ABSTRACT
Marketing an institution’s intellectual property (IP) is essential but challenging work. This chapter provides helpful information about how to locate potential licensees, how to determine whether or not they are qualified to manage a particular technology, and how to persuade them to begin licensing negotiations. The chapter stresses the importance of self-knowledge: having a clear sense of your institution’s own IP goals, as well as the institution’s strengths and weaknesses. Having this awareness makes it possible for a technology transfer office to choose wisely when it evaluates the strengths and weaknesses of potential marketing targets. Indeed, the chapter, rather than simply providing a basic overview of the marketing process, offers concrete suggestions and tough questions for those who aim to successfully market academic intellectual property.

1. INTRODUCTION
The goal of marketing IP is to bring motivated parties to a license negotiation. Technology transfer managers must locate potential licensees and make them aware of a technology’s promise. A technology transfer office (TTO) can best attract licensees by placing the right information in the right hands of the right companies at the right time. Getting all of these “rights” right is a challenge for any marketing effort, but some marketing challenges are unique to marketing intellectual property. First of all, the products (university inventions) are not developed in response to market needs. Thus, a TTO must convince businesses of the marketability of potential products before businesses have recognized the usefulness of such products—and the existence of which they may have never even imagined. Of course, university inventions are early-stage technologies. Often, the technology has not been demonstrated: the buyer (the licensee) cannot “touch the merchandise,” and the inventors themselves may have a hard time defining the technology’s utility. In fact, no one may even be sure that it will work.

Moreover, persuading potential customers to begin license negotiations is difficult because a business takes on considerable risk when licensing intellectual property. Of course, there are license fees, but greater costs come in the form of reorienting internal resources and priorities, investing enormous sums in development, and changing company behavior (in terms of manufacturing processes, kinds of products offered, and so on). And if the invention is a “bust,” it is the licensee who usually bears the financial burden.

On the other hand, everyone knows that new technologies can offer the promise of enormous value. Innovation is the engine behind any


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growing business. Therefore, for a marketer of an institution’s intellectual property, the task is to make a licensing deal as attractive as possible by reducing the risk/promise ratio.

2. GETTING STARTED
To overcome the difficulties, one must begin at home. Indeed, when we think of “selling” an institution’s intellectual property, a logical place to start is to ensure that the objectives of the TTO match those of its institution. The TTO and the institution it works for have a common goal and a common vision. This may seem rather obvious, but it is best for the institution to understand and endorse how the TTO operates (including its policies for such issues as conflict of interest, equity holdings, royalty splits, and even the direction of the research being licensed). Without this endorsement, a technology transfer manager’s marketing efforts will not be supported and, in a worst-case scenario, a negotiating process that took a great deal of time and effort to achieve will be rejected by your institution. If the objectives of the TTO are not clearly in line with that of the institution, it will also be difficult to create and maintain an atmosphere of trust and cooperation between the TTO and the university—much less between the TTO and its potential customers.

A written policy—approved by the appropriate authorities and available to all investigators—will establish the ground rules for the TTO’s operations. In addition to emphasizing the need to create economic benefit both for the institution and the community, this policy should reflect the philosophy of the institution. The following are sample objectives one might consider.

1. To increase research support from industry while maintaining these principles:
   • free and open communication among colleagues
   • collaborative research, as appropriate, among colleagues
   • an atmosphere of cordiality and mutual respect among scientists and clinicians
2. To provide guidelines for fairly distributing the economic benefits of academic–industry relationships and to ensure that these relationships enhance the institution’s basic mission in the areas of teaching, research, and community outreach
3. To provide reliable, expeditious processes and procedures for resolving conflicts of interest in academic–industry relationships
4. To ensure that partnership companies act ethically and in a socially responsible manner, so that they diligently promote the development and dissemination of the institution’s research products for the greatest possible public benefit

Publicly articulating such principles for the campus community will make the TTO’s efforts more focused, transparent, and effective. This is partly because the institution will be able to get behind the TTO wholeheartedly and partly because sharing these goals with potential business partners can go a long way toward fostering mutual understanding, which is always helpful for facilitating the negotiation process.

3. TECHNOLOGY AUDITS
A common TTO complaint is that “no one has time to audit the inventory of inventions.” If technology transfer managers do not know what is in the pipeline, then it will be impossible to organize a coherent sales or marketing strategy. Understanding what inventions are in the patent process, what investigators are actively working on, and whether this work matches the department chairperson’s expectations is valuable, not least because such understanding lays the foundation for an effective sales strategy.

Auditing the status of each technology is such a critical starting point that it could be worth the expense to bring in an outside consultant to augment the review of the invention disclosures, understand the patent situation, evaluate the commercial potential, and recommend commercialization alternatives.

3.1 Resource assessment
Once a technology transfer manager knows the “inventory” of the TTO, the manager can assess the resources needed to implement a sales strategy,
especially in relation to staffing. Balancing cases among available licensing professionals, for example, will allow for an even allocation of time for those cases that are close to closing. A technology transfer manager would not want to have one professional attempting to close ten cases, while another has none closing. In general, a caseload of up to 40–50 inventions in various stages of qualification per person is possible if good planning is in place.

However, realistically allocating cases among available resources may result in a shortfall. Once again, an outside consulting group may need to be brought in to handle a series of unattended cases. Moreover, it is always difficult to decide when to drop a case—the institution risks incurring unrecoverable patent expenses by carrying a case too long. Therefore, TTOs should not have cases lying dormant without having a strategy for eventually marketing them. Giving the case to a consulting group on a success-fee basis, with a small retainer to manage expenses, may be a logical action plan for cases that cannot be attended to by TTO personnel. Giving the case to a consulting group on a success-fee basis, with a small retainer to manage expenses, may be a logical action plan for cases that cannot be attended to by TTO personnel. The challenge is to ensure that the consultant’s approach is fully aligned with the strategy and personality of the TTO in order to match the mission of the institution, manage the interface with the commercial targets, and make sure the investigator is feeling the technology is adequately being attended to, rather than being overlooked or pushed aside.

4. WHO IS THE CUSTOMER?

4.1 Identifying customers

To develop a sales strategy, a technology transfer manager needs to thoroughly understand the customer so that he or she can ensure that the customer best matches the technology’s requirements and potential. Exactly who the customer is in a technology transfer is not always evident. On the one hand, the TTO must enter into tough negotiations with research sponsors and other prospective licensees; on the other hand, the TTO serves the institution and research scientists. The bottom line is, however, that the manager needs to remember that the industrial sponsor/licensee pays the royalties. To be sure, the scientist is the producer of the package to be sold, so treating that person as the TTO’s client and partner is equally important. The TTO must maintain a delicate balance.

Listening to the customer throughout the process can be a difficult challenge, but a deal could very well depend upon how well the TTO staff is listening. In particular, the manager must recognize that the technology is usually competing with other priorities in the company’s development plan. Open communication will allow the manager to respond to the customer’s needs and also let the TTO determine whether the customer is right for the technology.
4.2 Finding potential licensees

For most technologies, a list of potential partners can be easily generated. Indeed, the explosion of Web-based databases makes it simple to get a list of potential customers that may be appropriate to contact. Sites like biospace.com, not only allow the technology transfer professional to “reach out” and find customers, but maintaining your own Web site, that is updated routinely, allows companies to “reach in” to the institution portfolio. A TTO may be surprised at how companies are getting more sophisticated in searching university Web sites. The Massachusetts Association of Technology Transfer Offices has gone a step further and maintains a central Web site that can search 19 institutions through the use of key words. The site is updated nightly for any additions/deletions made by an individual institution. Other programs like TechEx.com also allow companies to reach in to the institutional portfolio from members worldwide who have listed their available technologies. Such lists, however, need to be sifted through before drawing up a targeted prospect list.

Another useful source of industry contacts is the team of scientists working at your institution. Scientists will often already have an industry contact for a given technology, and a scientist’s relationship with a company is invaluable for initiating negotiations. In fact, AUTM data have shown that 54% of licensees were initiated due to investigator-company relationships. So TTO staff must be sure to ask the scientists about their contacts. (Knowing where their graduates have gone can often provide useful leads.) When exploiting an inventor’s personal contact, however, one must make sure that the technology transfer manager is serving the best interests of the technology and not limiting its possibilities by deferring to the inventor/scientist.

Other sources of contacts may come from the TTO members’ industrial experience, experience from previous cases, AUTM members who have dealt with the targeted field of technology, or other members of the institution who have dealt with the company. Industry directories, professional association directories and materials, and trade publications and newsletters can all provide useful leads.

Of course, if you are a TTO manager, remember to think about your own contacts! Who do you know? Who do your friends know? Who has come to see you in the recent past? Networking begins with you.

4.3 Qualifying potential licensees

Evaluating companies means asking at least these four key questions:

1. Does the technology fit the company’s need?
2. What is the company’s time frame to develop the product?
3. Does the company have the budget to develop the product?
4. Is there any reason why the company would be unwilling to work with the institution/scientist?

It is often difficult to get accurate answers to these questions. The company contact may not be able to answer them, which may require the technology transfer manager to try to get the company to open up and explain its position. A simple tip is to ask questions beginning with the words “who, what, when, where, and why.” With these types of questions, the contact cannot give a simple yes or no answer. Most importantly, the TTO manager must remember to listen after asking the question! It is pointless to ask a question and then have a colleague (or yourself) answer it instead of the customer.

5. KEY QUALIFYING QUESTIONS

5.1 Does the technology fit the need?

The good way to start is by asking, clearly, whether the technology field matches the company’s current business development strategy. The question should be posed to the scientific contact at the company, as well as to the business contact, preferably at the executive level or at least with the top business development manager. The technology transfer manager should be on the lookout for company scientists eager to work in an area that does not match the company’s overall business goals. While such scientists may have the capability to fund initial work for the technology,
he or she will most likely be unable to move the technology any further.

Asking for a review of the company’s business strategy is appropriate, and good customers will want to provide this—confidentially—to ensure that everyone knows where this potential partnership would fit. After all, the company’s scientific efforts must be matched with its marketing endeavors for a licensed technology to be commercialized.

The company should also be able to provide a sense of the market for the proposed product. Such information should include market size, trends, participants, and contacts, as well as recent deals relevant to the market and the company’s overall approach to the market. Specific questions might include the following:

- Does the product fit into an easily identified market niche?
- What is the total market potential (range)?
- How fast is the overall market growing?
- Is the market prone to frequent innovation or is it a traditional/static market?
- Is market demand stable, cyclical, or seasonal?
- How many major competitors exist?
- Is market power diffused among many participants or concentrated in a few?
- Is the market characterized by critical price constraints, (for example, regulation, industry, association, dominant price leader, and so on)?
- Are competitors generally aggressive or relatively passive in their marketing?
- Are others working on similar developments?
- What competing research/development efforts exist?
- How easy would it be to duplicate the product?
- At what stage of development are others involved in this area of technology?
- How large are barriers to entry in this industry?
- How large a market share would be required to achieve the company’s objectives?
- How fast will consumers recognize and respond to this innovation when available?

Ideally, both parties come to the table with a clear idea of their needs. The TTO will have a list of the strengths of the technology, the strengths of the investigator, and the strengths of the institution, while the company will arrive with a clear definition of what it needs to accomplish its strategic goals. A close match will allow the manager to move on to the next qualifying question.

5.2 **Do time frames mesh?**

Where does the project fit in with the company’s development plans? The due diligence clauses in the contract need to match the answer to this question. The technology transfer manager might have negotiated a terrific royalty on product sales, but the company may not have plans to insert the technology into its product development group until the year 2015. Reviewing the business plan would be helpful in assessing the intentions of the company.

The company needs to express its intent to commercialize the technology in an acceptable time frame in order for the negotiation to proceed. Too many TTOs have been surprised by their partners’ lack of diligence, and asking this question in the beginning establishes the groundwork for moving on to the next qualifying question. Diligence can be ensured by attaching milestone payments, minimum annual royalties, or research-funding-level commitments to development activities.

5.3 **Is the company’s budget adequate?**

How much money does the company have budgeted to develop this technology? The answer must match both the institution’s and the company’s needs. Will the scientist be comfortable with this level of funding? What research should be carried out at the company versus at the institution? The answers to these questions may reveal a flaw in the company’s intentions. For example, it may desperately want this technology to round out a portfolio that would help the company raise additional funds but not really have the budget to undertake the project. The TTO might then miss the opportunity to license the technology to another party who has adequate funding available.
Typically, this question can come down to a company having any funds versus having the right funds. While having “any funds” may be acceptable, all involved need to understand this prior to entering into an agreement.

5.4 Do prejudices exist?
Prejudice against an institution, TTO, or scientist should not be overlooked in the qualification process. The TTO, for example, may have found the ideal company for commercializing a technology, but it turns out that the scientist is a leading consultant for the competition. Or perhaps the company has a major program in this field with another institution, and wants to avoid diluting its efforts. Perhaps previous negotiations with the company have been poorly handled, and so the company is reluctant to negotiate with the institution again.

Such prejudices need to be addressed. Any of these situations can cause negotiations to break down or even never begin. If historical prejudice involved former personnel or a situation that no longer exists, then the prejudice may be irrelevant, but there need to be assurances from the company.

6. MARKETING PACKAGE

6.1 Tailoring to your customer
The marketing package depends on the stage of customer qualification. Initially, when inventory is made, a short, nonconfidential abstract of the technology should be prepared. Organizing these abstracts by market segment allows the TTO to provide tailored packages to prospects. The technology transfer manager must understand that industrial business development offices receive hundreds of technology proposals. Proposals that align with the interests of such offices will have a much better chance of getting attention. Do not, however, overplay this aspect. Potential customers will reveal their level of market knowledge when they are qualified in the “technology to fit the need” questioning. It is extremely dangerous to tell a company how to conduct business in its field, even if a scientist thinks the company is approaching it incorrectly. Boxes 1 and 2 present two approaches for initiating the search for a company to license and develop a technology. Rifle-shot marketing⁴ (Box 1) is most appropriate when the TTO has a handful of good partnering prospects. The shotgun-marketing approach (Box 2) provides advantages for small tech-transfer offices.⁵ It is a no-frills approach that allows for a wide range of notification without a huge investment of time, but it requires careful orchestration.

An up-to-date Web site, with available technologies easily accessible, will augment your marketing approach. Make it easy for customers to navigate to a technology area and provide your nonconfidential abstracts. It could also be helpful to allow a link to pdf files of the abstract and of other publications so that the person searching can easily share the information with other internal staff. The TTO might also consider developing a list of quick pitches on video with the investigator taking 3–4 minutes to explain the technology. Technology today can produce videos relatively inexpensively, and setting a goal of adding 1–2 per month will help build the inventory without diverting too much energy from other tasks.

6.2 Getting it (confidentially?) right
An even more targeted approach than that of rifle-shot marketing will give the right information, to the right person, at the right time. Such precision requires a tremendous amount of effort, and managers should evaluate the opportunity cost of pursuing this approach in relation to other technologies that could be marketed using other methods. To pursue the “right-right-right-right” method,⁶ be sure to offer the “right information” including:

- title
- abstract
- patent or serial number
- summaries and digests
- catalogs and lists
- patent applications
- venture summaries
- business plan outline
- inventor discussions

As far as knowing how much information to give—and the form in which to give it—be sure to emphasize the benefits of the invention rather than its features. Describe what the invention
Box 1: Rifle-Shot Marketing

1. Present to one company at a time (or at most three or four).
2. Do not spend time and money publishing lists of “available cases.”
3. Present technologies handpicked for your contacts—but do not wear out your welcome.
4. Send as much nonconfidential information as you can, including published papers, if possible.
5. Do not send confidential information uninvited, but include a confidentiality agreement for easy access to more information.
6. Include the names of all the inventors; for example, “R. Jones and Albert Einstein” not “Jones, et al.”
7. Send a cover letter that explains:
   • what the case is all about (one paragraph)
   • why the case might interest the company
   • what the licensing situation is
   • how to get more information
8. Don’t be unnecessarily protective of information.
9. Do answer phone calls and letters promptly.

Box 2: Shotgun Marketing

Principle features of the shotgun marketing approach:

• many companies notified at once
• “cold mailings” used instead of targeted mailings
• preference to hit “more” instead of “less”
• follow-up time reduced

Special techniques for using the shotgun approach:

• provide a marketing package with a nonconfidential abstract for the invention/technology
• use letterhead, stationery, and other paper goods that clearly identify the institution
• use careful selection criteria to identify marketing targets
• maintain as much contact as possible with technology liaisons of the primary marketing targets
• explain to potential licensees why you are using this approach
does rather than how it does it. Compare the invention to one or more current alternatives, and highlight the invention’s advantages but be prepared to knowledgeably discuss its disadvantages. Identify and evaluate the market potential, estimate production methods (and costs, if possible), and estimate the investment required to commercialize the invention. For the latter, be sure to consider what other technical, marketing, or distribution resources would be required. Also, share knowledge you may have of any regulatory, governmental, or other factors that are important to commercializing the particular technology. Finally, develop an intuitive feel for how the invention would fit in a company’s strategic technical plans. As part of this attempt, try to use a title that will have marketing appeal, instead of a patent-type title. For example, turn “Synthesis of Conducting Tim Films by Nitridation of Spin-on Oxides” into “Improved Fabrication for Titanium Nitride Films Using a Sol-Gel Process.” This will show that you have carefully thought not only about how the potential product would fit into the company’s product portfolio but also how it might fit more generally into the market.

To get your information into the “right hands” at the “right company,” you will need to have identified who the “right hands” are. Consider what company level or function is most suitable for your pitch:

- top: chief executive officer, president, general manager, vice president, director
- bottom: scientist, engineer, operations staff, marketing/sales personnel
- middle: licensing, patent counsel, tech transfer
- by function: R&D, engineering, marketing, business development

Be sure to take full advantage of alumni employees, departed inventors, and others who may still have very useful contacts and information that can help you get your materials into the right hands. Of course, before you can identify the right hands, you will need to have identified the right company. Resources for finding the right company include:

- inventors
- online services
- business directories
- trade journals
- professional and trade associations
- scientific conference attendees/speakers
- government contacts (for example, Small Business Innovation Research grantees)

To find the right time to contact the right hand at the right company with the right information, you will need to be aware of changes in government regulation, shifts in business focus, external circumstances (for example, war or macroeconomic changes), personnel changes, technical breakthroughs, and other relevant current events. Think hard, then roll the dice.

It is possible to provide even more detailed information after confidentiality agreements have been signed. But more and more companies are scrutinizing their willingness to sign such agreements, especially for devices. At any rate, in confidence, more scientific detail may be provided, including a more detailed patent-status description. Depending upon the opportunity’s potential size, the TTO may go further and provide a full business plan to prospective investors.

The key to any successful information package is to find answers to as many questions as possible as to what companies would partner well with the institution, and then tailor the package to handle any objections raised by the customer. Be sure to emphasize the benefits of the invention related to the market. For example, could the invention lead to any of following?

- a product or service that performs an entirely new function
- improved performance of an existing function
- improved manufacture of an existing product
- additional functions of an existing product
- an existing product in a new market
- integration of two existing products

If the answer is yes, be sure to say so. Finally, and most importantly, follow up and keep track of contacts.
7. CLOSING THE TRANSACTION

7.1 Terms
Hopefully, the basic terms of the technology transfer will become evident after the qualification effort is complete. However, it would not be unusual for the terms to reveal the true answers to qualification questions. This is when it is critical for both sides to really understand what is expected from each party. Budget and remuneration issues should certainly be resolved at this stage and not left to the execution copy stage.

The technology transfer manager should not take a term sheet lightly. The institution attorney will caution the TTO that the term sheet could be construed as a binding document. Therefore, it should not be used for loose negotiating, but instead as a sincere effort to understand each other's responsibilities for the transaction. This includes not only the financial commitments, but the personnel, laboratory, institutional, and corporate resource commitments.

7.2 Transaction time and negotiation process
Transaction time, or the time taken to negotiate a contract from start to finish, is critical to the TTO if it is going to keep up versus build up its inventory. Lengthy negotiations, long meetings without agendas or outcomes, and lack of preparation all contribute to prejudices that could interfere with current and future transactions.

The technology transfer manager should keep in mind that royalties cannot begin without the completion of the transaction. A six-month delay due to a lack of focus or commitment may mean six months of lost revenue to the company and lost royalties to the institution. Moreover, competitive technologies often have a limited window of opportunity. It is a real disservice to all involved if an opportunity is missed because of an inability to work through the issues. One should always remember that, instead of languishing, it is usually better to determine quickly that a potential partner is not actually a qualified customer and then move on to another party that is more capable. The TTO has to look at such options as an opportunity cost: there are always other cases that could be moved forward but for a delayed qualification process.

This author has found it helpful as a member of a technology transfer department to review regularly the top three to six projects that are nearest to closing. Department members contribute to the process by suggesting ways to move things toward closing. The exercise also reminds the professional to spend an appropriate amount of time completing the task. In short, the TTO often needs to be the facilitator as much as the negotiator.

7.3 Follow up
The signatures on the execution copy of the contract are usually (1) the signal for celebration and (2) the opportunity to move on to the next case. However, the follow-up to a contract is often overlooked, and this can be a costly mistake. One must maintain contact in order to ensure that the company's original goals with respect to the technology remain the same. Be aware that the company may have been saying yes, when it really meant no, to questions during deal negotiations or during the ongoing commercialization of the institution's technology. This indecision can manifest itself when the TTO has presented a technology to a company that either does not want to, or cannot, make a decision about commercialization. The institution, for example, may be a big customer of the company's existing products, and the company does not want to upset the current relationship by passing on an opportunity to license a technology. But because the company does not know what to do, it does nothing, and the technology sits.

There is also no alternative to tracking contracts to make sure that payments are made and milestones are reached. Indeed, the diligence of all parties needs to be assured in order to eventually see a product enter the market. A database program should be used to automatically flag events, activities, and payments so that the TTO can more effectively follow up with the sponsor, collect fees, and monitor progress. By following up and measuring the success of a program, one gains useful information for future contracts. Indeed, a relationship can be built with the company that allows for more-efficient future negotiations.
8. CONCLUSION
Marketing intellectual property has unique challenges, not the least of which is trying to sell undeveloped (and, therefore, unproven) technology. The intangible and uncertain nature makes finding companies to develop such technology difficult, and yet critical to bringing the technology to market. Taking the many special considerations into account, marketing intellectual property can keep a technology transfer manager on top of IP developments at his or her institution, be an intellectually and socially stimulating part of the job, and be a successful foundational element of a TTO’s overall achievements.

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1. For example, ALITM lists, on its Web site, Technology Transfer Offices and companies that support technology transfer activity. www.autm.net/directory/search.org_results.cfm?searchby=all.
4. Special thanks to Lita Nelsen for this outline.
5. Special thanks to Connie Armentrout for this information.
6. Special thanks to Richard (Dick) Cahoon for this information.