



BREAKTHROUGH TO BEACHHEAD

Playbook for European DeepTech Founders

How to choose your first customer, climb the commitment ladder, and turn world-class European science into evidence that Silicon Valley Seed investors can understand and underwrite.

PATHFINDERS CAPITAL

The *Lab-to-Term Sheet*® Investor

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WHO THIS GUIDE IS FOR

DeepTech founders — especially those spinning out of European universities, national research organizations (Fraunhofer, CNRS, CEA, TNO, VTT, Max Planck, ETH and EPFL, Imperial, Oxford, Cambridge, TU Delft, KU Leuven and many more) and corporate R&D groups — who have a working technology, some early customer conversations, and are preparing to raise a pre-seed or seed round, possibly with US or Silicon Valley investors at the table.

If your science is proven but your commercial evidence is thin, fragmented, or written in grant-report language, this guide is for you.

INTRODUCTION

The Evidence Gap

Europe does not have a science problem. It has a commercialization problem.

Europe produces a remarkable share of the world's frontier research. Its universities and research institutes generate breakthroughs in quantum, photonics, semiconductors, advanced materials, robotics, energy, and space at a rate that rivals any region on earth. Yet the same founders who can defend a thesis in front of a hostile review committee frequently struggle to answer the four questions that decide a venture capital seed round:

Our existing guides explain why these questions matter and how investors test them. This guide is different. It is a **construction manual for commercial evidence**: 1) how to pick the beachhead, 2) how to run discovery that produces commitments rather than compliments, 3) how to structure pilots that convert, and 4) how to assemble a dossier that a US seed investor — who may never have heard of you, your academic credentials, your research work, your esteem institute — can underwrite in a single partner meeting.

THE CENTRAL IDEA

Technology readiness is not commercial readiness. A TRL 6 system with zero customer commitments is less investable than a TRL 4 system with two early, paying design partners who have written down what success could look like and what they will buy if it is achieved.

Investors do not fund your TRL. They provide capital for evidence that the next dollar will convert into a larger, lower-risk company.

WHY EUROPEAN FOUNDERS FEEL THIS GAP MORE SHARPLY

The European funding system rewards a different kind of evidence than traditional venture capital does. Grant programs, collaborative research consortia, and institutional budgets reward novelty, publications, partnerships, and scientific and technical milestones delivered on schedule. Venture capital rewards **customers' willingness-to-pay, repeatability of sales motion, profitable business model and speed of learning in adverse business situations**. Founders who have spent years optimizing for the first system often arrive at their first seed conversation carrying the wrong investable currency: impressive consortium partner lists, large non-dilutive awards, and letters of support — all of which are valuable, and none of which answer the four questions we posed above.

The fix is not to abandon European strengths. It is to **convert them into something that investors can understand with their investment return**: turn consortium partners into paying design partners, turn grant milestones into de-risking proof points, and turn understated scientific language into a quantified commercial narrative. That conversion is what the rest of this *Lab-to-Term Sheet*® guide of **Pathfinders Capital** teaches.

HOW TO USE THIS GUIDE

Where This Guide Fits Among Pathfinders Capital Other Guides

The sixth guide in the Lab-to-Term Sheet® founder library — and the one that turns diagnosis into construction.

Guide	The question it answers	Use it when...
Field Guide for DeepTech Founders	What are the big decisions that shape a deep-tech company?	You are orienting — before or at company formation.
DeepTech Startup Co-Build Playbook	What does a structured lab-to-market commercialization journey look like?	You need the end-to-end roadmap and readiness stack (TRL, MRL, RRL, CRL).
DeepTech Founders Need a Dedicated Startup Development Partner	Why do founders outside the major hubs face structural capital barriers?	You are deciding whether to go it alone.
The Hidden Operating System of Silicon Valley VC	How do Silicon Valley investors actually make decisions?	You are preparing to pitch into the Valley.
Stress-Testing Your DeepTech Startup	Which ten filters will institutional investors run on my company?	You want to find your weakest link before investors do.
Breakthrough to Beachhead (this guide)	How do I build the commercial evidence those filters demand — and make it legible across the Atlantic?	You know your gaps and need a method to close them in 60–90 days.

Each chapter follows the same pattern used across the library: **the principle** (what matters and why), **the mechanics** (how to do it), and a **Pathfinders Capital Insight** — the one idea worth remembering.

PART I — CHOOSING WHERE TO LAND

CHAPTER 01

The Application Map

One technology, many markets. Map the whole space before you narrow it.

THE PRINCIPLE

Conventional startups move from problem to solution. Deep tech usually moves the other way: from capability to a set of candidate problems. A new sensing modality, material, compute architecture, or process chemistry may be technically relevant to five or ten industries. That breadth is a genuine asset in the long run — it is what makes a platform narrative credible — but it is a liability at seed stage, because **customers never buy horizontal capability. They buy a specific outcome for a specific use case scenario and in a specific workflow.**

The Application Map is the discipline of writing down every plausible market before choosing one, so that the choice is deliberate and defensible rather than an accident of whoever answered your first email.

THE MECHANICS

Step 1 — Separate capability from outcome

Write your core capability in one sentence of physics or engineering (“detects strain changes below X microstrain over Y kilometres of fibre”). Then, for each candidate market, rewrite it as an outcome in the buyer’s currency (“cuts unplanned blade downtime for offshore wind operators”). If you cannot write the outcome sentence without jargon, the market is not yet understood.

Step 2 — Choose the route to market for each application

The same technology can reach market in very different forms, each with different capital needs, team requirements, and valuation profiles. A startup can sell standalone product or system, Component or subsystem, Software systems / data layer on hardware, Manufacturing process / engineering knowhow, IP licensing, Joint development. VCs fund different business models based on their fund strategy.

Step 3 — Run a first-pass screen

For each application, answer several questions: How large is the value created per customer? How urgent is the problem? Does the technology hold a meaningful advantage over incumbents? Is the market reachable by a small team? How hard is adoption (integration, requalification, workflow change)? What regulatory or manufacturing barriers exist? How much capital is needed to reach first revenue? How long until first revenue?

Kill any application where the honest answer to the last two questions exceeds your realistic funding horizon.

PATHFINDERS CAPITAL INSIGHT

“Everyone needs this” is not a market thesis — it is a burn-rate forecast. The applications you deliberately kill are as persuasive to investors as the one you choose.

PART I — CHOOSING WHERE TO LAND

CHAPTER 02

The Beachhead Scorecard

Optimize for market tractability, not prestige.

THE PRINCIPLE

The beachhead is the first market you will dominate: narrow enough for a small team to serve, valuable enough to matter, and connected enough to open the next market. The most common beachhead mistake in deep tech is not choosing a market that is too small. It is choosing the **most prestigious area and logo you can get into a room with** — a hyperscaler, a tier-one OEM, a national defense ministry — and discovering eighteen months later that its qualification cycle is longer than your runway.

A beachhead is also a hypothesis, not a marriage. The Scorecard makes the hypothesis explicit so it can be tested — and revised — as evidence arrives.

THE MECHANICS: SEVEN WEIGHTED CRITERIA

Score each potential application from 1 (weak) to 5 (strong) on several criteria: Problem urgency, Budget authority reachable, Advantage margin in the buyer's currency, Procurement & qualification tractability, Time to first paid deployment, Replicability, Expansion adjacency etc.

THE KILL RULE

A score of 1 on **budget authority** or **procurement tractability** is disqualifying at seed stage, regardless of the total. No amount of urgency compensates for a buyer who cannot sign or a process that outlasts your cash.

PATHFINDERS CAPITAL INSIGHT

Prestige is not a commercialization strategy. Tractability is. Your first customer should be the one most likely to convert, pay, and become a reference for the next ten — not the one that looks best on slide two.

PART I — CHOOSING WHERE TO LAND

CHAPTER 03

The Precision ICP

Specific enough to feel uncomfortable. That is the point.

THE PRINCIPLE

Most founders define their ideal customer profile (ICP) at the level of an industry: “industrial manufacturers,” “energy companies,” “SMEs then corporates.” That is not an ICP; it is a phone book.

A precision ICP defines the customer so tightly that **you could list the first several target accounts by name** and predict who inside each one owns the problem.

THE MECHANICS: THE LAYERED ICP

There are several layers to an ICP definition that should be evaluated and chosen: What type of organization in what segment? What size, scale or asset base? Where, which geography, and why there first? What is forcing their action now? Which employee P&L carries the pain? What do they do today, and why is it failing? What will happen to their business/team/individual performance card if they use the product?

Notice what the precision ICP does to the rest of the company. It tells marketing which three conferences matter. It tells sales who the champion and economic buyer are. It tells engineering which integration (SCADA and maintenance-management systems) to build first. It tells investors exactly how the first ten customers will be won — which is far more persuasive than a top-down market-size slide.

PATHFINDERS CAPITAL INSIGHT

Specificity does not shrink your market. It shrinks your cost of entry. The ocean stays the same size — you have simply chosen which beach to land on first.

PART II — BUILDING THE EVIDENCE

CHAPTER 04

Discovery That Measures Commitment

Compliments are free. Commitments are evidence.

THE PRINCIPLE

Customer discovery in deep tech is not market research. It is the first stage of a sales process, and its output is not a report — it is a **ranked list of accounts that have committed something**. People are generous with enthusiasm and stingy with resources. “That’s really interesting” is the most expensive phrase in deep tech.

THE MECHANICS

1. Cover the whole buying process and system

In industrial and enterprise settings, the person who benefits is rarely the person who pays. Every beachhead account should be mapped across several stakeholder roles — and your discovery program should include conversations with each: **Economic buyer, Internal champion, User, Veto holder, Integrator / channel**.

EUROPEAN NUANCE

In many European enterprises, **works councils, data-protection officers, and IT/OT security teams** hold real veto power earlier in the process than US founders expect — and public-sector and utility buyers may be bound by formal tender rules. Map these vetoes in your first five accounts, not your fiftieth.

2. Ask about the past, not the future

Hypothetical questions produce hypothetical answers. Ask instead about what has already happened: When did this problem last cost you money? What did it cost? What have you tried? What did you pay for it? Who signed off? What would have to be true for you to replace the current approach this year?

3. End every conversation with a commitment ask

Every discovery call should end with a specific request that moves the account one rung up the Commitment Ladder: an introduction to the budget owner, a sample dataset, a written list of technical requirements, access to a test environment. A prospect who will not share a single failure log has told you more than the rest of the call.

4. Log it like an experiment

Record everything: account, role, the pain in their words, cost of the pain, current workaround, commitment asked, commitment given, next step and date.

PATHFINDERS CAPITAL INSIGHT

The question is never “do they like it?” It is “would they pay for it today — and if not, what exactly would have to change?”

PART II — BUILDING THE EVIDENCE

CHAPTER 05

The Commitment Ladder

Evidence is weighted by what the customer gives up.

THE PRINCIPLE

Not all customer evidence is equal. The strength of a signal is proportional to the **time, data, access, money, or reputation the customer puts at risk**. The Commitment Ladder turns that principle into a shared vocabulary your team, board, and investors can use to measure pipeline quality.

THE EIGHT RUNGS

There are many rungs of customer evidence based on what the customer commits and what it costs to the customer. Progressively they carry different weight in the evidence hierarchy: 1. Exploratory meeting; 2. Expresses interest, 3. Introduces you to the budget owner or a second function, 4. Shares internal data, specifications, samples, or failure logs, 5. Agrees written technical requirements and success criteria, 6. Provides equipment, site, or production-environment access, 7. Pays for a feasibility study or pilot with pre-agreed conversion terms, 8. Signs a joint development or co-funded engineering agreement tied to commercial terms, 9. Issues a purchase order, production deployment, or multi-year supply agreement etc.

As you evaluate the evidence for investors, think which ones are useful and can generate credibility for investors.

WHERE DOES A LETTER OF INTENT SIT?

It depends entirely on what is inside it. An LOI that names **price, volume, timing, and the conditions for purchase** — and is signed by the economic buyer — can be rung-6 evidence.

An LOI without those elements, signed by an innovation manager, is **rung 1 wearing a suit**.

PATHFINDERS CAPITAL INSIGHT

Two paying design partners in the same segment beat ten logos across ten segments. Concentration is what makes evidence repeatable — and repeatability is what investors are buying.

PART II — BUILDING THE EVIDENCE

CHAPTER 06

Design Partners and Pilots That Convert

A pilot without a commercial conversion path is custom development disguised as validation.

THE PRINCIPLE

Pilots are where most DeepTech commercial momentum goes to die. The pattern is familiar: an enthusiastic champion, an unpaid or token-funded trial, a vague notion of success, no named decision-maker, and — twelve months later — a polite report, a request for “one more phase,” and no purchase order. This is **pilot purgatory**, and it consumes runway, engineering capacity, and credibility at the same time.

The antidote is to treat every pilot as a **commercial contract with a technical component**, not the other way around.

THE MECHANICS: THE ONE-PAGE PILOT CHARTER

Before any engineering begins, agree on a one-page charter with the customer, signed by both the champion and the economic buyer. It should contain ten fields: Operating problem, Pass/fail success metrics, Baseline performance, Scope and duration, Data and access strategy from customer, Customer resourcing on people and infrastructure, Executive sponsor and economic buyer, Price for Pilot, Decision or go/no-go date, Commercial conversion terms with price volume scope etc.

On paid versus free pilots

Charge something, even if it is modest. Payment does three things that goodwill cannot: it forces a budget owner to approve the pilot, it secures calendar time against competing priorities, and it gives your champion a reason to defend the project when procurement asks hard questions. A useful rule is to **anchor the pilot price to the expected production contract** — for example, a meaningful fraction of the first-year value, creditable against the production order — so the pilot rehearses the commercial relationship rather than a charitable one.

That said, payment is not the only signal. A tightly scoped, unpaid evaluation with a committed economic buyer, written success criteria, and pre-agreed conversion terms can be stronger evidence than a small paid pilot with no sponsor and no path to production.

WARNING SIGNS OF PILOT PURGATORY

PATHFINDERS CAPITAL INSIGHT

Design partners should validate customer behavior, not enthusiasm. The best ones give you real workflows, real data constraints, and a decision-maker who will judge the results — and they sign the conversion terms before you start.

PART II — BUILDING THE EVIDENCE

CHAPTER 07

The Economic Case and Pricing Hypotheses

Buyers do not purchase technical sophistication. They purchase outcomes.

THE PRINCIPLE

Enterprise and industrial buyers pay for one of five things: **lower cost, higher revenue, better efficiency, more output, or lower risk** (including regulatory and compliance risk). Commercialization requires translating technical performance — resolution, efficiency, latency, yield — into one of those outcomes, expressed in the buyer's currency (not what you think should be the measure of success) and testable against their own baseline.

THE MECHANICS

1. Build a customer ROI model with visible assumptions

For the beachhead account, model: the baseline process and its annual cost; the specific cost line or revenue line your technology changes; the expected improvement range; the adoption level in year one; implementation cost and time to first value; and the payback period. Early models will contain assumptions — that is normal. The goal is not false precision; it is to **make the assumptions visible**, rank them by importance, and use your pilots to validate the most important ones first.

2. Choose a business-model hypothesis — and test it

There are several business models a startup can experiment on – Hardware sale + service, Hardware-enabled subscription, Consumption or usage-based, Business outcome-based, License / royalty. The idea is to test a few highly probable business models to collect enough feedback from the market before settling on one.

3. Test willingness-to-pay early, and at more than one price

Introduce price in discovery once the pain is quantified — not after the pilot. Offer a range, observe the reaction, and record it on the account log.

Don't fix pricing at launch, but it must reflect how buyers perceive both value and risk. If adoption is slow for some reason, a lower-friction entry price (platform fee, implementation fee, or consumption model) may accelerate first commitments without destroying long-term economics.

PATHFINDERS CAPITAL INSIGHT

Link the specification to the KPI in the first thirty seconds. If a buyer has to do the translation from your physics to their P&L, they usually will not.

PART III — MAKING THE EVIDENCE INVESTABLE

CHAPTER 08

The Seed Evidence Dossier

Build the evidence package before the fundraise.

THE PRINCIPLE

In DeepTech, the sales narrative and the diligence narrative are the same story told to two audiences. Teams that assemble their evidence late create friction exactly when momentum should compound — the investor is interested, asks for proof, and waits three weeks while the founder reconstructs pilot data from email threads.

The Seed Evidence Dossier is a standing, always-current package that lets a serious investor move from first meeting to partner meeting quickly.

THE MECHANICS: SEVEN SECTIONS

The evidence list should potentially include (as much as is available): relevant technical proofs that it works in real world scenarios, various customer evidence that displays market demand, techno-economic models that justifies the value created for customers, ecosystem information on how the product will reach customer and will be eventually used, Op and license documents to show that the startups owns the core idea and assets, any specific conditions where the technology does not work yet or corner cases and their high/low implications, capital deployment strategy till next round and what will be accomplished with it.

Why the Limitations Register matters most

Founders usually omit this section, but it is the one that increases credibility most. A founder who can state precisely where the product/model fails, which environmental conditions degrade performance, and what remains unproven is far more believable than one claiming universal applicability. Investors will find your limitations in diligence regardless; presenting them first converts a potential red flag into evidence of judgment.

Technology spun out of a European institution? Get the licence terms clean first

Institutional license terms and equity stakes vary widely across European universities and research organizations, and practice has been shifting toward more founder-friendly terms in several countries. Unusually high institutional equity, restrictive field-of-use clauses, or unresolved inventor arrangements can stall a US-led round late in the process. Resolve them — with experienced counsel — before you build momentum, not after.

PATHFINDERS CAPITAL INSIGHT

Precise boundaries build confidence. The founder who says “here is exactly where it breaks” is the founder investors trust with the rest of the story.

PART III — MAKING THE EVIDENCE INVESTABLE

CHAPTER 09

The Transatlantic Translation

Your evidence is real. Make sure it reads as real in Sand Hill Road, Palo Alto, Menlo Park, Mountain View, San Francisco in California.

THE PRINCIPLE

As we describe in The Hidden Operating System of Silicon Valley Venture Capital, investors process deal flow through pattern recognition and signaling. European evidence is often strong but encoded in a format US investors discount: grant awards, consortium memberships, institute affiliations, and cautious language.

Translation is not exaggeration. It presents the same facts in the frame an investor uses to assess risk.

THE TRANSLATION TABLE

There are several ways various European DeepTech signals can be positioned in front of investors depending upon individual scenarios. But the re-positioning the signals starts first by understanding how the European signals are perceived in Silicon Valley so that you can decide how to reframe the signal. Large non-dilutive grants can be read as or a warning that the company is a research project; Collaborative research consortium partners can be read as Not customers; possibly “innovation tourism”, Letters of support from large corporates can be interpreted as Near-zero customer base, Affiliation with a renowned institute can emphasize no commercial savviness, understated language can imply low ambition, Revenue from consulting or bespoke engineering can allude to service heavy model, Smaller round sizes and local-valuation anchors can warn you will be under-capitalized and will be back soon for more.

THE TRANSATLANTIC NARRATIVES

Every European deep tech founder without slides should be able to: say how each grant retired a specific technical risk; show commercial evidence alongside, separate research partners from commercial accounts; lead with customers and economics; outline a path to a multi-billion outcome over a realistic horizon, report product revenue separately; size the round to the milestones and show the procurement pathway clearly etc.

PATHFINDERS CAPITAL INSIGHT

A “no” from a Silicon Valley investor is often a verdict on legibility, not quality. Your job is to remove every reason to misread strong European evidence as weak evidence.

PART III — MAKING THE EVIDENCE INVESTABLE

CHAPTER 10

Capital Follows Evidence

Ask yourself what you need to prove next — then raise the capital that proves it.

THE PRINCIPLE

Funding strategy should follow commercialization strategy, not support more science and deep engineering. Too many founders ask, “how much can we raise?” when the better question is **“what must we prove next, and what capital and how much is needed to generate that proof?”** Different sources of capital are good at retiring different risks.

THE MECHANICS: MATCHING CAPITAL TO EVIDENCE GENERATION TARGET

If you are trying to prove Core physics works reliably in the lab, the best suited capital could be Research and proof-of-concept grants; institute translational funds to help you gather Repeatability data; IP position. If the product must prove it works in a customer environment, seek customer-funded feasibility work; innovation grants; pre-seed venture for your pilot proof points. If you want to prove that customers will pay and convert, find Seed venture from deep tech specialists like Pathfinders Capital, blended with strategic and non-dilutive funding to validate product value prop, initial customer Rol in a segment.

Blending European non-dilutive funding with venture

Europe offers some of the richest non-dilutive and blended-finance instruments in the world. Used well, they extend runway and reduce dilution while technical risk is retired. Used poorly, they pull the company to report deliverables instead of customers and lengthen timelines.

Two rules help: **never let a grant choose your beachhead**, and **never present grant funding as a substitute for commercial evidence**.

PATHFINDERS CAPITAL INSIGHT

Capital deployed against vague platform ambition is hard to govern. Capital deployed against a commercial de-risking plan produces clearer learning — and a higher next valuation.

APPLYING THIS GUIDE WISELY

Reality Checks: Where the Textbook Breaks

Frameworks are lenses, not laws. Four cautions matter most.

1. The beachhead is a hypothesis, not a marriage

Commit hard enough to learn but review beachheads as evidence arrives. The failure is not changing beachheads; it is changing them without evidence or never revisiting a choice that the evidence has overturned.

2. Iterate on the market; change the architecture deliberately

Customer feedback should reshape your wedge, pricing, and integration fast. It should reshape your core technical architecture slowly and deliberately — deep tech cannot pivot its physics overnight, and design changes mid-flight can cost a year.

3. Paid pilots do not always mean enterprise scale

Large organizations sometimes fund small pilots simply to learn about technology, with no intention of production deployment. A paid pilot only counts as strong evidence when it carries a named sponsor, success criteria, and conversion terms.

4. A design partner is not your product manager

The deepest design-partner relationships create a subtle trap: building exactly what one account wants. Test every feature request against your ICP — if the next several look-alike accounts would not pay for it, it is custom development, and it should be priced as such.

PATHFINDERS CAPITAL INSIGHT

The goal is not to make deep technology look simple. It is to make the path from technical advantages to customer value legible, testable, and investable.

THE LAB-TO-TERM SHEET® INVESTOR

How Pathfinders Capital Helps

Building commercial evidence is hard to do alone — and harder still when you are building from Munich, Delft, Leuven, Grenoble, Zurich, Stockholm, Helsinki, Cambridge, or Barcelona, with fewer warm connections to the investors who will lead your seed and Series A, and less local pattern recognition for how those investors read your evidence.

Pathfinders Capital invests in pre-seed and seed and works alongside DeepTech founders as a **dedicated startup development and fundraising partner**. We do not simply stop at reviewing decks. We work with you to build an investable business strategy from the DeepTech innovation you have created so that Seed investors can understand and fund your dream.

REQUEST AN EVIDENCE DOSSIER REVIEW

Send us your deck. We review every DeepTech founder inquiry and respond within 7 days with an honest general assessment of your evidence — and of fit with pathfinders Capital.

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