

Shared Language, Hybrid Roles, and Organizational Alignment in Deeptech Ventures

Authors: Martina Vives FAYART, W. WENSKI, V. YADAV, Y. YAHIOUCHE, V. ZHARTUN, MSc in Management / Deep Tech Entrepreneurship (2025) – ESCP Business School
Edited by: Martin KUPP, V. Galand – ESCP Business School

Deeptech ventures transform scientific breakthroughs into scalable market solutions. Unlike digital startups that iterate quickly on existing technologies, Deeptech companies must navigate long development cycles, high capital intensity, and fundamental uncertainty in both technology and markets. This translation process is not only technical – it is deeply organizational.

Scientific rigor, engineering feasibility, and commercial urgency often operate under different logics, time horizons, and success criteria. Misalignment between these domains is a frequent source of delays, internal tension, and strategic drift in Deeptech startups.

This research investigates how Deeptech founding teams bridge science, engineering, and business within their organizational structure. The analysis draws on qualitative interviews with founders and senior team members from four Deeptech startups operating in artificial intelligence, biotechnology, MedTech, and industrial sensing. This briefing examines the leadership practices and organizational mechanisms that enable effective coordination under uncertainty in Deeptech startups.

1. DEEPTech TEAMS: THREE DOMAINS, ONE ORGANIZATION

Deeptech startups differ structurally from most technology ventures. They are typically built on fundamental scientific research or advanced engineering breakthroughs, operate under long and uncertain development cycles, and require substantial upfront investment before market validation.

As a result, founding teams must manage three interdependent domains simultaneously:

- Science, where uncertainty is intrinsic and progress is non-linear
- Engineering, where feasibility, integration, and scalability dominate
- Business, where funding constraints, timelines, and market validation impose pressure

Each domain relies on its own professional language and evaluation logic. Scientists prioritize accuracy and discovery, engineers focus on reliability and performance, while business leaders emphasize speed, clarity, and commercial traction.

Across interviews, founders consistently emphasized that technical excellence alone is insufficient. The core challenge lies in the team's ability to align these competing domains without oversimplifying or subordinating one to another. As one interviewee noted, "Deeptech is not about choosing between science and business. It's about keeping both alive at the same time."

2. FOUNDING STRUCTURES: TRUST-BASED BUT INCOMPLETE

In all cases studied, founding teams emerged primarily through academic or professional networks. Prior collaboration, shared research backgrounds, or previous working relationships played a central role in their team formation. This trust proved particularly valuable during early fundraising stages, where investors emphasized team credibility and cohesion.

However, early organizational structures were rarely designed with a clear integration of scientific, engineering, and business roles. Instead, roles evolved organically as the venture progressed. Responsibilities shifted according to immediate operational needs, while formal governance often lagged behind increasing complexity.

This flexibility enabled rapid early progress but also generated structural blind spots. While trust facilitated collaboration, it did not automatically resolve issues of role clarity, decision authority, or priority setting. Over time, informal arrangements frequently resulted in overloaded individuals and blurred accountability across domains.

3. CENTRALIZED BUSINESS LEADERSHIP AND EMERGING HYBRID ROLES

A recurring pattern across the startups studied was the centralization of business responsibilities in a single individual. This person was often the only non-scientist among the founders, or a scientist who progressively assumed commercial leadership.

This configuration allowed for fast decision-making and clear external communication with investors and partners. However, it also created bottlenecks and internal tensions, particularly when scientific exploration conflicted with market or funding imperatives.

In response, several teams developed hybrid founder roles. Scientists deliberately expanded their skill sets to include fundraising, partnerships,

and strategic positioning. Rather than recruiting a dedicated business co-founder early, these teams relied on learning-by-doing and selective external support.

While this hybridization reduced translation costs between science and business, it required high adaptability and placed significant cognitive and emotional demands on individuals occupying boundary-spanning roles. As one founder explained, "You cannot afford to misunderstand the business side, even if you come from science. At some point, you must learn both languages."

4. SHARED LANGUAGE AS A COORDINATION MECHANISM

Across all interviews, founders converged on a central insight: organizational alignment depends on the creation of a shared language.

Communication breakdowns were common, even within technically sophisticated teams. Engineers misunderstood scientific uncertainty, scientists underestimated commercial constraints, and business leaders struggled to assess technological risk.

Rather than relying on rigid hierarchies, teams developed continuous alignment practices, including frequent informal exchanges, regular cross-functional meetings, shared documentation standards, and explicit translation roles between technical and commercial functions.

No team claimed to have a perfect solution. Instead, trust emerged as a core organizational mechanism. Progress depended on trusting

domain experts while maintaining transparency around objectives and constraints.

Standardized frameworks such as Technology Readiness Levels (TRLs) played a particularly important role. By providing a neutral reference system, TRLs helped align scientists, engineers, and investors around shared milestones, reducing misinterpretation and expectation gaps.

5. CULTURE AND ADAPTABILITY OVER PURE EXPERTISE

Recruitment emerged as a critical lever for long-term alignment. Founders consistently reported that cultural fit and adaptability outweighed pure technical expertise.

Deeptech startups operate in environments where objectives evolve rapidly, resources are constrained, and roles extend beyond formal job descriptions. As a result, teams prioritized individuals who could tolerate uncertainty, communicate across disciplines, and remain committed despite prolonged ambiguity.

Several founders emphasized that academic excellence alone was insufficient. Candidates needed to demonstrate pragmatism, openness to compromise, and a willingness to prioritize progress over perfection. As one CEO summarized, “We don’t hire for what people know today. We hire for how they deal with not knowing.”

6. KEY PRACTITIONER INSIGHTS: WHAT ACTUALLY WORKS IN DEEPTECH TEAMS

The interviews conducted reveal that bridging science, engineering, and business is not achieved through a single organizational design choice, but through a set of recurring practices that Deeptech teams gradually develop under pressure. These practices are highly pragmatic and often emerge through trial and error.

Translation roles are unavoidable — whether formal or informal

Across all cases studied, Deeptech teams relied on at least one individual who acted as a translator between scientific, technical, and business domains. This role was rarely formalized at the beginning but became increasingly central as the startup progressed.

In some cases, this translator was the only non-scientist among the founders, explicitly recruited to “bring the business perspective.” In others, it was a technically trained founder who progressively learned how to communicate with investors, customers, and partners. At Neuralk AI, for example, the team explicitly mentioned the need for someone who could translate technical constraints into realistic commercial promises, avoiding misalignment between sales expectations and engineering capacity.

Founders emphasized that without this translation function, misunderstandings quickly escalated into strategic errors — overpromising to investors, underestimating development timelines, or misallocating resources. One interviewee summarized this necessity clearly: “If nobody translates, everyone assumes the others understand — and that’s when things go wrong.”

None of the founders interviewed believed that all team members could or should fully understand each other's domains. Even within technical teams, misunderstandings persisted between engineers, data scientists, and researchers. Instead, teams relied heavily on trust in expertise.

At AUSTRAL Diagnostics, for instance, the CEO explicitly stated that he could not evaluate the scientific details of every technical decision. Progress depended on trusting experts while using project management tools and milestones to monitor outcomes rather than processes. Similarly, at InSpek, the team focused on standardizing how information was shared and stored, rather than forcing full mutual comprehension.

However, this trust was described as fragile and dynamic, not automatic. It required a triangulation of:

- Regular communication,
- Transparency around constraints, and
- Clear articulation of priorities.

When trust weakened — for example, under fundraising pressure or technical setbacks — coordination costs increased significantly.

Hybrid founders reduce friction — but face personal overload

Several startups studied deliberately avoided recruiting a “pure” business co-founder early on. Instead, technically trained founders chose to internalize business responsibilities, including fundraising, partnerships, and strategic positioning.

Jonathan Naccache at Brink Therapeutics, for example, came from a scientific background but consciously developed business competencies to lead the company. This hybridization reduced translation friction and allowed faster decision-making, as fewer handovers were required between domains.

However, founders also highlighted the personal cost of these hybrid roles. Boundary-spanning individuals often experienced cognitive overload, conflicting priorities, and increased stress. Over time, some teams compensated by bringing in advisors or strengthening middle-management layers, but the early burden remained significant.

Shared frameworks help align expectations — especially with outsiders

Several founders emphasized the importance of shared reference frameworks to manage internal and external alignment. Tools such as Technology Readiness Levels (TRLs) were frequently mentioned as a way to synchronize expectations between scientists, engineers, and investors.

TRLs allows teams to:

- Make progress visible without oversimplifying uncertainty,
- Communicate realistic milestones to investors, and
- Legitimize technical delays as part of a structured development path.

By anchoring discussions in a commonly understood framework, teams reduced ambiguity and avoided subjective interpretations of progress.

Cultural fit outweighs technical excellence in the long run

When discussing hiring decisions, founders consistently emphasized mindset over credentials. While technical competence was necessary, it was not sufficient in the Deeptech context. Founders looked for individuals who:

- Accepted uncertainty as normal,
- Were willing to operate beyond narrowly defined roles,
- Prioritized collective progress over individual perfection, and
- Adapted quickly to changing priorities.

At AUSTRAL Diagnostics, cultural fit was described as more important than technical brilliance. At InSpek, the CEO explicitly stated that people coming from academia needed to adapt to faster cycles and accept “good enough” solutions in a startup context.

Shared purpose sustains teams through prolonged uncertainty

Finally, all founders highlighted shared vision and purpose as a critical glue holding teams together through long and uncertain development phases.

Unlike digital startups, where feedback loops are short, Deeptech ventures often operate for years before tangible market validation.

At Brink Therapeutics, motivation was anchored in the long-term impact of the technology. At InSpek, employees were described as highly engaged because they could see how their work directly shaped the product and its potential applications.

This shared sense of impact helped teams absorb setbacks, delays, and funding pressure without fragmenting internally.

Deeptech success is not determined solely by assembling diverse profiles. It depends on a team’s ability to continuously align scientific ambition, engineering feasibility, and commercial urgency under uncertainty.

The most effective Deeptech founding teams function as translation systems. They actively invest in shared language, hybrid leadership, and trust-based coordination mechanisms that allow frontier science to evolve into viable market solutions.

INTERVIEWS OVERVIEWS

	DURATION	NAME	PROFESSION	START-UP	INDUSTRY
R1	28'10"	Jonathan Naccache	Co-founder & CEO	Brink Therapeutics	Biotech
R2	33'45"	Philippe Mendels-Flandre	Co-founder & CEO	AUSTRAL Diagnostics	MedTech
R3	27'45"	Jérôme Michon	Co-founder & CEO	InSpek	Biotech
R4	20'08"	Paul Martineau	Founders' Associate	Neuralk-AI	AI software