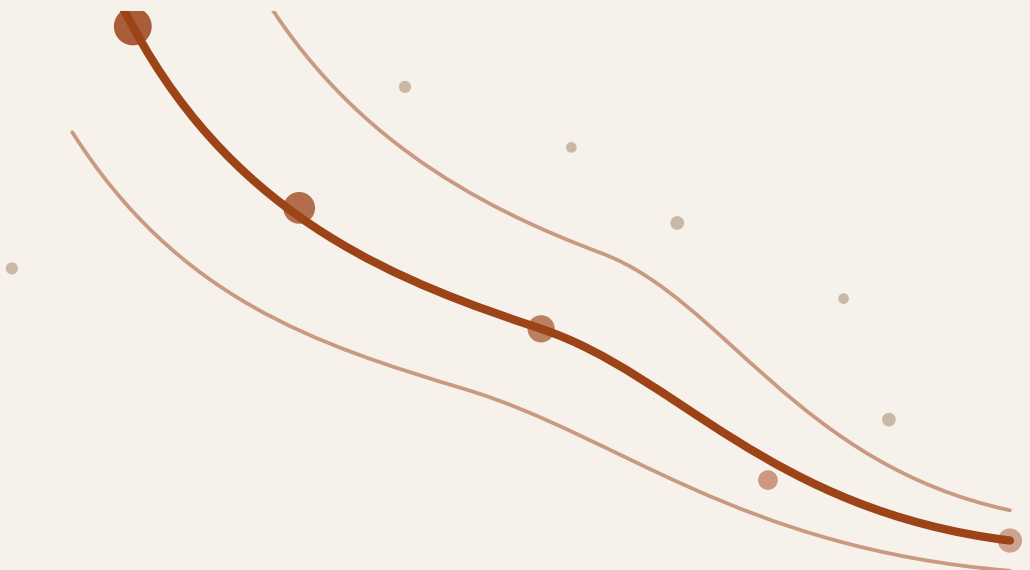


Innovation Management

From scattered initiatives
to a sustained organizational capability

Dr. Omar A. Alsamani



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18 Open innovation and innovation ecosystems

In this chapter we look beyond the boundaries of the organization. We trace how an organization can benefit from the knowledge and ideas that exist outside it, how far it should open up, what capacity it needs to absorb what flows in, and which forms of partnership are available to it; we then turn to how innovation ecosystems work, bringing together universities, government, the private sector and society.

Introduction

Opening case: a services company (composite case)

For years, a logistics services company struggled to improve the scheduling of its fleets, and its technical team worked on the problem with little to show for it. It then launched an open challenge with a modest prize, and an effective solution arrived from a graduate student in applied mathematics who knew nothing about logistics but recognized in the problem a mathematical model familiar from her own field. Yet the company could not make use of the solution. No one on its team understood the model well enough to integrate it into the company's systems, and some

engineers felt that a solution from outside the field “doesn’t understand our reality.” The solution stayed in the challenge report.

The company succeeded in opening up and failed at absorbing. Knowledge reached it from an unexpected quarter, but it lacked both the internal capacity to understand and use that knowledge and a culture willing to accept what came from outside. These two sides together form the subject of this chapter: how an organization opens up, and how it absorbs what it opens up to.

Learning Objectives

After studying this chapter, the reader should be able to:

- 1 Define open innovation and distinguish among its three directions.
- 2 Explain why too much openness can be as harmful as closedness.
- 3 Explain absorptive capacity and recognize resistance to what comes from outside.
- ε Choose the appropriate form of partnership for each purpose.
- 0 Describe innovation ecosystems, the organization’s place within them, and their role in supporting innovators.

18.1 From closed to open innovation

For most of the twentieth century, the research laboratories of large companies operated on a closed logic: the organization innovates by itself, with the best minds it can hire, protects what it produces, and develops it all the way to the market. Chesbrough observed that this logic had lost much of its validity, because knowledge had become widely distributed, talented people moved between organizations, and no single organization could any longer

monopolize the knowledge it needed. He proposed an alternative he called **open innovation**: the organization uses external ideas alongside internal ones and makes its unused ideas available to others (Chesbrough, 2003). Later, with Bogers, he defined it as a distributed innovation process based on purposively managed knowledge flows across organizational boundaries (Chesbrough & Bogers, 2014).

The word “purposively” matters in this definition. Open innovation does not mean throwing the doors open to everything; it means designing the flows of knowledge between the organization and its surroundings. Three directions of these flows can be distinguished, as Figure 18.1 shows.

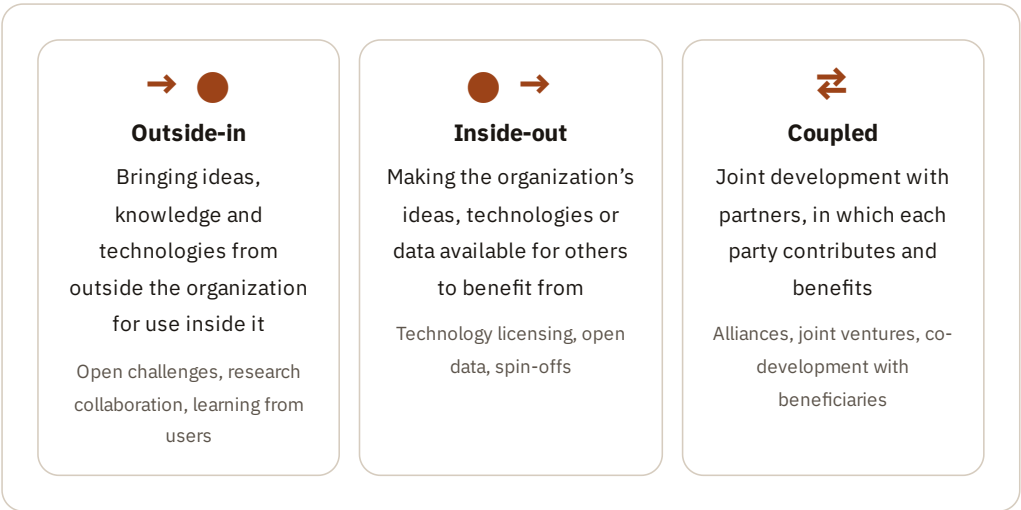


Figure 18.1 The three directions of open innovation, adapted from Chesbrough & Bogers (2014).

Chapter 11 presented one form of the first direction in lead users, who innovate for themselves before any provider offers them a solution. Chapter 13 presented one form of the second direction in the Xerox technologies that found no place in the company’s business model and left to become spin-offs.

18.2 How open should an organization be?

If openness is beneficial, does its benefit keep growing the more open an organization becomes? Laursen and Salter studied data on some 2,700 British manufacturing firms and measured their openness along two dimensions: **breadth**, the number of external sources a firm draws on, and **depth**, the extent to which it relies on each source. They found that the relationship between openness and innovative performance takes the shape of an arc: performance improves as openness increases up to a point, then declines once openness exceeds the organization's ability to follow its sources and benefit from them (Laursen & Salter, 2006). An organization that opens channels with every possible party may drown in relationships it cannot manage, just as an organization that opens a platform to every idea does.

Among the strongest arguments for openness is that a solution may come from where it is least expected. Jeppesen and Lakhani studied more than 160 scientific problems that companies had posted on an open challenge platform after their own laboratories had failed to solve them, and found that the likelihood of a solution was higher when the solver's field of expertise was distant from the field of the problem (Jeppesen & Lakhani, 2010). The distant specialist sees the problem through the tools of their own field, just as the student in the opening case saw the scheduling problem as a familiar mathematical model. This connects with the discussion in Chapter 12 of distant analogy as a way of breaking design fixation.

18.3 Absorptive capacity

Knowledge reaching the organization is only a first step; what follows is the ability to understand and use it. Cohen and Levinthal coined the concept of **absorptive capacity** to describe this: an organization's ability to recognize the value of new external knowledge, assimilate it and apply it. They showed that this ability depends on the organization's prior related knowledge; an organization can absorb only what lies close to what it already knows. For this

reason, they argued, internal research and development has two faces: it generates new knowledge, and it builds the capacity to absorb the knowledge of others (Cohen & Levinthal, 1990).

An important practical consequence follows from this concept: open innovation rests on an internal capability that supports it and receives what it brings in. An organization that hollows itself out of expertise by relying on partners and suppliers loses the ability to judge what they offer and to integrate it into its work. This is what happened in the opening case: no one in the company understood the mathematical model well enough to use it.

Absorption faces another obstacle, this time rooted in attitudes: resistance to what comes from outside, known as the not-invented-here syndrome. Katz and Allen studied R&D teams and found that the longer members remained together, the less the team communicated with external sources, and the more its performance declined along with it (Katz & Allen, 1982). This tendency can be countered by the boundary-spanning activities discussed in Chapter 9 and by the culture open to different ways of thinking discussed in Chapter 8. Respect for knowledge arriving from outside is another face of respect for ideas arriving from the most junior employee inside.

In Practice

Before you launch an open challenge or enter a partnership, identify by name who in your organization will receive what it brings: who will read the solutions, who has the knowledge to evaluate them, and who will integrate them into the work. If you cannot find these people, start by building this capacity before opening up.

18.4 Forms of partnership

Openness takes many forms, each suited to a particular purpose and each carrying its own risks. Table 18.1 sets out the most prominent of them.

Table 18.1 Forms of partnership in open innovation

Form	Suited to	What it requires of the organization	Risk
Open challenges	A specific problem that can be clearly formulated and might be solved from a distant field	Precise problem formulation, and the capacity to evaluate and integrate solutions	Solutions that go unused, as in the opening case
Research collaboration with universities	Problems that require deep scientific knowledge and a longer time frame	Patience with the pace of research, and someone who translates between the language of research and the language of practice	Published research that never turns into application
Working with startups	Fast-evolving technical solutions, and trying out new approaches	Flexible procurement and contracting procedures suited to the size of a startup	Procedures that exhaust the startup before it begins
Co-development with beneficiaries	Services whose value depends on the experience of those who use them	Respect for beneficiaries' time, and a clear response to their contributions	Token participation in which beneficiaries' views have no influence
Partnership with the private sector in service delivery	Services for which the private sector has capabilities or resources the agency lacks	Contracts that specify the public value required and accountability for it	Transferring risk without transferring the capacity to manage it

Form	Suited to	What it requires of the organization	Risk
Making data and technologies available	Data or technologies held by the organization on which others can build	Standards for privacy, quality and intellectual property	Releasing what should not be released, a matter taken up in Chapter 19

Two conditions recur across most of these forms. The first is that the problem be clear before the partnership begins, as Chapter 11 showed; a partnership built around a vague problem usually ends in conflicting expectations. The second is that the organization have a person or unit that acts as a bridge between the partner and the inside: one that understands the language of both sides, follows the relationship, and ensures that what comes from outside reaches those who need it.

18.5

Innovation ecosystems

An organization innovates within a wider system of actors, regulations and relationships. The concept of the **national innovation system** emerged to describe the network of public and private institutions that interact to produce, diffuse and use knowledge in a given country, and to stress that national innovation performance depends on the quality of these interactions as much as on the capabilities of each actor (Lundvall, 1992). The **triple helix** model focuses on three main parties in this system and holds that innovation arises from their interaction, to the point that each party sometimes takes on some of the roles of the others (Etzkowitz & Leydesdorff, 2000), as Figure 18.2 shows.

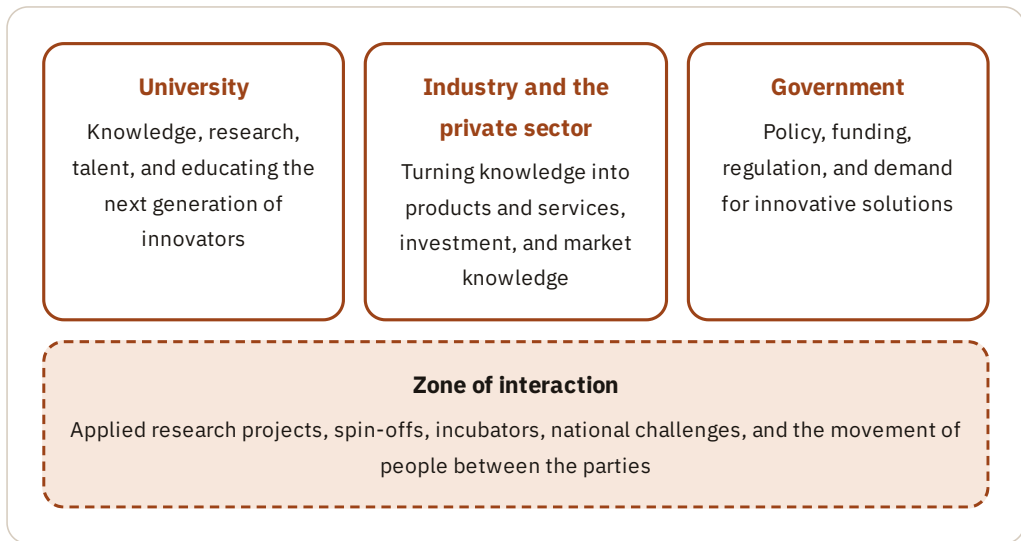


Figure 18.2 The triple helix of the innovation ecosystem, adapted from Etzkowitz & Leydesdorff (2000).

In the Kingdom, this system is taking shape around the national research, development and innovation priorities presented in Chapter 2, and around the role of the Research, Development and Innovation Authority (RDIA) as enabler and regulator of the sector (Saudi Press Agency, 2022 [Arabic]). This means that an organization, whether a university, a government agency or a company, can link the search fields in its strategy to these priorities and so find partners, funding and demand for its solutions.

Ecosystems carry risks of their own. Adner warned that the success of an innovation may depend on other parties in the ecosystem whom the organization does not control: on partners who must also innovate for the solution to work, and on links in the adoption chain that must accept the solution before it reaches the end beneficiary (Adner, 2006). A government solution that requires another agency to change its systems, or a university solution that depends on acceptance by a field-training provider, is exposed to risks invisible to anyone who looks only at their own organization.

18.6**The community that supports the innovator**

Innovation ecosystems are usually studied from the perspective of institutions; in this book we also look at them from the perspective of the person: what does the innovator need from the community around them? In a phenomenological study conducted with ten Saudi innovative entrepreneurs, participants identified four features of a supportive community: recognizing the innovator's distinctiveness and understanding their personal and cognitive style; investing in the innovator, promoting them and connecting them to suitable economic settings; financial and operational empowerment of their initiatives; and building their innovative and entrepreneurial identity through flexible environments that allow deep learning and genuine practice (Alsamani, 2026 [Arabic]).

These features converge with the findings of another study of the experiences of prominent innovators, most of whom saw their network of relationships as a pathway to opportunities, and all of whom agreed on the importance of interacting with peers (Alsamani, 2023). In the innovator's eyes, the ecosystem is people who know them, opportunities they can reach, and peers they learn alongside.

The university holds a unique position in this ecosystem, because it is the party through which most innovators pass during their formative years. When it connects its students with the problems of government agencies and companies in its region, offers them internships and joint projects, and introduces them to opportunities aligned with national priorities, it builds for them the network of relationships they need before they graduate. We return to this role in detail in Chapter 20.

Principle

Openness brings in knowledge, internal capacity absorbs it, and culture accepts it. An organization that has only the first collects solutions in reports; one that has all three turns them into value.

Chapter tool: the partner map

Draw a map of the external parties that could contribute to an initiative or an innovation area in your organization. For each party, write down what it offers, what it wants in return, the appropriate form of partnership, and who in your organization will receive what comes from it. Then identify the party on which the initiative depends but which you do not control: it is your first source of risk.

Chapter tool The partner map (an example from the university case)

Party	What it offers	What it wants	Form of partnership	Who receives it internally
Regional development authority	Real development problems, data, and potential funding	Workable solutions, and local talent	Annual student challenges on regional priorities	The orchestrating unit, and instructors of related courses
Major companies in the region	Internships, mentors, and sponsorship	Job-ready graduates, and solutions to their problems	Joint capstone projects, and mentoring programs	The partnerships unit, and project supervisors

Party	What it offers	What it wants	Form of partnership	Who receives it internally
National bodies for innovation and gifted education	Programs, competitions, and funding	High-quality student participation	Linking their programs to the student's extended pathway	Gifted support services, and the accelerator
Innovative alumni	Peer mentoring, and relatable stories	Belonging, and opportunities for networking and investment	A network of innovative alumni	Alumni affairs

Chapter Summary

- Open innovation is a process based on purposively managed knowledge flows across organizational boundaries, in three directions: outside-in, inside-out, and coupled.
- Openness has an optimal level, beyond which it exceeds the organization's ability to benefit from its sources.
- A solution may come from a field distant from that of the problem, and this is among the strongest arguments for openness.
- Absorptive capacity is a precondition for benefiting from external knowledge and depends on related internal knowledge, so openness is no substitute for internal capability.
- Each form of partnership has its purpose and its risks, and all share two conditions: a clear problem, and an internal bridge to receive what comes from outside.
- An organization works within an ecosystem that brings together university, industry and government, and the success of its innovation may depend on parties it does not control.

- In the innovator's eyes, the ecosystem is people, opportunities and peers, and the university holds a unique position in building a network of relationships for its students before they graduate.

Key Terms

Open innovation Open innovation	A distributed innovation process based on purposively managed knowledge flows across organizational boundaries.
Absorptive capacity Absorptive capacity	An organization's ability to recognize the value of external knowledge, assimilate it and apply it.
Not-invented-here syndrome Not-invented-here syndrome	Resistance to ideas and knowledge that come from outside the team or the organization.
National innovation system National innovation system	The network of public and private institutions that interact to produce, diffuse and use knowledge in a given country.
Triple helix Triple helix	A model that explains innovation through the interaction of university, industry and government.
Ecosystem risk Ecosystem risk	The dependence of an innovation's success on partners and adoption links that the organization does not control.

Review and Discussion Questions

- 1 Why is open innovation no substitute for internal capability?
Understanding
- 2 Analyze the opening case using the concepts of absorptive capacity and the not-invented-here syndrome, and suggest what should have been done before the challenge. **Analysis**
- 1 Choose a problem in your organization and identify the most suitable form of partnership for it from Table 18.1, giving your reasons. **Application**
- 2 Draw a partner map for an innovation area in your organization, and identify the party that represents the greatest ecosystem risk. **Application**
- 3 “The more partners an organization has, the greater its capacity to innovate.” Evaluate this statement. **Evaluation**

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How does an organization move from scattered initiatives that celebrate innovation to a sustained capability to produce it?

This book traces the path of innovation from the first signal to a solution adopted in practice that creates value, and analyzes the organizational foundations that make this path a settled practice: strategy, systems, culture, governance, teams and measurement, with people at the center.

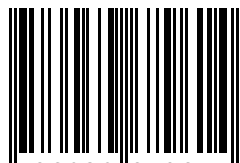
It rests on three pillars: a clear, high-priority problem; motivated people whose needs are met; and a system that connects them and turns effort into repeatable results. It combines international research evidence with the Saudi context, and pairs each chapter with a tool that can be used in a real organization.

Its twenty chapters are organized in five parts: foundations; institutional foundations and people; the initiative journey; value and the ecosystem; and an application to the university innovation ecosystem.

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