

## Establishing Strategic Partnerships with Universities

### ISSUE OVERVIEW: MAXIMIZING LONG-TERM VALUE CAPTURE THROUGH UNIVERSITY COLLABORATION

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University partnerships provide R&D organizations with a number of valuable resources including complementary technical expertise, insight into new research fields, and access to key sources of talent. As companies continue to increase their reliance on external innovation to fuel long-term growth, many recognize the tremendous benefits of true university 'partners.' In recent years, more R&D organizations have begun developing long-term, strategic partnerships with universities globally to achieve strong and more consistent ROI. However, building and maintaining successful university relationships still proves very challenging for companies on many levels, especially in negotiations for intellectual property protection.

Through interviews with four Council members, the following brief provides strategies to help R&D organizations develop and sustain strong university partnerships. The brief focuses specifically on identifying the right partner for collaboration, negotiating intellectual property agreements, and structuring and managing partnerships to maximize value capture.

#### KEY FINDINGS

**Although Western universities have long provided promising opportunities for collaboration, an increasing number of R&D organizations now consider academic partnerships in emerging markets.**

In response to IP negotiation challenges in developed nations, R&D organizations turn more frequently to universities in emerging markets such as China, India, and Russia for potential collaboration. These universities prove more 'sponsor' friendly and offer unique access to large pools of skilled scientists. However, companies still report challenges in generating successful research results and 'win-win' partnerships. Before collaborating with an emerging market university, R&D organizations should carefully examine a number of factors, including the potential for IP leakage and the institution's existing level of industry partnership activity.

**IP negotiations prove the most challenging roadblock to maximizing ROI from academic collaboration, but recent activity suggests that both universities and companies understand the need to adopt a more flexible approach.**

Recent reports and collaboration activity indicate that some universities recognize that restrictive IP stances damage their reputations as a strong source for industry collaboration. In addition, R&D organizations also understand that negotiation flexibility in areas that do not threaten their competitive advantage not only saves significant resources but also fosters stronger relationships and more innovative technology breakthroughs.

**Leading R&D organizations develop a centralized post that provides critical resources and support to the individual program managers/lead scientists who manage collaborative research efforts.**

Within a decentralized network of university activity, leading companies have a central individual or team that performs a number of key activities, including targeting potential partners, supporting negotiations as a liaison to legal counsel, and disseminating best practices in university relations. R&D organizations that develop a centralized post should ensure that it effectively supports the organizational structure of partnership activity and aligns collaboration with strategic objectives and business needs.

**The development of Master Sponsored Research Agreements (MSRAs) with universities provides R&D organizations with a number of critical benefits that can significantly impact ROI.**

R&D organizations that collaborate frequently with a particular university should consider initiating a master contract agreement – often called a Master Sponsored Research Agreement (MSRA). MSRAs are tailored to the business interests of both parties and provide a number of benefits, including faster negotiation timeframes, unique access to research, and more dedicated collaborations.

**To overcome relationship continuity challenges, many companies assign an individual per partnership who facilitates the regular interaction necessary to ensure relationship growth.**

Council members indicate that the largest reason newer relationships fail to grow and established partnerships suffer is because they do not maintain strong individual relationships with key faculty or department heads. To build and maintain the continuity of key interpersonal relationships, R&D organizations often delegate an individual – often referred to as a 'relationship captain' or 'alliance champion' – who serves as a critical communication channel within each strategic partnership.

#### PROFILED COMPANIES


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## Executive Summary

### The Growth of University-Industry Reliance

Global companies facilitate collaborations with universities as a valuable resource to complement their R&D activity. Universities provide R&D organizations with leading insights into new technological fields, complementary expertise in core industry areas, and unique access to the world's most qualified science and technology talent. As R&D work continues to expand globally, an increasing number of international institutions welcome and sponsor research and other collaborative activity.

In recent years, universities and global companies have increasingly relied on each other to obtain, or maintain, competitive advantage within their respective fields. The table below illustrates the primary drivers for increased collaboration:<sup>1</sup>

#### Top Reasons for Partnership: 2005 Industry-University Survey

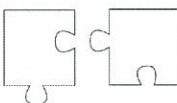
- 1) Access to technical expertise unavailable within company
- 2) Insight into new technologies
- 3) Aid in renewal and/or expansion of current products
- 4) Access to top recruiting talent
- 5) Exposure to diversity of knowledge

Source: Sricca, Cherie, *University-Industry Research Partnerships: Motivations*

#### DRIVERS OF INCREASED DEMAND FOR COLLABORATION

##### INDUSTRY

- **Growth of Open Innovation Models:** Difficulty sustaining growth through solely internal R&D requires access to greater range of external innovation sources
- **Importance of Knowledge Economy:** Increasing levels of competition and global R&D activity require stronger ties into university knowledge network
- **Diminishing Research Budgets:** Leveraging cost savings/efficiency through external alliances counters reductions in basic research and tighter R&D budgets



##### UNIVERSITIES

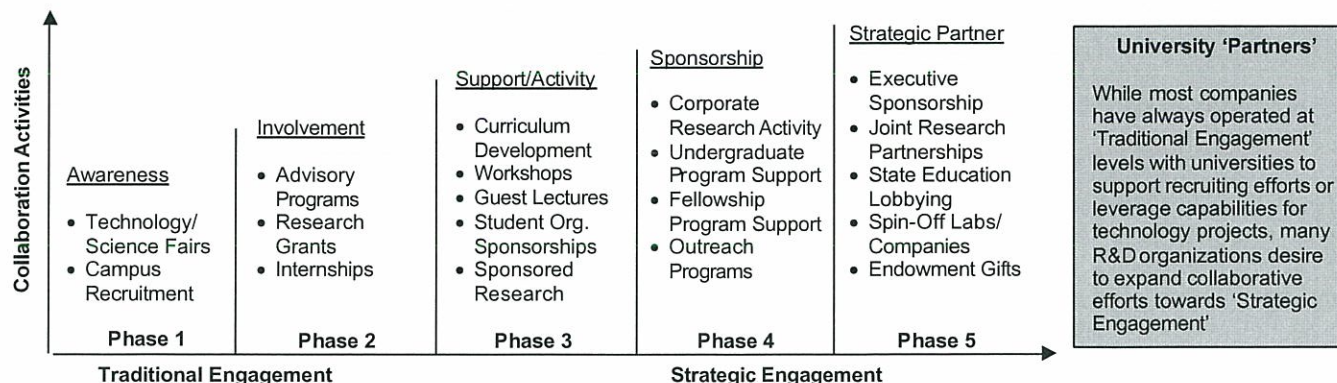
- **Pressures to Fuel Growth:** Growing state pressure on public universities to help contribute to state economic growth
- **Maintenance/Growth of Prestige:** Level of global company partnership in university research greatly improves institutional and faculty reputation
- **Diminishing Levels of Public Funding:** Decrease of federal and state budget allocation to university research requires more financial support from industry

### A Desire for 'Strategic' Collaboration

As the level of university collaboration activity increases, more companies are focusing on developing long-term, strategic partnerships with universities. Although many companies still utilize shorter, 'one-off' collaborations to complement a specific project or research area, more formalized relationships often facilitate higher value-added results for R&D organizations.<sup>2</sup>

First, more strategic partnerships ensure strong commitment and accountability in a crowding collaboration environment, in which university departments or faculty are often working simultaneously with other organizations.<sup>3</sup> Second, well-defined partnerships help streamline the contractual negotiations process, which proves the strongest impediment to effective collaboration. As a result, R&D organizations recognize the significance of universities that they value as 'partners.' Building off a model that **Hewlett Packard** utilizes to build its strategic relationships, the graphic below highlights the range of activities companies generally undertake with universities:

FIGURE 1: THE PARTNERSHIP CONTINUUM: THE DRIVE TOWARDS STRATEGIC COLLABORATION



Source: *Guiding Principles for University Endeavours*, HP Partnership Continuum, (2006); Council Research.



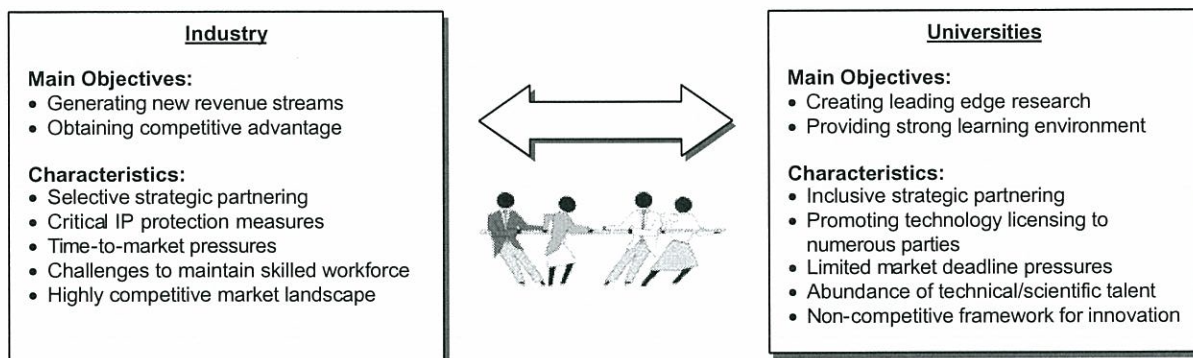
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## Executive Summary, continued





### The Perennial Challenges of Creating 'Win-Win' Partnerships

A 2003 IRI study contends that global companies and universities share similar motivations for collaboration – namely to obtain additional resources, expand their existing capabilities, and help fulfill their organization's mission.<sup>4</sup> However, despite these analogous motivations and increasing levels of reliance, many global organizations still struggle to maximize value capture from university collaboration. To overcome the inherent conflicts in developing successful collaborative efforts, global organizations and universities must both work to manage the critical differences highlighted below:<sup>5</sup>

#### BRIDGING THE GAP TO GENERATE 'WIN-WIN' PARTNERSHIPS



To uncover the drivers of successful university relationships, the Council interviewed four member companies and consulted several key secondary sources. The following brief highlights three critical areas that R&D organizations should focus on to maximize ROI from university collaboration and to build successful long-term relationships:

KEY INVESTIGATION AREAS	CRITICAL QUESTIONS	PAGES	PROFILED COMPANIES
<b>Identifying and Engaging Partners</b>	<ul style="list-style-type: none"> <li>What are the key considerations to help determine the right partner for collaboration?</li> <li>What are successful strategies to begin a relationship?</li> <li>How do I effectively build the relationship?</li> <li>What are the benefits/drawbacks to university partnerships in emerging markets?</li> </ul>	4-7	     ALPHA COMPANY
<b>Negotiating Intellectual Property Agreements</b>	<ul style="list-style-type: none"> <li>How do IP stances differ across industries and project types?</li> <li>When should the R&amp;D organization take a more flexible stance to negotiations?</li> <li>How can I streamline the negotiations process to save critical resources?</li> <li>What are the benefits of Master Sponsored Research Agreements?</li> </ul>	8-11	
<b>Structuring and Managing Relationships</b>	<ul style="list-style-type: none"> <li>How do different organizations manage their university relationships?</li> <li>What role(s) should a central university partnership team play?</li> <li>What are successful strategies to disseminate lessons learned from past collaborations?</li> <li>How do organizations foster continued interaction to maintain institutional relationships?</li> </ul>	12-16	

\* Pseudonym



Executive Summary	Identifying and Engaging Partners	Negotiating Intellectual Property Agreements	Structuring and Managing Relationships
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## Identifying and Engaging Partners

This section provides steps to help companies identify the right partner and build the foundations of a successful relationship. These insights apply primarily to companies seeking to provide support for their overall technology strategy.

### I. Identify the Leading Departments and Faculties

The first key element of university collaboration is to identify the university departments and/or faculties that are producing leading research in a particular technology area. Interviewed members express a relatively strong understanding of the universities and experts working on technologies related to their core business as well as exploratory research of interest to their R&D organization. Generally, companies find the right targets for potential collaboration through a few specific sources.<sup>6</sup>

#### Selected Sources for Identifying Potential Partners



##### University Websites



University websites provide background into the research conducted by the graduate community and often list key faculty members as points of contact. In addition, several universities design websites targeted at industry by illustrating ways to become involved in the university community



##### Peer Review/Scientific Journals



Leading science and technology publications provide insight into the universities and faculty experts demonstrating significant progress in particular technology areas



##### Peer 'Word of Mouth'



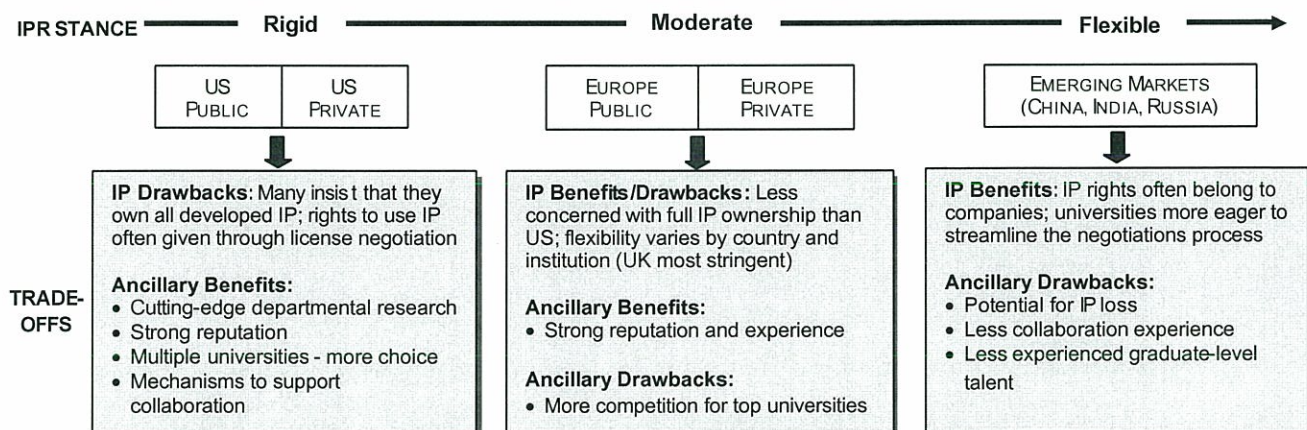
R&D executives gain credible insight into university or faculty reputation through interactions with industry peers and experts within research consortia, forums, and other networking-based groups

### II. Understand the Spectrum of University IP Goals

It is critical that companies understand the general IP stance of universities prior to collaboration. For most companies, the main driver of academic partner selection lies in the university's level of negotiation flexibility.<sup>7</sup> While all universities' IP stances vary to some degree based on the individual project or research area, companies should understand general IP trends below:

- Public vs. Private:** Public universities (US) are often bound to state guidelines for IP ownership and research disclosure under the Freedom of Information Act. In addition, public institutions must generate financial contributions for the state and therefore often have more stringent IP protection stances. Private universities, whose primary financial funding comes from endowments, treat collaborations as more of a free-standing business decision and generally offer more flexible IP positions.
- Geographic Region:** Universities in the United States generally take the firmest stance on ownership of developed IP. As organizations move east from the US, they will find that universities become increasingly more flexible in negotiations.

FIGURE 2: MANAGING TRADEOFFS: GENERAL IP STANCES FOR UNIVERSITIES ACROSS THE GLOBE



Sources: Santoro and Betts, Making University-Industry Partnerships Work (2003); Council Research.



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## Identifying and Engaging Partners, continued

### III. Consider Emerging Market Collaboration

In response to increasing IP negotiation difficulties in the US and Europe, companies have recently increased university collaboration levels in emerging markets. While many companies still perform more advanced research in developed countries, the growth of R&D activity in emerging markets corresponds with a significant increase in partnerships with universities such as Tsinghua University in China and the Indian Institutes of Technology (IIT).<sup>8</sup>

To entice leading global innovators, universities in emerging markets prove more 'sponsor-friendly' in developing partnerships.<sup>10</sup> Companies often own a majority, if not all, of the developed IP during the relationship and incur significant cost savings from a streamlined negotiations process. For example, The Dow Chemical Company noted that it takes an average of three weeks to negotiate a sponsored research contract with an emerging market university, compared to an average of six months with a United States university.<sup>11</sup> In addition, university collaboration in nations such as India and China provide R&D organizations unique access to their fast growing and increasingly talented labor market.

#### EMERGING MARKET FLEXIBILITY<sup>9</sup>

"Many high-quality foreign universities are very eager to work with American companies, and by keeping attorneys out of the discussion completely, they have streamlined the process"

- R. Stanley Williams, Director of Quantum Science Research, Hewlett Packard

"The levels of talent and domain expertise are very high, and you very often have outright access to the IP that gets created"

- Deborah Kilpatrick, Director of New Ventures, Guidant Corporation

### IV. Find the Right Fit: Extensive Due Diligence

Although emerging market academic institutions offer an attractive collaboration alternative to Western universities, some companies have been disappointed with the results from collaboration activities. In addition, other R&D organizations have found difficulties developing more strategic relationships overseas because many emerging market universities have less sophisticated institutional mechanisms to facilitate collaboration. R&D organizations should carefully consider and investigate three critical factors when considering a partnership.<sup>12</sup>

#### Emerging Market Due-Diligence



**Factor 1: Understand the implications of IP leakage:** With increased globalization and inconsistent IP protection laws, R&D organizations must be prepared for possible IP leakage to other companies. Several companies have indicated that there is almost a 100% chance that some IP will leak during a collaborative effort.



**Factor 2: Determine the level of university commitment:** Because many top universities have numerous relationships with foreign firms, the marginal effort associated with adding an additional relationship might result in disappointing returns. Companies should conduct due diligence on faculty and/or department areas to better ascertain the time they will devote to you.



**Factor 3: Gravitate toward established examples of success:** Most universities do not have the sophisticated processes (e.g. technology transfer offices, multiple labs) that western universities possess, which can impede research results. Companies should ensure they are pursuing relations with universities that show a track record of successful collaborations.

Regardless of the location of the university, companies should conduct extensive due diligence on potential partners to understand prevailing IP positions, past relationships with other global companies, and other research-related factors (e.g., Does the university generally protect confidentiality in publications?). For example, **BT Group's** University Research Team constantly analyzes different universities' research activities and reputations to decide whether to pursue a strategic relationship.<sup>13</sup> This activity helps R&D organizations generate a more concrete understanding of strategic objectives and expectation levels, which improves the likelihood of a strong ROI.



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## Identifying and Engaging Partners, continued

### V. Engage the University Effectively

While many universities design mechanisms to encourage the development of business partnerships, they vary widely in their ability to promote engagement. Some schools have a 'director of corporate relations' who connects companies with the appropriate contact, while others prefer companies to communicate directly with specific departments/faculty.<sup>14</sup> Several Industry-University studies stress the link between proper engagement of universities and the growth of a strong relationship. Through interviews with universities, two recent studies highlighted key elements for companies to consider when contacting potential partners:<sup>15</sup>

#### KEYS TO SUCCESSFUL RELATIONSHIP-BUILDING

##### Define Partnership Objectives



Universities note the difficulty in fostering collaborative relationships unless companies provide a clear idea of the projects and/or relationship they wish to pursue.

##### Engage on Many Levels



Companies should consider contacting school deans as well as departments/faculty to understand the university's larger objectives.

##### Understand University Time Scales



A consideration of university time scales enables discussions early enough to prevent miscommunication and time pressures that can damage future relations.

### VI. Foster Relationship-Building Activities: Gaining Visibility and Credibility

R&D organizations that generate credibility through regular activities and interest in university department objectives often reap greater benefits from partnership efforts. In addition, collaborative activities provide insight into the quality of research and graduate students within the university, which enables R&D organizations to gauge the benefits of increased collaboration. **BT Group** utilizes a strategy of engaging new universities with small activities to both establish commitment and gain unique visibility into the university.<sup>16</sup>

#### BT Group's University Engagement Process

<div data-bbox="185 1163 331 1247"> </div> <div data-bbox="355 1155 607 1272"> <p><b>BT Group plc</b> Industry: Networked ICT Services 2006 Revenue: \$34.4 bn 2006 Employees: 104,400</p> </div> <div data-bbox="188 1291 516 1318"> <p><b>University Partnership Overview :</b></p> </div> <div data-bbox="188 1339 558 1411"> <p><b>Purpose:</b> Continual flow of knowledge (primary); sponsored research (primary); recruiting (secondary)</p> </div> <div data-bbox="188 1432 540 1501"> <p><b>Types of Collaborations:</b> Long-term strategic partnerships; single-research projects in specific area</p> </div> <div data-bbox="188 1522 522 1593"> <p><b>Key Partnerships:</b> MIT, Cambridge, University of California-Berkeley, University College London, Stanford</p> </div> <div data-bbox="206 1619 506 1688"> </div>	<div data-bbox="659 1161 1045 1186"> <p><b>The Need for Increased Collaborations:</b></p> </div> <div data-bbox="659 1184 1463 1276" data-label="Text"> <p>University partnerships are a large component of BT's open innovation program and have directly contributed to several key product and service innovations. As the company expands into new markets/sectors, increasing its access to a university knowledge base that lies outside the R&amp;D organization's existing expertise proves critical.</p> </div> <div data-bbox="659 1323 1136 1348"> <p><b>Connection Mechanisms with Potential Partners:</b></p> </div> <div data-bbox="659 1346 1451 1394" data-label="Text"> <p>Whenever BT decides to connect with a new university, the organization always initiates with small relationship-building activities, including:</p> </div> <div data-bbox="678 1392 1456 1514" data-label="List-Group"> <ul style="list-style-type: none"> <li>• <b>Short-term Research Fellowships:</b> Offers 10-15 fellowships per year for postdocs and young faculty, who spend 3 months immersed within a BT R&amp;D group</li> <li>• <b>Summer Internships:</b> Places 200 undergraduate students in various research and development areas to promote learning and active engagement in new technology development</li> </ul> </div> <div data-bbox="659 1549 872 1575" data-label="Section-Header"> <p><b>A Wealth of Benefits:</b></p> </div> <div data-bbox="659 1575 1464 1692" data-label="List-Group"> <ol style="list-style-type: none"> <li>1) Helps to develop a strong reputation amongst students and credibility amongst faculty and department heads</li> <li>2) Enables accurate assessment of students/faculty quality, which serves as an important input into the R&amp;D's decision to pursue a more comprehensive relationship</li> <li>3) Provides an important source for recruiting top talent from across the globe</li> </ol> </div>
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## Identifying and Engaging Partners, continued

To foster relationship-building - either at the outset of engagement or in addition to sponsored research activity - companies facilitate a number of different 'hands-on' mechanisms within universities. While pursuing 'one-off' collaborations in a particular research area often do not require such complementary activities, these actions establish commitment and enable key access into the university.<sup>17</sup>



**Short and Long-Term Sabbaticals** – R&D researchers spend periods of time (e.g. four weeks to 1 year) inside university departments to gain knowledge in a particular research area, develop new analytical capabilities, or help lead new areas of research.

*Example: Microsoft Corporation* employees frequently take one year sabbaticals at both western and emerging market universities.



**Guest Lectures/Presentations** – R&D leaders provide expertise in a particular research field or give technical presentations within universities.

*Example: Schlumberger* sponsors 'Open Days' at various universities to demonstrate new technologies and prototypes to large groups of undergraduate and graduate students.



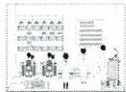
**Professional Skills Coursework** – R&D organizations sponsor coursework in various technology fields or soft skills training programs for engineers.

*Example: Chevron* provides coursework and seminars to students/faculty within their Centers of Research Excellence at various universities such as University of Southern California.



**Graduate Degree Programs** – Companies work with specific universities to develop graduate degree programs for their employees.

*Example: Intel Corporation* partnered with Babson College to design a customized online MBA program to improve management skills of technical employees. Intel employees complete Babson e-learning classes, partner on company projects, and hold online discussions via an e-learning format.



**Mini on-campus projects**: R&D organizations initiate small technical projects on university campuses to generate student/faculty interest and promote learning in an industry-related field.



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## Negotiating Intellectual Property Agreements

This section provides an overview of intellectual property trends in university collaboration and highlights strategies to facilitate more streamlined negotiations.

### I. The Most Difficult Roadblock

In several surveys of R&D executives, the factor of both greatest importance and difficulty in university collaboration lies in negotiating intellectual property.<sup>18</sup> Although studies indicate that only ~3% of industry-university collaborations generate intellectual property that actually warrants rigorous protection, failure to negotiate agreements leads to extremely long and potentially costly delays.<sup>19</sup> The Industry-University Congress estimates that 20% of contracts take over 6 months to complete, with some lasting over 18 months.<sup>20</sup>

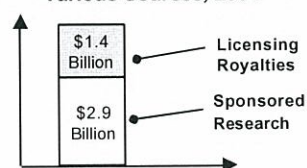
#### NEGATIVE IMPACT OF A LONG NEGOTIATION PROCESS<sup>21</sup>

- **Resource Drain:** Protracted negotiations become very costly
- **Lost Business Opportunity:** Timeframe to capitalize on new technology opportunity passes
- **Damaged Reputation:** Company image injured within academic circles
- **Broken Continuity:** Key faculty members retire or company liaisons change roles/leave company during negotiations, breaking relationship bonds

### II. More Universities Seeking Financial Benefits

In recent years, universities have become more stringent about IP protection and other elements of negotiation. Many have developed more robust contract agreements to protect their ability to engage in further research, pursue new avenues of inquiry, and partner with numerous companies.<sup>22</sup> In 2004, monetary gains from royalties reached almost 50% of the money that universities gained from sponsored research funding (see box on right).<sup>23</sup> This figure indicates that a much larger percentage of universities are envisioning and utilizing partnerships primarily as financial ventures. Interviewed Council members noted that universities overrate the value of their intellectual property, believing they will achieve big monetary gain through patents, royalties, licensing, and even spin-off companies.<sup>24</sup>

#### University Funding from Industry Various Sources, 2004



Source: "Living Studies in University-Industry Negotiations" (2006)

### III. Understanding the Need for Flexibility

The recent establishment of formalized roundtables such as the University- Industry Demonstration Roundtable (UIDP) and the University & Industry Innovation Summit have helped efforts to close general IP negotiation gaps. Some universities have begun to realize that less restrictive IP policies conceding certain aspects of protection will prove more beneficial to achieving desired objectives.<sup>25</sup> On the other hand, R&D organizations also understand that negotiation flexibility not only saves significant resources, but also fosters stronger relationships and more innovative collaborative results. **IBM, Intel Corporation, Cisco Systems, and Hewlett Packard** recently developed a multi-tiered collaboration effort with leading universities, illustrating the growing commitment to develop 'win-win' partnerships:

#### CASE IN POINT: OPEN COLLABORATIVE RESEARCH PROGRAM<sup>23</sup>



**Situation:** To overcome IP challenges and foster more collaboration, four global IT companies (**IBM, Cisco, Intel, HP**) met with seven leading universities at the University & Industry Innovation Summit to discuss possible solutions



**Action:** The organizations developed the 'Open Collaborative Guiding Principles,' which stipulate that all IP will be openly published or made available royalty free to foster innovation and facilitate greater software interoperability



**Result:** In late 2006, **IBM** launched new partnerships with all seven universities focused on Software Quality, Security Policy Management, and Software Clinical Decision Support







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## Negotiating Intellectual Property Agreements, continued

### IV. Varying Levels of IP Flexibility (by Industry)

Experts on University-Industry partnerships contend that companies should not focus on identifying a 'correct stance' for all collaborations. Generally, companies should protect any IP from research activity that is part of their core products/services, while taking a more flexible stance to research in new or exploratory areas. Research also suggests that companies should focus on determining the probability that the collaboration will generate valuable IP, showing more flexibility to those projects with a lower likelihood of IP invention. However, the following chart illustrates that industries tend to approach IP negotiations in different ways:

**Industry Approaches to IP Protection for University Partnerships**<sup>26</sup>

INDUSTRY	GENERAL IPR STANCE		COMPANY EXAMPLE
IT/High Tech	Flexible ↓	<ul style="list-style-type: none"> <li>Companies generally do not dispute university ownership of IP</li> <li>Many prefer to place inventions in public domain due to the benefits of technology sharing and interoperability (e.g., open source software)</li> <li>Almost always prefer non-exclusive, royalty-free license</li> </ul>	 As an information communications technology (ICT) solutions provider, BT encourages innovation at the edge of networks. As a result, they encourage sharing some developed IP.
Chemicals/Plastics		<ul style="list-style-type: none"> <li>Companies find it easy to negotiate a contract for basic research because IP protection is less important</li> <li>Companies prefer exclusive licensing rights for highly applied laboratory work</li> </ul>	 For applied research activity, Dow creates contracts that give the organization protections for any invention applicable to their core business.
Health Care/Biotechnology		<ul style="list-style-type: none"> <li>Companies want to own IP in early-stage research because the ultimate value of results is difficult to ascertain</li> <li>Sometimes focus on drawing clear lines between ownership of the research findings (data) and the IP generated as a result of those findings (new technology development)</li> </ul>	 Guidant explicitly links IP ownership rights with the owner of the invention. However, the R&D organization seeks rights to an exclusive license for any developed IP within a corporate-sponsored collaboration.
Aerospace & Defense	Rigid	<ul style="list-style-type: none"> <li>Companies require ownership of any potentially useful discoveries from collaborations</li> <li>Absence the ownership of IP, companies want exclusive rights to license the technology</li> </ul>	 Northrop Grumman negotiates for the exclusive use of data and IP from collaborations, because they often utilize discoveries to develop products for entirely new markets.

### V. Challenges Behind Technology Licensing

Technology licensing is generally the key component of most university partnership IP arrangements, and often the point of largest contention. The main challenge is that universities generally seek a rapid decision on whether the R&D organization wants to license a newly developed technology. This short time-window proves extremely difficult for companies conducting early-stage collaborative research and for industries with long product lifecycle times because the potential value of the developed technology is very unclear.<sup>27</sup> Therefore, negotiations often stall because R&D organizations and universities cannot effectively incorporate licensing terms directly into the research contract.

#### ROYALTY PAYMENT DISADVANTAGES<sup>29</sup>

"The cost of tracking royalties through product life cycles and derivatives can cost more than the value of invention itself"

- Joe O'Brien, University Relations Program Manager, Hewlett-Packard

Payment structures for technology licenses are generally built into the negotiation contract and consist of either a lump-sum payment or royalty payments. Due to uncertain downstream outcomes and lower resource-intensity, companies generally prefer to negotiate lump-sum payments for an invention.<sup>30</sup>



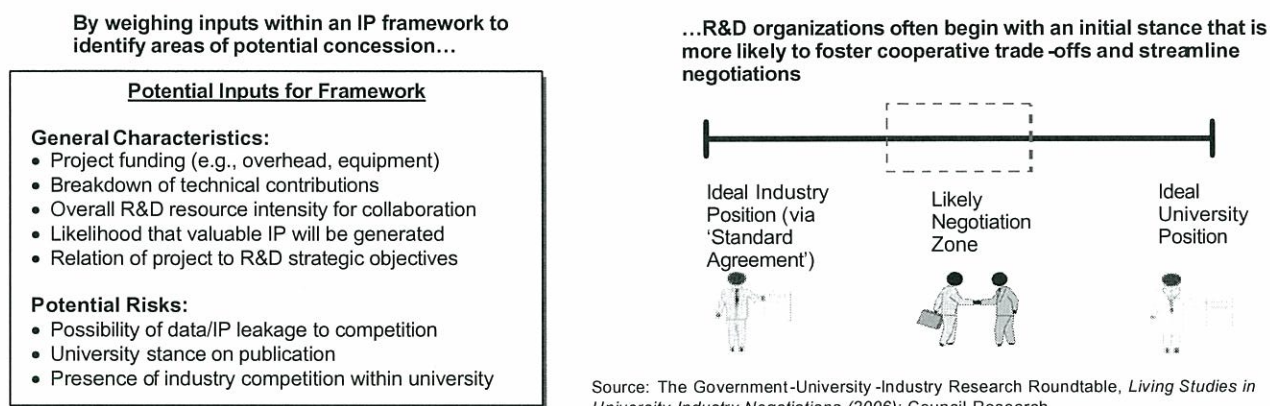
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## Negotiating Intellectual Property Agreements, continued

### VI. Developing an IP Framework

To complement any 'standard agreement' for collaboration, companies should develop an IP framework tool or model that further streamlines the negotiation process. The framework should include a list of critical questions that will shape the company's initial negotiation position and identify areas of potential flexibility.<sup>31</sup> This process mechanism enables companies to enter negotiations with both a stronger understanding of their own objectives and a greater likelihood of reaching an agreement in a manageable timeframe.

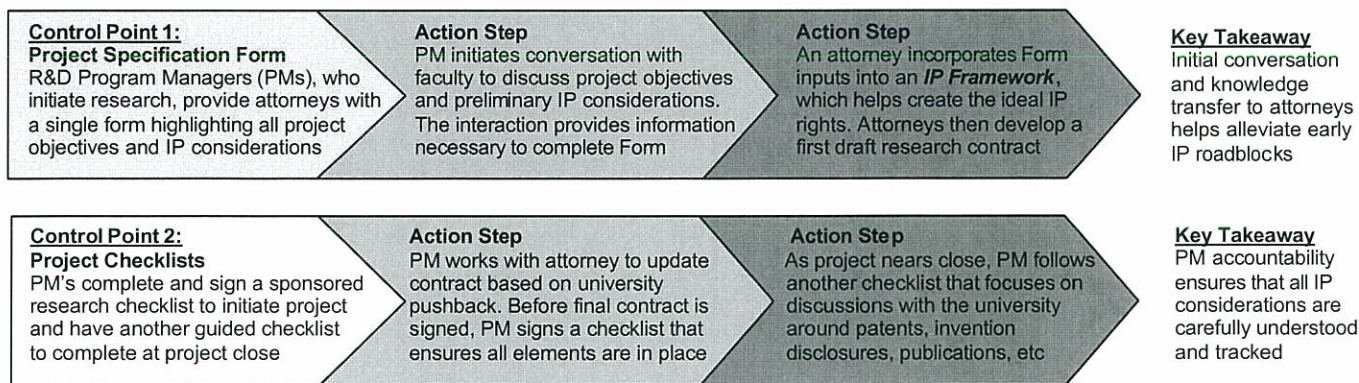
FIGURE 3: REDUCING NEGOTIATION TIMEFRAMES: IP FRAMEWORKS



Building off the utilization of an IP framework, **Caterpillar** developed a standardized process for individual research projects that significantly reduces negotiation timeframes and creates 'win-win' partnerships that significantly impact ROI.<sup>32</sup>

### Caterpillar's Control Point-Driven IP Negotiations Process

<b>CATERPILLAR®</b>  <b>Caterpillar Inc.</b> <b>Industry:</b> Industrials <b>2006 Revenue:</b> \$41.5 bn <b>2005 Employees:</b> 85,116	<b>University Partnership Overview:</b>  <b>Purpose:</b> Sponsored research; recruiting; charitable giving  <b>Types of Collaborations:</b> Long-term strategic partnerships; single projects in specific area  <b>Key Partnerships:</b> Multiple (including 13 under MSRA)	<b>IP Negotiation Difficulties:</b> Caterpillar realizes that involving legal counsel at the outset of negotiations leads to overprotective IP positions, causing costly delays  <b>Action:</b> A process to streamline negotiations and place desired IP ownership in the hands of R&D program managers  <b>Result:</b> Significantly reduced negotiation time; in one case, a researcher finalized contract in only 10 days
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## Negotiating Intellectual Property Agreements, continued

### VII. Master Sponsored Research Agreements (MSRAs)

R&D organizations that have engaged in numerous sponsored research projects or collaborative interactions with a university should consider initiating a master contract agreement – often referred to as a Master Sponsored Research Agreement (MSRA). MSRAs are tailored to business interests of both parties and considered a milestone in moving from a 'tactical' to 'strategic' partnership. Companies should initiate MSRAs only after regular communication, commitment, and expectations are well established and understood. These agreements provide tremendous benefits to collaboration efforts that often significantly impact ROI, including:<sup>33</sup>

- **Faster Negotiation Timeframes:** Decreases time and resources spent negotiating IP agreements for individual projects
- **Increased Project Motivation:** Stimulates both parties to provide the commitment necessary to generate breakthrough results
- **Critical Information Access:** Provides R&D organizations with increased accessibility, and often preferential department knowledge transfer, within key research areas
- **Consistent Quality:** Reinforces communication channels to ensure strong collaboration





#### BT's MSRA Benefits:<sup>34</sup>



BT negotiates individual projects with 'strategic partners' within 2-3 weeks

BT has special access to MIT academic research, from social sciences to technology, which helps R&D constantly assess new markets for growth

Although R&D organizations may have a long standing relationship and strong track record of success with a university, MSRAs still prove very difficult to formalize. **Alpha Company\*** illustrates that while you must place committed resources and time towards the creation of master research agreements, the result is extremely valuable asset that complements long-term strategic objectives.<sup>35</sup>

 <p><b>Alpha Company*</b> Industry: Consumer Products 2005 Revenue: \$10-25 bn 2005 Employees: 25,000-50,000</p> <p><b>University Partnership Overview :</b></p> <p><b>Purpose:</b> Sponsored research against a set of technology platforms</p> <p><b>Types of Collaborations:</b> Long-term strategic partnerships (primary); single projects in specific area</p> <p><b>Key Partnerships:</b> UC Davis, University of Nottingham, MIT (all under MSRA)</p>  	<p><b>Laying Groundwork</b> After successful collaboration activity with UC Davis, a lead scientist from Alpha Company** and a UC Davis departmental head created the framework for a master contract</p> <p><b>Committing Significant Time and Effort</b> Both parties engaged in a long period of negotiations to develop the 5-year master research contract <u>Key Elements:</u> Defined IP Rights, defined funding, flexible structure that enables new research projects</p> <p><b>Reaping Benefits</b> "This master contract was a major accomplishment and incredibly valuable... We have a unique position within these universities that has a significant impact on our research and technology development efforts" - Vice President, University Research, Alpha Company*</p> <p><b>Alpha Company*:</b> Purchasing Group Director; Head of Internal Council, Technology <b>UC Davis:</b> VP of Tech Transfer</p> 
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\* Pseudonym

### VIII. Managing Individual Projects within the MSRA

R&D organizations use MSRAs as a firm base for project negotiations but sometimes must formulate sub-agreements that focus on the nuances of an individual project. Within **Caterpillar**, every project pursued within an MSRA must contain a project specification form highlighting project objectives, budget etc. Due to the complicated nature and length of the MSRAs, the R&D organization has developed a useful synopsis of key IP elements to enable better university collaboration decision-making:

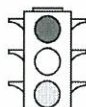
#### Caterpillar's MSRA Summary Mechanism<sup>36</sup>

1



**Access to MSRA Summary**  
R&D program managers who want to initiate a project with a strategic university partners have web access to a synopsis highlighting key elements of the MSRA

2



#### Color-Coded IP System

Each IP element (patents, licensing, etc.) is color-coded based on whether Caterpillar met their initial negotiation objective in the MSRA:

**Green:** Met or exceeded objective  
**Yellow:** Did not fully meet objective  
**Red:** Possible to lose control of confidential information/IP (e.g. university has IP rights to joint inventions under MSRA)

3



**Insight Improves Choice**  
This mechanism helps PM's decide if they want to:  
a) Proceed with project under MSRA  
b) Go outside MSRA and re-negotiate separate agreement  
c) Seek out another university partner for the project



Executive Summary	Identifying and Engaging Partners	Negotiating Intellectual Property Agreements	Structuring and Managing Relationships
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## Structuring and Managing Relationships


The following section highlights the structure and management of university relations at several leading global R&D organizations. In addition, the section illustrates strategies to ensure the continued interaction necessary to grow and maintain lasting strategic partnerships.




### I. A Central Post Overseeing a Decentralized Network Structure

Council interviews suggest that most R&D organizations take a relatively decentralized approach to their university partnership engagements while maintaining central oversight. While relationships with universities function as a network that often permeate many levels of the company, individual employees (e.g. program/project managers, lead scientists, relationship ambassadors) generally own and manage collaborative research efforts and the relationship at large.<sup>37</sup>

Within this decentralized network of university activity, all interviewed companies have a central individual or team that provides critical support to academic collaborations. This central post performs a number of key activities, including targeting relationship-building, supporting the negotiations process as a liaison to legal counsel, and disseminating best practices and lessons learned in university relations.<sup>38</sup> The central university relations posts at **BT** and **Caterpillar** offer insight into two different approaches that effectively support the structure and strategic objectives of their R&D organization:

#### BT Group's University Research Team: Fostering the Business-University Link<sup>39</sup>

	<b>University Research Team</b>	<b>Overview</b>
<b>Composition:</b>	<ul style="list-style-type: none"> <li>• Head of Strategic University Research</li> <li>• Team of five full-time managers</li> </ul>	<p>Through a 'hands-on' approach, BT's central university research team establishes critical connections with universities through three components:</p> <ol style="list-style-type: none"> <li>1) Supporting individual projects</li> <li>2) Supporting larger business unit strategy</li> <li>3) Ongoing support via an internal website to further promote visibility of partnership activity</li> </ol>

COMPONENT	DESCRIPTION	KEY TAKEAWAY
<b>1. INDIVIDUAL PROJECTS:</b> IDENTIFYING UNIVERSITY PARTNERSHIP OPTIONS 	<ul style="list-style-type: none"> <li>• Research Team provides information on leading academics or university departments upon request from R&amp;D manager</li> <li>• To help fill a more complicated R&amp;D project need, they perform background research to identify the appropriate partner</li> </ul>	<p>Streamlines identification process; fosters better collaborative match</p>
<b>2. LARGER BUSINESS UNIT STRATEGY:</b> CONNECTING UNIVERSITY RELATIONSHIP ACTIVITY TO STRATEGIC BUSINESS NEEDS 	<ul style="list-style-type: none"> <li>• Head of University Research Team meets quarterly with 12 'key clients' (e.g. BU heads)</li> <li>• Discussion centers around key business needs and leading university activity</li> <li>• Provide collaboration ideas to complement existing business or help drive new growth</li> </ul>	<p>Forum ensures that partnership activity aligns with and complements BT's key strategic objectives</p>
<b>3. ONGOING SUPPORT:</b> INCREASING VISIBILITY OF PARTNERSHIP ACTIVITY AND DISSEMINATING BEST PRACTICES ACROSS THE ENTERPRISE 	<ul style="list-style-type: none"> <li>• University Research Team maintains and updates comprehensive internal website each month, summarizing briefings from R&amp;D project leaders during and after collaboration activity</li> <li>• Website provides updates on all partnership activity, information about key universities/faculty, and links to all published research from collaboration</li> <li>• Summarized in business-friendly form for easy consumption</li> </ul>	<p>Added 'real-time' resource for partnership identification; knowledge management mechanism to store best practices; keeps senior management (200 people) briefed on latest collaboration activity and key research developments</p>




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## Structuring and Managing Relationships, continued

### I. A Central Post Overseeing a Decentralized Network Structure, continued

#### Caterpillar's Central University Function: Educating Owners of Relationships<sup>40</sup>

	<b>University Relations Group</b>	<b>Overview</b>
<b>Composition:</b>	<ul style="list-style-type: none"> <li>• Manager, University Relations</li> </ul>	<p><b>'Bottom-up' University Partnership Management:</b> Individual R&amp;D program managers and their project engineers initiate and own all Caterpillar's university collaborations based on individual project needs</p> <p><b>'Top-down' Centralized Support:</b> Caterpillar's centralized university partnership function develops and regularly updates critical web-based tools and resources that serve as an educational roadmap for project leaders</p>

#### Key Elements of Caterpillar's University Partnership Internal Website

- 
**University Partnership Guidebook:** A high-level brief about the sponsored research process that provides guidelines for R&D staff
  - Separates partnership activity into four sub-processes: 1) Finding Experts; 2) Negotiating Agreement; 3) Managing Research Project; 4) Closing out Project
- 
**E-Learning Module:** A one-hour online teaching module that explains the process and highlights various Caterpillar partnership case studies to demonstrate best practices and lessons learned
- 
**Resource Learning Links:** Tools and resources grouped into different links, including:
  - 'Learn the Process'
  - 'Review the Process'
  - 'Use the Process'
  - 'Learn About Current Partnerships'



#### Solving Critical 'Bottom-Up' Challenges

- 1) Incorporates lessons learned into teaching to help project leaders avoid key failure points
- 2) Streamlines the partnership engagement and relationship building process
- 3) Educates engineers of different experience levels throughout the organization through different modes of consumption

### II. Maintaining Regular Company-University Interaction

Several recent university partnership studies indicate that consistent communication and interaction are the most critical elements to maintaining and strengthening relations.<sup>41</sup> Interviewed Council members note that maintaining strong interpersonal relationships is critical to the success of sponsored research collaborations and long-term partnerships. They also note that newer relationships fail to grow and established partnerships suffer considerably when dedicated interaction to the university decreases.<sup>42</sup>

### III. The Benefits of Co-Location

R&D organizations maintain regular interaction most effectively through some form of co-location or collaborative research work. For example, **Schlumberger** believes that collaborations prove beneficial when its R&D centers and universities are conducting simultaneous research work. Even further, the organization's most successful sponsored research work involves the exchange of personnel, which usually involves placing Schlumberger scientists on university campuses for 1-2 years.<sup>43</sup>

#### INTERACTIVE RESEARCH ACTIVITY

"The greater the degree of involvement by our scientists and engineers, the greater the chances for success... simply giving money to universities does not work"<sup>42</sup>

- Larry Schwartz, PhD, University Relations, Schlumberger



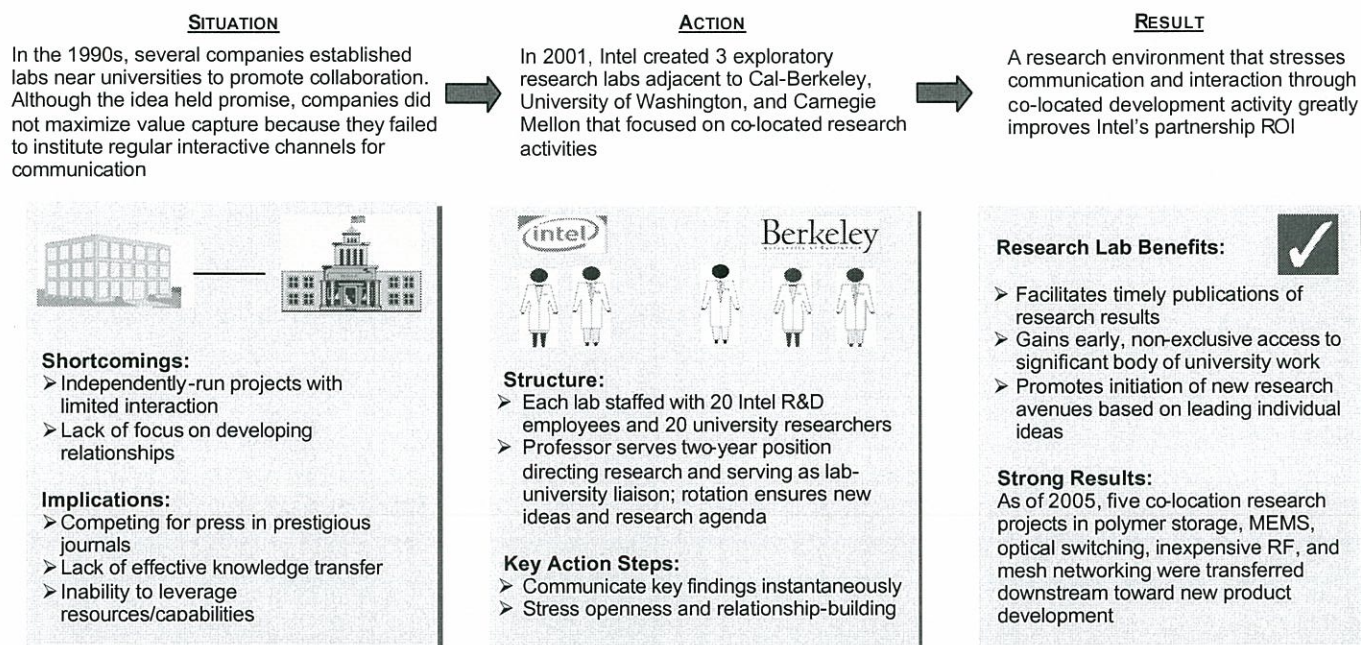
Executive Summary	Identifying and Engaging Partners	Negotiating Intellectual Property Agreements	Structuring and Managing Relationships
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## Structuring and Managing Relationships, continued

### III. The Benefits of Co-Location, continued

Beginning in 2001, **Intel Corporation** developed an Open Collaborative Research Model that enabled joint research projects between R&D employees and university researchers. The co-location activity provides the regular interaction necessary to accelerate Intel's research activity in a number of crucial technology areas.<sup>45</sup>

FIGURE 4: CASE IN POINT: INTEL'S OPEN COLLABORATIVE RESEARCH LABS



Source: Tennenhouse, David, "Intel's Open Collaborative Model of Industry-University Research (2004); Council Research.

### IV. Mechanisms to Ensure Sufficient Personal Interaction

In the absence of (or sometimes in addition to) joint development labs or co-located research, leading companies institute established communication channels to ensure the communication necessary to benefit from collaboration. R&D organizations develop these mechanisms in addition to R&D employee(s) responsible for managing individual research projects. Examples include:<sup>46</sup>

- **University Champions:** Often referred to as 'alliance champions,' these individuals serve as the liaison between the R&D organization and university. Champions are often PhD researchers, and have responsibilities that range from initiating new project ideas, meeting regularly with leading faculty and department heads, and facilitating interactive campus activity.
- **Campus Managers:** Campus program managers volunteer to help maintain relationship continuity with a university in addition to their functional R&D responsibilities. These individuals are generally university alumni that already possess strong ties with university faculty and department heads and serve as an additional steward of the relationship.



Executive Summary	Identifying and Engaging Partners	Negotiating Intellectual Property Agreements	Structuring and Managing Relationships
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## Structuring and Managing Relationships, continued

### IV. Mechanisms to Ensure Sufficient Personal Interaction, continued

Interviewed members indicate that dedicating at least one senior employee to each university relationship is critical to ensure relationship value and growth. For example, **Alpha Company\*** accelerates the development and maintains the strength of a relationship by assigning one individual 'captain' to manage each of its 3 strategic university partnerships.<sup>47</sup>

#### Characteristics of 'Captain'

- Relatively senior R&D employee
- Strong industry/lab experience
- Extremely strong communicator
- Effective networking skills
- Understands 'academic' language
- Preference: University alumni



#### RELATIONSHIP CAPTAIN



**Personal Time Allocation:**  
1/3-1/2 of full time job



**Location:** Lives within local distance of university

#### Key Responsibilities

- Reports directly into Tech Platform group
- Provides support for managers of individual research projects
- Identifies right contacts for new research
- Meets regularly with key professors, Dean of School Departments, and VP of University Research

\* Pseudonym

### V. Challenges to Established Continuity

Despite strong efforts to maintain interpersonal relationships, Council members indicate a challenge around maintaining partnership continuity when R&D or university employees transition out of their current role. In many cases, the relationship built by the R&D employee and university faculty/department head suffers greatly as a result of individual transitions. To maintain relationship continuity with 40 different universities around the world, **Schlumberger** instituted the Ambassador Program to great success.<sup>48</sup>

#### BROKEN RELATIONSHIP BONDS

"Employees who change positions take their personal university network with them, which may risk the institutional relationship."<sup>48</sup>

- Larry Seitzmann, Manager, University Relations, Caterpillar

### Schlumberger's Ambassador Program



**Schlumberger**  
Industry: Oilfield Services  
2006 Revenue: \$19.2 bn.  
2005 Employees: 60,000

#### University Partnership Overview :

**Purpose:** Recruiting (primary); external innovation source/sponsored research (secondary)

**Types of Collaborations:** Long-term strategic partnerships; single-research projects in specific area

**Key Partnerships:** MIT, Purdue, Rice, Stanford, Texas A&M, IIT (Delhi), Moscow State University, University of Oxford, Ecole Centrale de Paris

**Ambassador Relationships (total):** 46



#### Challenges of a Growing Company

Schlumberger engages in relationship activity with over 40 universities through internships, scholarships, campus events, and sponsored research. With a majority of R&D employees changing roles every 3-4 years, the organization often damaged critical relationship bonds that impacted key recruiting efforts.

#### Maintaining Relationship Bonds to Secure University Talent

To communicate its need for skilled university graduates and postgraduates around the world, Schlumberger developed its **Ambassador Program**

#### KEY ELEMENTS:

- Upper-level manager assigned as Schlumberger 'Ambassador' to each university
- Ambassadors responsible for overseeing the relationship and acting as a company advocate on campus
- Supported by a local team that maintains regular contact with key departments, faculty, and student groups

**CRITICAL FEATURE:** To maintain relationship continuity, the Ambassador remains as steward of the university relationship regardless of movement within company. Therefore, established bonds with key university players remain strong, facilitating shorter negotiation timeframes and 'win-win' collaboration activity.



Executive Summary	Identifying and Engaging Partners	Negotiating Intellectual Property Agreements	Structuring and Managing Relationships
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## Structuring and Managing Relationships, continued

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### VI. Post-Project Reviews

To ensure continuous improvement of university collaboration efforts, R&D organizations should develop a standard post-project evaluation process. For example, qualitative reports written by R&D project leaders play a prominent role in most member activities. These reports generally examine the quality of research work from the university department/faculty, uncover areas of failure and success, and provide a forum to codify learnings about new technical directions. Therefore, qualitative reviews should focus on the research results but also on the quality and frequency of company-university interactions.<sup>50</sup>

The review process enables R&D organizations to examine the value created by the relationships, which provides insight into the level of future collaboration with a particular university. In addition, as illustrated by **BT Group** and **Caterpillar**, post-project analysis must include a knowledge management mechanism to capture and disseminate learnings throughout the organization, such as a website or publication.

*For further information on case profiles that analyze post-project reviews, please refer to the Council study titled "Demonstrating the Value of University Research Partnerships" - <http://www.rtec.executiveboard.com/Members/ResearchAndTools.aspx/88148375>*



- <sup>1</sup> Santoro, Michael and Stephen Betts, "Making Industry-University Partnerships Work," *Research Technology Management*, (2002); Council Research.
- <sup>2</sup> "Living Studies in University-Industry Negotiations: Applications of the Guiding Principles for University-Industry Endeavors," National Council of University Research Administrators and the Industrial Research Institute, (April 2006).
- <sup>3</sup> Scricca, Cherie A., "University-Industry Research Partnerships: Motivations for Collaboration," (2006).
- <sup>4</sup> Scricca, Cherie A., "University-Industry Research Partnerships: Motivations for Collaboration," (2006).
- <sup>5</sup> Santoro, Michael and Joel Sutherland, "University Research Centers: Adapting the Industry's Changing Needs So Both Parties Benefit," Lehigh University for Value Chain Research (August 2006).
- <sup>6</sup> Corporate Leadership Council, "Tactics to Build Relationships with Universities," *Corporate Executive Board*, (2002); Lambert Response: Schlumberger; Council Research.
- <sup>7</sup> Council Research.
- <sup>8</sup> "Intellectual Property: Universities, Corporations and Finding a Common Ground," The American Society of Engineering Education, (13 February 2006).
- <sup>9</sup> "Intellectual Property: Universities, Corporations and Finding a Common Ground," The American Society of Engineering Education, (13 February 2006).
- <sup>10</sup> "Intellectual Property: Universities, Corporations and Finding a Common Ground," The American Society of Engineering Education, (13 February 2006).
- <sup>11</sup> "Intellectual Property: Universities, Corporations and Finding a Common Ground," The American Society of Engineering Education, (13 February 2006).
- <sup>12</sup> "Living Studies in University-Industry Negotiations: Applications of the Guiding Principles for University-Industry Endeavors," National Council of University Research Administrators and the Industrial Research Institute, (April 2006); Council Research.
- <sup>13</sup> Council Research.
- <sup>14</sup> Corporate Leadership Council, "Tactics to Build Relationships with Universities," *Corporate Executive Board*, (2002).
- <sup>15</sup> Corporate Leadership Council, "Tactics to Build Relationships with Universities," *Corporate Executive Board*, (2002); "Living Studies in University-Industry Negotiations: Applications of the Guiding Principles for University-Industry Endeavors," National Council of University Research Administrators and the Industrial Research Institute, (April 2006).
- <sup>16</sup> Council Research.
- <sup>17</sup> Corporate Leadership Council, "Tactics to Build Relationships with Universities," *Corporate Executive Board*, (2002); Lambert Response: Schlumberger; TU, ChevronTexaco Create Partnership; Council Research
- <sup>18</sup> Santoro, Michael and Stephen Betts, "Making Industry-University Partnerships Work," *Research Technology Management*, (2002); Council Research.
- <sup>19</sup> "Living Studies in University-Industry Negotiations: Applications of the Guiding Principles for University-Industry Endeavors," National Council of University Research Administrators and the Industrial Research Institute, (April 2006).
- <sup>20</sup> "Living Studies in University-Industry Negotiations: Applications of the Guiding Principles for University-Industry Endeavors," National Council of University Research Administrators and the Industrial Research Institute, (April 2006).
- <sup>21</sup> "Living Studies in University-Industry Negotiations: Applications of the Guiding Principles for University-Industry Endeavors," National Council of University Research Administrators and the Industrial Research Institute, (April 2006).
- <sup>22</sup> Santoro, Michael and Stephen Betts, "Making Industry-University Partnerships Work," *Research Technology Management*, (2002).
- <sup>23</sup> "Living Studies in University-Industry Negotiations: Applications of the Guiding Principles for University-Industry Endeavors," National Council of University Research Administrators and the Industrial Research Institute, (April 2006).
- <sup>24</sup> Council Research
- <sup>25</sup> Lohr, Steve, "I.B.M. And Universities Plan Collaboration," *New York Times*, (14 December 2006).
- <sup>26</sup> "Intellectual Property: Universities, Corporations and Finding a Common Ground," The American Society of Engineering Education, (13 February 2006).
- <sup>27</sup> "Intellectual Property: Universities, Corporations and Finding a Common Ground," The American Society of Engineering Education, (13 February 2006).
- <sup>28</sup> "Living Studies in University-Industry Negotiations: Applications of the Guiding Principles for University-Industry Endeavors," National Council of University Research Administrators and the Industrial Research Institute, (April 2006).
- <sup>29</sup> "Intellectual Property: Universities, Corporations and Finding a Common Ground," The American Society of Engineering Education, (13 February 2006).
- <sup>30</sup> "Intellectual Property: Universities, Corporations and Finding a Common Ground," The American Society of Engineering Education, (13 February 2006).
- <sup>31</sup> "Living Studies in University-Industry Negotiations: Applications of the Guiding Principles for University-Industry Endeavors," National Council of University Research Administrators and the Industrial Research Institute, (April 2006).
- <sup>32</sup> Council Research.
- <sup>33</sup> "Living Studies in University-Industry Negotiations: Applications of the Guiding Principles for University-Industry Endeavors," National Council of University Research Administrators and the Industrial Research Institute, (April 2006).
- <sup>34</sup> Council Research.
- <sup>35</sup> Council Research.
- <sup>36</sup> Council Research.
- <sup>37</sup> Council Research.
- <sup>38</sup> Council Research.
- <sup>39</sup> Council Research.
- <sup>40</sup> Council Research.
- <sup>41</sup> "Living Studies in University-Industry Negotiations: Applications of the Guiding Principles for University-Industry Endeavors," National Council of University Research Administrators and the Industrial Research Institute, (April 2006).
- <sup>42</sup> Council Research.



<sup>43</sup> Author Unknown, *Lambert Review: Schlumberger Response*, (16 April, 2003); [lambertreview.treasury.gov.uk/pdf/files/busin/bschlumbergerswilldave160403.pdf](http://lambertreview.treasury.gov.uk/pdf/files/busin/bschlumbergerswilldave160403.pdf)

<sup>44</sup> Council Research.

<sup>45</sup> Tennenhouse, David, "Intel's Open Collaborative Model of Industry-University Research," *Research Technology Management*, (2004).

<sup>46</sup> Research & Technology Executive Council, "Developing and Growing University Partnerships," Corporate Executive Board, (2003); Corporate Leadership Council, "Tactics to Build Relationships with Universities," *Corporate Executive Board*, (2002).

<sup>47</sup> Council Research.

<sup>48</sup> Author Unknown, *Lambert Review: Schlumberger Response*, (16 April, 2003); [lambertreview.treasury.gov.uk/pdf/files/busin/bschlumbergerswilldave160403.pdf](http://lambertreview.treasury.gov.uk/pdf/files/busin/bschlumbergerswilldave160403.pdf)

<sup>49</sup> Council Research.

<sup>50</sup> Research & Technology Executive Council, "Demonstrating the Value of University Research Partnerships," *Corporate Executive Board*, (2004).

#### PROFESSIONAL SERVICES NOTE

The Research & Technology Council (RTEC) has worked to ensure the accuracy of the information it provides to its members. This project relies upon data obtained from many sources, however, and the RTEC cannot guarantee the accuracy of the information or its analysis in all cases. Furthermore, the RTEC is not engaged in rendering legal, accounting, or other professional services. Its projects should not be construed as professional advice on any particular set of facts or circumstances. Members requiring such services are advised to consult an appropriate professional. Neither Corporate Executive Board nor its programs are responsible for any claims or losses that may arise from any errors or omissions in their reports, whether caused by Corporate Executive Board or its sources.