Models for Managing Access to University Resources

What kind of person can best construct a bridge between the university and the community? How do we go about building this bridge? Four people who have taken on this role — that of a "linker," a spanner of knowledge boundaries — discuss their function and effectiveness. The use of linkers is one model used at Michigan State University for managing access to university resources. Linkers are specialized professionals responsible for describing their units' outreach capacity to potential users, translating user needs into projects valuable to a research faculty, brokering contracts between faculty and outside groups, and ensuring that the university remains responsive to the user's needs.

The four presenters came to their roles in different ways, and each performs his or her job differently. Nonetheless, each possesses the characteristics of a linker depicted by Mary Walshok in her new book, *Knowledge Without Boundaries:* 1) advanced academic credentials in content areas for which they are responsible, 2) hands-on experience, 3) a professional commitment to the knowledge-linking role, 4) knowledge of how to facilitate problem solving, 5) strong linking-leadership abilities, 6) skill at articulating and communicating information, and 7) the ability to manage budgets.

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Linking Engineering

From the beginning, engineering has been involved in manufacturing development at the basic research levels, where an attempt is made to "model the world," and in problem solving, where incremental product/process improvements are the focus. In recent years there has been the rise of "concurrent engineering." This is where design engineering works with manufacturing, marketing, and accounting as a team. These teams can serve a variety of functions, and can even function as virtual corporations with several teams coming together to address issues. Embedded in the concurrent engineering movement is the notion that engineers need to be familiar with manufacturing and business issues. Business demands are driving engineers to move beyond what they normally do and to be part of a different kind of relationship.

According to Michael Martin, associate director of the Network for Excellence in Manufacturing On-Line and manager of technology transfer in the MSU College of Engineering, universities are in a unique position to help businesses address issues which are important to them. The parties involved in this relationship, however, come from different cultures. The mission of the university is to create and disseminate knowledge. The mission of a business or governmental unit is to maximize the investment of stockholders. These groups speak different languages. Traditional mediums of exchange involved the engineering community giving money to the university in exchange for students and ideas. Because of environmental pressures on clients (global competition,

technological change, demographic changes, etc.), and on universities (shifting sources of funding and agendas, demographic changes, etc.), this relationship is changing.

Universities are starting to see the value in collaborative efforts — collaboration across colleges and universities, and collaboration with industry. The engineering community is interested in universities as product/process/curriculum developers and as problem solvers. Universities want to bring capabilities to clients through research. Unfortunately, while university faculty are interested in basic research, clients seek practical problem solving.

How do linkers bring the two groups together? It is Martin's experience first to seek out those in both organizations who are willing and able to play the liaison and resources roles and establish relationships. Then, between them problems are translated into interesting challenges and additional resources are identified. Linkers do not manage the projects themselves, do not sell or deliver the actual product, but rather facilitate and create opportunities.

Linking with Government

Working with the Michigan state government human services agencies and with the United Way of Michigan, Annette Abrams, assistant director of university outreach at MSU, understands the importance of engaging external sectors and helping them to understand the benefits of research. Critical to this engagement process is the identification of research questions which are embedded in the problems faced. That is where the point of mutual interest can be found.

In her work, she has encountered three primary audiences that she needed to be concerned with: 1) community members, 2) policymakers, and 3) faculty, administrators, and students.

As a linker, Abrams works with each audience to help them realize what MSU could offer, and does so using their own language. Linking is more than bridge building. It involves taking a long hard look at a project and applying a relevant knowledge base to it.

Linking with Business

According to William A. Hetzner, director of the Network for Excellence in Manufacturing On-Line, to understand business linking and its impact, it is first necessary to understand the situational context within which such a linker operates.

The university context of the business linker is quite complex. Universities have typically regarded business colleges as "cash cows," representing a quick and easy way for the university to make money. As a

result, business colleges and business faculty members have developed an academic inferiority complex. Forces are at work to change, however, and business schools are beginning to make the transition from being considered professional schools to being regarded as colleges. As part of this process, it is becoming more important for business faculty to do research and publish in reputable research journals. At the same time, however, business faculty do not want to give up lucrative consulting work, nor do they typically understand the problems faced by small to mid-size businesses.

The manufacturing client base is complex as well. There are a few large original equipment manufacturers (OEMs) in the state, and these have considerable resources, have a long-term, problem solving orientation, and are generally used to seeking outside help. Their expectations for the quality of the help they will receive are increasing. Serving these organizations are a large number of suppliers who possess limited resources to meet these demands.

The role of the linker is multifaceted, and he or she must take on both a project role and a programmatic role. The linker must interact with funding agencies, coordinate among academic and staff units, provide the voice of the customer, and provide funding to faculty to do applied activities. In addition, the business linker should provide referrals to service providers, aggregate research needs, identify interested faculty, help find research sites, and help find additional funding.

Universities and business firms accrue many benefits as a result of linking activities. For example, universities receive praise for community service behaviors, and faculty members can increase sample sizes for their studies and support additional graduate students. Business firms are meanwhile able to obtain good, low-cost advice and assistance from an unbiased source.

Several conditions are necessary for business linker success. Administration must provide support and effective coordination with other linkers. The linker must use the existing infrastructure of the organization, must have a departmental or programmatic focus, and must be perceived by faculty as an academic insider.

Linking the Sciences

Larry Forney, associate director of the Center for Microbial Ecology and associate professor of microbiology at MSU, has a simple philosophy in doing outreach: “If you are selling, talk to the buyers. If you are trying to help, go to the people who are doing the work.” The outreach linker should focus at the problem-solving level within governmental agencies and corporations. Forney is currently taking on a variety of projects in order to increase his perceived legitimacy among those with whom he works. “All linkers have a credibility problem. The linker needs to speak

their [faculty's] language, commiserate with them about teaching, students, etc....to be a member of the club." The linker has multiple clubs of which he or she needs to be considered a member and must be perceived as administratively, economically, socially, and technically competent.

Communication of knowledge is key for the linker because "outreach is teaching." Congress recently called for universities to redefine their role. People in industry, however, felt that universities should do what they have done in the past — teach and educate students. The most significant success factor for corporations is often incremental improvement, as opposed to generating completely new technologies. Fundamental research scientists can help people do things better. As a linker, Forney tries to make research information available to people who can use it.

There are certain keys to successful outreach activity. For one, linkers must possess scientific credibility and must be able to stand on their own credentials. As a linker, Forney has often found himself in a position where he had to mediate a reasonable solution among involved parties, standing in the middle to give people the bottom line. This is where scientific credibility and raw courage come in. Linkers must also show a willingness to help; they must be willing to come to the table first, and start helping right away although it is not immediately clear where the return will be for the university. Recognizing that we are dealing with interdisciplinary problems, our approach must be interdisciplinary in bringing our resources to bear on the problems we face.

Forney and other linkers noted that cultural differences exist between faculty and external constituents. Faculty have a different agenda than constituents do (e.g., faculty's concern with publications, constituent's concern with internal rates of return). There are different time clocks (a semester schedule vs. a business schedule where results are needed immediately) and success is measured differently.

Still, many benefits come to universities for being involved in these activities. Faculty and students gain a deeper understanding of the relevance of research to real world problems, which are, in themselves, tremendous educational opportunities. Outreach experiences often point to additional opportunities for research. Both federal and corporate funding for research can be tapped. In sum, the linker can be a catalyst to create wonderful win-win opportunities for all involved parties.