozen New Companies Had Joined LAA by the End of 1987

Allied	Cascade Optical	Codman & Shurtleff
Continental Laser	Cryogenic Rare Gas	CVD Inc.
Diaguide	Directed Energy	ESI Inc.
Ferranti Electric	Image Engineering	KEI Laser
Kontes Glass	Koppers Co.	Labsphere
Laser Alignment	Laser Corp of America	Laser Machining
Laser Photonics	Laser Science	Lasermetrics
Liconix	Lumonics	Melles Griot
MIRA Inc.	Omnichrome	Quantrad
S.E. Huffman	Synrad	Questek
Two-Six	Wilson Ventures	XMR Inc.

companies had signed up by the end of the year. LAA membership now comprised more than 60 companies, and several LAA board members calculated that LAA members manufactured at least 93% of the lasers manufactured in the United States.

Other LAA board members were taking a longer-term view, speculating on other projects the LAA might address after export controls and conference proliferation had been settled. A long-range planning committee was created, with Dean Hodges (see Figure 1.4) of Newport as its chair. The committee initiated a poll of members, asking about the industry's most-pressing needs. The potential project receiving the most positive response was a compilation

FIGURE 1.4 Dean Hodges was instrumental in LEOMA's creation and in guiding it through many undertakings.

of market data, so that companies could have a better perspective of the marketplace they served.[5]

Taking over from Jon Tompkins as LAA's president in 1989, Hodges convinced the board that the LAA should not limit its focus to lasermakers, but should also include a broad swath of companies involved in lasers and electro-optics. A new name was needed to emphasize the LAA's broader purpose.[6] After considerable discussion and a vote of the membership, the LAA renamed itself as the Laser and Electro-Optics Manufacturers' Association—LEOMA—at the June 1989 board meeting. Shortly thereafter, the charter was expanded to include "North American" laser and electro-optics companies, rather than U.S. companies.

As described in other chapters, the work with conference proliferation and export controls was moving rapidly. But all the time and travel associated with these projects was expensive, and the LEOMA found itself running out of money. For the fiscal year that ended in March 1989, we had spent nearly $80,000, but revenue from dues had been only $60,000.[7] LEOMA's reserves were shrinking at an alarming rate. Another issue, articulated by Mark Dowley of Liconix with the support of many smaller members, was the "nonlinearity" of the dues structure. While the absolute value of dues paid by larger companies was larger, smaller companies' dues represented a significantly larger percentage of their sales.

Treasurer Bob Gelber of Coherent proposed a major revision of the LEOMA's dues structure, which previously topped out at $5000 annual dues for companies with sales in excess of $20 million. But several companies—including Gelber's—had sales significantly in excess of $20 million. Under Gelber's plan, companies at the large end of the revenue spectrum, those with revenues in excess of $200 million, would see their dues increase 160%, to $13,000. At the lower end, the dues increase would be far less, only 10% for companies whose revenues were less than $6 million. From the entire membership, there was only one vote against Gelber's proposal, which went into effect in the summer of 1989. Although the structure still was not linear—dues for smaller members still represented a larger percentage of their sales—it was closer to linear than it had been. Dale Crane, the founder of Uniphase, was LEOMA's president-elect that year. In a recent interview, he reflected on

[5]Several board members argued that the calculation about 93% of the lasers being made by LAA members was dubious, because there were no hard data about the marketplace.

[6]"LEOMA" was not among the initial options. In the fall of 1988, the two leading candidates were "American Photonics Association" and "Photonics Manufacturers' Association."

[7]Each autumn, the board member designated as treasurer would work with me to design a budget for the following year. But day-to-day financial tasks—check writing, tracking budget categories, and so forth—fell to me. I made a detailed financial report at each LEOMA board meeting. I wrote and signed my own paycheck.

the size disparity between the two largest companies and the rest of the industry. "If [the dues] had been truly linear, Spectra-Physics and Coherent would have been paying for everything and the rest of us would have been coasting along for free."

And even as LEOMA was making headway with conference proliferation and export controls, another potential problem for the industry presented itself: "Europe 1992." The European Union was being formed, and along with a host of economic reforms, the Europeans were creating continent-wide standards organizations that would create standards for everything from automotive safety to screw sizes and included in the mix were new standards on lasers, laser optics, and other laser accessories. The industry viewed these new standards with alarm, and the LEOMA board was quick to add this issue to their association's agenda.

Initially, in the LEOMA board's view, the most efficient course would be to retain an attorney in Brussels, the seat of the European Union, to represent the U.S. laser and electro-optics industry in all matters European. That was an expense not anticipated in LEOMA's budget, but the LEOMA board viewed it as crucial. To cover the additional cost, the board passed a voluntary "standards assessment," effectively doubling the dues of those companies that agreed to participate. All the larger members did participate, and I was sent to Brussels, where I interviewed several attorneys who were eager to add LEOMA to their list of frightened U.S. clients.

But even as the LEOMA board was considering their various proposals, we were becoming more involved with the international standards bodies, the International Organization for Standards (ISO),[8] and the International Electrotechnical Committee (IEC).

Chapter 3 describes LEOMA's successful efforts during the ensuing decade—and beyond—to influence the evolution of international laser standards.

The LEOMA board still identified recruiting as one of the association's most important activities. At the urging of LEOMA's 1990 president, Dale Crane of Uniphase, the LEOMA board members agreed in May 1990 to launch a major effort to recruit larger companies that use lasers, companies like HP, IBM, and others. These companies, the reasoning went, would be concerned with laser standards and export controls because they used so many lasers. A committee of past LEOMA presidents was tasked to design a plan for approaching these companies.

[8]It's incorrect to take ISO as an acronym, and call the organization the "International Standards Organization." Instead, "ISO" is Greek for "same" or "equivalent." The goal of standardization is to make measurements, procedures, and so on the same everywhere they're performed.

But at the next LEOMA board meeting, the past presidents reported that they were unable to design a viable plan for reaching these large companies. True, such companies may have been huge laser users, and they may even have been concerned with laser standards and export controls. But from their perspective, they wielded more political power by themselves than all of LEOMA put together could muster. They saw no benefit in joining LEOMA. "I can imagine the futility of that [recruiting] effort . . . now," Crane mused in a recent interview. But at the time, he and everybody else associated with LEOMA were intent on evaluating every growth mode possible.

At about the same time, LEOMA experienced another disappointing recruiting effort with a group of companies that manufactured laser machine tools. These tools are large instruments that use lasers to cut, weld, and otherwise process metals and other materials in automotive manufacturing and other heavy industries. The manufacturers of these tools wanted to have a trade association, and contacted LEOMA seeking information on how LEOMA might meet their needs. The board agreed that LEOMA could form a special section for these companies, and dispatched me to Chicago to deliver LEOMA's pitch at a conference of machine-tool builders.

But LEOMA's projects—standards, export controls, and conference proliferation—were not aligned with these companies' needs. They were interested in knowing how their products could penetrate an existing market that for decades had used conventional, non-laser, techniques for heavy manufacturing. Despite my assertion in the *Lasers & Applications* editorial nearly a decade earlier, this was not something with which LEOMA could help. I returned from Chicago empty handed.

Despite these recruiting disappointments, LEOMA was making substantial progress in its other projects. There was light at the end of the tunnels—or at least the end of the tunnel was in view, in the case of conference proliferation. Flush with these successes, the board began considering what challenges LEOMA could take on next.

The long-range planning committee put forth several ideas, including a market survey and enhancing the industry's interface with the federal government. Enhanced worker training was also discussed. But all these lacked the immediate urgency of the issues that had precipitated LEOMA's creation in the first place.

In September 1991, several members of the board and I visited Washington in search of inspiration for new LEOMA projects. We had appointments at the American Electronics Association (now AeA), the nation's largest high-tech trade association, where we hoped to learn about its activities that we might join or emulate. We also had appointments with several government agencies and departments, where we hoped to learn how LEOMA members could benefit by LEOMA's serving as an industry interface with the federal government.

At AeA, Bob Gelber of Coherent, who was LEOMA's president-elect that year, and I met with AeA president Dick Iverson and several other AeA officials. Iverson bent over backward trying to be helpful, and when our 11 AM appointment ended, he took us to lunch to allow an extra hour of conversation. He identified export controls and international standardization—two areas where LEOMA had already made significant headway—as issues of vital importance to any high-tech trade association. He explained that the AeA's interaction with the federal government was also important. But he identified the collection and distribution of market data as the most-appreciated function his organization performed. That, also, was a project that we had discussed at LEOMA, but after visiting AeA we realized that it could be a significant benefit to our members.

We visited several officials at the International Trade Administration (ITA) to evaluate how LEOMA might enhance its members' international sales through closer ties with the ITA. But we concluded that, while the international market was important to LEOMA, the ITA dealt with issues that were larger than the relatively small volume of sales in lasers and electro-optics. We saw no benefit to our members from interacting with the ITA.

One undertaking under discussion at LEOMA in 1991 was the possibility of organizing a research consortium among U.S. electro-optics companies. At the Commerce Department that September, LEOMA's 1991 president, Bob Pressley of XMR, and I met with several officials to discuss Commerce's support of such a project. The officials were very positive about industry's creating such a consortium, but they were not encouraging about Commerce Department funding.

The National Institute of Standards and Technology (NIST) is a part of the Commerce Department. While we were at Commerce, Pressley and I asked about NIST funding for LEOMA's work in international standardization, emphasizing that the United States was the only delegation at the ISO Laser Committee that lacked funding from its government. The best we could get from this discussion was a promise to look into the issue and get back to us.

When those of us who had visited Washington presented our findings to the whole LEOMA board, the reaction was mixed. Some board members were enthusiastic about launching new projects, while others were more dubious. But clearly, these proposed new projects lacked the urgency of the original issues LEOMA had been formed to address. In a memorandum to the LEOMA Executive Committee in late 1991, I summarized the question that hung over these deliberations: "Assuming that the issues of export control, international standards, and ["conference proliferation"] have been dealt with, does the laser/E-O industry still need a trade association?"

During the decade or so following its invention, the laser was often referred to, half jokingly, as "a solution in search of a problem." Now that the initial issues had been addressed, had LEOMA itself become a solution in search of a problem?

During the ensuing months, the momentum generated by LEOMA's successes in its original projects convinced its members that the industry did, indeed, still need a trade association. In the spring of 1992, the LEOMA board approved a new mission statement that identified several new directions for the association. Building from the results of our initial visit to the nation's capital, and especially our visit with the American Electronics Association, we would seek to establish constructive contacts with the federal government. Over the subsequent years, this project would yield several important successes, as described in Chapter 6.

The dubiousness of the previous autumn had been dispelled, and in an enthusiastic, unanimous vote, the board launched a project to create a quantitative study of the laser/electro-optics marketplace. The initial survey was distributed in May 1992. It was an overview of sales data that members had submitted, in full confidence, to the accounting firm Deloitte & Touche. Deloitte compiled the raw data and prepared a summary that described the overall marketplace, without including any company-specific information. Two years later, a second survey would be added to LEOMA's agenda, this one studying the compensation levels of engineers and technicians in the laser and electro-optics industries. The full story of these surveys, and of other intra-industry projects LEOMA addressed, is told in Chapter 7.

Meanwhile, international standards remained a concern, but one requiring much less effort than in previous years. Accordingly, the "standards assessment," begun in 1989, was discontinued in the spring of 1992. However, LEOMA's other projects were a drain on the association's assets, so a dues increase was passed at the same time. The larger companies' dues went up 15%, while the hike was smaller for smaller companies, all the way down to 5% for companies with revenue less than $600,000. That boost soon proved to be inadequate to fund all LEOMA's activities, and a second increase—this time 67% for larger companies, down to 15% for smaller companies, was approved before the end of 1992.

Of course, it was preferable to increase revenue by adding new, dues-paying members, rather than by increasing the dues for existing members. Newport's Randy Heyler, still leading LEOMA's recruiting effort, oversaw the creating of new recruiting materials emphasizing the new projects. He also solicited the two leading trade publications, *Photonics Spectra* and *Laser Focus World*, to run free advertising describing the association's new projects and their value to the industry. LEOMA was rewarded with five new members by the end of 1993.

Despite the dues increases in 1992, LEOMA's financial resources continued to diminish during 1993 as expenses associated with the new projects exceeded dues income. In early 1994, I proposed to the board that my short course, *Understanding Laser Technology* (ULT), become a LEOMA asset. ULT was (and is) a three-day course that I had developed long before LEOMA, but had ceased teaching recently because LEOMA took all my time. Now my concept was to begin teaching again, but the income from the course would go to LEOMA. The board accepted the proposal, and during the next six or seven years, I would teach the course a more than dozen times, both at LEOMA member companies and at public presentations around the country.

Buoyed by the extra income from ULT, LEOMA continued on a relatively even financial keel for the next several years. But there were emerging signs of trouble. Recruiting new members had slowed almost to a standstill. Several years earlier, David Rossi of Newport had distributed camera-ready copies of a small LEOMA logo to the membership, asking that members display the logo in a corner of their print ads. But in late 1995, a survey of the relevant magazines showed that only 4 out of 26 members' print ads included the logo. The board decided to discontinue the campaign.

To make matters worse, several small companies were dropping out. Most of LEOMA's projects—international standards, the interaction with the federal government—benefited the entire industry, not just member companies. In other words, companies could enjoy many benefits of membership without actually joining LEOMA and paying membership dues.

One incident in about 1997 was particularly telling. I was visiting a small laser company in Mountain View, trying to convince its CEO not to drop out of LEOMA. I argued that without LEOMA's participation in international standards, the Europeans would be free to create standards that could effectively block U.S. companies from the European market. "Spectra-Physics and Coherent are taking care of standards," he told me dismissively. What he meant, of course, was that Spectra-Physics and Coherent and other LEOMA members were paying LEOMA dues to protect all U.S. laser companies. My visit ended when he explained that his LEOMA membership cost as much as a new company-name sign on the front of the building. And he was going to opt for the sign.

Meanwhile, LEOMA's board was actively seeking new projects that would make the association more attractive, both to existing members whose loyalty was wavering and to potential new members. John Ambroseo of Coherent suggested launching a study of potential laser markets in the emerging field of extreme-ultraviolet lithography. Newport's Bob Phillippy suggested a campaign to reduce the burdensome requirement to obtain the European CE mark.

Neither of these ideas found much resonance with the membership as a whole. Other ideas were floated in late 1997 and early 1998. The National Fire

Protection Association, whose rules are often adopted by local governments, invited me to join its advisory committee addressing fires ignited by, among other things, lasers. I suggested that to the board, but it turned out that none of the members had experienced difficulty with fire regulations.

Recent federal legislation encouraged the creation of "Risk Protection Groups" of companies that could bind together and seek lower rates for liability insurance. Also, it was suggested that LEOMA make bulk purchase of magazine advertising space at a discount, and resell the space to its members. Neither of these ideas found favor with the board or with the individual members.

In the first months of 1998, two Canadian companies, Gentec and Lumonics, notified me that they would discontinue their membership. Both companies had been represented on the LEOMA board, and the absence of their dues would seriously undermine LEOMA's finances.

Still searching for appealing projects, I surveyed a dozen companies in the San Francisco Bay Area, and found that a remarkable shortage of laser technicians was likely to occur in the coming years. In 1998, these companies employed about 200 laser technicians, but by 2003, they predicted they would need at least 400. Where were these technicians to come from?

Chapter 4 describes the successful laser- and optics-technician programs LEOMA instituted at California community colleges. And while these programs were appreciated by regional companies, they did little to add to LEOMA's appeal for companies elsewhere. Indeed, their existence seemed not to encourage LEOMA membership even among regional companies. That same Mountain View company—the one with the new sign out front—actively competed with LEOMA members to hire graduates from the laser-technology program LEOMA had designed at San José City College.

But the absence of companies that had resigned from LEOMA in 1997 and 1998 was putting a severe crimp in the association's budget. Even with over $10,000 coming in from the ULT short course, my projection for 1999 was a shortfall of $40,000. Left with no alternative, treasurer Len Marabella and other board members worked out a budget that drastically curtailed many crucial LEOMA activities, but left it with a balanced budget for 1999.

That was not an acceptable solution to Spectra-Physics president Pat Edsell (see Figure 1.5). A long-time LEOMA board member and former LEOMA president, Edsell felt that curtailing these crucial activities undermined the association's fundamental reason for existence. Rather than allow the cutbacks to take effect, he offered funding from Spectra-Physics to underwrite LEOMA's entire $40,000 deficit.

Reflecting back on that 1998 decision recently, Edsell told me it was a worthwhile expenditure, even though in the end it merely postponed the inevitable. "I believe that LEOMA did the things a trade association should do. We can do more things better collectively than we can independently."

FIGURE 1.5 Pat Edsell, Spectra-Physics' CEO, was a long-serving LEOMA board member and the LEOMA president in 1994.

The industry needed LEOMA, Edsell said, and he was willing to do whatever he could to support it.

So LEOMA was out of the woods for another year, but it was clear that we still had to confront the question I'd posed seven years earlier**:** Absent the urgency of LEOMA's original, seminal projects, had LEOMA become a solution in search of a problem? To answer that question once and for all, LEOMA organized an industry-wide forum during a technical conference in San José in January 1999.

The forum was called "Solving Problems; An Alliance of Competitors," and was intended to bring non-LEOMA members into a discussion of industry-wide issues and their potential solutions. Many of these companies, as Spectra-Physics' Pat Edsell had pointed out in a *Laser Focus* editorial in December 1998, had withdrawn from such discussions because they considered themselves not "laser companies," but "semiconductor-equipment" companies or "telecom" companies or "medical" companies. But all these companies manufactured lasers and electro-optics, and therefore shared common problems that could be effectively addressed through LEOMA, Edsell argued.

The forum took its name from Andrew Procassini's book, *Competitors in Alliance*, cited on the first page of this chapter. And Procassini, who had led the Semiconductor Industry Association (SIA) for a decade, was one of two keynote speakers at the forum. Procassini credited the SIA with solving the major problems encountered by the U.S. semiconductor industry, and concluded that much of the credit for the U.S. leadership role in semiconductor technology went to industry executives who agreed to work cooperatively through the SIA to address common problems.

The second keynote speaker was Jon Tompkins, who while at Spectra-Physics had played a key role in LEOMA's early history. Tompkins had left Spectra and in 1999 was chairman of the Board of Trustees at KLA-Tencor and also chairman of SEMI/Sematech, the then-12-year-old industry association made up of majority U.S.-owned and -controlled chip suppliers. Tompkins described the importance of SEMI/Sematech to its industry and strongly urged the leadership of the U.S. laser and electro-optics industry—most of whom were in that room—to support LEOMA.

Following the keynote talks, a panel of six industry leaders addressed a pair of crucial questions: What were the most urgent issues facing the industry as a whole, and how can companies most effectively address those issues? The six panelists had been chosen for their experience in the laser/electro-optics industry, and for the diversity of their opinions. Of the six, only two—Bernard Couillaud, president and CEO of Coherent, and George Balogh, VP and general manager of Spectra-Physics' optics division—were affiliated with LEOMA member companies. The other panelists were David Rossi, VP of marketing in Opto-Sigma; Lindsay Austin, VP and general manager of Uniphase's laser division; Don Scifres, president and CEO of SDL; and Bob Mortensen, president and CEO of Lightwave Electronics. Dave Hardwick, LEOMA's 1998 president, moderated the discussion.

The LEOMA members of the panel argued that the industry's crucial issues—international standards, government regulations, worker training, and so forth—were precisely those issues that LEOMA was addressing. The counterargument was voiced forcefully by Lightwave Electronics' Mortensen, who held that when a truly urgent issue confronted the industry, companies could unite to address it. But in the absence of potentially catastrophic developments, he insisted, a trade association was an unnecessary expense.

But Mortensen was in a definite minority, and the LEOMA board convened as a newly invigorated body at its next meeting. The last year of the century would be the year to replant LEOMA and revitalize the association as an integral part of the photonics industry. An ambitious plan to restructure LEOMA was launched, with committees to address each of the prime objectives the board had identified. Each committee consisted of three to

five board members, one of whom was designated as the chair.[9] The concept was that each of these committees would focus on its particular project, being more efficient than the entire board, whose attention in past years had been diluted over LEOMA's entire scope.

During 1999, these committees made a serious effort to cope with their respective projects, but the truth was that each committee member was a high-level manager at his own company, and company concerns outranked LEOMA concerns. By midyear, the concept of action committees composed of board members was wavering, and by the end of the year it had effectively been abandoned.

And while the LEOMA supporters—board members and others—were recharged by the "Alliance of Competitors" meeting in January, the enthusiasm had not spread well into the larger community. Few new members were recruited, and LEOMA was nowhere near generating additional dues income to replace the $40,000 that Pat Edsell had supplied to underwrite LEOMA's 1999 activities. In putting together a budget for CY 2000, I increased the contribution from ULT to $20,000, and still predicted a shortfall of $30,000. LEOMA had sufficient resources to absorb the shortfall, but it clearly was not a steady-state situation.

And further problems began surfacing. It turned out that not only was the concept of action committees composed of board members impractical, but also board members were so involved with issues at their individual companies that none of them was able to serve as LEOMA secretary during 2000. Minutes during 2000 were taken by an individual (most often a board observer from *Photonics Spectra* magazine, rather than a regular board member) drafted into service at the beginning of each meeting.

Another setback in 2000 was the demise of the LEOMA Marketplace Survey. As explained in Chapter 7, despite the enthusiasm with which the board had initiated the survey a decade earlier, the project had not been terribly successful during the ensuing years. At the October 2000 board meeting, I proposed discontinuing the survey, and the board agreed to do so.

Yet another blow during 2000 was the resignation from LEOMA of one if its prime members, SDL Inc. After absorbing a $30,000 shortfall in 2000, and now accounting for the absence of SDL's dues in 2001, LEOMA was looking at a shortfall of $50,000 for that year. LEOMA's diminished resources were inadequate to cope with a deficit that large.

[9]The committees were (1) Government affairs, chaired by Spectra-Physics' Pat Edsell; (2) Bylaws revision, chaired by Tom Cekoric of Applied Optronics; (3) Manpower and training, chaired by Newport's Bob Phillippy; (4) Small-company projects, chaired by Chong Lee of Lee Laser; (5) Export control, chaired by Dave Hardwick of Galileo Corporation; and (6) Surveys, chaired by Len Marabella of TRW.

But these setbacks were at least partially balanced by the progress LEOMA was making with worker-training programs. The predicted shortage of engineers and scientists—in all fields, not just photonics—was perceived as a strategic national problem. The shortage was especially acute in the optics field,[10] where the unprecedented growth of fiber-optics technology created a seemingly insatiable demand for optical components. Chapter 4 describes how LEOMA had begun addressing the problem years earlier. Those efforts were now bearing fruit with successful programs at several community colleges, with the PowerPoint presentation prepared by Bob Phillippy describing careers in optics, and with my own stint as chair of the Coalition for Photonics and Optics,[11] where I was moving that institution to focus on programs encouraging high school and college students to consider careers in optics and photonics.

Nonetheless, the $50,000 cash shortfall predicted for 2001 was an overwhelming cloud on the horizon. I feared that LEOMA would be forced to discontinue operations despite its successes in worker training. But in a turn of events I had not expected, the board eliminated that cloud in less than 10 minutes during its October 2000 meeting.

Dave Dover of *Photonics Spectra*—who had "volunteered" to take the minutes of that meeting—said that Wendy Laurin, the magazine's publisher, had instructed him to announce that the magazine would contribute $5000 to LEOMA's treasury as a step toward alleviating LEOMA's financial plight. Steve Sheng then said Spectra-Physics would donate $10,000 in addition to its normal dues, and John Ambroseo made a similar donation from Coherent. Bob Phillippy of Newport added another $10,000, as did Mike Dorich of Melles Griot. This amounted to $45,000 in donated funds against the $50,000 shortfall, and Steve Sheng then said Spectra-Physics would come up with the remaining $5000 if nobody else did.

So, for the second time in three years, LEOMA's significant operating deficit would be underwritten by a few of its largest members. At its January 2001 meeting, the board began anew the effort to find the formula for a successful trade association in the laser/photonics industry. Recruiting new companies was an obvious priority, and board members themselves committed to contacting nonmember companies in an effort to learn what might attract them to LEOMA.

Scott Keeney of nLight, who was an active board member, contacted several companies including Aculight and Phaethon, finding "lukewarm"

[10]The HR manager at one large optics company told me she would visit fast-food restaurants and, if anybody behind the counter looked particularly intelligent, make a job offer on the spot.
[11]CPO was a coalition of professional societies and other organizations described in Chapter 2.

interest at best. These companies' executives were "incredibly busy," Keeney reported, and not particularly interested in industry-wide issues.

Steve Sheng of Spectra-Physics, LEOMA's president in 2001, spoke with officials at New Focus and Lightwave Electronics, and found those individuals too preoccupied with internal issues to be interested in discussing LEOMA.

John Ambroseo of Coherent, another active board member, contacted several additional companies. At Corvis, he found general disinterest in any of LEOMA's projects. At Avanex, he found his contacts too focused on many other short-term issues to focus on the benefits of a trade association.

At a technical conference earlier in 2001, Jeff Canon of JDSU had told me that he was enthusiastic about participating in LEOMA, but that enthusiasm evaporated a month later when I formally approached him. I also spoke with SDL's CEO Don Scifres, whose resignation from LEOMA the previous year had precipitated a financial crisis. But he said that "budget pressure" would prevent his rejoining the association in the foreseeable future.

So, all in all, the prospects for meeting LEOMA's financial shortfall by recruiting new members were not favorable.

A proposal was made at the May 2001 board meeting to readjust LEOMA's dues schedule to reflect the greater benefits to California companies. All LEOMA's community college programs were in California. But California companies were already providing more than three-quarters of LEOMA's income, so the board nixed any revision of the dues schedule.

During that May meeting, board members tabled several ideas for lifting LEOMA out of its financial straits. It was suggested that we contact other associations, like the Semiconductor Industry Association and the National Machine Tool Builders' Association, to learn if any of their "best practices" might be something LEOMA could emulate. Once again, the possibility of increasing membership surfaced. Prefacing his comment by saying he didn't want to sound like a curmudgeon, Pat Edsell observed that all these approaches had been tried before, unsuccessfully.

Edsell was right. Reluctantly, the board began examining LEOMA's projects with an eye to abandoning the least crucial ones. The executive seminars, annual meetings of the board and other executives of LEOMA companies, had been held in Washington in recent years. They were viewed as a valuable opportunity to network with executives from other companies, and an important part of the interface with the federal government. But they cost time and money to organize, and they appeared less vital than LEOMA's other activities. The board voted to discontinue them.

Time and money were also involved in organizing another set of seminars, the Human Resources seminars for LEOMA's HR managers. Although the HR managers found these seminars useful, they did not provide a vital

contribution to the industry as a whole. The board instructed me to inform the HR directors at various LEOMA companies that LEOMA would no longer organize the seminars. If they wanted to continue them, they would have to organize them themselves. Of course, the board knew that this was unlikely and, indeed, there were no further HR seminars after 2000.

Finally, the board considered the possibility of a merger with one of the professional societies. Feelers went out to two of them, the Optical Society of America (OSA), and the International Society for Optics and Photonics, known by an acronym for its former name, SPIE. The OSA responded positively toward the end of 2001. OSA had a strong program of short courses presented at conferences, and they were interested in LEOMA's community-college programs. Their strongest interest, though, was in LEOMA's 501(c)(6) tax status. As a 501(c)(3) corporation, OSA was barred from many political activities that LEOMA could perform. The OSA concept was that LEOMA would retain its (c)(6) status and become a subsidiary of OSA.

There were advantages to LEOMA of such a merger. OSA had a Corporate Associates program, which, while far less active than LEOMA, had many more members. The idea was, if the merger occurred, LEOMA could absorb OSA's Corporate Associates, thereby boosting its income and, in the process, making its services available to a wider swath of industry.

A conference call in November involved the presidents and executive directors of LEOMA and OSA, as well as Duncan Moore, who was the OSA's senior science advisor, and LEOMA board members Bob Phillippy and John Ambroseo. Dave Hardwick, who was then an OSA board member but was also a past president of LEOMA, also took part in the conversation. All participants agreed that a merger would in many ways be advantageous for both institutions. But OSA wanted LEOMA to operate out of its Washington, DC, offices, and I did not wish to relocate to the East Coast.

That turned out to be a deal breaker. With two kids in grade school and a wife successfully running her own business in California, I was unwilling to uproot the whole family and move it to Washington. And the LEOMA board was equally unwilling to turn day-to-day operation of LEOMA over to a stranger from the OSA. Shortly after the conference call, LEOMA formally asked OSA to put further discussions "on hold."

But another possibility soon emerged when SPIE responded positively to the feelers LEOMA had generated. As had been the case with OSA, SPIE was interested in LEOMA's 501(c)(6) tax status. In December 2001, I met Eugene Arthurs (see Figure 1.6), the SPIE executive director, at the San Francisco airport and we drove together to Mountain View, where we met with LEOMA's president, Steve Sheng, and president-elect, John Ambroseo.

Arthurs explained that SPIE was interested not only in LEOMA's tax status, but also in access to the LEOMA companies, whose leaders had for

FIGURE 1.6 Eugene Arthurs, the SPIE executive director, was interested in absorbing LEOMA, but after its initial enthusiasm, the LEOMA board decided against joining forces with SPIE.

years been championing solutions to industry-wide issues. And he offered to help LEOMA expand its community-college program nationwide, using SPIE's network of student chapters as a basis. The mechanics would be similar to those envisioned earlier in the OSA discussions: LEOMA would retain its own board and its (c)(6) tax status, and become a subsidiary of SPIE. But unlike OSA, SPIE had no issue with LEOMA's keeping its headquarters where they were in California. By the end of the meeting, both parties agreed to take the proposal to their respective boards in January, and to meet for further discussions at an SPIE technical conference in late January. If both boards were in agreement, the wording of a contract could be achieved by summer, and the formal merger could take place by September.

Some skepticism to the merger plan surfaced at the January 2002 LEOMA board meeting. One question was whether LEOMA should retain its name after the merger. Several board members felt it would be beneficial to drop the name "LEOMA," because most companies knew—or thought they knew—what LEOMA was and had made up their minds about becoming associated with it. But others worried that losing the name would lead to LEOMA's being subsumed into SPIE, even though it retained its own board.

But what were the options? LEOMA had gotten through 2001 on the strength of donated funds from its leading members, but those companies were not willing to continue that level of support. At the board's request, I fashioned a proposed budget for 2002 that showed a balanced budget without curtailing any LEOMA activities. The donated funds from 2001 would be replaced by income from LEOMA's short courses. LEOMA had been receiving income from *Understanding Laser Technology* for several years, and meanwhile I had added a second course, *Understanding Fiber-Optics Technology* (UFT). My proposed budget called for a dozen presentations of the courses during 2002, six presentations of ULT and six of UFT, bringing in an additional $50,000.

Were that many presentations feasible? A quick survey of companies represented at that board meeting indicated that nine presentations could be hosted by those companies alone. Emboldened by the possibility of continuing independent operations, the LEOMA board instructed its representatives—Steve Sheng, John Ambroseo, and myself—to slow down the pace of those negotiations during the subsequent meeting with SPIE.

At the last minute, Sheng had a family emergency that prevented his participation at that meeting, and Pat Edsell asked if I wanted him to fill in. I gratefully accepted the offer. But at that pivotal meeting, Edsell went a lot further than "slowing the pace" of merger negotiations. He single-handedly torpedoed the merger. LEOMA didn't need SPIE's support, he insisted, and a merger would dilute LEOMA's strength. By the end of that meeting, a merger between SPIE and LEOMA was no longer a possibility.

Ironically, neither Edsell nor Ambroseo today have any recollection of that meeting. But one person who does remember it is Eugene Arthurs, SPIE's executive director. "When LEOMA approached us, we formed a subcommittee of the SPIE board to evaluate the matter," he told me recently. "We decided it was promising, and after the discussion you and I had, the subcommittee came to the meeting with LEOMA." They were taken aback by the resistance to the idea they encountered at that meeting. Arthurs found the dénouement of the negotiations "insulting," especially since LEOMA had approached SPIE in the first place.

Speculating recently on his motives at the meeting, Edsell mused that he didn't want LEOMA to be absorbed into SPIE and have its impact diluted. "SPIE does a lot of things," and LEOMA's projects would be low on the priority list. He "felt strongly that LEOMA was important, and that industry [not a professional society] should support it." But LEOMA did go out of business shortly after that meeting, I pointed out. "Maybe I was wrong. I've made a few mistakes in my career." But, he insisted, LEOMA operating as a subsidiary of SPIE would have been of very limited value to the industry.

But the optimism that had fueled the notion in January that LEOMA could fund operations through 2002 with income from the short courses proved

unfounded. The fiber-optics boom that had driven rapid growth in the optics/photonics industry during the last years of the previous century came crashing down in the first years of the twenty-first century. By early 2002, demand for optical components had diminished drastically, and companies that had previously been desperate for employees were suddenly laying people off. LEOMA's optics program at Yuba College came to a screeching halt, and its recent graduates who had found new jobs at optics companies were often the first to be let go. The demand for LEOMA's new short course, *Understanding Fiber-Optics Technology*, shrank to zero, and by mid-2002 it became obvious that the short courses were not going to generate the income to keep LEOMA in the black for 2002.

At the May 2002 board meeting, the discussion focused on whether LEOMA's large members would—for the third time in four years—provide the emergency funding to keep the association going. But John Ambroseo, LEOMA's 2002 president, observed that one thing he'd learned in his years at Coherent was, "If it's not working, quit throwing money at it."

LEOMA was not working. The entire industry was in a slump, and LEOMA dues were among the lowest priorities on companies' lists. One of LEOMA's most successful undertakings, training programs for optical and laser technicians, was producing technicians who could not find employment. And I had begun reversing the process of 14 years ago, making commitments of my time to clients other than LEOMA. By the end of 2002, nearly half my time was devoted to non-LEOMA projects.

The board agreed to put LEOMA in a "simmer mode," where only the association's crucial activities would receive minimal maintenance funding. The activities were defined as export controls, international standards, the ADR[12] agreement, and the Coalition for Photonics and Optics. All LEOMA's education-related activities were halted. There would be no more recruiting, no more seminars or surveys, no more interfacing with the federal government.

But the "simmer mode" is not a long-term strategy. Interest in LEOMA's issues continued to wane until, at its January 2005 meeting, the LEOMA board agreed to discontinue operations as a dues-collecting industry association and transform into a loose confederation of companies, still calling itself "LEOMA," with a paid consultant. Ambroseo proposed, and the board unanimously agreed, to transfer the balance of LEOMA's treasury to me as a "severance package." From that point forward, the companies paid the consultant—me—directly, rather than paying LEOMA dues.

And that arrangement has survived to the present day. The LEOMA companies continued to hold "board" meetings from time to time, which

[12]The Alternative Dispute–Resolution agreement is described in Chapter 7.

in reality were merely meetings of an advisory committee. In 2006, Michael Lebby, then executive director of the Optoelectronics Industry Development Association (OIDA), visited one of these meetings in an unsuccessful attempt to recruit the LEOMA companies to OIDA. Chapter 5 describes the LEOMA-driven revision of international laser export controls from 2001 to 2006. In 2006, Jim Harrington of the State Department visited one of LEOMA's "board" meetings to describe the newly revised controls and praise LEOMA for its contributions to them.

THE BENEFIT OF HINDSIGHT

In the end, LEOMA did indeed turn out to be a solution in search of a problem. LEOMA was created to address two very specific problems: export controls and conference proliferation. Shortly after its founding, the association identified a third issue, international standards. LEOMA was quite successful in dealing with export controls and international standards and, to be fair, at least partially successful in dealing with conference proliferation.

The momentum of those successes carried LEOMA forward for the next decade. During that decade, the association undertook a variety of new projects, from market surveys to worker training to interfacing with the federal government. Most of these projects achieved their intended goals, but the urgency of the initial three projects was never repeated. Much of the initial momentum was gone by the turn of the century, and the industry downturn that accompanied the new century proved to be LEOMA's undoing. When budgets were being cut, LEOMA's less-than-urgent projects were among the first to go.

Even before the momentum began to diminish, LEOMA suffered from the "public television" problem: Many benefits aren't dependent on membership. Just as all viewers can watch public TV programs, all laser companies benefited from most of LEOMA's activities, whether or not they joined LEOMA. Development of international standards, reform of export controls, training programs for industry workers—all of these projects benefited the entire industry, not just those companies that paid LEOMA dues. Many companies calculated, correctly, that they would derive more self-benefit from spending their money elsewhere. Projects whose benefits accrue exclusively to the members are crucial in a trade association's success.

With the few projects LEOMA undertook whose benefit could have been exclusive, the tendency was to open them to nonmembers. The executive seminars, the market survey, the compensation survey—these projects could have been for members only, but in most cases nonmembers were also invited to participate. The motivation behind opening these projects to nonmembers

was increased industry participation. The more companies that participated in the surveys, the more reliable the resulting data would be. The more companies that attended the executive seminars, the more valuable the networking would be. And, to be frank, the more companies participating in—and underwriting—these projects, the better for LEOMA's bottom line.

The reality was that very few nonmember companies participated in any of these projects. In hindsight, one wonders if the perceived value of these projects might have been greater if they had remained exclusive. The executive seminars, in particular, had a certain degree of cachet. As Randy Heyler succinctly explained in a 2013 conversation, "The LEOMA executive seminars were a great thing, because it played to people's egos. People could say, 'I'm an industry leader, so I get to go to this seminar and talk to other industry leaders.'" Perhaps that cachet would have been greater if the seminars had been exclusive. Perhaps, if these projects had been members only, they would have encouraged more companies to investigate LEOMA membership.