



Best Practices in Centralization, Coordination, and Consolidation in University Technology Transfer Offices

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Whether they are called the technology transfer office (TTOs), the office of technology management (OTM), or the university's research foundation (RF), these organizations face many challenges in their efforts to move their academic researchers' innovations, technologies, and other intellectual property (IP) into the commercial marketplace quickly, cost-effectively, and successfully. In the author's more than 15 years of examining and working directly with technology transfer programs at major research universities and other large institutions in the U.S. and abroad, experience has shown that a certain level of centralization, coordination, and consolidation greatly aids in the efficiency and effectiveness of these programs.

Universities vary greatly in their technology transfer structure, both at the campus level and (for large, multi-campus institutions) at the institutional level. The same is true for federal agencies that have oversight for multiple research laboratories, such as the Department of Energy and the National Aeronautics and Space Administration (NASA). This paper discusses best practices for implementing:

- Centralization within a single campus
- Coordination across multiple campuses
- Consolidation across multiple campuses

Although written with a focus on universities, the principles and practices are applicable to federal laboratories as well.

Centralization on Campus

Some technology transfer programs—whether part of a large, multi-campus state university or within a single-campus private institution—employ a distributed, decentralized format. Under this structure, a TTO's technology managers (TMs) are located within the buildings of the colleges (or departments) they represent. By collocating TMs with researchers, such TTOs seek to become familiar with the researchers and their innovations. Although such familiarity is essential for successful technology commercialization, this structure has several disadvantages.

A key disadvantage of the decentralized, one-office-per-college model is that each college tends to set its own expectations and responsibilities for the TM. As a result, TMs often are asked to perform college-specific tasks that do not directly relate to the TTO's goals, taking away valuable time from marketing and licensing activities. Because the colleges provide the office space—and, in some cases, part of a TM's salary—the TMs tend to place a high priority on these college-specific, non-TTO-related tasks. Additionally, the colleges will often dictate the criteria for selecting technologies for commercialization based on internal stakeholder pressures rather than market-based factors. This can cause inconsistencies in quality and decision making, setting



precedents that will be costly in the near term and problematic in the long term (e.g., raising questions among faculty and the university administration).

Even when TMs are focused on TTO activities, being in decentralized offices requires that they spend excessive time on administrative tasks, such as record keeping and filing documents. This inefficiency is at least partially linked to the fact that TTO-specific support staff are not conveniently located near the TMs and are not in one shared office space.

Advantages of Centralizing Technology Managers in a Single Office

- ✓ TMs focus on tech transfer tasks rather than unrelated, college-specific tasks.
- ✓ Commercialization decisions are made based on market factors rather than internal pressures.
- ✓ TMs spend less time on administrative tasks.
- ✓ TMs can better share knowledge and cooperate with their tech transfer colleagues.

TMs are further hamstrung in their work by being isolated from their TTO colleagues, inhibiting team building, knowledge sharing, and cooperation. Therefore, gains in familiarity with college's researchers and their technologies are offset by losses due to the "disconnect" from TTO professionals.

Therefore, best practice is to centralize the TTO's technology managers and operations in a single office space with the TMs regularly visiting the individual colleges and inventors to establish an appropriate level of familiarity. In some cases, it may be appropriate for the TM to have a desk located among the college/department researchers. TMs could establish a once-a-week "residency" schedule. Whatever format is appropriate can be used, provided that TMs do not lose sight of the larger institution's goals for technology transfer in favor of the individual college/department's goals.

Implementing the solution

A key part of implementing this change is for the university's leadership to clearly communicate to the colleges that centralization of the TMs, as well as the TTO as a whole, enables even higher levels of service to the faculty. Such communication is most successful when it describes the advantages of the centralized structure. The advantages that are relevant to the faculty include improved capabilities in seeking qualified licensees by leveraging all TTO resources rather than just the individual assigned to the college as well as easier and more consistent processes for inventors and licensees working with the TTO.

In cases where the TTO and the college share the financing of the TM position, a new financing arrangement may be required. Having the college continue to provide partial funding for the TM increases the likelihood that the college will inappropriately encroach on the responsibilities and allocation of time of the TM. The university should view the TTO staff as a support function across the entire university, much like the research contracting function.



Expected results

Bringing the TMs into a single office location will greatly enhance the opportunities for increased teaming and sharing of information. Sharing their experiences, best practices, licensing results, and marketing contacts likely will result in an increased level of service back to the specific college and increased job performance efficiency, since TMs can more easily learn from each other and benefit from the synergies of a teaming environment. Being in a single office area will also make it easier for each TM to be aware of and adhere to a consistent set of criteria and procedures. Elimination of one-off processes and documents will lead to a significant time savings and will reduce frustration from inventors and licensees who previously may have had to learn a new way of doing business for each individual TM with which they worked.

The chances that TMs will be asked to perform college-specific activities not related to TTO goals will be dramatically reduced when they are not physically located at the college. Similarly, once centralized into a single office, the TMs can call upon the TTO support staff to perform many of the administrative tasks that they currently must perform themselves. This will free up even more of the TMs' time to focus on marketing and licensing efforts while being more cost-efficient for the TTO.

Finally, centralizing the TMs allows the TTO to commit resources to the colleges and technologies with the most market promise rather than an even distribution across all colleges.

Coordination across Campuses

This section applies to large institutions—particularly multi-campus state-funded university systems—where each campus has its own TTO. Because of the many potential operating efficiencies and cost savings offered by cross-campus coordination, this section defines and provides guidance for implementing such a structure.

Cross-campus coordination is not dependent on where the TTOs fit within the larger university's or within a specific campus's organizational structures. The university might structure its TTOs as having campus-specific offices reporting separately to each campus's leadership. Conversely, each campus's TTO director could report to a single university administrator.

Advantages of Coordinating Tech Transfer across Campuses

- ✓ Ensures clear communication across campuses
- ✓ Facilitates consistent decision making and performance evaluation
- ✓ Presents a unified image of tech transfer to the university and of the university to industry
- ✓ Maximizes operational and financial efficiencies

Regardless, the staff required at each campus's TTO is essentially the same, assuming relatively comparable amounts of research and innovation are occurring at each campus. Eventually some consolidation of infrastructure activities can be pursued (see the "Consolidation across Campuses" section below), but it is highly recommended that per-campus offices currently



lacking coordination first have the opportunity to restructure, stabilize, and enjoy the benefits of cross-campus coordination.

Below are best practices for cross-campus coordination in three areas: standard technology management procedures, shared information technology (IT) systems, and common structural elements. It should be noted that the implementation of these best practices must itself be coordinated. Specifically, a joint team composed of representatives across all campus TTOs can advise TTO leadership, monitor the implementation of a shared/coordinated technology management process, and counsel TTO leadership on other issues that might arise relating to the office's functions.

Standard technology management procedures

Having standard procedures from campus to campus for managing faculty technology and other IP helps ensure clear communication across campuses, facilitates consistent decision making, presents a unified image of the university, and maximizes operational efficiencies.

Standard invention disclosure form. Review and combine each campus's disclosure forms to create a single form used by all campuses. Using the same form throughout the university ensures that—when it is made available to faculty online—IT systems can communicate with each other. Although some differences in required information will exist (e.g., pharmaceutical technologies will have clinical fields that are not relevant to engineering technologies), the general layout of the form and most of the information provided will be similar.

Standard criteria for decision making. Applying market-based criteria for selecting which technologies will be patented and marketed is critical. Developing a single process and basic criteria across the university's campuses allows resources to be devoted to the technologies that have the greatest commercialization potential rather than political pressure. It also reduces the time spent responding to faculty about why they are not receiving more resources—a market-based assessment removes all other volatile issues from the discussion and is rarely challenged by faculty once they understand the business analysis behind the decision.

Standard format for evaluating technology. The format for technology screening, assessment, or other evaluation reports should be standardized across all technical areas but also across campuses.¹ Standardizing the report facilitates information sharing by using a “common language” and becomes familiar and comfortable for faculty since it is repeated for all inventions. A common format goes a long way toward ensuring that resource decisions will be made consistently and evenly across the university's entire IP portfolio. Similarly, consistency makes it easy to identify any technologies that are best offered and marketed as a group,

¹ For a broader discussion about evaluating technologies and other innovations, see (1) “Getting to the Best First: Proactive, Efficient, and Effective IP Screening,” by Laura A. Schoppe, published in the June 2004 issue of *les Nouvelles*, the journal of the Licensing Executives Society and (2) “Extracting Value from Your Patent Portfolio,” in *The PDMA Handbook of New Product Development* (Hoboken: John Wiley & Sons, Inc., 2005).



regardless of which campus was the source of the innovation (see “Shared marketing information” below).

Standard marketing materials. Giving Web sites and other marketing materials a standardized “look and feel” creates a single image or brand for the university’s innovations. This is particularly important because the same potential licensees might be contacted independently by more than one campus’s TTO, and they should not perceive the individual campuses as being different organizations. Furthermore, since licensees do not care which campus has the technology solution they need, each campus’s technologies must be accessible through searches on every other campus’s TTO Web site.

Shared marketing information. Look for opportunities to combine individual TTOs’ marketing activities and relationships. For example, before beginning to market a technology, one TTO communicates the opportunity to the others in case those campuses have additional IP that could be bundled together to strengthen the technology package being offered. As another example, one campus’s TTO might have contacts in its marketing files that could benefit another campus’s technology marketing efforts. Such cooperative efforts are greatly enhanced by a shared marketing database system (see the “Shared IT systems” section below).

Equivalent licensing templates. Create templates with standard language for the four most common types of license scenarios: exclusive for equity, exclusive for nonequity, nonexclusive for equity, and nonexclusive for nonequity. Have legal counsel across the campuses work together to develop the templates, ensuring they can be readily used throughout the university. Such templates reduce the risk of inappropriate or omitted terms and conditions while also reducing the amount of time it takes to negotiate a license and have it reviewed and approved by legal counsel. Companies also appreciate templates so they know what the university expects regarding terms and conditions as well as its preferred language. Furthermore, the company’s lawyers typically will need less time to review changes to the template than to negotiate a unique agreement. The specific business terms (e.g., royalty rates, milestones, minimums) will be negotiated for each technology deal and can become an addendum to the license agreement to make it easier to review, without requiring a modification to the base license agreement.

Shared IT systems

For all of a university’s TTOs to successfully coordinate their activities and share information, each campus’s data must be easily accessible by and compatible with the other. Such data sharing demands the implementation of some common IT systems.

Technology tracking system. Implementing a common database management system that is accessible across all TTO locations via the Web will achieve many operational efficiencies. Financial efficiencies also are possible, since any updates or other ongoing technical requirements that will be needed will cost less with a single joint system than with multiple separate systems. Ideally, such a system is capable of tracking the technology management process from invention disclosure through technology evaluation, marketing, deal-making and even the monitoring and follow-up of established agreements. Several off-the-shelf systems



already exist and should be evaluated to determine the best fit for the entire university (e.g., Sophia, Inteum). Ideally, the database system will also have a “one-click” connection to a Web portal (e.g., Flintbox, yet2.com) to post technologies being marketed (see below).

Marketing database. Having a common marketing database—one that is compatible with the technology tracking system described above—also is helpful when coordinating TTO activities across multiple campuses. The best of these systems are capable of tracking marketing contacts as well as identifying additional licensing opportunities for potential licensees. A system with the ability to track conversations with potential licensees, their contact information, and their areas of technology interest greatly increases the effectiveness of the university’s targeted marketing efforts as well as provide operational efficiencies.

Common Structural Elements

In addition to procedures and IT systems, having some uniformity to the structure of each TTO across all of the campuses in the university system has many advantages, as discussed below.

Job titles. Using consistent titles for the TTO staff across all campuses avoids confusion over the lines of authority, particularly for those outside of the TTO.

Metrics.² Evaluating TTO personnel consistently across all campuses—using performance-based metrics that can be tied to the goals and outcomes of the TTOs—ensures apples-to-apples comparisons of TTOs’ performance while enhancing morale and a positive, productive spirit of “cooperation” (cooperation is part of the evaluation criteria so that they may compete but also combine their metrics to help each other meet goals).

Financial reporting. Using a common financial reporting process with financial budgets and reports in the same format allows performance to be tracked in the same level of detail on a timely basis across all campuses. Most commercially available TTO databases also include financial management modules.

Board of advisors. Having all TTOs governed by a single Board of Advisors, composed of equal representation from each campus as well as including university system and external representation, helps ensure seamless and constant leadership direction, delivery of consistent messages to all TTO locations, and an open channel for communication among the campuses while also facilitating teaming opportunities. In addition, a single Board of Advisors can more efficiently manage the common elements of the technology management methodology and organizational structure, monitor TTOs’ performance against common goals, and track these items against the university’s economic development or other goals than could separate, campus-specific boards.

² For more on the use of appropriate metrics for TTOs, see “How’d We Do: Establishing Useful Technology Transfer Metrics,” which is available at <http://www.fuentek.com/publications.htm>



External consultants. Significant operational efficiencies can be achieved by striving for consistency among the TTOs in regards to consulting contracts and pooled resources. Allowing individual offices to establish contracts with external consultants results in inconsistencies regarding deliverables, performance, risk management, and engagement structure. It also inhibits—or in some cases might preclude—the ability of information to be shared across campuses for cross-campus benefit. Conversely, awarding consulting contracts at the Board of Advisors level allow for consistent support and knowledge transfer across all campuses. (Again, more about this concept appears in the next section.)

Consolidation across Campuses

Many multi-campus universities employ a fully distributed structure for their TTOs. They have similar offices at each campus performing similar technology transfer activities. However, this approach has several drawbacks that could be addressed by consolidating the technology transfer program across campuses.

To be crystal clear: Fuentek does *not* advocate the elimination of on-campus TTOs. Such on-the-ground support is absolutely essential to a technology transfer program’s success. Rather, Fuentek recommends that some—but not all—technology transfer activities be consolidated within a single organization that serves all campuses.

The distributed model and its drawbacks

In the distributed model, each campus has its own TTO, which may or may not coordinate with each other (as discussed in the previous section). These offices handle the full technology transfer lifecycle—from technology evaluation to marketing to deal negotiations—as well as ancillary activities such as training faculty researchers on the importance of technology transfer and general outreach to industry promoting the university as a source for innovation.

This distributed structure results in an extensive amount of redundancy, duplication, and (paradoxically) inadequacies. It is not the most efficient use of the university’s financial resources, and every campus is left wanting.

Consider technology evaluation as an example. This is the process of looking at market factors to determine a technology’s commercialization potential, thereby making an informed patenting and other disposition decisions. To explore all of the technical factors and specific market size and trend issues associated with a specific technology, the TTO evaluator must have significant expertise in the relevant technical area (e.g.,

How Campuses Currently Address the Staffing Problem

Some campus-based (and non-university) TTOs use external consultants to complement their in-house staff. External consultants allow the TTO to expand its technical capabilities and business acumen significantly. Because the TTO can “pick and choose” their involvement as needed, external consultants are a cost-effective resource. The same rationale for leveraging the just-in-time staffing offered by external consultants applies to the concept of cross-campus consolidation, whereby all campuses receive adequate technology transfer support as needed while costing the entire university system less.



mechanical engineering, life sciences, materials, information technology) as well as business acumen. For a campus with a diverse range of research feeding into the IP portfolio, the TTO would have to employ dozens of staff. No state university campus has the financial resources to support such extensive staffing (and even if it did, the campus TTO would be using its resources inefficiently). Therefore, each TTO can hire only a few of the needed evaluators, who are then required to assess the commercialization potential of technologies that are outside of their realm of expertise, compromising the commercialization decision-making process. Not only is a mismatch of technical expertise being used, but the evaluation process (if it happens at all) takes longer due to that lack of knowledge, leading to a bottleneck and the creation of a significant backlog.

Decisions can be further compromised by “local politics,” whereby a provincial and squeaky-wheel focus prevails, influencing commercialization decisions that should be driven solely by market factors. Other compromises occur in “forced equality” situations, where resources are directed at each campus equally. Such an approach presumes that the “best” opportunities from each campus are equally strong. But the fact is, the “first best” at one campus might have less potential for success than the “tenth best” at another campus.

Conversely, budgets that are tied to the amount of innovation emerging from each campus can be problematic. For example, a low-innovation campus that is allocated few TTO resources might produce a technology that would be a commercialization gem. Yet because few resources are allocated to that campus’s TTO and they may not have the technical background to recognize the commercial applications, the opportunity slips through the cracks and is lost.

Put simply, the fully distributed model is less effective cost-wise and in terms of decision quality.

Consolidation is the solution

Consolidating a university system’s technology transfer activities into a single organization allows for the rapid and easy redistribution of technology transfer resources on an as-needed basis and ensures decisions based upon what is best for the university as a whole. Such an organization can be structured in several ways:

- It can be a service-based organization that supports all campuses with certain activities, such as technology evaluation, market research, patenting, and training of faculty researchers.
- It can have decision-making budgetary authority, selecting technologies for commercialization, implementing the marketing strategy, and negotiating agreements.
- It can be a separate, non-university, not-for-profit entity that is the assignee for the entire university system’s IP portfolio and, therefore, manages the entire technology transfer process.

Again, ***Fuentek is not advocating the elimination of individual campus-based TTO representation.*** Even in the most consolidated model (i.e., the third option above), an on-campus presence is essential to identify opportunities and inspire faculty researchers to



participate in the technology transfer process. (To put it bluntly: If your researchers aren't filing their invention disclosures, you won't have any technologies to transfer.)

Nevertheless, cross-campus consolidation makes the technology transfer process more proactive, addressing market needs and ensuring that resources are consistently directed at the innovations with the greatest potential for commercialization success, regardless of which campus was that technology's home.

Leadership Makes It a Reality

The overall success of efforts to centralize, coordinate, and/or consolidate a university's TTOs—as described in this paper—is highly dependent upon institutional leadership, both by the TTO's director as well as senior management. For example, allocating the budgetary resources needed to make the university's goals for technology management and transfer achievable clearly conveys the leadership's commitment to centralization, coordination, and or consolidation. In particular, the budgetary allocation to each TTO must be rational, based on their respective caseloads and the resources needed to operate the office effectively.

In cases where a separate organization has been established to lead the formation of start-ups, Fuentek recommends that the leadership for the TTOs, the start-up support venture, and the university jointly develop guidelines and policies to clarify the expectations and responsibilities of each organization and communicate these guidelines to the respective organizations.

By establishing and communicating a shared commitment to centralization, cooperation, and/or consolidation—and providing the required financial resources—an institution can truly achieve the efficiencies, cost savings, and improvements in effectiveness described in this paper.

If you would like to discuss the concepts presented in this paper in further detail, please contact Fuentek president Laura Schoppe (919-249-0327 or info@fuentek.com).