The Role of the Innovation Capitalist in Open Innovation

A Case Study and Key Lessons Learned

Innovation capitalists can help companies manage the challenges of sourcing innovation externally.

Satish Nambisan, John Bacon, and James Throckmorton

OVERVIEW: An innovation capitalist can help companies manage the organizational and managerial challenges inherent in sourcing innovation externally. Innovation capitalists are innovation intermediaries; they mediate large firms' interactions with external sources of innovation. In particular, innovation capitalists seek out promising new ideas from independent inventors and other sources, invest in those ideas to transform them into market-ready concepts, and sell (or license) the related intellectual property to large client firms. Drawing on a case study of an innovation capitalist firm that focuses on sourcing ideas and technologies from universities and national labs and placing them in large global technology companies, the article suggests organizational strategies and practices that can enhance the success of open innovation initiatives involving innovation intermediaries.

KEYWORDS: Innovation capitalist, Open innovation, Innovation intermediary, Technology transfer

The business rationale for pursuing open innovation initiatives is widely acknowledged (Chesbrough 2003, 2007); however, most companies face organizational and managerial challenges in executing such initiatives (Enkel, Gassmann, and Chesbrough 2009; Minshall et al. 2010; Munsch 2009; Sieg, Wallin, and von Krogh 2010). Frequently, companies exploring open innovation will turn to innovation intermediaries, firms that help connect companies to external sources of innovation and mediate their relationships with those sources. Hence, for many companies, a key organizational challenge relates to the nature of relationships with innovation intermediaries (Sawhney, Prandelli, and Verona 2003).

Companies can acquire innovative ideas and technologies for new products/services at different levels of maturity (ranging from raw ideas to market-ready products and services) and from different types of intermediaries. At one end of the continuum, relatively raw ideas and undeveloped technologies can be acquired by reaching out directly to individual inventors or firms—as Proctor & Gamble has done through its Connect+Develop initiative—or by using idea

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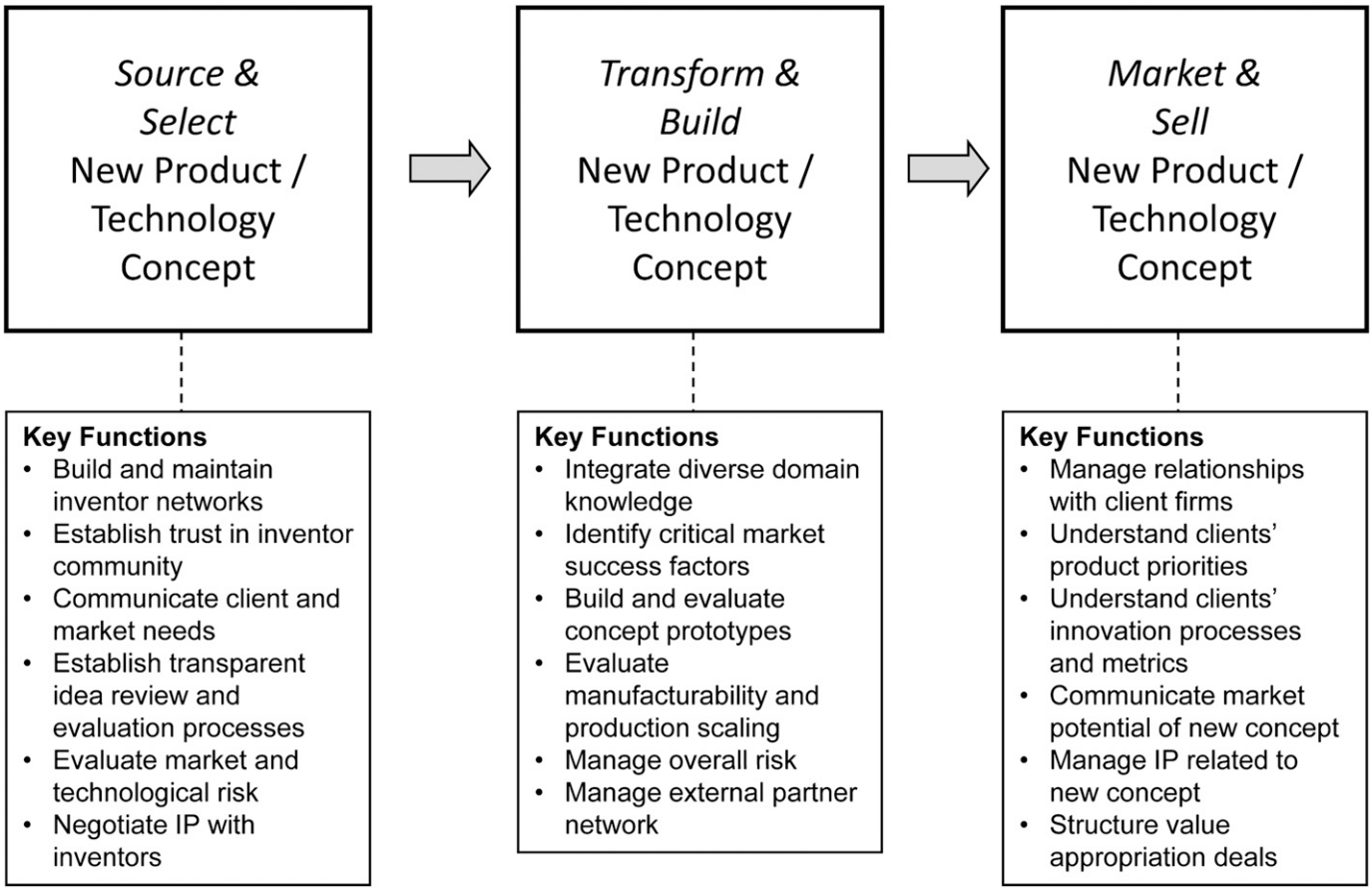

FIGURE 1. The three primary tasks of an innovation capitalist

scouts, electronic R&D marketplaces (such as Innocentive), and other such intermediaries whose primary role is to connect the company with inventors. At the other end of the continuum, venture capitalists may serve the role of an innovation intermediary, offering fully developed, market-demonstrated products and services married with matching organizational infrastructures. The high value added by venture capitalists makes the acquisition of such "market-ready products" very costly, albeit less risky.

A new type of innovation intermediary—the innovation capitalist—has emerged to fill the gap between these two extremes, by offering companies access to market-ready concepts—ideas and technologies that are developed enough to bring clarity to their market potential but not developed enough to inflate their acquisition costs. An innovation capitalist goes beyond traditional innovation brokers by seeking out and evaluating innovative technology and product concepts from the inventor community and other external sources and then developing and prototyping those ideas to a stage where their market potential is validated. That process involves three primary tasks (Figure 1). Innovation capitalist firms tend to make significantly smaller investments (mostly in the $50,000 to $250,000 range) than venture capitalists, which may invest millions of dollars in a promising idea. The project time also tends to be much shorter, measured in months rather than years.

Much has been written about the different types of innovation intermediaries in recent years (e.g., Howells 2006; Tran, Hsuan, and Mahnke 2011; Gassmann, Daiber, and Enkel 2011; Sawhney, Prandelli, and Verona 2003), but there has been limited research focus on innovation capitalists.[1] At the same time, the number of firms adopting such a business model has increased rapidly in the last few years.[2] While there is considerable clarity regarding the role and the functions of innovation capitalists (Nambisan and Sawhney 2007a, 2007b), the successful execution of the business model raises a host of operational issues and challenges—both for the innovation capitalist and for its partners at either end of the process. Given the nascent nature of our knowledge on this topic, a case-study approach (Yin 2003) is appropriate to explore related issues and identify best practices.

[1] We conducted an extensive review of the literature on innovation intermediaries and open innovation and didn't find any articles on the business model underlying the work of innovation capitalists. Much of the literature on innovation intermediaries has focused on those at the two ends of the continuum (technology scouts and electronic R&D marketplaces at one end and venture capitalists at the other).

[2] While there are no definite statistics available, to our knowledge there are at least 20 firms in the United States that have adopted the innovation capitalist business model (or some variation of it), and several more in Europe and Asia.

The Study

We conducted an in-depth study of the practices of one innovation capitalist firm, IP2Biz LLC, which focuses on sourcing innovative ideas and technologies from universities and national laboratories.[3] Our objective was to explore the key challenges and identify some of the lessons learned from the experience of IP2Biz. Further, companies have had limited success in partnering directly with universities (Buganza and Verganti 2009); by focusing on an innovation capitalist that sources technologies primarily from universities, we hoped to contribute to a better understanding of the relationships between innovation intermediaries and universities.

Following Yin (2003), we adopted a multiple case-study approach and conducted a detailed comparative study of the 43 projects completed by IP2Biz. With the project as the unit of analysis, our analysis was based on a preliminary conceptual framework that considered the nature of partner interactions, skills and capabilities, and outcomes associated with each of the five project phases we identified in our work. The success factors identified through this qualitative analysis were further refined based on extensive interviews and discussions with senior managers in the client firms and with technology transfer office personnel in two large U.S. universities.

The results of the analysis suggest strategies and practices that large organizations could adopt to enhance their success in partnering with innovation capitalist firms to leverage externally sourced technologies.

IP2Biz LLC: Case Study of an Innovation Capitalist

IP2Biz LLC, based in Atlanta, Georgia, focuses on facilitating the commercialization of innovative ideas and technologies developed by research universities—in particular, those ideas and technologies that are better suited for licensing to an existing company than for development as a start-up firm. Since its founding in 2005, the company has pursued 43 projects involving a varied range of technologies, including chemicals, material science, energy, and medical devices. The company's investments in these projects have ranged from $25,000 to $400,000. Over the past seven years, the company has established an extensive network of relationships on both the supply side (600 university-based researchers) and the demand side (50 U.S.-based large technology firms).

To help client companies source early-stage technologies from universities, the company developed a structured five-step process (called IPScout[SM]) that incorporates rigorous search procedures as well as extensive processes for evaluating the suitability of new technologies for further development (Table 1). Each phase is associated with a defined set of activities and goals:

Discovery. The goal in the discovery phase is the development of a broad problem statement. At this stage, it is important to gain the sponsoring executive's input, which almost always offers a broader perspective than technical personnel may be able to provide, and to limit the desire to create an engineering spec rather than an open-ended definition of a problem. Also during this phase, the client shares the results of preliminary efforts.

The goal in the discovery phase is the development of a broad problem statement.

Scan. At the core of the scan phase is a first, sweeping look across the global field of research to identify activities that might offer solutions. A key challenge at this stage is to make sure that technologies that seem to be a little off the mark are not too quickly dismissed, either by IP2Biz staff or by the client. Often, the best results come from these "not quite right" technologies.

Screen. In the screen phase, the most promising technologies identified by the scan are subjected to a more detailed analysis. The screen process identifies salient characteristics of candidate technologies and determines their IP status, sources, and availability for licensing. The screen phase includes an evaluation of the willingness of the technology transfer office (TTO) and the researcher to become involved in the development process.

Vet. The best technologies move to the vet phase, which provides a very detailed examination of the markets, industries, and IP space around those candidates. The details of the license agreement and the potential research project are developed, although the TTO and the researcher are not made aware of the client's identity at this point. Very often, the vet phase report is used by the client as the internal business case to develop organizational support for the initiative.

ProofCo. In the ProofCo phase, a research project is executed to demonstrate the commercial potential of the technology. It is important for all involved to understand that the outcome of this phase is not a product, but a market-ready concept that can be moved into the company's product-development pipeline. Typically, IP2Biz funds the ProofCo project; in a jointly managed ProofCo, the client and IP2Biz co-fund this phase.

Over the company's seven years of experience, the basic structure of the five project phases has remained the same, but the scope and activities associated with each phase have evolved. For example, the company started out assuming that clients would be able to articulate a broad and comprehensive problem statement. However, once experience revealed the need to help clients to understand the structure of an effective problem statement, the company instituted a much more detailed and structured discovery phase.

An innovation capitalist project need not always be triggered by a client company request. Sometimes a promising technology might be identified outside of an existing client project. In this case, the innovation capitalist may conduct its

[3] The authors of this article include the cofounders of IP2Biz; our study was informed by their experiences as well as by discussions with other employees of the company.

TABLE 1. Phases of a typical IP2Biz project

Project Phase	Activities
Discovery	Meet with the client team to develop a better understanding of the problem statement, establish expectations for timing and form of the deliverables, and address potential concerns of the client firm's R&D managers with regard to how the process may affect their own workload.
Scan	Search TTO databases, scholarly articles, and other external sources (such as the Kauffman Foundation's iBridge). Assemble and involve the research network, particularly researchers who work in the same or similar technology space.
Screen	Identify a set of technologies to examine in more detail. Conduct a more detailed but still high-level evaluation of candidate technologies to analyze the status and availability of any intellectual property and forecast the potential performance of the technology.
Vet	Conduct a detailed technological, market, and industry analysis of one or more technologies to identify the most suitable technology for development. Typically, no more than 10% of the original set of technologies is chosen for analysis in the vet phase. Existing technologies that might compete in the marketplace are evaluated in depth, and intellectual property status is determined through outsourced patent landscape studies.
ProofCo	Negotiate a license for the chosen technology that can be assigned, if desired, to the client. Upon signing of the simple option agreement and payment of the option fee, initiate a funded research project focused on demonstrating the commercial potential of the technology. This typically involves detailed market testing, technology prototyping and testing, and manufacturability testing. The outcome from this phase—a clean, market-validated technology asset package including exclusive, global rights to the technology—is submitted to the client for final decision and follow-up.

own vetting and ProofCo phase and then take the proven concept to potential buyers. Here, too, the client company would acquire the technology in the form of a market-ready concept and develop it further in its internal product-development pipeline before launching the eventual product.

The success of an IPScout project can be assessed from two perspectives. From the client company's view, the project must develop the technology in such a way that the concept moves through its internal development pipeline and into the market more quickly and cost-effectively than internally developed concepts typically do. In this context, in addition to the market success of the eventual offering, the relative project cost and time form another set of success metrics for the client company. From the innovation capitalist's view, the placement of the technology must produce sufficient returns on the firm's investment in identifying and proofing the candidate technologies. IP2Biz has set its threshold for investment returns at six times its expenses on the project. The company also uses other project success metrics, such as client satisfaction, percent-of-goals achieved, and time overruns.

Three recent projects in different fields help to illustrate the issues related to the activities of innovation capitalists and their interactions with client companies and inventors—in this case, university researchers. While two of the projects were triggered by client company requests, the second project illustrates a case where the availability of a promising technology (from a university lab) initiates the innovation capitalist's actions.

The Green Technology Project

A large, diversified U.S.-based technology company that makes products through seven operating divisions, including one (the client for this project) that has in excess of $3 billion in sales and sells a wide range of products to industrial customers was contacted by IP2Biz. The initial contact was with the client's innovation department, which was a centralized unit serving all divisions and responsible for interfacing with potential suppliers of innovation, including TTOs at major research universities. The innovation department's stated goal was to find new technologies for the various divisions.

IP2Biz spent more than two years working with the innovation department exploring potential technology-sourcing opportunities with no tangible outcomes. It became clear to the IP2Biz team that many in the company's internal innovation group viewed the innovation capitalist (and other similar innovation intermediaries) as competitors who could threaten their jobs and established processes and policies, rather than as partners. Finally, one member of the innovation department realized that while IP2Biz's offering was potentially valuable to the company, it didn't fit well with their established innovation processes and procedures. He introduced the innovation capitalist to an executive vice president of development for one of the company's large operating units, a person who was respected for his dedication to innovation and who was also senior enough to overrule bureaucratic obstacles. The senior executive, in turn, introduced the innovation capitalist to an ad hoc team designed to cut across departmental barriers and evaluate various technology alternatives. The team had been trying to find technologies related to recycling and recovery of industrial emissions. After some preliminary deliberations, the team decided to partner with IP2Biz in that initiative.

The IPScout problem statement involved finding a new technology in the industrial recycling space that could be coupled with an internally developed technology to convert the recycled product into a salable chemical. Following the initial discovery phase meeting, IP2Biz began a search for suitable technologies (the scan phase). Because of the easy availability of government grants and increasing environmental concerns in this particular technology space, more than 100 candidate technologies were uncovered (typically only 20 to 30 are found). However, most were quickly identified as inappropriate or insufficiently original. From the

initial 100, 15 candidate technologies were jointly selected for a detailed review in the screen phase; based on that evaluation, 5 of the 15 technologies were selected for further evaluation.

The vet phase began with a review of those five technologies and the selection of two for detailed vetting. Ultimately, the technology chosen in this project involved scaling up from the lab bench to small-scale manufacturing and demonstrating the repeatability of the process. The research required an investment of approximately $300,000 from IP2Biz.

Because of the trust-based relationship with the researcher, IP2Biz was able to learn of the researcher's hunch that a new material might result in a cost breakthrough. The project definition for the ProofCo phase was changed to move the investigation of that new material to the early stage. Testing in the lab confirmed a significant breakthrough with this high-performance but much lower-cost material. The client, at that point, exercised its option to purchase the license to the technology. The IP2Biz license was assigned to the client, who built a prototype as planned while also continuing to work with the researcher. With the technology well on its way to market, the project is considered a success by both the client and the innovation capitalist.

The Wound Measurement Camera Project

This project was initiated when the TTO executive of a major university, with whom the company had built a trusting relationship through previous projects, called IP2Biz to make them aware of a new disclosure regarding a wound-care technology developed by a university researcher. IP2Biz had previously identified this technology space as one of interest because of increasing governmental pressures to reduce healthcare costs. Where reimbursement for medical costs was previously related to the length of time the patient was under medical care, the system was switching to progress-based payments. Nowhere was this change to have more impact than in treating large diabetic or pressure-ulcer–related wounds. The inventor (a university researcher) was very experienced in the wound care space and had recognized the need for a simple, low-cost tool to facilitate tracking and treatment of such wounds.

The technology, which is intended to measure progress in healing these wounds, is based on a standard smartphone with a camera and four guide lasers. A picture of the wound is taken and the camera calculates the area and depth of the wound. The image and the data are then uploaded to the institution's medical records database. Taken repeatedly over days and weeks, these pictures and calculations serve as a record of progress in wound management.

IP2Biz negotiated a license to this technology, managed the IP filing and prosecution, sponsored further research in the inventor's lab to produce prototypes that could be taken into a real setting, and began the search for potential buyers. The trust-based relationship established with the researcher enabled IP2Biz to take an active part in the detailed and highly collaborative discussions of the features to be included and excluded in the prototype unit.

Because this technology was not found as part of an IPScout process—it didn't emerge from a client request—the innovation capitalist was able to offer the technology to a variety of companies, large and small. Strongly positive reviews from the three area wound clinics that participated in trials facilitated sale of the license. This technology has just reached the market and will soon take its place in clinical settings.

The Medical Devices Project

This project involved a large, publicly held medical devices company with around $2 billion in sales. There was no corporate R&D function; the divisions were expected to accomplish their own R&D. The client for this project was one of the larger business divisions (with $700 million in sales), selling one of the company's most profitable product lines. The primary contact was an R&D program manager responsible for quarterly sales as well as for introducing new products. IP2Biz made a sales presentation to a large group of R&D staff including the vice president of R&D for this division; the vice president was not involved in this project after that initial meeting.

The scope of the assignment seemed broad enough: "find us technology that could replace or enhance our most profitable product, which is coming under increasing regulatory pressure." The product had been identified as a common cause of hospital infection, so the assignment was aimed at solving that problem. However, feedback on potential technologies quickly revealed that the assignment was not broad at all. Again and again, feedback on a candidate technology took the form, "This isn't close enough to our current product to be useful." As more and more potential technologies were suggested with the same result, it became clear that the client was looking for technologies that would not require any changes to their current product design or manufacturing processes.

The innovation capitalist team identified more than 40 potential technologies, all of which required that the product or process be redesigned to one extent or another. As the scan phase ended, the division underwent a reorganization that transferred the product development function to marketing. The new contacts proved to be even more resistant to changes to their current product design. Soon, the newly organized division decided not to pursue any of the technologies. Without executive involvement and without a broadly focused problem statement (and the readiness to accommodate changes in product strategy), this project didn't go forward beyond the scan phase.

Key Success Factors and Lessons Learned

IP2Biz has completed 43 projects; the overwhelming majority of them (39) are seen as successes by both the client companies and the innovation capitalist (Table 2). Based on a detailed review and analysis of all the projects (including the three case-study projects), we identified eight factors that govern project success and failure, four related to the client organization's structure and processes and four related to the intermediary's practices and procedures. Client-related factors include:

We identified eight factors that govern project success and failure—four related to the client organization's structure and processes and four related to the intermediary's practices and procedures.

- Sustained senior executive involvement
- Broad problem statement
- Well-diffused open innovation culture
- Willingness to undertake organizational changes to support open innovation

Intermediary-related factors include:

- Flexibility to accommodate client's internal innovation processes
- Process that allows for rapid iteration
- Capability to complement common gaps in TTO competencies
- Established, trust-based relationships with researchers

Some of the factors enhance project success, while others help avoid failure (Table 3). Each implies specific actions on the part either of the client or of the innovation capitalist.

Client Firms

Success factors for client firms initiating a relationship with an innovation capitalist (or, likely, any innovation intermediary) have to do with building internal support for open innovation in general and for the specific project (Table 4).

Sustained involvement of key senior executives. The sponsoring executives in the client firm must remain actively involved with the project to ensure its successful completion. This is a factor whose presence can enhance the success of a project and whose absence can bring down a project. Without the involvement of the sponsoring executive, the project is too often sidetracked by well-meaning engineers who lack executive vision. For example, in the green technology project, the senior executive championing the project had the vision to see potential value in the ultimately chosen technology that few of his scientists could see. Often, such a broader outlook may lead to redefining the problem and finding new opportunities to commercialize a particularly promising technology—departures in project scope that only a senior executive can envision and authorize. Further, the criteria used by engineers to assess technologies tend to be too restrictive (often, biased toward rejecting those externally sourced technologies that require large product architecture or process changes).

Broad problem statement. A broad enough client assignment enables exploration of entirely new directions. On the other hand, very narrow project descriptions tend to over-define the requirements too early in the search process and preclude the consideration of breakthrough technologies that might help the client firm redefine its market position. This factor was present in 77 percent of successful projects and—more importantly—it was absent in 100 percent of failed projects. In the more successful projects, the scope was amended as the project progressed; almost all such amendments resulted in broadening the scope of the project.

Well-diffused open innovation culture. To ensure the successful development of market-ready concepts sourced externally via an innovation capitalist, a company must have an innovation culture infused with the principles of open innovation—not just within R&D or the business development group but throughout the organization—and this takes time. Lack of an open innovation culture can most certainly ensure failure (in three of the four failed projects, this was found to be the key factor), although its presence alone may not ensure success. Our data also show that in all those companies where the CEOs or other senior executives spent considerable time and effort infusing an appropriate culture and building a business case for open innovation, the innovation capitalist needed to spend less time "selling the opportunity," bringing down the client's overall cost. More importantly, in all of those cases, the intermediary's interactions with the company were largely devoid of conflicts among different organizational units and the associated organizational inertia. A key indicator of a company's open innovation culture is how well it has integrated open innovation metrics with other innovation metrics—making open innovation processes part of the organizational routine.

Willingness to undertake organizational changes to support open innovation. Even though a senior-level executive may assume the role of open innovation champion, much of the day-to-day effort and interaction with innovation capitalists is undertaken by mid-level managers who have to address competing operational issues. As a result, new technologies are regularly sacrificed even if they are very promising. Thus, beyond the innovation culture, companies also need to adopt additional measures—specifically, changes in organizational structure and processes—to address the potential disconnect between open innovation vision and existing innovation operations. Our data shows that in close to 53 percent of the successful projects, the companies had incorporated some type of open innovation–oriented organizational measures. For example, in some companies, incentive programs were changed to reflect a different emphasis on open innovation efforts since the payback is not short term. In other companies, mid-level managers were given separate budgets, managed outside of the normal budgeting process, for open innovation efforts. In almost all successful projects, the client companies had departed from their traditional centralized (corporate) innovation set-up and instituted new, decentralized structures that engaged line managers heavily. Overall, our data shows that companies that acknowledged the need to make operational-level accommodations to open innovation efforts experienced higher levels of success in their projects.

TABLE 2. Representative project successes and failures

Industry / Sector	Client Firm Key Executive	Outcome
Industrial Products	Chief IP Counsel	First IPScout project successfully completed; client acknowledged value addition and signed up for second IPScout project while internal development, still ongoing, began. IP2Biz goals were accomplished.
Industrial Products	SVP Business Development	Key executive "very happy with process and results," decided not to pursue joint ProofCo; invited IP2Biz to call again in three months for next assignment, which subsequently happened. IP2Biz goals were accomplished.
Industrial Products	Division R&D Director	IPScout project identified three attractive new technologies. Executive currently negotiating acquisition of one of the technologies. Expect product on the market within two years. IP2Biz goals were met.
Consumer Products	Director R&D	Initially, key executive turned project over to engineer, who tried to treat researcher like other vendors; project proceeding, but only after senior executive got re-involved resulting in currently ongoing joint ProofCo. Goals not yet met.
Industrial Products	CEO	CEO acquired the license to the technology from IP2Biz. Plans to launch product within 12 months by combining with existing product lines. IP2Biz goals met.
Medical Devices	R&D Program Manager	Project too narrowly defined, no acceptable technologies found; project stopped in the scan phase.
Medical Devices	Division VP	VP couldn't overcome staff's opinion that "we know everything there is to know about this area"; no discussion beyond initial interaction.

***Note**: Shaded rows present projects that were not successful.*

TABLE 3. Key success factors in IP2Biz projects

Industry or Sector	Number of Projects		Senior Exec Involvement		Broad Problem Statement		Well-Diffused OI culture		OI Org Changes		Flex to Client Process		Rapid Iteration		Complement TTO		Univ. / Res. Relations	
	Success	Failure	PIS*	AIF*	PIS	AIF	PIS	AIF	PIS	AIF	PIS	AIF	PIS	AIF	PIS	AIF	PIS	AIF
Consumer Products	9	1	8/9	1/1	7/9	1/1	2/9	1/1	2/9	0/1	7/9	0/1	5/9	1/1	3/9	0/1	0/9	0/1
Green Energy	9	0	8/9	0/0	8/9	0/0	0/9	0/0	5/9	0/0	4/9	0/0	4/9	0/0	0/9	0/0	3/9	0/0
Healthcare	4	1	3/4	1/1	3/4	1/1	2/4	1/1	0/4	0/1	0/4	0/1	0/4	1/1	0/4	0/1	1/4	0/1
Industrial	15	2	13/15	2/2	12/15	2/2	6/15	1/2	6/15	0/2	9/15	0/2	4/15	1/2	6/15	0/2	2/15	0/2
Testing and Measurement	2	0	2/2	0/0	0/2	0/0	1/2	0/0	0/2	0/0	0/2	0/0	0/2	0/0	1/2	0/0	0/2	0/0
TOTAL	39	4	34/39	4/4	30/39	4/4	11/39	31/4	13/39	0/4	20/39	0/4	13/39	3/4	16/39	0/4	6/39	0/4
			87%	100%	77%	100%	28%	75%	33%	0%	51%	0%	33%	75%	41%	0%	15%	0%

Notes
**PIS = Present in Successes*
**AIF = Absent in Failures*

TABLE 4. Key success factors and associated organizational practices for client firms

Success Factor	Practice
Sustained involvement of key senior executives	• Ensure that a senior executive stays involved throughout the project to maintain the vision and prevent the broader goals of the project from being dictated by those harboring more parochial interests.
Broad problem statement	• Maintain a broader vision for the project beyond the immediate technical problem by connecting the project with organization-level innovation goals/themes. • Bring in managers from related areas in evaluating potential solutions to force broader thinking and identify hidden value-creation opportunities.
Well-diffused open innovation culture	• Acknowledge that diffusing an open innovation culture takes time and requires sustained effort on the part of senior management to build the business case and engage the entire organization (and not just R&D/innovation).
Willingness to undertake organizational changes to support open innovation	• Address the potential disconnect between open innovation vision and actual innovation operations by making appropriate changes in organizational structures and processes. • Focus the effort at key mid-level managers (who make day-to-day project decisions) and those managers who interact most with the innovation capitalist. • For the first project, select the internal group with the most credibility and visibility within the organization; select the initial project so as to foster the development of trust and openness in the relationship with the innovation intermediary.

For the innovation capitalist firm—and likely for any innovation intermediary—success factors revolve around accommodating client processes and building relationships.

Innovation Capitalist

For the innovation capitalist firm—and likely for any innovation intermediary—success factors revolve around accommodating client processes and building relationships, with client firms and with the researchers who provide the technologies. For IP2Biz, with its focus on accessing technology from university labs, that means focusing on university TTOs as well as individual inventors (Table 5).

Flexibility to accommodate client's innovation processes. By flexing its business processes, an innovation capitalist can accommodate or complement unique aspects of the client's internal processes. Such flexibility helps client-firm managers to better prioritize the external technology in their internal decision-making process and avoid unnecessary delays due to process mismatches. In almost 50 percent of the successful projects analyzed, the innovation capitalist had made some type of change in its process to meet client needs. Such an approach helps the client to see how the innovation capitalist's processes and capabilities can fill the gaps in its innovation infrastructure and speed up project interactions. It also makes the client more willing to share information with the innovation capitalist—information that would enable the intermediary to be more effective in finding solutions.

Process that allows for rapid iteration. By adopting an iterative process structure for technology sourcing and evaluation, the innovation capitalist can minimize the time demands on the client firm. Rapid iteration facilitates constructive involvement without demanding major time commitments from the client's already overworked staff. While client executives spend some time evaluating the deliverables from the innovation capitalist, the iterative process minimizes surprises and reduces the time it takes to complete evaluations. Our data show that where iteration was not practiced, projects took considerably more time and often failed. On the other hand, in those projects where rapid iteration was employed, the average total time commitment for any individual staff member from the client firm was less than 10 hours, spread over four months.

Capability to complement gaps in TTO competencies. Many TTOs view any innovation intermediary skeptically, an outlook largely shaped by their past interactions with intermediaries such as IP brokers. Some TTOs view intermediaries as potential competitors. It takes time and persistent effort on the part of the innovation capitalist to overcome such initial impressions and effectively communicate its core value proposition. This effort is complicated by complex, rigid policies and regulations related to intellectual property rights in some universities. To build this critical relationship, the innovation capitalist must focus on those capabilities and competencies that TTOs often lack but that are critical for the successful commercialization of university IP (for example, the wide network of corporate connections the innovation capitalist can provide, or the objectivity that an independent entity can bring to the analysis of a high-profile researcher's work). This helps TTOs to see the innovation capitalist less as a competitor, and more as a true partner who can extend the reach and range of their services and external network. This also implies that innovation capitalists should consider their relationships with TTOs as a long-term investment (rather than as a one-time deal).

Established, trust-based relationship with researchers. While it is relatively easy to make an initial connection with researchers, it takes time to establish trust-based partnerships. Typically, the innovation capitalist should have continued interactions with individual researchers (particularly those who lead university labs or research centers) to clarify the nature of the partnership and the value that the company brings to the researcher. Through sustained interactions over a period of time, the company convinces the researcher that it is not there to "steal the invention"; instead, its business model represents the most effective way for the inventor to commercialize the invention. The innovation capitalist should also clarify that the company operates on value appropriated from client companies, and as such, it does not charge the researcher. Further, over time, the innovation capitalist can demonstrate how it can help the

TABLE 5. Key success factors and associated organizational practices for innovation capitalists

Success Factor	Practice
Flexibility to accommodate client's innovation processes	• Incorporate flexibility in processes and activities to accommodate and complement unique aspects of the client's internal innovation processes and capabilities; help the client to view the innovation capitalist firm as an extension of its internal innovation infrastructure.
Process that allows for rapid iteration	• Utilize an iterative process structure that minimizes time demands on the client firm
Capability to complement common gaps in TTO competencies	• Focus on building and deploying the critical capabilities and competencies that TTOs often lack.
Trust-based relationships with researchers	• Clarify the nature of the partnership and the value that the innovation capitalist brings to the university researcher. • Offer assistance to researchers beyond the immediate project (for example, help in connecting with large companies) to establish long-term relationships.

researcher build relationships with a large company, relationships that may often extend beyond the immediate project. Such an approach helps demonstrate the overall value that the innovation capitalist can bring, building trust for the long-term partnership that it seeks to establish.

Conclusion

The growing appetite for new technologies among large companies presents significant opportunity for early-stage technology placement and commercialization. The innovation capitalist can play an important role in this context. We hope that our discussion of the key success factors and the organizational practices will lead to a better understanding of how large technology firms and universities can form valuable and mutually beneficial partnerships with innovation capitalists.

Our study and its findings also have broader implications for organizations pursuing open innovation. Many of the insights derived here regarding innovation capitalists apply to other types of intermediaries, too; for example, the significance of a broad problem statement holds equally well when client firms partner with electronic R&D brokers such as Innocentive. Similarly, the structural and cultural accommodations to open innovation identified here would be relevant in all instances of external innovation sourcing, regardless of whether they involve an intermediary or not. At the same time, when intermediaries do get involved, the complexity of the open innovation context may increase, making these success factors even more critical. Further, the greater the value addition of the innovation intermediary, the closer the partnership needs to be, underlining the significance of the process and structural changes. For example, an innovation capitalist adds more value to external innovation sourcing (compared to electronic R&D marketplaces and other intermediaries). However, this also implies the need for closer working arrangements between the innovation capitalist and the client company—more interactions and information sharing—which in turn call for greater process and structural adaptations. Future studies that examine these and related issues in different open innovation contexts will be very valuable.

The growing appetite for new technologies among large companies presents significant opportunity for early-stage technology placement and commercialization.

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