Why Deep-Tech Ventures Fail to Find a Problem - and How to Solve It

A Structured Approach to Problem-Solution Fit in Deep-Tech Commercialisation

Why Do Deep-Tech Ventures Struggle?

Deep-tech ventures often face the "**solution looking for a problem**" dilemma, where new technologies are developed without a clear market need. Unlike conventional start-ups that respond to clear customer needs, deep-tech innovations frequently lack predefined applications, leaving their market relevance unclear.

Without a structured process to align technological capabilities with real-world challenges, deep-tech ventures risk spending resources on technologies that fail to resonate with stakeholders or deliver tangible value. This disconnect delays adoption, hinders scalability, and prevents these ventures from making impact. A systematic approach is needed to bridge this gap, ensuring that innovations are guided by validated problem areas.

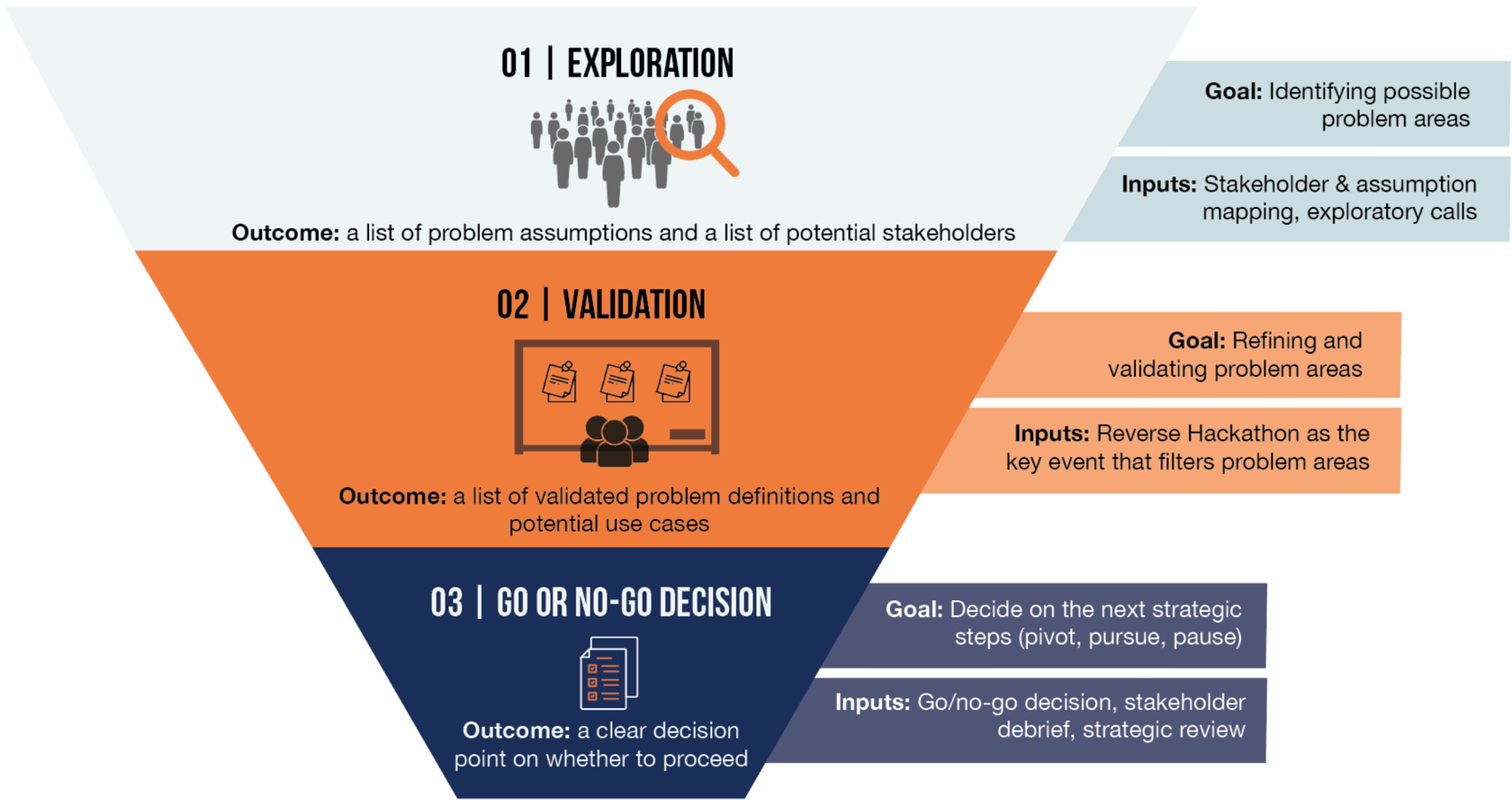
Three Barriers to Commercial Success

The research highlights three specific challenges that prevent deep-tech ventures from aligning their solutions with market opportunities:

Stakeholder Misalignment: Conflicting priorities and poor data-sharing practices hinder collaboration and validation.
→ Exploration Phase: Stakeholder mapping addresses conflicting priorities

Integration Complexity: New technologies face resistance when integrating with legacy systems due to complexity and high costs.
→ Validation Phase: Reverse Hackathon simplifies co-creation and alignment

Strategic Tensions: Balancing market-pull and tech-push strategies is difficult and often overlooked.
→ Decision Phase: Prioritisation criteria balance market-pull and tech-push



Turning Research Into Action

The PSF process and Reverse Hackathon provide a structured approach to address early-stage challenges in deep-tech commercialisation. By mapping stakeholder landscapes and co-creating solutions, ventures uncover hidden challenges and align innovations with market needs.

This iterative method reduces uncertainty, builds trust, and ensures that technologies meet critical industry demands. Using the Reverse Hackathon, problem areas are validated collaboratively, ensuring relevance and feasibility. This structured approach enables ventures to transition from abstract ideas to impactful, market-ready solutions.

Key Takeaways

- **Collaborative innovation** is essential for uncovering and prioritising actionable problem areas
- A Reverse Hackathon can build **alignment and trust** among stakeholders
- The PSF process enables ventures to transition from abstract solutions to **impactful** market applications

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