Perspective

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Building an External Innovation Capability

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EXECUTIVE SUMMARY

In the past few years, an increasing number of the largest companies in the world have established a new C-level role—the chief innovation officer—responsible for leading innovation activities throughout the enterprise. As these executives get to work, they quickly find that the pace of innovation has accelerated and that their companies cannot hope to create and develop every possible source of innovation advantage exclusively in-house.

Furthermore, as CIOs look more closely at what their companies are best at, and assess the productivity of internal innovation capabilities, many are compelled to conclude that though their companies have focused resources (people and capital) on internal innovation capability systems, the drivers of growth are often externally originated innovations that have been seeded, licensed, joint ventured, or acquired. There is often a dramatic mismatch between where the company is placing its money and where productive growth-driving innovations are emerging.

As a result, CIOs have turned instead to external innovation as a source of advantage, and some have used this approach to create considerable value for their companies. Others, following in their footsteps and having experimented with a few of the tools in their external innovation "tool kit," are determined to do more. But few have systematically created an external innovation strategy and the capabilities needed to carry it out. This Perspective outlines the tools most likely to form the basis of an external innovation capability, and details the questions that CIOs will need to answer in order to develop a business plan that can be presented to the entire executive team.

THE CIO'S CHALLENGE

Prior to 2000, the position of chief innovation officer was a rarity. Since then, however, CEOs and their executive teams have become ever more aware of the increasing rate of innovation, much of it fueled by technological change. They have watched as products and services launched by new and established competitors built substantial new sources of revenue for their inventors and created fundamental disruptions for industry incumbents. And given the many and varied sources of these innovations, every executive team has come to understand just how important it is to make sure its company's innovation focus gets past the all-too-common "not invented here" attitude to include ideas from further afield. External innovation has finally become a critical capability in most companies' product development arsenal.

As a result, calls for a C-level executive to oversee both internal and external innovation have become widespread. Today, global leaders from Arby's to Zurich NA, including Citigroup, Clorox, Coca-Cola, DuPont, Humana, Salesforce.com, Textron, U.S. Bank, and many more, have appointed CIOs. And in companies that have not, many heads of R&D and chief technology officers are considering pitching for the title. In every case, the concept involves tasking a C-level executive to champion innovation across the enterprise, and thus increase the number, variety, and scale of innovations driving forward the company's development and growth.

It is the CIO's job to develop his or her company's innovation capability to the point where it can exploit every relevant innovation to the benefit of shareholder value and to identify everything that might disrupt and potentially undermine the success of the executive team and the trajectory of the shareholders' investment.

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HARNESSING THE WORLD'S INNOVATORS

CIOs searching for new sources of innovation will soon discover the obvious: There are many more sources of innovation outside their companies than within. No company, no matter how large its scale and scope, can hope to corner the innovation market in its particular sector. The maturation of global communication and collaboration technologies, cloud-enabled tools that allow for real-time research and development environments, and expanding innovation networks and communities of interest have all accelerated the number and quality of ideas and potential innovation partners.

Many companies can now point to external innovations that have dramatically increased their competitive advantage. Apple and Google leverage the power of tens of thousands of independent software developers to build portfolios of hundreds of thousands of applications for their products to showcase and their users to buy. Life sciences leaders such as Amgen and Pfizer are collaborating with external scientists around the world to push forward the boundaries of biopharmaceutical progress. For these companies and others, the benefits are already clear: an enormous universe of innovators working on technologies, products, and services of relevance to the company; reduced costs associated with moving a larger portfolio of innovations down the pipeline; reduced risk as others put their human capital to work on risky propositions; and accelerated time-to-market as innovation is freed from the shackles of the cumbersome large-company financial, planning, and pipeline process.

Depending on the innovation strategy deployed, a strong external innovation capability is absolutely critical. In our annual Global Innovation 1000 study, we typically divide companies up into three distinct groups depending on their innovation strategy. Need Seekers actively and directly engage current and potential customers to shape new products and services based on superior end-user understanding to better capture their unarticulated needs, and then strive to be the first to market with those new offerings. So it is imperative that they concentrate on this capability if they are to effectively capture as many new ideas as possible. Technology Drivers, too, must build up this capability: Their success is dependent on leveraging their investment in research and development to drive both breakthrough innovation and incremental change, so gathering fresh ideas from as wide a variety of sources as possible is critical. For Market Readers, the need for external innovation is not so great. Such companies monitor their customers and competitors with equal care, but they maintain a more cautious approach, focusing largely on creating value through incremental change and being "fast followers" of proven concepts. Because generating their own breakthrough ideas is not central to their strategy, their success does not depend to such an extent on external innovation.

CIOs at companies of every stripe are putting experimental toes in the waters of external innovation. And now, as that first cycle of experimentation comes to an end, we are seeing a wider range of companies looking to stand up an external innovation capability as a core component of their overall innovation strategy.

Early efforts to build an external innovation capability have focused on one or more of a growing number of external innovation tools. Which tools to initially use as part of an external innovation program, and which to develop later on, depends greatly on the objectives, strategies, and capabilities of the company creating the program and on the nature of the external environment in which the relevant technologies and innovations are surfacing (*see "The External Innovation Tool Kit," page 4*). Each of these tools can be quite effective when properly matched to the user's technology and market conditions. The key is to employ the right set of tools to maximize the probability of success without spreading management resources and attention too thin.

The External Innovation Tool Kit

Though by no means exhaustive, the chief innovation officer's external innovation capability tool kit draws on a variety of tools at each stage of the innovation value chain:

1. *Grants and Scholarships:* Providing research grants to education or government institutions can leverage outside expertise with smaller investments. Funding innovative organizations can also provide a company with new technology and ideas from the diverse set of companies and stakeholders often brought in by these external bodies.

2. *Innovation Networks:* An innovation network can enable a company to develop an external community of interest within a framework controlled by the company that is open to outside innovators but closed to competitors. The goal is to encourage problem solving by a systematically identified network of global thought leaders in areas of interest to the company, as Amgen has done with its "extramural research alliances."

3. *Joint R&D Agreements:* These agreements, typically made with academic institutions or government agencies, are designed to support the mission of each partner. Such agreements are typically structured as long-term partnerships focused on areas of mutual interest to both parties. Potential benefits include breakthrough university research or government insight into industry challenges.

4. *External Advisory Boards:* An external advisory board is a multi-stakeholder group made up of different businesses and industries, often with representation from government or academia as well. The external members of such boards are usually independent experts with a diverse set of specialized expertise or knowledge. It is typically easier for a company to introduce expertise through an advisory board than to hire similarly experienced resources.

5. *Certified Developer Programs:* Certified developer or user networks can create communities of loyal partners, helping to accelerate and improve development and adoption. Aggressive adopters like Apple and Google have pioneered the reliance on third-party ecosystems to develop core products far more quickly than competitors that focus on in-house development.

6. *Incubators:* Incubators typically work with early-stage startups by providing facilities, contacts, and business advice to help them prove and launch their business. Partnering with an incubator can provide valuable access to potential technology partners as the startups develop their products.

7. *Corporate Venture Funds:* Similar in operation to a traditional venture capital fund, this type of fund is run by an individual company and uses the company's capital to invest in promising technology. It allows the company to exercise more control and to participate directly in the success of the companies it invests in. Corporate funds typically invest in companies with close tie-ins to the investing company's strategic goals, rather than for purely financial reasons.

8. *Limited Partnership Positions:* Investing in a traditional VC firm as a limited partner allows a company to make focused investments in particular technologies while spreading some of the risk with the general partner and other limited partners. This technique also takes advantage of the general partner's access to deal flow and expertise in negotiating and structuring deals and crafting exit strategies.

9. *Related Ecosystems:* Related ecosystems usually come in the form of alliances or joint ventures among companies joining together to support a technology or to package products into a solution. Cisco, EMC, VMware, and Intel have recently created such an ecosystem by contributing some of their intellectual property and product expertise to launch VCE, which targets the virtual computing environment. These ecosystems allow individual companies to leverage partner companies' capabilities and potentially gain access to untapped capabilities or resources, along with new customers in adjacent markets.

10. *Collaborative Innovation:* These efforts come in many forms, ranging from collaborations with individuals to working with other leading enterprises. Companies can use external innovation to collect ideas from a variety of sources, which might include external communities of enthusiasts, such as the open competition sponsored by Netflix to discover improved algorithms for recommending movies; vast networks of internal employees like Procter & Gamble's; or other companies in related fields.

11. *Venture Exchanges:* Venture exchanges provide a structured environment in which participating venture funds can feature their portfolio companies. Typically, a group of venture funds agrees to participate on a regular basis, although some venture exchanges are ad hoc in nature. Funds showcase companies with the requisite focus to potential customers, partners, acquirers, the press, and others, depending on the venture exchange's focus.

12. *Key Opinion Leader Councils:* These councils typically resemble an external advisory board in makeup, but they differ in scope, focusing on the problems and needs of the broader industry rather than on the direction of a single company.

13. *Joint Ventures and Partnerships:* Joint ventures are formal arrangements in which two companies form a legal structure and combine a defined set of assets and capabilities to jointly address a specific market need. This arrangement is particularly useful when the companies have complementary capabilities but neither could go to market on its own. JVs are one step removed from a merger, in that the parties are still independent but have very closely allied themselves in the chosen market.

14. *In-Licensing Programs:* In many cases, companies find it more cost-effective to license intellectual property that has already been developed than to develop their own. A company typically makes such a deal to enhance the functioning of its current products, or to use its superior commercialization capability to bring new technology to market more effectively than the technology owner could.

15. *Acquisition Programs:* When a technology that rounds out a company's product portfolio or strategic position is developed by another company, one avenue is to acquire sole ownership in the technology and/or the company that has developed it. Working with corporate development teams, CIOs can put in place technology acquisition programs that will scan the external environment for promising targets and bring them in-house.

Each of these tools can be quite effective when properly matched to the user's technology and market conditions. The key is to employ the right set of tools to maximize the probability of success without spreading management resources and attention too thin.

THE CAPABILITIES PLAN

To get the entire executive team to agree on the direction and funding of a new and expanded external innovation capability, the CIO must first develop a comprehensive strategy and business plan for the program. In our experience, a concerted effort to address the following issues can help determine the scope, scale, and resources needed to build a strong external innovation capability.

Time to Build a New Capability
First and foremost, the CIO must demonstrate the mismatch between how the company's resources have been allocated between internal and external innovation capabilities and the degree to which the drivers of the company's growth have been the result of internally versus externally originated innovations. Though it's not a universal truth, we find that in many industries and in many companies, the inertia of the past has left the bulk of people and capital deployed against internal innovation capability systems, even as the opening up of the world's innovators has meant that an accelerating share of the company's growth is being driven by innovations originated externally. In our experience, for example, large pharmaceutical companies still consistently direct the majority of their innovation spending internally, though the majority of their growth is derived externally.

The Risk–Cost Trade-Off
Having established that it is time to allocate greater resources to external innovation, the CIO must engage the executive team in determining the company's stance regarding the trade-off between risks and costs inherent in leveraging external innovation approaches and tools. The discussion should begin with an understanding of where each of the major external innovation tools fits into the traditional corporate innovation value chain (*see Exhibit 1*). The key question here is where on the value chain a company feels most comfortable placing its innovation bets.

- Some companies prefer to operate upstream, where the risks are high, but where many small bets can be placed on emerging technologies and companies.

- Others abhor failure, preferring to pay more for proven technologies that can be brought in and scaled up. Such companies tend to gravitate toward later-stage bets, and hence the tools most helpful in finding and developing them.

- A few companies can operate throughout the entire risk–cost equation and thus feel comfortable with a range of external innovation tools, each focused on a different slice of the value chain, from ideation and research through seeding and into expansion situations.

Required Technology Domains
The next area of focus involves determining the domains that will be most critical to accomplishing the strategic aspirations and priorities of the company. Typically, this process begins by assessing the strategic plan and product portfolio and then mapping it to the innovation portfolio and pipeline to determine what is critical, what is missing, and what appears to be an "orphan" in the context of the company's strategy. For the CIO, the key questions to answer are these:

- In which technology domains are our internal research and development operations strongest?

- Which technology domains are most likely to generate new products or expansions and improvements to established products needed to achieve the growth objectives of our current core businesses?

- Where are the gaps between our current domain strengths and our future needs?

Sources of External Technology
For those technology domains that are critical to the long-term strategic priorities of the company, and that are either insufficiently represented or entirely missing in the internal operations of the innovation organization, the next step is to find and assess external sources that can be leveraged.

- Where is each of the needed technology domains best represented in the external environment, and which researchers, laboratories, or companies have the requisite technology expertise in these areas?

- To which of these domains does the company already have access, and where will it need to forge new partnerships, alliances, or other structures for collaboration?

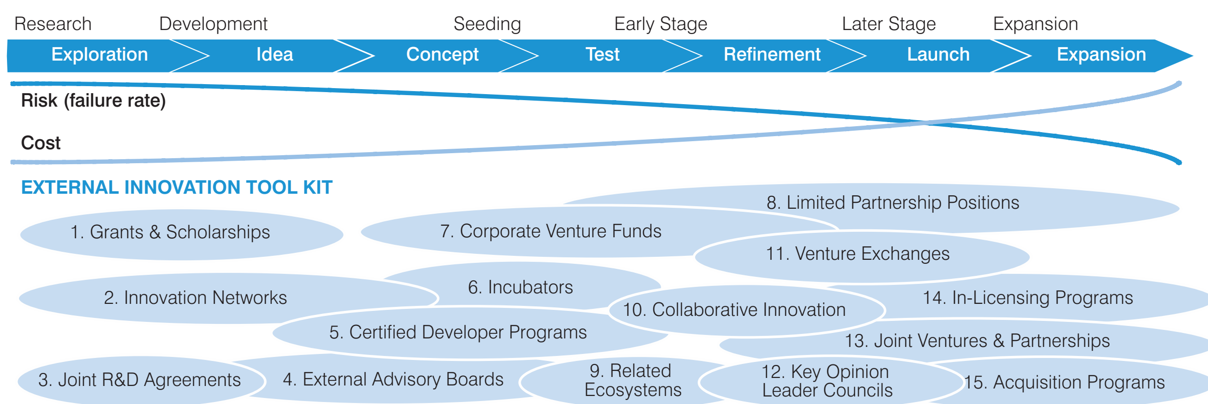
External Innovation Tools
Having identified the most appropriate external centers of technology, the CIO must then determine which external innovation tools to focus on. This will involve a combination of the executive team's stance regarding risk–cost trade-offs and the specific characteristics of the external sources of innovation. Key questions include the following:

- Which set of external innovation tools will provide the best access to the needed technology domains?

- Which of the tools are already prototyped at the company, and how can they be scaled to the requisite levels to ensure success?

- What is the company's risk–cost trade-off tolerance in creating the needed tools?

Exhibit 1
External Innovation Capability Tools Also Mine the Risk–Cost Trade-Off



Booz & Company analysis

- How does its risk tolerance affect the use of each external innovation tool and its relative weight in the overall external innovation strategy?

Required Internal Capabilities
Standing up an external innovation program also requires the development of the proper set of internal capabilities needed to accomplish three overarching goals: to ensure that the company is viewed by external innovation players as an attractive partner; to raise the likelihood of success of the external innovation activities; and to prepare the company to exploit those new technologies and products once they are ready to be brought in-house for launch and rollout. Key questions include the following:

- What assets, capabilities, and resources does the company as a whole already possess to help make external innovation tools and efforts successful?

- What capabilities are needed to ensure that the company is viewed by external parties as a preferred partner as it expands its external innovation program?

- Which elements of the company's current internal innovation activities are likely to hamper its external innovation efforts, making it more difficult to integrate those efforts into the company?

- What changes to the company's operating model—including goals, strategies, roles and responsibilities, processes, and governance model—will be necessary to ensure that an expanded external innovation program operates successfully?

New Category Opportunities
So far, we have focused on external innovation as a source of technology and innovation for driving core strategic priorities and growth. But external innovation can also generate new breakthroughs that may expand the company's area of focus. To achieve this goal, the CIO must consider the following:

- What other product and market opportunities might be opened up by the new technology domains beyond those required to support the growth of the company's current core businesses?

- How interested is the company in pursuing new category growth, and how should this be factored into its efforts to build an external innovation capability?

Outbound Opportunities
In addition to the new opportunities arising from external innovation activities, opportunities may be uncovered that the company does not consider relevant or exploitable by itself. Other companies, however, may find these "orphan" opportunities valuable, so it is important to develop a process by which the external innovation mechanism can take advantage of them.

- Which new products and technologies discovered through our external innovation efforts or already in the pipeline are superfluous, or too risky, given our current growth strategy?

- Considering our current technology domain strengths and our future needs, which existing technology domains will not support continued growth in our current core businesses?

- How might a new external innovation capability leverage these "orphan" technologies and products in order to capture their economic value?

THE BUSINESS PLAN

It is generally the CIO's job to develop the comprehensive business plan that outlines the focus of external innovation activities, requests funding and proposes resource allocations, and then provides projections of the expected benefits of the new capability for the growth trajectory of the company. The plan must take into account the implications for funding, governance, the organization, and performance management.

Funding

- How much capital (and/or what percentage of operating expenses) will be needed?

- How many external innovation tools must be supported, and what level of funding and allocations will be needed to support each one?

- What are the expectations for self-funding the capability at some point (as opposed to a purely strategic investment)?

Governance

- What new decision rights will be needed across the organization?

- What new decision-making processes must be put in place?

The Organization

- Where should the external innovation capability be located within the broader innovation organization?

- How should the external innovation capability be organized?

  - What mix of current staff and new hires will be needed?

  - What competency profiles are needed for a successful external innovation program?

  - How should compensation and incentives be structured (including, in some cases, upside sharing)?

Performance Management

- What metrics and key performance indicators will be needed to track the new capability's performance?

- How should revenue and earnings targets and goals be structured?

- Can a corrective action feedback loop be put in place to continually improve performance?

- What is a reasonable time horizon for measuring success (quarterly targets, annual goals, a five-year plan)?

As CIOs form a strategy and a business plan for an external innovation capability, they must constantly remind themselves and their internal innovation organization that the whole point of the external innovation exercise is to access external innovators that are fast-moving, lean, and very loosely structured. Care must be taken not to slow down or stifle the external innovation program by layering on too much "big-company thinking and process." At the same time, no company can reap the benefits of an external innovation program without careful consideration of how to make use of the linkages, points of integration, and critical assets of the larger firm that can help it succeed.

Conclusion

The CIO role is powerful, and it offers plenty of excitement and stimulation. However, it also carries obligations and responsibilities. Leading a company's innovation efforts requires the ability to move quickly to position the company for an obvious reality: Innovation is without boundaries, and there is much more going on outside the company than within. This means, first and foremost, developing an external innovation strategy and building an external innovation capability.

Resource

Booz & Company Product and Service Innovation
http://www.booz.com/global/home/what_we_do/services/innovation

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