

How to get the most out of academic research

Understanding the process and the resources required improves the ability to meet the project goals.

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Companies can engage with academia on various levels through educational programs and the cross-sharing of knowledge. Another channel to engagement is research—the subject of this column.

Academia can be a valuable source of innovation for companies, especially those searching for answers to specific research questions. Researchers in academia offer deep expertise, inventiveness, and, often, industry experience, and do not have an agenda to sell commercial products. However, companies must know academia’s distinguishing features to ensure project participant goals are met.

Levels of engagement

There are various ways to engage with an academic research resource. For example, companies can join existing research projects like consortia, created to focus on a particular issue or set of issues. As a member of such a group, a company exchanges ideas with other member enterprises and the academic researchers involved. Typically, the consortium has a research agenda—that corporate members help to shape—and a timetable for achieving its objectives.

Another approach is to find a researcher within an academic institution whose work

you appreciate and/or with whom you have a productive relationship. Supporting research is similar to how artists received funding hundreds of years ago. A sponsor would find an artist they favored, and fund them to create works of art, sometimes with specific objectives in mind.

A researcher might propose a project to a company he or she has identified as a likely research partner. For example, MIT CTL’s last-mile logistics team wanted to be on the bleeding edge of this field and sought innovative enterprises with which to work.

Another variation is engaging with students to meet a company’s research goals. At MIT CTL, for example, supply chain master’s students must complete a capstone project before graduating. A company can propose such a project, and the students, supervised by a faculty member, carry out the work. Sometimes a capstone can inspire a more substantial research project.

Keys to success

Regardless of which route a company takes to collaborate with academic researchers, it needs to know what to expect. We draw the following pointers from our experience of research collaborations with corporate partners.

Define the research question. This might seem obvious, but many companies are less clear on their research objectives than they assume. Goals can differ from one department or team to the next.

The problem statement must be clear and paired with a research question. A mistake we often encounter is that the statement and/or question are too general. Examples of this include asking about the availability of state-of-the-art solutions or what future developments to expect in a particular area of interest. Questions like these require assessments of trends rather than research. Companies should take time to study the issues they want to research and clarify their goals before framing problem statements and research questions.

Define what research vehicle you are looking for. For example, do you need a forum to bounce ideas and gain insights into how other companies are handling the challenges you have identified? A forum can also help to clarify what you don't know.

A consortium could be an option but be aware that the sponsor organization often tries to tailor the work toward its specific needs. This is understandable given the work a sponsor devotes to the project. A consortium may be the right vehicle if you can accept this potential restriction. If your needs are more specific, maybe an in-depth, one-on-one relationship with an academic resource is the right vehicle. Perhaps you want to break new ground, find solutions that a previous research initiative failed to deliver, or build on past research.

Some companies reach out without doing much research on their own because they require a quick briefing on key emerging issues. This approach can reflect

a lack of market knowledge and a sudden realization that the organization urgently needs to fill a knowledge gap. Do some initial research and consider your requirements before engaging with a researcher. Both parties should benefit from these exchanges.

Understand the difference between work carried out with academia and consultants. Fundamental differences between these types of relationships shape the work and expected outcomes.

Academic researchers are generally more interested in solving unique problems and publishing their discoveries than in developing commercial products or services. However, confidentiality and the commercial potential of the fruits of their research are usually foremost priorities for corporate partners.

These differences underscore the need for conversations about non-disclosure and intellectual property agreements at the outset. We find NDAs are usually only needed when the company intends to share data and/or confidential information about their practices. But even in these situations, it is often possible to set boundaries for information sharing with no formal NDAs. Of course, if the company prefers a formal agreement, that is fine. A notable difference between academic research and consultancy is that the former aims to solve problems without existing solutions, whereas the latter re-applies known solutions in different environments or with slightly different conditions. Hence, the nature of the work and the time required to complete it are quite different.

An example is a project MIT CTL completed for the sports apparel company Reebok some time ago. Details of the project are in the public domain. Reebok wanted to improve its demand forecasts for NFL jerseys after Sunday games. Our research team determined the answer was not better forecasting, but improved responsiveness and suggested a supply chain design that delivered more rapid responses. A consultant may have pursued only state-of-the-art methods for forecasting demand.

Make sure you have the right data. This requirement applies to any research initiative. It is prudent to expect a substantial data-cleaning component of the project you want to pursue. In our experience, the extra time required for collecting and cleaning data can increase a company's time estimates for this work fourfold.

Allocate the resources needed to support the project. Again, this may seem obvious, but remember that an academic department will not have student or faculty resources standing by to meet unexpected demands like a commercial partner might offer.

Also, suppose an academic research project has a relatively low priority within your busy organization. In that case, it might not command the attention—especially from your subject matter experts—that it needs to accomplish its goals. Schedule regular status project meetings to monitor progress and resource needs.

Matching outcomes with needs

For many companies, ready access to research has become a competitive necessity as the pace of change speeds up,

and they grapple with increasing supply chain complexity and market volatility. The rapid advance of innovative technologies such as artificial intelligence and the growth of automation also put a premium on new knowledge.

In this environment, innovation in and of itself is not enough. These pressures, and the importance of building on past successes, elevate the need for long-term research relationships.

One of the most important benefits academic researchers can offer is to fulfill the role of honest brokers; a source of objective, thoughtful feedback not beholden to a commercial agenda. We find companies appreciate the opportunity to refine their research goals with researchers who have deep knowledge about a particular field or application.

For their part, working with industry partners keeps academic researchers in touch with real-world problems and demands, and less prone to becoming overly focused on theory.

However, to realize these benefits, both parties need to be cognizant of their respective needs and shape research agendas accordingly. •