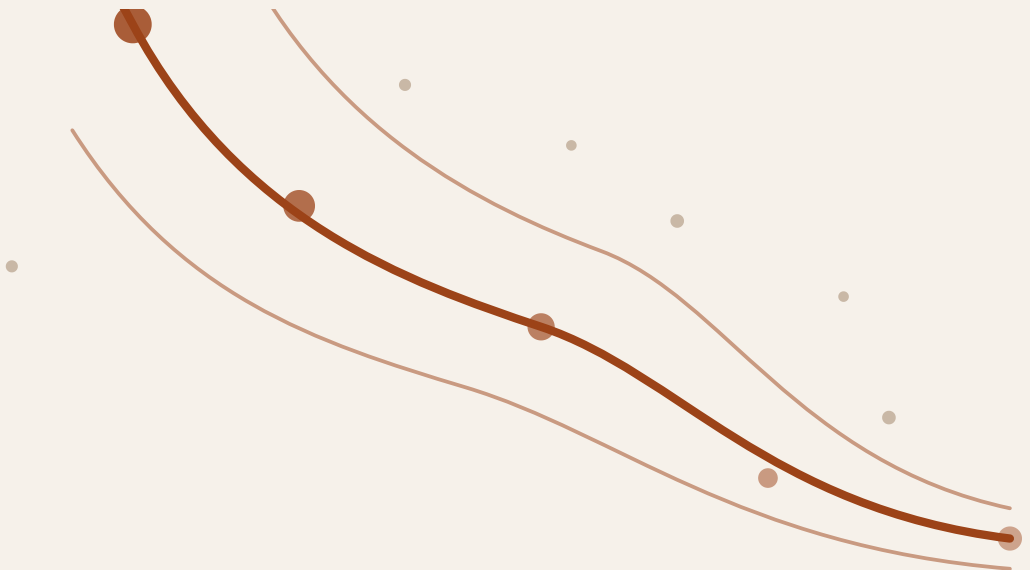


Innovation Management

From scattered initiatives
to a sustained organizational capability

Dr. Omar A. Alsamani



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Chapter 2

Why innovation now?

In this chapter we trace the shifts that have moved innovation from a seasonal activity to a permanent organizational need: accelerating change, artificial intelligence and what it means for the value of people, and the changing skills that work demands. We then read these shifts in the Saudi context and show that investment in the inputs of innovation pays off only to the extent that an organization is able to turn them into results.

Introduction

Opening case: an innovation center (composite case)

Three years ago, a public agency set up an innovation center. It gave the center a budget and a fully equipped space, launched a platform to collect employees' ideas, and ran a series of hackathons. Its annual report carried striking figures: hundreds of ideas, dozens of participating teams, prizes for the winners. Then an internal review asked a simple question: how many of these ideas are in actual use today? The answer: very few.

The agency had every input in place: funding, space, a platform and enthusiasm. The fault lay in the distance between inputs and results. This leads us to two linked questions in this chapter: why has innovation become a

permanent organizational need under present conditions, and why does investment in its inputs fall short of achieving it on its own?

Learning Objectives

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

- 1 Explain how operational discipline and innovation discipline complement each other, and when work calls for each.
- 2 Distinguish between an organization's external and internal realities, and use both to read the need for innovation.
- 3 Identify the main forces reshaping work, including artificial intelligence and changing skills.
- 4 Interpret Saudi Arabia's position in international innovation indices, and explain the gap between innovation inputs and outputs.
- 5 Weigh the risks of innovating against the risks of not innovating, and distinguish situations in which innovation is the appropriate response from those in which it is not.

2.1 From the logic of stability to the capacity for renewal

Traditional management had good reason to care about discipline and standardization. In the early twentieth century, the principles of scientific management, with their division of labor, standardized procedures and performance measurement, delivered enormous gains in productivity and quality (Taylor, 1911). This logic remains essential for any work that must be done correctly every time, such as dispensing medicine, paying salaries or processing regulatory transactions.

Yet this logic was designed for problems whose causes and solutions are known, where the challenge lies in skilled execution. Its limits show when it is applied to shifting opportunities and uncertain paths, where the need is not fully understood and the link between intervention and outcome is unclear. In such situations, insisting on a detailed plan drawn up in advance becomes a source of error, because the plan rests on assumptions that have not been tested.

The shift required, therefore, is to hold two kinds of discipline that work together: **operational discipline**, which protects quality and reliability, and **innovation discipline**, which guides exploration, experimentation and learning. The management literature calls the combination of the two organizational ambidexterity, which we discuss in detail in Chapter 3.

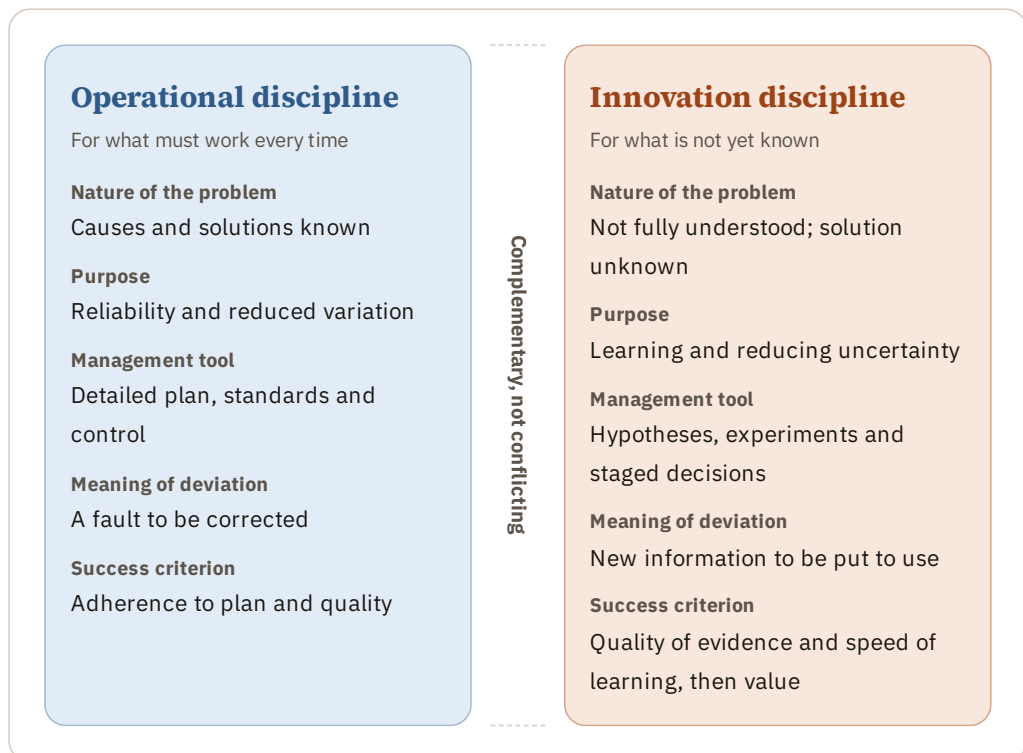


Figure 2.1 How operational discipline and innovation discipline complement each other.

One of the most common management errors is to apply one discipline where the other belongs. An exploratory initiative is judged by the standards of an operational project and is stifled before it can learn, or sensitive operational work is handled with the logic of experimentation and the service is exposed to needless errors. The first management question in any situation is therefore: do we know the solution and need to implement it, or do we first need to discover it?

2.2 External and internal realities

The value of any organization rests on a set of assumptions about the world around it: who its beneficiaries are, what they need, what alternatives are open to them, and what technology and regulation allow. The conditions surrounding the organization, and the ways they change, make up its **external realities**. These include shifts in markets, society, legislation and technology, and the points where they intersect, as when a social shift in young people's expectations meets a technological shift in the ways services are accessed.

The danger is that external realities usually change gradually and quietly, while the organization carries on working on assumptions that held true in the past. As the changes accumulate, the organization may find that the foundation on which its value was built is no longer there.

The pace of this change is quickening. A study of corporate longevity among firms in the S&P 500 index of large US companies tracked the average tenure of a company in the index and found that it fell from about thirty-three years in 1964 to about twenty-four in 2016; the authors projected that it would approach twelve years by 2027, and linked the decline to shifts in technology and business models and to waves of mergers and acquisitions (Anthony et al., 2018). The phenomenon resembles what Christensen described as disruptive innovation, in which a new solution starts out simple at the margins of the market and then improves until it displaces leaders that served their existing customers well (Christensen, 1997). Government organizations are less exposed

to being pushed out of the market, but they face the mirror image of this phenomenon: a widening gap between what they provide and what beneficiaries expect, having grown used to fast digital services in their daily lives.

Set against these are the organization's **internal realities**: its current state in terms of leadership, culture, structures, roles, internal relationships and the skills of its people. If external realities determine *what* the organization should innovate, internal realities determine its *capacity* to deliver it. The distinction is close to the familiar **SWOT** analysis of strengths, weaknesses, opportunities and threats: opportunities and threats belong to external realities, strengths and weaknesses to internal realities. The difference is that an innovation perspective treats strengths and weaknesses as things that can be built and developed.

Teece described an organization's capacity for renewal in a changing environment as **dynamic capabilities**, and identified three components: **sensing**, which means detecting opportunities and threats and listening to beneficiaries before changes force themselves on the organization; **seizing**, which means mobilizing resources and making decisions to capture the opportunity; and **reconfiguring**, which means continually adapting structures, assets and practices (Teece, 2007). Sensing without seizing produces reports that no one acts on; seizing without sensing produces activity in the wrong direction.

Building these capabilities is a responsibility shared across every level of the organization. Sensing often happens at the organization's edges, with the employee closest to the beneficiary; seizing requires leadership decisions and resources; and reconfiguring calls for the participation of all levels. The organization therefore needs a vision that makes renewal part of its purpose, and an environment that encourages initiative at every level, so that responding to change becomes an organizational habit. As change accelerates, building this capability becomes a condition for survival and excellence, and a priority that takes precedence over many operational ones.

In Practice

Ask yourself: when did your organization last learn of a change in its beneficiaries' needs, and how? If it was through complaints or falling numbers rather than regular dialogue with them, sensing is weak. If trends are noted in reports but lead to no decision in the plan or the budget, seizing is weak.

2.3 The forces reshaping work

Innovation management has gained importance because the sources of value and competition, and the very nature of work, are changing. The most influential forces can be summed up in five:

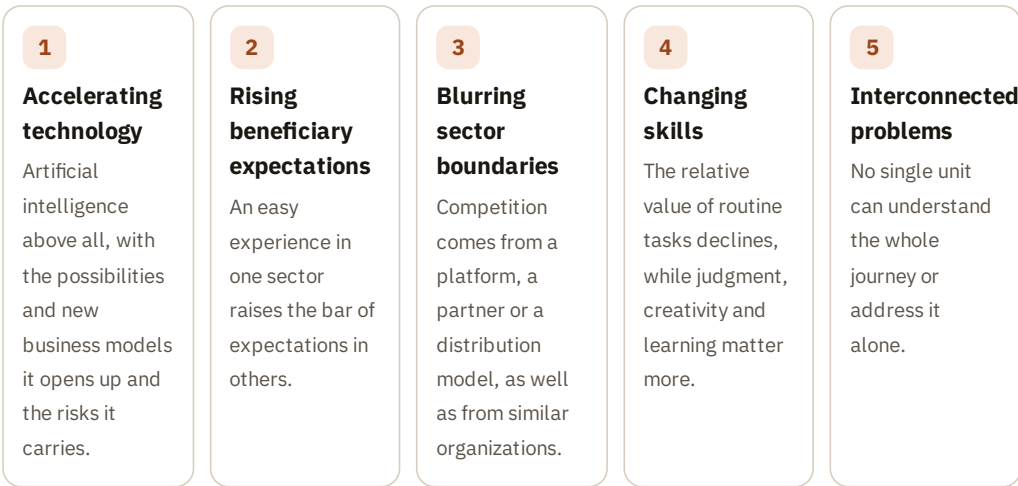


Figure 2.2 Five forces reshaping work.

The fourth force is evident in the World Economic Forum's Future of Jobs Report 2025, in which employers expect 39% of workers' core skills to change by 2030. Notably, the list of skills expected to grow in importance goes beyond

technical skills such as artificial intelligence and cybersecurity to include creative thinking, resilience and flexibility, curiosity and lifelong learning, and leadership and social influence (World Economic Forum, 2025).

This finding bears directly on innovation management: the capacity to innovate depends on people who are ready to question, experiment and learn, and on a work environment that nurtures these abilities, as much as it depends on technology and structures.

2.4 Artificial intelligence and the value of people

Generative artificial intelligence is changing how much a single person can accomplish. In a field experiment with 791 employees at Procter & Gamble working on real product-development challenges, an individual working with AI performed on a par with a team working without it. Those using AI also produced solutions that were better balanced between technical and commercial considerations, whatever their specialty, as though the tool had softened the effect of functional silos (Dell'Acqua et al., 2026). What once required a team and a long stretch of time may now be accomplished by one person, faster and at comparable quality.

The picture has another side, however. In a study of short-story writing, AI-generated ideas raised the creativity of each individual writer, with the largest gains among the less creative, but the stories became more similar to one another, so the diversity of ideas across the group declined (Doshi & Hauser, 2024). When everyone uses the same tools in the same way, their ideas converge.

How the tool is used is what makes the difference. In a study of 123 university students working on entrepreneurial projects, the students followed a structured five-stage collaboration protocol that asked the tool to question their assumptions and suggest alternatives, while leaving evaluation, revision and reflection to them. Of these students, 91.9% reported a marked development in their project ideas, and many showed improvement, to

varying degrees, in aspects of their strategic analysis (Alsamani, 2026). These are self-perceptions from an exploratory study, but they suggest that the tool can act as a thinking partner when collaboration with it is deliberately designed.

In this sense, we argue in this book, artificial intelligence raises the value of people in the innovation system. When generating alternatives and building prototypes becomes easy and available to everyone, the sources of distinction shift to what the tool cannot produce on its own: choosing the problem worth solving, understanding the context and the beneficiaries, exercising judgment when weighing alternatives, diversity of perspectives, and the motivation to keep trying. This shift requires innovation management to revisit entrenched assumptions: team size, the division of roles, the cost of experimentation, which has fallen sharply, and the way individuals and their contributions are evaluated.

The management question

A more productive question than “How do we use artificial intelligence?” is “What has it made possible, and what remains for people to add?”

2.5 The Saudi context

Innovation holds a central place in Saudi Vision 2030 as a means of diversifying the economy, raising public-sector efficiency and improving quality of life (Saudi Vision 2030, 2016 [Arabic]). On June 30, 2022, the national aspirations and priorities for the research, development and innovation sector over the next two decades were announced. They set out four priorities: health and wellness, sustainable environment and supply of essential needs, energy and industrial leadership, and economies of the future. They also set targets for annual spending on the sector to reach 2.5% of gross domestic product by 2040 and for the sector to contribute some SAR 60 billion to GDP, with the Research, Development and Innovation Authority (RDIA) serving as the sector’s enabler and regulator (Saudi Press Agency, 2022 [Arabic]).

These efforts are reflected in the Global Innovation Index published by the World Intellectual Property Organization (WIPO): Saudi Arabia rose from 66th place in 2020 and 2021 to 42nd out of 139 economies in 2026 (World Intellectual Property Organization [WIPO], 2026).

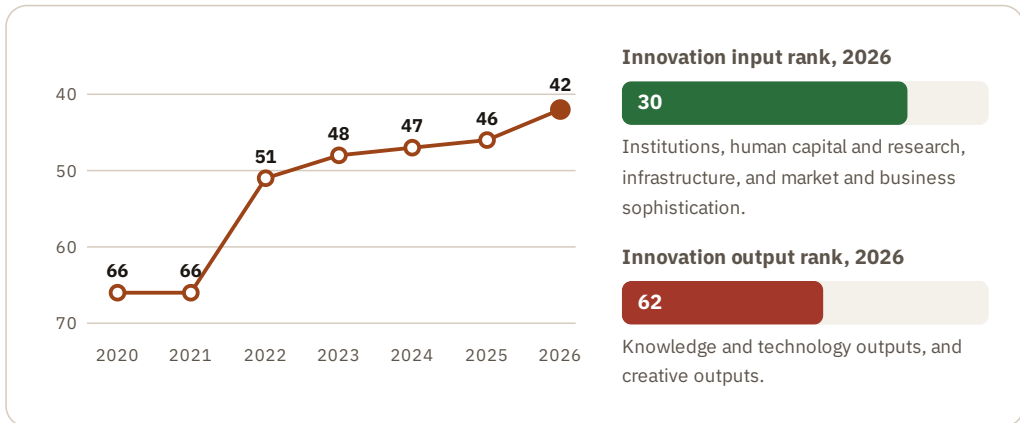


Figure 2.3 Saudi Arabia's rank in the Global Innovation Index (vertical axis: rank; higher on the chart is better), and the gap between input and output ranks in 2026. Bar length reflects the strength of the rank. Source: WIPO (2025, 2026).

A careful reading of the index, however, goes beyond the overall rank. In 2026 Saudi Arabia ranked 30th on innovation inputs and 62nd on innovation outputs, and the report notes that the country produces less innovation output than its level of investment would warrant. The picture was similar in 2025, when it ranked 31st on inputs and 61st on outputs (WIPO, 2025, 2026). Among the notable strengths the report identifies are Saudi Arabia's first place worldwide in the use of information and communication technology and its strong position in startup financing and e-government services; among the weaknesses is its lower ranking in knowledge and technology outputs and in creative outputs.

This gap matters for the subject of this book. Inputs such as funding, infrastructure, centers and programs are a necessary condition for innovation, but they do not turn into outputs automatically. The conversion happens inside organizations: in the way priorities are set, opportunities captured, ideas

tested and decisions made, in how people are involved and motivated, and in how solutions are moved into operation. This is the domain of innovation management. Setting up an innovation center in a university or government agency without linking it to the daily work of departments and units, and to the way their performance is assessed, raises the inputs while the outputs remain contingent on what happens inside those units.

A caution on reading indices

International innovation indices are tools for comparison at the national level, and they are affected by changes in methodology and data sources from year to year. Their general trends and major gaps are what should be read, and they should be used alongside other sources when judging the performance of a particular organization.

2.6 Relevance and risk: when is innovation the answer?

The aim of renewal is for the organization to maintain its **relevance** to its beneficiaries' needs, now and in the future, which is what reconfiguring means in the dynamic capabilities framework. The difference between an organization that **responds** and one that **reacts** is that the first reads change before it is forced upon it, and so is prepared, while the second reads it after the effect has been felt, and so acts under pressure.

Innovation has its risks, because it pursues what has not yet been tried. Risk management in this context is an ally of innovation: it sets the boundaries within which experimentation can proceed without unacceptable harm, and it uses methods such as limited experiments and staged funding to reduce risk. Yet not innovating is not as safe an option as it seems; an organization that stops renewing itself gradually loses its relevance. The right comparison, then, is between risks that can be managed and risks that accumulate unseen.

The need for efficiency persists through all these shifts; skilled operations are what fund renewal. Some problems, moreover, need only adherence to a known standard or the application of a proven practice, and using innovation tools on them slows the solution and undermines the credibility of innovation itself.

Table 2.1 Indicators that help in choosing the appropriate approach

Situation	Indicators	Appropriate approach
Execution failure	The cause is known, the solution proven, and the gap lies in compliance or resources	Operational management and follow-up
Opportunity for improvement	Performance is below standard, the causes can be analyzed, and solutions are mostly known	Continuous improvement and quality tools
Technically complex problem	Requires specialized expertise, but can be broken down and planned	Expert analysis and design
Unresolved need or opportunity	The solution is unknown, and there are essential assumptions about the user, the implementation or the value	Innovation approach: experimentation and staged decisions

A distinction drawn by Bennett and Lemoine helps with this diagnosis. They observed that describing the environment as “volatile, uncertain, complex and ambiguous” becomes an excuse for not planning when it is used as a blanket label for every difficulty, and that its value lies in identifying the type of challenge: volatility is met by building reserves and flexibility, uncertainty by gathering information, and complexity by restructuring and building expertise, while **ambiguity**, where causal relationships are unclear and there are no precedents to go by, calls for experimentation (Bennett & Lemoine, 2014). Experimentation is the core of the innovation approach, which is why

innovation is the most fitting response precisely when ambiguity defines the situation, and why other approaches take precedence for the remaining difficulties.

Organizational maturity shows in diagnosing the situation and choosing the approach that creates value with no more complexity than necessary.

Chapter tool: External realities scanning matrix

Use this matrix to turn the external changes you observe into questions that can be decided on, in strategic planning sessions or periodically every six months. Fill in one row for each significant signal of change.

External realities scanning matrix					One signal per row
Domain	Signal observed	Likely effect on us	Opportunity it opens	Type of challenge	Proposed response
Beneficiaries and society	What has changed in their expectations and behavior?	Which assumption in our model does it threaten?	What new need is emerging?	Volatility / uncertainty / complexity / ambiguity	Act now / explore / monitor
Technology	What new possibilities are available?				
Regulation and legislation	What is changing in regulations and policies?				

Domain	Signal observed	Likely effect on us	Opportunity it opens	Type of challenge	Proposed response
Economy and resources	What is changing in funding and costs?				
Competitors and alternatives	Who offers an alternative from outside the sector?				
Environment and sustainability	What environmental pressures or opportunities are there?				
Rule of use: every signal classified as “explore” should lead to a specific question, an owner and a deadline; otherwise the matrix becomes a monitoring report that changes nothing.					

Chapter Summary

- The contemporary organization needs two complementary disciplines: operational discipline for what must work every time, and innovation discipline for what is not yet known. The common error is to apply one where the other belongs.
- External realities determine what an organization should innovate; internal realities determine its capacity to deliver it. The organization needs all three dynamic capabilities: sensing, seizing and reconfiguring.
- Five forces are reshaping work: accelerating technology, rising expectations, blurring sector boundaries, changing skills and

interconnected problems. Among the skills growing in importance are creative thinking, flexibility and curiosity.

- Artificial intelligence multiplies what an individual can accomplish, yet it may reduce the diversity of ideas. The value of what people add therefore rises: choosing the problem, understanding the context, judgment, diversity of perspectives and motivation.
- Saudi Arabia rose in the Global Innovation Index from 66th to 42nd between 2020 and 2026, with a clear gap between its input rank (30) and output rank (62). Converting inputs into outputs is the work of innovation management inside organizations.
- Innovation carries risks that can be managed; not innovating carries risks that accumulate unseen. Maturity shows in diagnosing the situation and choosing the approach that suits it; experimentation is a response specific to situations of ambiguity.

Key Terms

External realities External realities	The conditions surrounding an organization and the ways they change, in markets, society, legislation and technology.
Internal realities Internal realities	The organization's current state in terms of leadership, culture, structures, roles and skills.
VUCA VUCA	A description of the environment in four dimensions: volatility, uncertainty, complexity and ambiguity.
Dynamic capabilities Dynamic capabilities	An organization's capacity to sense opportunities, seize them and reconfigure its resources and

	practices in a changing environment.
Relevance Relevance	The continued fit between what an organization offers and the needs of its beneficiaries, now and in the future.
Innovation inputs / outputs Innovation inputs / outputs	Inputs are the resources and conditions that enable innovation; outputs are its knowledge, technological and creative results.

Review and Discussion Questions

- 1 Explain the difference between operational discipline and innovation discipline, and give an example of a situation in your organization where one was applied in place of the other. **Understanding**
- 2 Choose an external change affecting your sector and determine whether it is mainly a matter of volatility, uncertainty, complexity or ambiguity; then identify the appropriate response to it, and whether that response is innovation. **Application**
- 1 “Artificial intelligence will make innovation easier for everyone.” Discuss this statement in light of the two studies presented in Section 2.4. **Analysis**
- 2 Explain the gap between Saudi Arabia’s rank on innovation inputs and its rank on outputs. What factors within organizations might contribute to this gap? **Analysis**
- 3 “Not innovating is the safer option.” Evaluate this statement, identifying the situations in which innovation is not the appropriate response. **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.

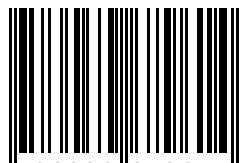
It rests on three pillars: a clear, high-priority problem; motivated people whose needs are met; and a system that connects them and turns effort into repeatable results. It combines international research evidence with the Saudi context, and pairs each chapter with a tool that can be used in a real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