SVC

Unlocking private capital for deep tech in Saudi Arabia

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H.E. Abdullah A. Alswaha

Minister of Communications and Information Technology

With the unwavering support and bold vision of HRH Crown Prince Mohammed Bin Salman, Saudi Arabia is transforming frontier science into globally competitive industries. Today, in the AI age, deep tech is a strategic pillar for technological sovereignty, economic resilience, and long-term competitiveness.

By integrating research, capital, and industry into one cohesive ecosystem, we are positioning the Kingdom as a global hub for science-driven innovation and a leader in shaping the industries of the future.

I commend and thank Saudi Venture Capital for its continued leadership in mobilizing private capital and strengthening the foundations of our deep tech economy.

H.E. Dr. Nabeel Koshak

CEO and Board Member, SVC

Deep tech is reshaping global innovation. Today, it represents around 40% of global venture capital investment, reflecting growing confidence in science-based ventures that tackle complex industrial and societal challenges. Across leading economies, public and private investors are converging to back technologies that fuse advanced research with commercial ambition.

Saudi Arabia is now entering this space with momentum. The Kingdom already counts over tens funded deep tech startups. Building on Vision 2030, national programs have expanded research capacity, venture funding, and innovation partnerships - laying the groundwork for a competitive deep tech ecosystem.

Executive summary

Deep tech transforms frontier science into practical innovation. These ventures convert advanced research into market-ready solutions that redefine industries. While development cycles are long and uncertain, the potential impact is transformative - driving competitiveness, job creation, and national resilience.

Deep tech demands investors who think long-term and embrace risk. Traditional finance struggles to fund ventures with extended R&D timelines, but patient capital fills this gap - bringing both funding and expertise. Globally, deep tech has captured a rapidly expanding share of venture investment, driven by advances in compute power, maturing research networks, and successful exits. These trends show that patient capital can convert advanced science into scalable, profitable enterprises.

Around the world, leading innovation hubs have built conditions that make deep tech investable. Successful ecosystems blend public support with private capital, establish clear rules for research commercialization, and ensure that founders have access to infrastructure, talent, and early markets. Five recurring best practices emerge: mission-driven policy frameworks, catalytic public funding and grants, customer-led validation pathways, dedicated deep tech venture capital funds, and integrated university–investor ecosystems supported by targeted talent development. Together, these create a virtuous cycle of innovation, investment, and growth.

Saudi Arabia's deep tech landscape is emerging. Many science-based startups have been founded in recent years, concentrated primarily in Riyadh, Thuwal and Dhahran, respectively due to the presence of scientific communities at KACST, KAUST and KFUPM. These companies focus on advanced computing, automation, and industrial technologies - showing that the research base is translating into commercial activity. Most remain in early funding stages, highlighting the need for mechanisms that help ventures move from prototype to pilot to production.

The Kingdom is establishing the cornerstones of a deep tech economy. Policy clarity, supportive investment structures, and an expanding innovation culture are combining to lower barriers for entrepreneurs. Shared research infrastructure, university–industry partnerships, and growing investor participation are helping de-risk early development. Continued acceleration will depend on aligning incentives, simplifying market access, and fostering sustained collaboration between academia, industry and investors.

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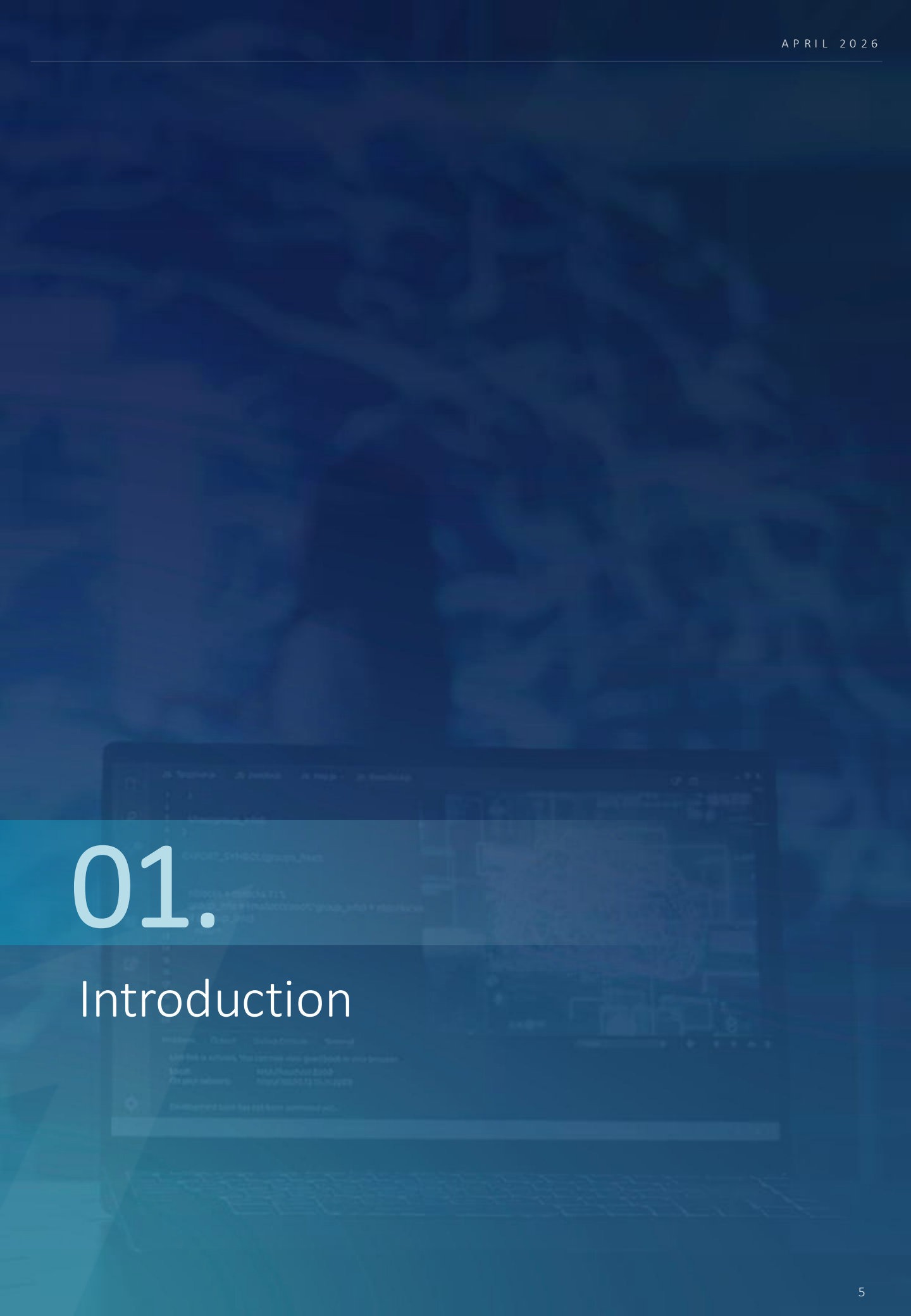
TABLE OF CONTENTS



01.

Introduction

Saudi Arabia is entering a new phase of economic transformation - one defined by diversification, innovation, and the pursuit of globally competitive industries. As the Kingdom strengthens its research capacity and private sector dynamism, science-driven technologies are emerging as powerful engines of productivity and resilience. Deep technology, or "deep tech," represents this frontier of innovation. It encompasses breakthroughs in fields such as artificial intelligence, advanced materials, quantum computing, robotics, and biotechnology that can fundamentally reshape production systems and address complex societal challenges. Deep tech ventures operate at the intersection of research and entrepreneurship, converting scientific discovery into solutions with lasting industrial and economic impact.

Building on its expanding research base, world-class universities, and maturing venture ecosystem, Saudi Arabia is increasingly positioned to translate scientific progress into commercial outcomes. Over the past few years, reforms to strengthen intellectual property frameworks, expand research infrastructure, and cultivate innovation hubs have accelerated the translation of ideas into ventures. At the same time, both public and private investors are channeling greater attention toward high-risk, high-impact technologies, signaling confidence in the country's capacity to host and scale science-based enterprises. Together, these developments mark the early formation of a national deep tech ecosystem - one that can enhance competitiveness, foster new industries, and reinforce technological sovereignty.

This report explores how Saudi Arabia can unlock private capital for deep tech and convert its research assets into globally competitive ventures. It draws on global best practices, analyzes the current state of the Kingdom's deep tech landscape, and identifies priority actions to accelerate ecosystem maturity. The study examines the capital dynamics of deep tech investment, the structural enablers of successful ecosystems, and the unique opportunities present in Saudi Arabia's research and industrial base. By combining data, case studies, and expert perspectives, the report outlines the case for developing a vibrant deep tech sector - one capable of fueling long-term innovation, diversification, and national resilience.

02.

Deep tech venture capital investments

What deep tech is

Deep tech is defined as novel scientific or engineering breakthroughs making their way into products and companies for the first time[1]. As scientific frontiers keep advancing, the perimeter of deep tech is constantly evolving - the breakthrough of today becomes tomorrow's mainstream, while new discoveries continually redefine the edge. Based on classification of emerging technologies, deep tech is currently encompassing 10 different segments (Figure 1), all sharing three traits: complex engineering breakthroughs, long development timelines and a need for sustained, high-risk investment.

The importance of deep tech resides in its potential to tackle the world's most pressing challenges. Unlike traditional tech, deep tech creates entirely new capabilities that can reshape industries. In fact, these technologies deliver greater impact: stronger competitiveness for economies, new high-quality jobs, and solutions to critical issues, such as climate change, health, and food security.

For countries and investors, deep tech is not just an opportunity - it is a strategic necessity to remain relevant in the next wave of global innovation.

Figure 1: 10 segments and key technologies in deep tech

Categories	Examples of technologies	Selected companies
Artificial Intelligence	AI drug discovery, Generative AI, Enterprise workflow	ANTHROPIC, Dataminr, OpenAI
Autonomous systems	EV, Autonomous driving, Drones, Robots, eVTOL, Nanosatellites	cruise, nuro, WAYMO
Advanced Physics and Chemistry	Battery technology, Energy production, Green solvents, Propulsion systems	Commonwealth Fusion Systems, SPACEX, tae
Internet of Things and Sensors	Next-gen telecommunications, Video movement and sound sensors, microscopes	OneWeb, PARAGRAF, Sonair
Synthetic biology	Bioreactors, Novel proteins, Gene sequencing / writing / building, Diagnostics	GINKGO BIOWORKS, LanzaTech, UPSIDE
Advanced materials and nanotechnology	Semiconductors, Metal alloys, Construction materials, Biomaterials, Nanomaterials	Bolt, Form energy, UNISOC
Quantum technologies	Quantum computing, Quantum communications, Quantum sensing	IONQ, PsiQuantum, XANADU
Factory automation	Industrial robots, Additive manufacturing, Automation software	EXOTEC, inform, Geek+
Blockchain	Blockchain, Homomorphic computing	consensys, LEDGER, NEAR
Next gen interfaces	AR/VR headsets, Optical waveguides, haptics, digital twin	Magic Leap, mindmaze, NEURALINK

Source: BCG

"Deep tech sounds intimidating. It is founders who see a structural problem and build through it, not around it. Better infrastructure, better products, lower costs, technology that reshapes entire supply chains. The region is ready for a lot more of that"

- Mohammed Almeshekah, Founding Partner at Outliers VC

1. Lake Star, Walden Catalyst, Dealroom.co (2025) The 2025 European deep tech report

The key role of VC in deep tech

VC is critical for deep tech because it provides the risk-tolerant funding needed to turn scientific breakthroughs into market-ready products. In fact, deep tech ventures face long development and commercialization timelines, high upfront costs and uncertain commercialization paths (Figure 2) - barriers that traditional financing typically avoids. VC not only bridges this gap with early- and growth-stage funding but also brings expertise, networks, and credibility that help startups attract partners and customers.

By absorbing early risk and fueling ambitious ideas, VC acts as the catalyst that transforms promising research into companies capable of scaling globally, ultimately driving both economic growth and societal impact.

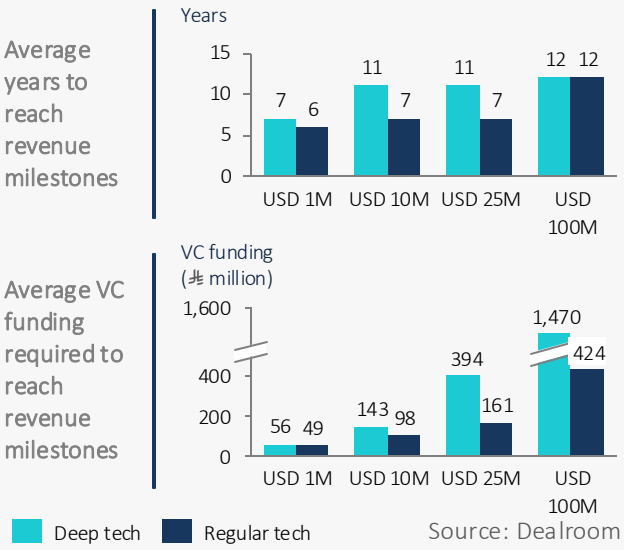
Global momentum in deep tech investments

The value of the global deep tech investment market - including both VC and private equity - reached ⅄ 489 billion (USD 130 billion) in 2025 (Figure 3). The share of global VC capital invested in deep tech has also doubled in the last decade to 40% (Figure 3). Despite the complexity and time horizons of deep tech investments, their weighted average internal rate of return (IRR) is 26%, 5 p.p. above traditional VC investors[2].

Venture investment is surging because several forces move together. Governments reduce early risk via grants, tax credits, and procurement. Corporates and public buyers signal demand with pilots. Universities and labs create spinouts and strong IP. Costs for compute, sensors, and fabrication keep falling. Talent concentrates around these hubs. Successful exits recycle capital and confidence.

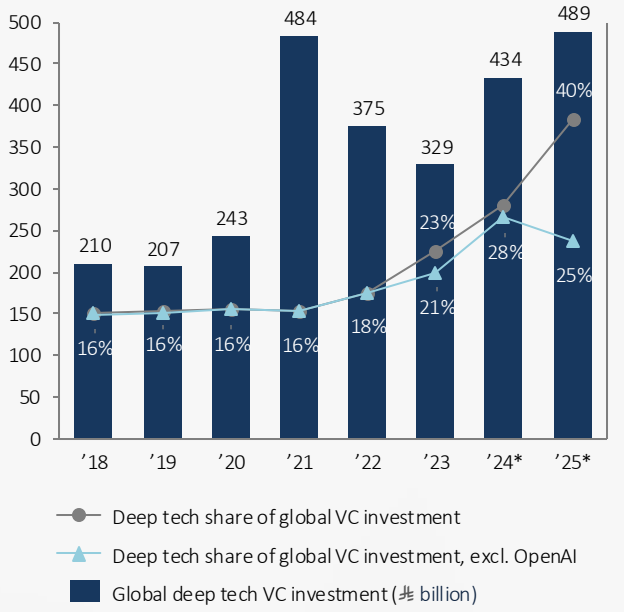
These forces create a reinforcing loop. Early support leads to proof, which in turn brings more investors. New capital speeds hiring and experiments. Faster progress lowers costs and lifts performance. Better performance wins bigger customers and revenue, leading to successful exits. Each successful exit recycles both capital and confidence into new funds, sustaining innovation cycles.

Figure 2: Time and funding to reach revenue milestones



Source: Dealroom

Figure 3: Global deep tech investment



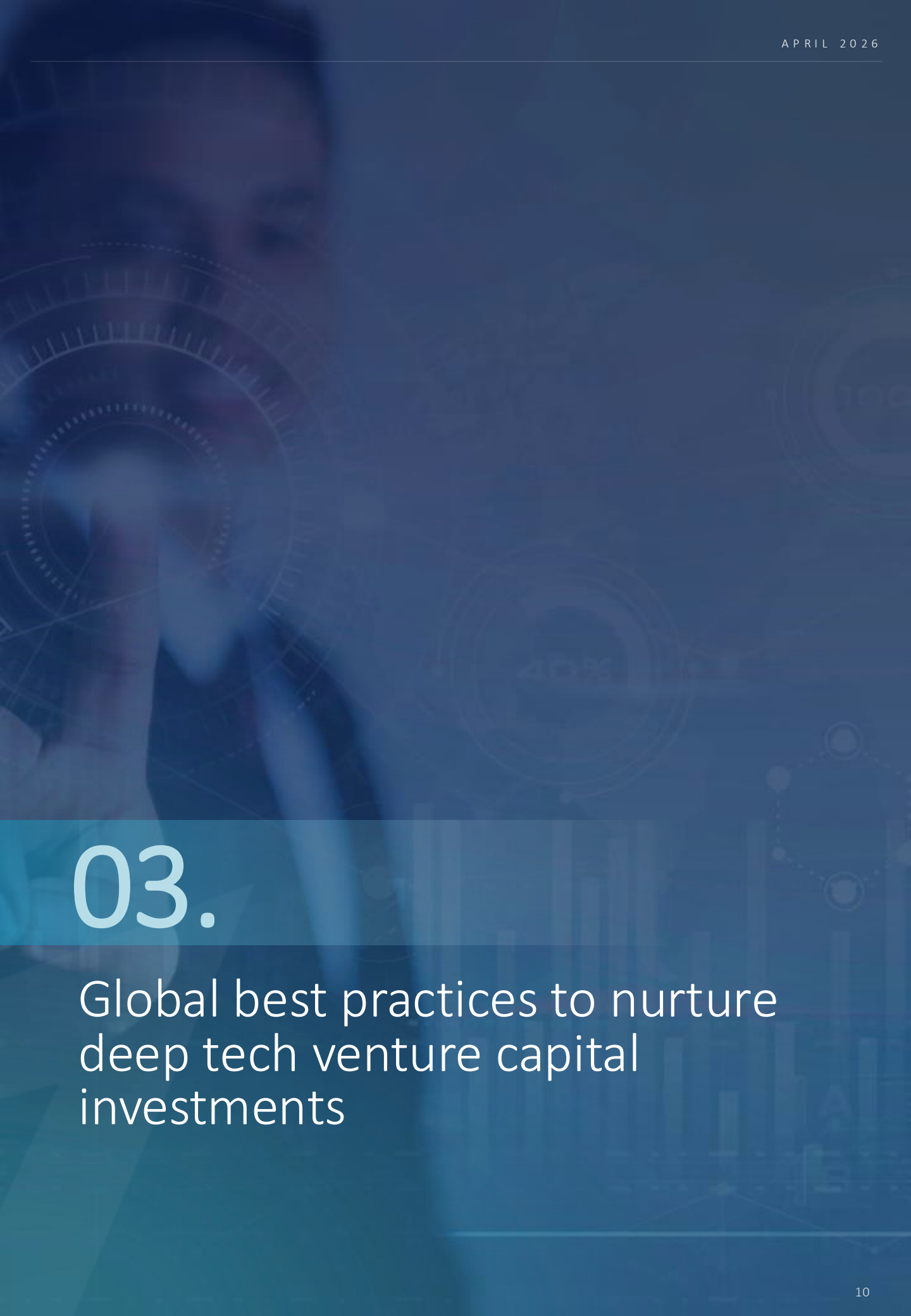
*Numbers are not yet final due to possible reporting lag

Source: Dealroom

"Deep tech investments have outperformed other assets in our portfolio: higher returns, defensible IP, and sustained value even in slower markets"

- Qamar Aftab, Investment Director at Wa'ed Ventures

2. BCG (2023) An Investor's Guide to Deep Tech



03.

Global best practices to nurture deep tech venture capital investments

Best practices to unlock VC in deep tech

Attracting private capital into deep tech ventures requires more than the standard VC playbook. Yet some ecosystems have proven that thoughtful programs and initiatives can unlock private capital to accelerate the development of local deep tech ecosystem. These initiatives can be summarized in 5 best practices to create the right conditions for high-risk, science-driven ventures to thrive - combining supportive policies, public funding, early market validation, strong innovation ecosystems, integration of investors and researchers, and targeted education.

Five best practices to develop deep tech ecosystem

1. Mission-driven policies unlock innovation
2. Public funding and grants de-risk early investments and crowd in private capital
3. Customers validate real-world adoption and accelerate commercialization through pilot-to-procurement pathways
4. Establishment of venture capital funds focused on deep tech
5. Universities and research centers turn research into spinouts and connect researchers with startups

"Technological sovereignty is the defining race of our time. Deep tech isn't just essential for national security and resilience, it's where the highest-conviction bets are being made: energy, chips, food supply, critical minerals. That is a generational investment opportunity"

- Rawan Farwana, Investment Manager at Wa'ed Ventures

01 Mission-driven policies unlock innovation

Policies designed to unlock innovation create the conditions for deep tech ventures to thrive. They typically include three elements: regulatory clarity and efficiency, innovation-friendly incentives, talent and knowledge mobility.

Regulatory clarity and efficiency refers to simplification of company formation, licensing, and compliance, while introducing tools like sandboxes that allow safe experimentation.

Innovation-friendly incentive measures – such as R&D tax credits or accelerated approvals – reduce the cost and time to bring new technologies to market.

Talent and knowledge mobility frameworks make it easier to attract, retain, and integrate global experts, while strengthening intellectual property protection to encourage commercialization.

Together, these policies reduce uncertainty, lower barriers to growth, and give entrepreneurs and investors the confidence to scale deep tech solutions.

Examples:

Singapore's Generative AI Evaluation Sandbox is a government-led program for controlled, near-production trials of GenAI applications with third-party testing. An SME track (2024) extends the same framework to smaller firms. The Global AI Assurance Pilot (2025) then applied this approach by pairing independent testing providers with deployers to formalize technical-assurance practices that now inform the Sandbox.

In 2024, the Sandbox's SME track offered 13 solutions in grant-backed trials reaching ~300 SMEs. Sandbox 1.0 involved 150+ SMEs, ~80% of which continued to use the solutions - evidence of a low-risk, assurance-aligned path to scale. In 2025, the Global AI Assurance Pilot paired 17 deployers with 16 testers across 10 industries[3].

The U.S. Research & Development tax credit (IRC §41) is a permanent federal incentive that that lowers corporate tax liability by 14-20% of qualified research expenses (QRE), including wages, supplies, eligible contract research, computing costs[4]. It is relevant to deep tech ventures as it covers the expenses to advance science-based solutions.

In 2021, corporations reported ¥ 125 billion (USD 33 billion) in U.S. R&D credits. This demonstrates the program's scale and its fiscal impact on innovative firms[5]. It is estimated that the average effective research and experimentation credit rate is ~6% of QRE, implying ~6% reduction in cost of eligible R&D[6].

The **United Kingdom** has implemented two VC schemes providing income tax relief to individual investors in VC (Seed Enterprise Investment Scheme (SEIS) and Enterprise Investment Scheme (EIS)). These schemes allows individuals to claim 30% of the amount invested up to defined investment thresholds. In case of investment into knowledge intensive companies (i.e., deep tech), investors the investment threshold for income tax relief doubles.

In 2023, ~75k claims were made by investors in total[7].

Canada's 2023–24 Tech Talent Strategy is a package of immigration measures aimed at attracting skilled tech workers and founders. It includes a work permit stream for US H-1B holders (work visa for US employers to hire foreign professionals in specialty occupations - typically requiring specialized knowledge), an Innovation Stream for highly talented individuals, STEM-specific draws under Express Entry, and expanded open work permits for startup founders.

In 2023, the H-1B stream hit the 10,000 cap in under 48 hours, with ~14,000 applications and ~6,000 approvals, which is evidence of strong demand and early results. These measures broaden access to senior STEM talent and speed founder work authorization[8].

"Deep tech is high risk; if ecosystems don't support R&D, breakthrough innovation simply doesn't reach the market"

- Dr. Ali H. Alhasan, Founder at NanoPalm

3. Infocomm Media Development Authority (IMDA) (2023,2024,2025) First of its kind Generative AI Evaluation Sandbox for Trusted AI by AI Verify Foundation & IMDA; Building on the success of Singapore's first Generative AI Sandbox for SMEs, IMDA launches Generative AI Sandbox for SMEs v2.0 to help SMEs adopt GenAI solutions; Singapore Unveils Insights from World's First Technical Testing of Real World Applications of GenAI; EntrePass, Ministry of Manpower (Singapore)
4. U.S. Department of the Treasury (2016) Research and experimentation (R&E) credit
5. IRS (2021) Table 14. Form 6765, Credit for Increasing Research Activities, Selected Items by Sector
6. Tax Policy Center (2023) Understanding R&D Tax Breaks and Reform Options
7. UK Government (2024) Enterprise Investment Scheme, Seed Enterprise Investment Scheme and Social Investment Tax Relief statistics
8. Government of Canada (2023) CIMM – Open Work Permit for H-1B Visa Holders; Minister Fraser launches Canada's first-ever Tech Talent Strategy at Collision 2023

02 Public funding and grants de-risk early investments and crowd in private capital

Public funding plays a pivotal role in moving deep tech ventures from lab to market. With long R&D cycles, high capital intensity, and uncertain commercialization paths, private investors are often hesitant at the earliest stages. Well-designed public programs reduce this barrier through competitive R&D grants that fund proof-of-concept research and milestone-based commercialization grants that support prototypes and early pilots, alongside seed funding and targeted deep tech funds. Non-dilutive grants are particularly powerful: they extend runway without early dilution and provide third-party credibility through rigorous selection. By de-risking technology before equity is required and signaling quality to private markets, public funding crowds in venture and corporate capital rather than replacing it.

France's **Bpifrance deep tech plan** is a State-backed innovation program launched in 2019 with a five-year budget of ৳ 11 billion (€ 2.5 billion). It provides grant and equity funding and strategic support to researchers and entrepreneurs to commercialize scientific breakthroughs.

By 2025, it has supported 2,500+ deep tech startups, including 385 created in 2024. These ventures raised ৳ 12.3 billion (€ 2.8 billion) in 2024, giving France approximately 20% of Europe's deep tech investment[9].

The **United States National Science Foundation** runs America's Seed Fund, the federal **Small Business Innovation Research** and **Small Business Technology Transfer programs** that provide non-dilutive research and development grants to early-stage technology startups. The program awards over ৳ 750 million (USD 200 million) annually to roughly 400 companies, funding proof-of-concept and prototype development without taking equity[10].

Since 2016, it has made 4,000+ awards across science and engineering sectors[11]. By extending runway and reducing early technical risk, these grants strengthen venture readiness and help crowd in private capital[10].

Innovate United Kingdom, part of **United Kingdom Research and Innovation,** provides competitive, non-dilutive grants to businesses for feasibility studies, industrial research and experimental development. These grants fund early-stage technical validation & prototyping, helping science-based ventures build commercially relevant technologies before raising private capital [12].

Innovate United Kingdom has awarded over 59,000 grants to more than 14,000 firms since 2005, with funded companies demonstrating stronger growth & improved access to equity finance compared to non-funded peers.[13].

The European Innovation Council (EIC) Pathfinder backs high-risk researches at Technology Readiness Level (TRL) 1-4, which include basic research, proof of concept, and laboratory validation stages. The European Innovation Council (EIC) Transition supports eligible outcomes from Pathfinder or similar EU projects toward TRL 5-6 for transition from lab to real-world environments.

In 2025, Pathfinder Open (a call for proposals under Pathfinder) received more than 2,000 proposals for ৳ 27 billion (€ 6.2 billion) against a ৳ 625 million (€ 142 million) budget. The late-2024 Transition call drew 413 proposals seeking ৳ 4.4 billion (€ 991 million) for a ৳ 431 million (€ 98 million) envelope, with grants up to ৳ 11 million (€ 2.5 million) each[14, 15].

SEEDS Capital, investment arm of Enterprise Singapore and Singapore Economic Development Board, co-invests into early-stage technology startups with substantial innovative and intellectual content, and international scalability.

SEEDS Capital has a portfolio of 100+ deep tech startups and works with 50+ co-investors. It plans to committed to catalyze at least ৳ 860 million (S$300 million) of private investment into Singapore-based deep tech ventures under a ৳ 430 million (S$150 million) public commitment[16].

"For us, it was key to get early-on support of quantum computing-specialized VC fund - which relied on a mix public and private funding"

- Nicolas Proust, Vice President at Pasqal

9. Bpifrance (2022,2025) Institutions' Role To Help Deep Tech Companies Address Major Challenges Of The 21st Century; 6 years of the Deeptech Plan: a structured French sector, driving the European deeptech dynamic
10. United States National Science Foundation (2024) America's Seed Fund Overview
11. United States National Science Foundation (2024) America's Seed Fund Portfolio Statistics
12. Innovate United Kingdom (2026) Categories of research and development supported
13. Innovation Research Caucus (2025) The Contribution of Innovate UK to UK Firm Growth and Performance
14. European Innovation Council (2024) EIC Pathfinder
15. Accelpoment (2025) Record-breaking interest in the EIC Pathfinder 2025 call with more than 2,000 submitted proposals
16. Enterprise Singapore (2025) About SEEDS Capital

03 Customers validate real-world adoption and accelerate commercialization through pilot-to-procurement pathways

Early customer engagements to validate product-market fit are critical for deep tech ventures, where technologies often face long development timelines and high uncertainty before reaching commercial viability. Beyond formal contracts, large companies and public organizations play a pivotal role by opening their facilities, data, and operational environments for pilots, trials, and experimental deployments. Such partnerships allow startups to test and refine their technologies in real-world conditions, gaining invaluable technical feedback and demonstrating feasibility at scale. Mechanisms like advanced contracting, outcome-based procurement, or milestone agreements can then build on these early trials, translating validation into the first revenue streams. Together, these early engagements not only accelerate learning cycles but also provide credible proof points that de-risk investment decisions and shorten the path from prototype to market-ready solution.

Examples:

Cerebras Systems, a wafer-scale AI hardware startup, deployed its CS-Series at GSK R&D to train large genomics/epigenomics models. Both Cerebras and GSK shared the results publicly. This is an enterprise, real-world use of novel wafer-scale AI hardware in drug discovery workflows rather than a lab demo[17].

This is strong product-market validation for a deep tech startup. Paid deployment converts milestones into revenue and a marquee reference, boosting investor confidence while GSK gains faster training and larger models.

Nuclear fusion startup **Helion Energy** signed a power purchase agreement with Microsoft to annually supply 50 MW of electricity. Helion has started construction of power plant in 2025, and it is expected to be operational from 2028. Microsoft will pay once when electricity is delivered, turning Helion's technical milestones into a contracted offtake[18].

The structure signals demand, ties revenue to performance, helps unlock suppliers and finance, and gives Microsoft first-mover access to potential clean electricity for data centers, accelerating the shift from prototype to commercial power.

Donecle builds autonomous drones and IoT sensors for aircraft exterior inspections. It engaged with Air France Industries-KLM Engineering & Maintenance (AFI-KLM E&M) to test its drone inspection system on real operational aircraft. Donecle was granted access to the maintenance environment, enabling trials of its UAV-based inspection solution[19].

Donecle validated its system for defect detection in aircraft fuselage and moved from experimentation into commercialization. It also gave Donecle a credible reference partner and demonstrable performance in an operational aerospace environment, thereby reducing risk for future investors and customers. For AFI-KLM, it provided an opportunity to trial innovative inspection methods that could reduce downtime and costs.

"Deep tech startups should look early-on at the applicability of their solutions, leveraging engagements with established local and global companies"

- Lana Graf, Global lead for AI and deep tech investments at International Finance Corporation

17. Businesswire (2023) Helion announces world's first fusion energy purchase agreement with Microsoft
18. Cerebras (2022) GlaxoSmithKline and Cerebras are Advancing the State of the Art in AI for Drug Discovery
19. Donecle (2020) AFI KLM E&M renewing cooperation with Donecle

04 Establishment of venture capital funds focused on deep tech

Universities are generating a growing pipeline of deep tech spinouts, yet specialist venture capital supply remains limited. Science-based ventures require longer R&D timelines, capital intensity, and technical diligence that generalist VC models often cannot accommodate. Dedicated deep tech fund managers therefore play a critical role, providing patient, thesis-driven capital and commercialization expertise to bridge the gap between research demand and private capital supply.

Examples:

Cambridge Innovation Capital (CIC) is a specialist deep tech investor focused on commercializing science from the University of Cambridge. CIC operates an Entrepreneurs-in-Residence (EIR) model, embedding experienced operators alongside researchers to shape ventures and often act as co-founders.

In 2025, CIC committed at least ~475 million (£100 million) to back Cambridge spinouts. By underwriting early scientific risk and supporting structured company formation, CIC strengthens specialist VC supply within the Cambridge ecosystem and helps crowd in later-stage capital[20].

IQ Capital is a dedicated European deep tech VC investing from pre-Seed to Series A across quantum computing, advanced materials, synthetic biology, and AI infrastructure.

Since 2005, it has partnered with 200+ deep tech founders and can follow on with up to 150 million ($40 million) per company, supporting ventures through technical and commercial inflection points[21].

High-Tech Gründerfonds (HTGF) is Germany's largest public-private seed-stage VC fund for technology startups. It provides up to 4.4 million (€ 1 million) in seed financing and can invest up to 17.6 million (€ 4 million) per company. The fund's capital base combines public contributions with investments from corporates and financial institutions, illustrating how government-backed financial institutions like KfW can play a catalytic role.

HTGF has supported ~700 startups since inception, achieving 160+ exits. It currently manages 6.2 billion (€ 1.4 billion) and has catalyzed more than 19.8 billion (€ 4.5 billion) in follow-on capital[22].

Pacific Channel is a New Zealand-based deep tech venture capital firm, focused on commercializing breakthrough science from research institutions across health, agri-food, and environmental technologies. The firm invests in science-based startups developing technologies with long R&D timelines and high technical complexity.

Pacific Channel manages ~470 million (USD 125 million) in assets and has backed 67 deep tech companies, achieved 11 successful exits and supported the creation of 1,000+ high-value jobs, demonstrating the role of specialist venture capital in scaling research-driven innovation[23].

Lux Capital is a US deep tech venture capital firm managing over ~26 billion (USD 7 billion) in assets, investing in science- and engineering-driven companies across advanced materials, AI infrastructure, robotics, biotech, aerospace, and energy.

With investments in 75+ companies, Lux provides patient capital to scale frontier technologies from early validation to commercial impact in strategically critical sectors[24].

"Rigid frameworks can limit progress in deep tech. Venture capitalists need to adopt entrepreneurial thinking and take bold risks because they're investing in technologies that will shape the future."

- Klaus Hommels, Founder and Chairman of Lakestar

20. University of Cambridge (2025) Cambridge Innovation Capital commits £100m to back University of Cambridge spinouts
21. IQ Capital (2024) Firm overview
22. HTGF (2024) New component for Germany's Future Fund: HTGF Opportunity Fund launches with €660 million for growth-phase investments; Federal Ministry for Economic Affairs and Energy, High-Tech Gründerfonds
23. Pacific Channel (2025) 20 Years of Impact, Innovation & Investment
24. Sidley (2026) Sidley Advises Lux Capital on New VC Fund, Lux IX

05 Universities and research centers turn research into spinouts and connect researchers with startups

Universities generate high-value scientific research, but commercialization accelerates when research centers are structurally integrated with private investors and standardized spinout frameworks. Direct collaboration between researchers, tech-transfer entities, and venture capital reduces time-to-company formation, clarifies equity structures, and improves investor readiness. Ecosystems that institutionalize this integration consistently translate more university IP into venture-scale deep tech companies.

Cambridge Innovation Center (CIC) integrates research institutions, startups, corporates, and investors within Kendall Square adjacent to MIT. Its campus model facilitates repeated interaction through shared space and curated convenings that connect researchers directly with venture capital.

CIC reports ₹ 4.9 billion (USD 1.3+ billion) VC raised in 2018 by client companies and ₹ 27 billion (USD 7.3+ billion) lifetime by clients and affiliates. The district includes flagship deep tech ventures such as Vaxess Technologies and Arena BioWorks, underscoring the science-led ecosystem CIC anchors and amplifies[25].

Université Paris-Saclay integrates levers to commercialize solutions directly into its research ecosystem. The Paris-Saclay Seed Fund, managed by private VC firms Partech and Kurma Partners, provides equity financing for university spin-outs, while SATT Paris-Saclay (Société d'Accélération du Transfert de Technologies) supports technology maturation before private investment.

This combination of VC capital and public tech-transfer ensures startups can bridge the gap from lab research to investable ventures. By aligning funding with founder commitment, Paris-Saclay reduces risk and accelerates the path to market[26].

Oxford Spinout Equity Management (OSEM) was established in 2008 by the University of Oxford to manage and standardize the university's approach to equity holdings in spinout companies. The initiative aims to simplify negotiations between academic founders, investors, and the university by introducing a transparent, consistent equity framework. OSEM acts as a centralized body that oversees Oxford's equity stakes across more than 100 spinouts, ensuring fair and balanced ownership structures that both recognize academic contribution and attract private investment.

The introduction of OSEM has helped reduce friction in spinout creation, improving both the speed and quality of commercialization outcomes. The standardized framework has made Oxford spinouts more attractive to investors by clarifying ownership and governance expectations early in the process. Since its creation, Oxford has seen a steady increase in deep tech spinouts and follow-on funding volumes - reaching record levels of venture capital investment in science-based startups between 2021 and 2024[27].

Massachusetts Institute of Technology (MIT) The Engine is a venture platform established by MIT to support commercialization of science and engineering driven startups emerging from university research. It provides lab infrastructure, venture support, and investor access for companies developing technologies in areas such as biotechnology, advanced materials, robotics, and climate technologies.

Since its launch, The Engine has supported 150+ companies across 19 technology sectors, helping translate research breakthroughs into venture backed companies[28].

"We pair researchers with experienced executives to facilitate the transition from applied research to commercially viable ventures"

- Andrew Williamson, Managing Partner at Cambridge Innovation Capital

25. CIC (2025) CIC Cambridge About Us; Cambridge Innovation Center (CIC) (2018) CONNECT: CIC and Partners Global Impact Report
26. Paris-Saclay, The Paris-Saclay ecosystem: A world-class scientific and technological hub
27. Oxford University Innovation (2021) Researcher and University shares of equity in a new spinout company
28. MIT The Engine (2024) Impact & Ecosystem Overview

04.

Status of deep tech in Saudi Arabia

Saudi Arabia's deep tech startup pipeline

Deep tech in Saudi Arabia is no longer a theoretical ambition - it is a tangible and steadily expanding segment of the national innovation economy. Our analysis identifies tens of deep tech startups with headquarters in the Kingdom that have received external funding, reflecting a healthy and growing pipeline of ventures translating research into real-world applications (Figure 4). The largest concentrations of startups are found in autonomous systems and factory automation (Figure 5), areas that directly align with Saudi Arabia's industrial and digital transformation agenda. Natufia Labs develops fully-automated indoor growing systems to spur food-tech innovation. On the other hand, Nommas deploys smart factory automations solutions for manufacturers, supporting their transition towards Industry 4.0.

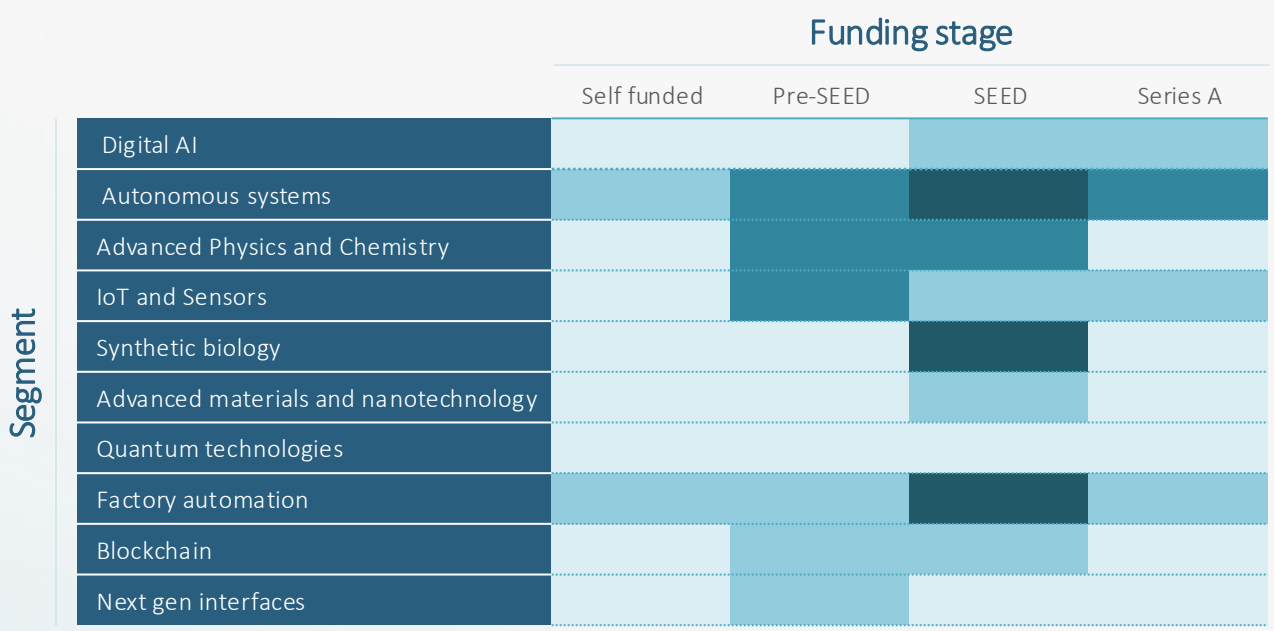
The vast majority of these ventures are in early funding stages, with most activity concentrated in pre-seed and seed rounds (Figure 5). This distribution signals a young but vibrant ecosystem: one that is actively producing ideas and prototypes but still maturing toward commercialization and scale. Beyond domestic founders, several foreign deep tech firms have also established substantive operations or partnerships in the Kingdom, further enriching local capability. For instance, Pasqal, a European quantum computing company, is collaborating with Aramco to deploy the region's first on-site quantum computer. Collectively, this mix of homegrown startups and international partnerships underscores that deep tech in Saudi Arabia is evolving into a concrete, investable reality - anchored in early innovation and poised for significant growth.

Figure 4: Deep tech startups and investors in Saudi Arabia

Non-exhaustive list

Source: SVC analysis

Figure 5: Deep tech startups in Saudi Arabia, by segment and funding stage



Note: Pre-seed includes Angel investment;
Series A includes Pre-series A
Source: SVC analysis on Magnitt and Tracxn data

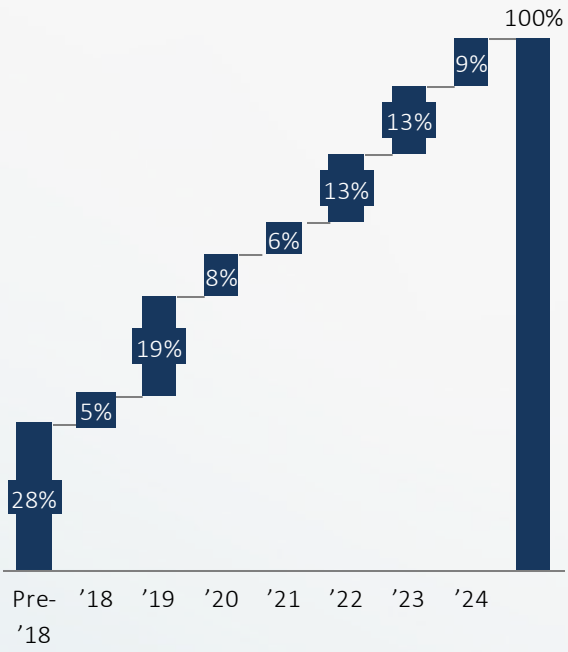
The pace of deep tech venture creation in Saudi Arabia has been steadily (Figure 6). The country's startup pipeline has expanded continuously over the past six years, with the share of new deep tech companies rising each year and a particularly strong cohort founded between 2022 and 2024. This trajectory confirms that deep tech is not a one-off phenomenon, but a sustained growth trend supported by expanding research capacity, entrepreneurship programs, and investor attention. It also reflects the natural time lag in the sector: deep tech ventures often require long R&D cycles and significant validation before attracting institutional or venture capital funding. Many of the most recent startups are therefore expected to reach funding readiness in the coming years as their technologies mature an prototypes are validated.

Geographically, deep tech activity in the Kingdom aligns closely with the presence of research institutions and shared infrastructure (Figure 7). Riyadh hosts the largest concentration of ventures, benefiting from proximity to KACST and national technology programs, while the Thuwal–Jeddah corridor revolves around KAUST's research base and its Core Labs that enable lab-to-pilot transition. While KAUST's research base and its Core Labs enable lab-to-pilot transition in the Makkah region, in the Eastern province startups leverage the industrial R&D and testing environment anchored by KFUPM and Dhahran Techno Valley and proximity to Aramco, Sabic and other major petrochemical players. These clusters show that Saudi Arabia's deep tech entrepreneurship is emerging precisely where scientific capability, infrastructure, and early-adopter industries intersect - creating a geographically coherent and institutionally supported innovation landscape.

"If we want deep tech to scale in Saudi, we must unlock three things: market-led commercialization, real end-user conversations, and autonomy over critical inputs. Talent exists - the ecosystem must enable it"

- May AlSaleh, Investor at Outliers VC

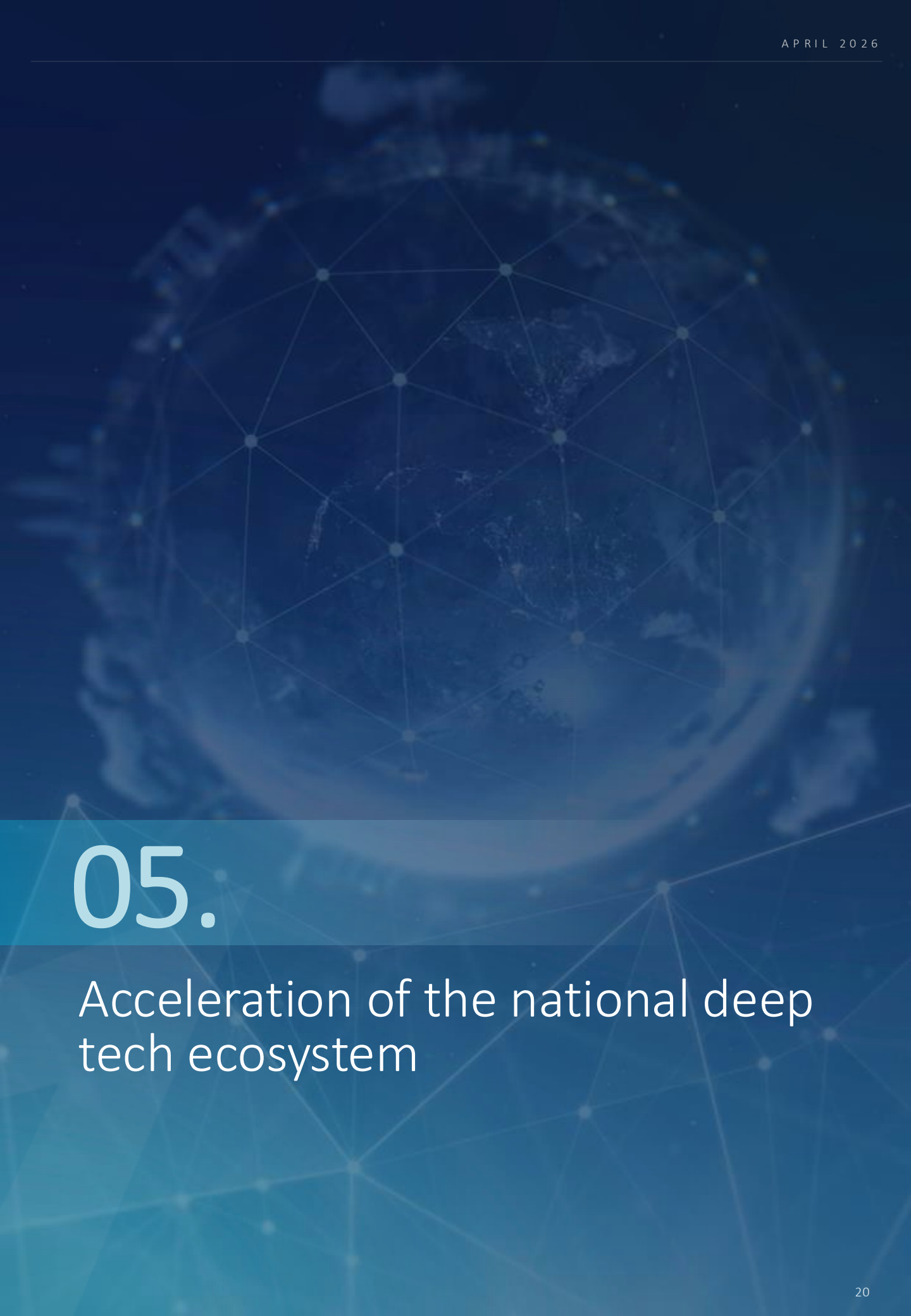
Figure 6: Deep tech startups in Saudi Arabia, by founding year



Source: SVC analysis on Magnitt and Tracxn data

Figure 7: Deep tech startups in Saudi Arabia, by region

Source: SVC analysis on Magnitt and Tracxn data



05.

Acceleration of the national deep tech ecosystem

The growth of Saudi Arabia's deep tech ecosystem is the product of converging efforts across multiple fronts - capital formation, infrastructure development, education, and regulatory modernization. What was once a collection of early initiatives is now evolving into a coordinated environment capable of supporting science-based entrepreneurship. Building on the global best practices outlined earlier, this chapter examines how the Kingdom has begun to translate those lessons into action. It explores how global approaches to risk-tolerant capital, shared research facilities, integration between academia and industry, and talent development are being localized within the Saudi context. The analysis highlights both the progress made and the opportunities that remain to deepen impact - showing how the alignment of policy, investment, and innovation can accelerate the Kingdom's transition toward a mature, self-sustaining deep tech ecosystem.

Five best practices to develop the deep tech ecosystem

1. Mission-driven policies unlock innovation
2. Public funding and grants de-risk early investments and crowd in private capital
3. Customers validate real-world adoption and accelerate commercialization through pilot-to-procurement pathways
4. Establishment of venture capital funds focused on deep tech
5. Universities and research centers turn research into spinouts and connect researchers with startups

01 Mission-driven policies unlock innovation

Saudi Arabia has reduced regulatory friction and moved from one-off permissions to clearer, rules-based paths from incorporation to pilot to scale through sector guidance, one-stop digital company setup, targeted incentives, strengthened IP regulations and talent mobility programs.

Clearer rules and streamlined business creation give founders a faster path to early pilots

Non-exhaustive list

The Saudi Food and Drug Authority (SFDA) issued MDS-G010 guidelines[29], clarifying requirements to obtain Medical Device Marketing Authorization (MDMA) for AI/ML-based devices, including design, performance evaluation, change-notification, and post-market surveillance considerations. This gives health tech startups a formal regulatory pathway to authorization.

The **Ministry of Health's Regulatory Healthcare Sandbox**[30] allows AI and digital health companies to pilot their technologies under supervised conditions before seeking full authorization, helping startups de-risk compliance and gain early traction.

Talent and knowledge mobility measures make it easier to bring in and retain frontier expertise

Non-exhaustive list

Premium Residency[31] is a program through which Saudi Arabia provides a sponsor-free, rule-based route for specialist talent and founders to live and work in the Kingdom. In February 2025, the government announced 685 awards under the Special Talent product for technology experts, which is evidence that the pathway is being used to ease relocation in AI, cloud, & advanced computing.

Higher protection of intellectual property allow researchers to demonstrate the commercial potential of their innovations

Non-exhaustive list

In April 2023, the **Saudi Authority for Intellectual Property (SAIP)**[32] issued Draft Intellectual Property Law to unify and modernize IP protection across patents, designs, trade secrets, and copyright. The draft introduces fast-track registration for emerging technologies, clearer rules for IP generated through AI, and requires public research institutions to adopt formal IP and commercialization policies. These reforms strengthen legal certainty for innovators and investors, helping deep tech ventures protect and scale R&D-driven technologies in the Kingdom.

Saudi Arabia can further accelerate the development of deep tech ecosystem through targeted policy measures. There is potential to broaden the regulatory clarity Saudi Arabia has achieved in healthcare to other verticals. As emerging sectors in deep tech mature, creating comparable sandboxes and streamlined frameworks would reinforce investor confidence and speed time-to-market.

Also, current incentives are concentrated in special zones and discrete programs. Over time, there is potential to layer in a simple, economy-wide, R&D incentive with a dedicated deep tech window to encourage sustained private research spending.

"We identify digital gaps in our national ecosystem and we support local and international startups aiming at addressing these gaps"

- Shaden Alkoraishi, Program Manager at Ministry of Communications and Information Technology

"Many foreign founders choose to stay in the Kingdom after our residency, applying to Saudi Arabia's Premium Residency Program to continue living and building here"

- Halah Al -Jubeir, Managing Director at Antler

29. SFDA (2023) MDS – G010 Guidance on Artificial Intelligence (AI)
30. Saudi Press Agency (2024) Health Ministry Opens Door to Healthcare Innovation
31. Saudi Press Agency (2025) Over 680 Exceptional Tech Talents, Researchers Granted Special Residency in Saudi Arabia
32. GCC Board Directors Institute (2023) The Saudi Authority for Intellectual Property (SAIP) issued a Draft Intellectual Property Legislation

02 Public funding and grants de-risk early investments and crowd in private capital

Deep tech ventures in Saudi Arabia face long research cycles, high capital requirements and significant technical uncertainty. These characteristics often delay private investor participation in early stages. Public funding, particularly non dilutive grants, plays a critical role in absorbing scientific and technology risk before ventures become investable.

Research grants typically support fundamental research, proof of concept validation and early technical development. At a later stage, commercialization support mechanisms fund prototyping, pilot deployment and early market validation. By extending runway without immediate equity dilution, grants validate feasibility and signal quality through competitive selection. This strengthens ventures before they approach institutional investors.

In the Kingdom, grant based instruments increasingly complement equity platforms such as Saudi Venture Capital and Jada Fund of Funds, forming a layered capital stack that supports science based ventures from research to scale.

The National Technology Development Program's (NTDP) Fuel initiative - executed by SVC - backs VC funds investing in deep and emerging tech startups from pre-seed to pre-IPO. This initiative has committed ~ ﷼ 1 billion (~USD 266 million) was committed to this deep tech mandate[35]. The NTDP Fuel initiative provides commercial incentives and structured support that help validate minimum viable products (MVPs), catalyze early market adoption and strengthen technology ventures' readiness for follow-on private capital.

NextEra by NTDP is a deep tech–focused grant and acceleration program providing non-dilutive funding (up to SAR 5 million) to support research-driven startups in emerging and frontier sectors. The initiative helps companies advance technology readiness levels, complete prototyping and validation, and strengthen commercialization and investor readiness through structured ecosystem support[36].

"The presence of investment entities such as SVC, together with public programs including NTDP, RDIA, and others, plays a vital role in fueling and sustaining the growth of the deep tech sector in Saudi Arabia. This support is especially important given the need for stable and sustained funding to enable the rapid evolution of deep tech across its various development cycles and capital requirements"

- Mohammed Alhoshan, Investment Manager at SVC

Mechanisms that anchor funds and signal long-term commitment

Non-exhaustive list

The Saudi Innovation Grants Program (SIGP)[33], run by Research, Development & Innovation Authority (RDIA) and National Technology Development Program (NTDP), provides funding for proof-of-concept and early commercialization. Its non-dilutive grants for proof of concept and early commercialization directly support science-heavy startups.

As part of its national grants ecosystem, RDIA issues competitive awards within initiatives such as Technology Development Grants and Technology Breakthrough Grants, designed to fund later-stage research translation and pre-commercial technology development, with awards calibrated to project scope and commercialization readiness[34].

These mechanisms are already delivering on the ground for Saudi deep tech. For instance, **FalconViz**, a KAUST spinout in 3D surveying and drone mapping, first raised funding from KAUST Innovation Ventures which is university-backed, and later received a ﷼ 1.9 million (USD 500k) follow-on from Aramco's Wa'ed Ventures. This shows how government-backed anchor funding de-risks an early deep tech venture and crowds in private corporate VC to finance scale[37].

A next step would be to expand SVC's focus and AUM to anchor long-term capital in frontier technologies, blending government and institutional investment under professional management across sectors such as advanced materials, AI, and biotech. Combining public risk capital with private discipline would help close early funding gaps for R&D-intensive ventures, signal sustained national commitment to deep tech, and attract international co-investors - strengthening Saudi Arabia's position as a regional hub for science-based innovation.

33. Saudi Press Agency (2024) Research, Development, and Innovation Authority Launches Program to Empower Innovative Solutions for Addressing National Challenges
34. RDIA Grants: Saudi Applied Research and Technology (SART) initiatives including Baseload Applied, Technology Development, Technology Breakthrough and Labs Reactivation grants (KFUPM listing)
35. Arabia Gulf Business Insight (AGBI) (2024) Saudi Arabia backs tech startup sector with $888m; NTDP (2025) Financing support - Fuel; SVC, Magnitt (2024) Saudi Arabia Venture Capital Report H1 2024
36. NTDP (2026) NextEra – financial grants for emerging and deep technologies
37. FalconViz Press Release (2021) Wa'ed adds follow-on investment to help FalconViz scale drone operations to meet rising global demand

03 Customers validate real-world adoption and accelerate commercialization through pilot-to-procurement pathways

Deep tech startups need first buyers to prove that science works in practice, generate early revenues, and attract follow-on investment. Advanced market commitments (AMCs) de-risk demand by pre-committing to buy a specified quantity/standard once a solution meets agreed technical and regulatory thresholds. They create bankable revenue signals like volume guarantees, milestone payments, price floors, that help deep tech startups raise capital and scale production before full commercial markets exist.

Saudi Arabia is beginning to mobilize both public institutions and large corporates as early adopters, turning its health system, giga projects, and industrial leaders into "living labs" for frontier technologies.

Non-exhaustive list

Private corporates pair investment with first-customer access and industrial validation

Aramco signed with Pasqal to install, operate, and maintain a 200-qubit quantum computer at Dhahran, targeted for second half of 2025 - creating an enterprise testbed for energy/materials use cases[40].

By running a supervised AI crowd-management pilot with national authorities, **Aramco Digital** put algorithms into live operational workflows at the Holy Sites prior to any scaled rollout, generating the evidence regulators and future customers require[41].

Non-exhaustive list

Government-funded customers open testbeds and pilot routes for frontier technologies

Red Sea Global (RSG) partnered with iyris to build and operate an indoor farm using sunlight- and saltwater-cooled greenhouses to supply The Red Sea destination; RSG designated a 50-hectare food development zone, named Red Sea Farms a main supplier to its resorts, and granted an option to expand up to 100 ha after the pilot - a clear path from pilot to production inside a public mega project[38].

NEOM adopted NOMADD's autonomous, waterless solar-panel cleaning robots on its solar arrays, making NEOM an anchor customer and generating operating data for wider adoption[39].

GlobeMed Saudi signed a strategic cooperation with TachyHealth to deploy its AI in benefits/claims workflows, providing regulated-use validation and national TPA reach[42].

Saudi Arabia has been engaging with deep tech players; however, corporate demand for deep tech is still nascent beyond a few national champions. One way forward is to create sector-specific "pilot to procurement" frameworks that make it easier for companies to source from startups. These frameworks would spell out eligibility rules, the data to be collected during pilots, IP and usage terms, and clear decision points for moving from pilot to paid deployment. This would give founders and procurement teams predictable rules of engagement and expand the pool of potential early customers.

"If we only developed the solution inside the university, it would have zero impact. You must build with real customers - the customer side is more important than the lab"

- Ryan Lefers, Co-founder at Iyris

38. Red Sea Global (2021) Red Sea Global partners with Red Sea Farms to further develop sustainable food supply
39. KAUST (2022) KAUST startup NOMADD supports NEOM's solar power ambitions
40. ARAMCO (2024) Aramco signs agreement with Pasqal to deploy first quantum computer in the Kingdom of Saudi Arabia
41. Communications, Space & Technology Commission
42. GlobalMed Saudi (2024) GlobeMed Saudi and TachyHealth Cooperate

04 Establishment of venture capital funds focused on deep tech

Saudi Arabia is rapidly expanding its research output and early-stage venture ecosystem, yet the number of fully specialized deep tech fund managers remains limited. Capital-intensive ventures in advanced manufacturing, energy, biotech, AI infrastructure, and industrial technologies require patient capital, technical diligence capabilities, and significant follow-on reserves. Strengthening the supply of dedicated deep tech VC funds will be critical to matching growing research commercialization demand with appropriately structured private capital.

SVC, through the NTDP Fuel Initiative, operates as a strategic capital catalyst supporting deep and emerging technology ventures across Saudi Arabia. SVC has established a dedicated investment pathway spanning the full venture lifecycle from pre-seed to pre-IPO. The initiative deploys capital through leading partner funds including Global Ventures, Outliers, Antler, Vision Ventures, and RAED, targeting priority sectors such as Generative AI, Biotechnology, Space Tech, Mobility Tech, and Smart Cities. In its first year, SVC fulfilled its full commitment by channeling capital into 18 deep tech companies, strengthening the Kingdom's capital infrastructure and bridging national technology priorities with private market investment[45].

"KAUST sees itself as an integral part of Saudi Arabia's deep tech journey - working directly with government, corporates, and startups to accelerate advanced technology from research to application"

- Belal Fayad, Industry Engagement and Partnerships Manager at KAUST

Non-exhaustive list

Examples

KAUST Innovation Ventures operates as the **venture** investment arm within the King Abdullah University of Science and Technology, targeting early-stage deep tech startups aligned with energy, environment, advanced materials, robotics/ICT, and health sectors. The fund actively co-invests with domestic and international VCs and supports research-driven ventures from seed through early growth, helping bridge laboratory innovation to commercial viability. KAUST's portfolio has collectively attracted more than ~3.75 billion (USD 1 billion) in external investment, showcasing the increasing investor confidence in Saudi deep tech ventures[43,44].

Saudi Arabia is expanding venture capital capacity, yet the number of fully specialized deep tech managers with repeatable technical diligence capabilities and laboratory-to-market experience remains limited, and later-stage funding capacity for capital-intensive ventures is still developing. The next phase is to establish a focused set of flagship deep tech funds with longer fund horizons, stronger follow-on reserves, and dedicated sector expertise aligned to national priority technologies. Blended capital structures anchored by public limited partners, institutional investors, and strategic corporates can de-risk early vintages and catalyze broader private participation. Institutionalizing such vehicles would create a more predictable pathway from research and industrial innovation to venture formation and scale-up capital within the national ecosystem.

43. KAUST Innovation Ventures – Official overview (2024–2025)
44. Robotics & Automation News (2025) KAUST startups raise over $1 billion
45. Ecosystem Saudi (2025) Supporting the Financing of Tech Companies in Saudi Arabia – Fuel Initiative channels funding through VC funds including SVC

05 Universities and research centers turn research into spinouts and connect researchers with startups

Saudi Arabia is linking university research with private capital and early industry buyers through programs that bring companies onto campus and into project teams.

University–led programs that connect research to investors and buyers

Non-exhaustive list

KAUST Industry Collaboration Program (KICP) is a membership model where companies pay to join, sit on the KAUST Industry Advisory Board, and co-fund campus R&D tied to defined use cases - putting private capital, mentors, and buyer requirements directly into lab projects. KICP has 28 members and has cumulatively deployed ₪ 769 million (USD 205 million) in industry R&D, with members receiving access to faculty, talent, and facilities[46].

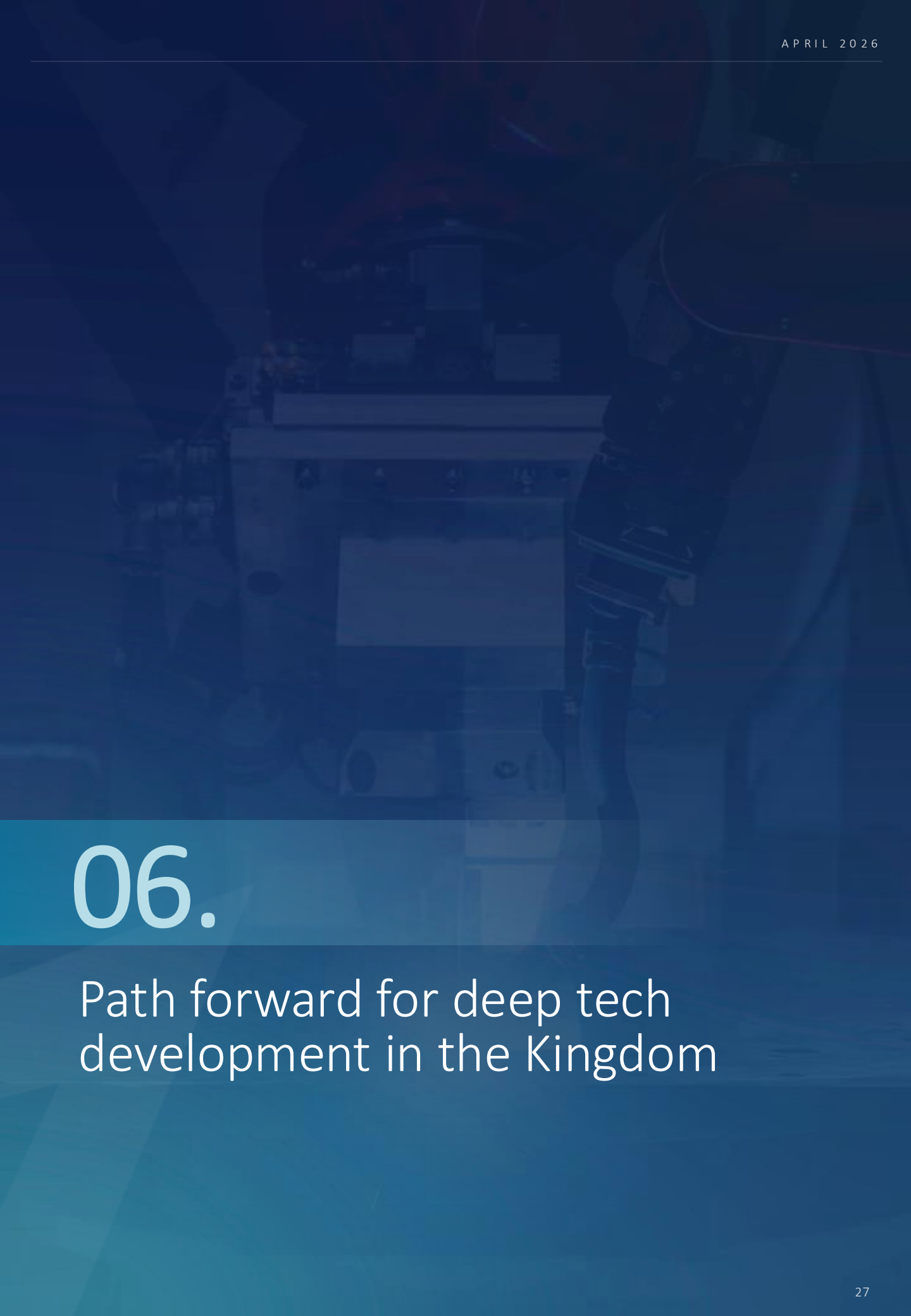
King Fahd University of Petroleum and Minerals (KFUPM) and Dhahran Techno Valley (DTV) Collaborative Research Grant[47] integrates companies into the research process. Each proposal must include a counterpart from a DTV company and matching company funding. Reviewers assess the substance of the company's role. With corporate R&D centers next to KFUPM labs and startup programs at DTV, teams can use company facilities and progress to prototyping on the same campus.

Community Jameel Saudi's "**Jameel Deep Tech Initiative**," launched with KACST and StartSmart Saudi, links research capabilities with venture-building and funding (incl. prize financing), aiming to localize advanced technologies and scale deep tech entrepreneurship[48].

Early lab–investor integration is already producing investable ventures. For instance, **Lihytech** is a KAUST spin-out which was developed at KAUST's Research & Technology Park. It secured private investment (Ma'aden with KAUST Innovation Ventures) to fund a pilot. With Aramco providing oilfield brine for validation toward potential field deployment, the tech is moving from lab proof toward industry trials - showing how a research center, investors, and an early corporate partner speed commercialization[49].

There is potential for Saudi Arabia to accelerate lab-to-market progress by tightening links between research hubs, investors, and early industry buyers. KAUST Industry Collaboration Program's corporate membership and co-funding model could be extended across other centers. The KFUPM–DTV collaborative grant approach, which requires an industry partner and matching funds, could also be applied more widely. Together, these measures bring private capital and buyer input into university projects earlier, align research with market needs, and help startups move from proof to pilot.

46. KAUST (2022, 2024) How to secure funding from KAUST's Innovation Venture fund to grow your deep tech startup; KAUST Industry Collaboration Program (KICP) celebrates 15 years of R&D investment
47. KFUPM (2025) Dhahran Techno Valley Collaborative Research Grant
48. Jameel Deep Tech Initiative 2025 | Home Page
49. KAUST startup Lihytech raises $6 Million for lithium extraction from seawater (2023) KAUST; Aramco and Lihytech Announce Strategic Collaboration to Recover Lithium from Oilfield Brines (2024) KAUST; Aramco's lithium project promising but not yet commercial (2025) Reuters



06.

Path forward for deep tech development in the Kingdom

Venture capital remains the decisive enabler for deep tech advancement worldwide. It provides the patient, risk-tolerant funding that allows scientific discovery to progress from research to commercialization. Sustained growth in this sector depends on investors who understand that high uncertainty and long timelines are intrinsic to breakthrough innovation - and who view these qualities as opportunities rather than barriers.

Across leading ecosystems, the formula for deep tech success leverages five ingredients: mission-driven policies that unlock innovation; public funding that de-risks early investment; customer pathways that accelerate commercialization; dedicated venture capital funds for deep tech; and integrated universities and investors that turn research into scalable spinouts.

Saudi Arabia's expanding base of funded deep tech startups demonstrates that science-driven entrepreneurship is taking root. Concentrated in key research hubs, these ventures are transitioning from early research translation toward commercial pilots - establishing the foundation for accelerated ecosystem development. The Kingdom is now translating global best practices into a coherent national model, well progressing across six dimensions.

Saudi Arabia is advancing from one-off authorizations toward predictable, rules-based frameworks that give founders and investors clarity. Simplified business setup, sector-specific guidance, and transparent incentives reduce friction across the innovation journey. Extending this consistency across emerging sectors will further anchor investor confidence and shorten time-to-market.

Non-dilutive and milestone-based public funding is helping de-risk early stages of development. Making these mechanisms more standardized and time-bound can accelerate proof-of-concept while attracting private investors earlier in the cycle.

National enterprises and giga projects are beginning to act as first adopters of frontier technologies. Institutionalizing "pilot-to-procurement" frameworks will turn these successes into a predictable route for startups to prove, iterate, and scale their products in real-world environments - creating the strongest signal of market readiness.

Multi-user laboratories, testbeds, and high-performance computing facilities are lowering barriers for early-stage ventures. Standardizing access and linking regional hubs under common operating principles will increase utilization and help startups move from lab prototype to industrial pilot faster and more affordably.

Collaborative research programs and co-funded projects are aligning academic excellence with commercial opportunity. Expanding these integration models across universities and corporate partners will ensure a steady pipeline of investable technologies and reinforce the continuum from discovery to deployment.

Saudi Arabia is aligning its talent system with the needs of deep tech sectors through specialized training and industry-embedded learning. Scaling these initiatives - particularly programs that link industry, research and entrepreneurship - will ensure that talent supply keeps pace with ecosystem growth.

Together, these levers form a unified architecture for deep tech acceleration. The priority ahead is to align them into one coherent system, ensuring that capital, infrastructure, policy, and talent reinforce one another. With sustained coordination, Saudi Arabia can convert its emerging momentum into a globally competitive deep tech ecosystem that continuously generates innovation, investment, and industrial leadership.

Term	Definition
Advance purchase agreements	Commitments by a party to purchase product if predefined conditions are met (e.g., price, performance, timeline); also referred to as advance market commitments (AMCs) or offtake agreements
Deep tech	Novel scientific or engineering breakthroughs being turned into products and companies, typically with complex engineering, long timelines, and high-risk capital needs
Catalytic capital	Public or mission-driven money structured to crowd in private investors
Early-adopter customers	First buyers who validate product-market fit and unlock follow-on investments
First-loss capital	A junior or subordinated tranche that absorbs initial losses so other investors are more willing to finance higher-risk, early-stage ventures
Innovation district	Geographically limited area which concentrates universities, corporate R&D, labs/testbeds, and investors - co-locating infrastructure and buyers to shorten time from proof to pilot
Knowledge spillovers	Know-how crosspollination when innovators physically co-locate in a district or cluster
Milestone-based funding	Mechanism based on which capital is released when a startup reaches predefined milestones (e.g., TRL progress, validated pilot)
Non-dilutive funding	Capital which does not impact ownership structure of a company
Open-access core labs	Shared facilities offering specialized equipment, technicians, and training on a fee-for-service basis - allowing startups to rent capability instead of building it
Pilot-to-procurement playbook	A standard route that links pilots to contracting - covering data, IP, safety, evaluation criteria, and offtake triggers - so pilots can convert into deployment
Regulatory sandbox	Rule-based authorization letting companies test products in real conditions with safeguards, while regulators learn and refine final approvals
Spin-out	A company formed to commercialize university or lab research
Technology Readiness Levels (TRLs)	Standardized scale used to assess the maturity of a technology - from initial concept development to full commercial deployment
Testbed	A supervised, real-world or pre-commercial environment where frontier technologies are trialed before full rollout
Venture debt	Debt provided to startups - often secured by assets or receivables - expanding options to finance capex or working capital before scale

About SVC

SVC is an investment company established in 2018 and is a subsidiary of the SME Bank, part of the National Development Fund (NDF).
SVC aims to stimulate and sustain financing for startups and SMEs from pre-Seed to pre-IPO through investment in funds and direct investment in startups and SMEs. Since inception, SVC has backed 62 Private Capital Funds (Venture Capital, Private Equity, Venture Debt, Private Debt) that supported 1,000+ Startups and SMEs.

Venture capital

MEVP, global.ventures, propeller, 和玉资本 MSA, RAED, VISION VENTURES, سدو المالية SADU CAPITAL, outliers, HALA ventures, STV, sukna ventures, Merak Capital, نوى nuwa CAPITAL, 500, impact46, SHOROOQ PARTNERS, EMKAN CAPITAL إمكان كابيتال, SEEDRA VENTURES, ICONIQ, Salica Investments, RUA GROWTH FUND OB & IMENA, ARTAL CAPITAL, endeavor CATALYST, TREASURY, ARZAN VENTURE CAPITAL, VALOR CAPITAL GROUP, LLC, ACCESSBRIDGE VENTURES, S3 VENTURES BY JOA CAPITAL, BECO CAPITAL, sharaka شراكة, BITKRAFT, VSQ

Accelerator and startup studio

FLAT6LABS, ANTLER, 500, techstars_

Private equity

Jadwa Investment جدوى للاستثمار, ALPHA CAPITAL ألفا المالية, GENERAL ATLANTIC, ewpartners, K1 INVESTMENT MANAGEMENT, GCC ASIA GROWTH FUND, TVM Capital, KHWARIZMI PARTNERS, OliveRock Partners, INVESTCORP, ALIPH

Private and venture debt

PFG PARTNERS for GROWTH, Ruya Partners, Janus Henderson INVESTORS

Direct investment

SUPPLYFIED, لين LEAN, TAKER, مرن MARN, دكان أفكار, darjer, salla سلة, PetroApp, احسبها EHSIBHA, LUCIDYA Lucid Insights, منافع Manafa, تلفاز11 Telfaz11, tabby, unifonic Your Communication Code, تلقاني Telgani, noon نون Academy أكاديمي, فهيم, MONH مونة, VIBES, salasa سلاسة Your Growth Partner, HYPER PAY, سيارة, هادي HADI, ساري, GOLDEN SCENT قولدن سنت, Qoyod قيود, bonat بونات, Caramella, PHYSIO HOME, TGC, مخازن العناية Makhazen Alenayah, QUANTUM, B8ak بيتك, BARQ, NOTA NOTA نوتا نوتا, nana direct, ثمار THEMAR, HALA, NearPay, stitch ستيتش, tamara, eventful تطبيق قصور سابقا, NQOODLET, برايا Baraya, rewaa

UK deep tech ecosystem tours

As a market maker, SVC invited its strategic partners for two trips in 2024, and 2025 to expand partnerships that stimulate the Deep Tech ecosystem in Saudi Arabia, aiming to:

- Learn from UK technology transfer offices' best investment practices and experiences to accelerate the development and commercialization of deep tech innovations in Saudi
- Explore successful working models for technology transfer offices concerning deep tech investments in the UK to identify potential applications in the Saudi ecosystem
- Build strong relationships with key players in the UK deep tech ecosystem to facilitate knowledge exchange and collaboration
- Explore the potential expansion of UK deep tech startups to Saudi Arabia

Participants

SVC

ntdp البرنامج الوطني لتنمية تقنية المعلومات National Technology Development Program

RDI هيئة تنمية البحث والتطوير والابتكار Research, Development & Innovation Authority

UK ecosystem engaged

British Business Bank

Deeptech Labs

Molten

UCL

UK INNOVATION & SCIENCE SEED FUND

OXFORD SCIENCE ENTERPRISES

BLOC VENTURES

UNIVERSITY OF CAMBRIDGE enterprise

IQ CAPITAL

ATLANTIC BRIDGE

octopus ventures

AlbionCapital

Foresight

NORTHERN GRITSTONE

Si Speedinvest

LAKE STAR

IMPERIAL

OXFORD UNIVERSITY INNOVATION

Oxford Seed Fund

FUTURE PLANET CAPITAL

octopus ventures

Amadeus Capital Partners

CAMBRIDGE INNOVATION CAPITAL

NTDP Fuel Initiative delivered by SVC

In partnership with the National Technology Development Program (NTDP), SVC has established a dedicated investment pathway for deep and emerging technology companies, spanning the full venture lifecycle from pre-seed to pre-IPO.

This partnership reflects a deliberate institutional commitment to channel private capital into the sectors that will define Saudi Arabia's next economic frontier. Across priority verticals, including Generative AI, Quantum Computing, Biotechnology, Space Tech, Open Radio Access Networks (ORAN), Mobility Tech, and Smart Cities. SVC is building the capital infrastructure required to translate national research and development ambitions into scalable, investable ventures.

In its first year under the NTDP Fuel Initiative, SVC achieved its full commitment by deploying capital into 18 deep tech companies through five partnered funds. This milestone underscores SVC's role not only as a capital allocator, but also as an ecosystem architect, bridging the gap between national technology priorities and private market investment.

Partnership

SVC

ntdp البرنامج الوطني لتنمية تقنية المعلومات National Technology Development Program

Portfolio funds

global.ventures

outliers

ANTLER

VISION VENTURES

RAED

Sectors deployed

- Generative AI
- Biotechnology
- Space Tech
- Mobility Tech
- Smart Cities