



European Deep-Tech Scaleups: **Strong Board**

Scaleup Series | Roadmap 2 out of 10 – Challenges

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Executive summary

Who this is for

Foreword

1. Introduction | Relevance of the topic

2. Core development areas

3. Priority actions

4. Plan | Self-assessment | OKRs | KPIs

5. Selected literature

Annex 1: Recorded presentation and satisfaction survey

Annex 2: Scaleup Series | 10 Roadmaps

Annex 3: Methodology

Annex 4: EIC Scaling Club companies

Annex 5: Contributing experts and organizations

A **board** refers to a group of individuals appointed to oversee the activities and governance of an organization. However, only 40% of European deep-tech companies had non-executive directors on their boards, suggesting that at least 60% might not have formal boards. Moreover, only 35% of executives believe their boards effectively contribute to growth, according to a recent BCG piece. This report aims to shed some light on how European deep-tech companies can better leverage a strong and productive board.

Our findings reveal that within this strategy, the analyzed sample often considers five core development areas: **governance, growth, investment, reputation, and innovation**. The study has segmented each area into the four most relevant priority actions that companies implement to tackle these areas to identify the most frequent initiatives, transitions in time, and existing misalignments.

To identify transitions in time, priority actions were ranked by relevance based on both the past –what companies did during the last 12 months– and the future – what they aim to prioritize during the next 12 months. Then, for identifying misalignments, the analysis has compared two perspectives: the companies as well as expert stakeholders including investors, corporations, mentors, and policymakers. Moreover, nearly 30 principles of do’s and don’ts are provided, jointly with several examples.

Within the strong board strategy, the results showcase:

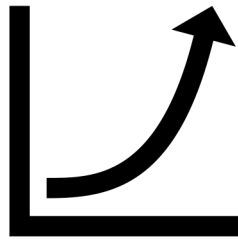
- The **most relevant actions** are seeking board complementarity in both networks and expertise, securing their guidance for market entry, leveraging their networks to attract funding, involving them in industry events to enhance the company’s reputation, and seeking their feedback.
- The **most pivotal temporal shifts** are the increases in board specialization by committees and the promotion of the company’s value via board members, while a decrease in seeking their guidance for entering new markets.
- The **most significant misalignments in priorities** where companies undervalue board members’ potential contributions compared to stakeholders’ expectations: obtaining unbiased guidance from independent directors, utilizing board members to identify market trends and engage with investors, involving board members in industry events to enhance the company’s reputation, and seeking board input on intellectual property strategy.

This document also provides a **self-assessment** to benchmark your company (or your portfolio’s) against the sample, and then showcase some possible objectives and results as well as key performance indicators for each core development area to support you in developing a 6-month improvement plan.

The **conclusions are based** on a literature review, expert interviews, online and onsite workshops, and surveys –involving 61 international experts– as well as the analysis of primary data from a subset of the companies of the EIC Scaling Club at the time of this publication. Currently, they have an average valuation of €57.8M and an average fundraised amount of €34.8M.

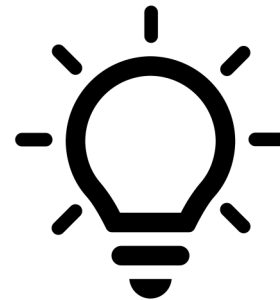
1. European deep-tech scaleups

Empowering your scaleup journey, receiving actionable strategies for an exponential growth.



2. Deep-tech scaleup mentors

Enhancing your mentoring capabilities in supporting EU deep-tech scaleups, based on primary data and peer insights.



3. Deep-tech experts

Elevate your expertise on this challenge about the most relevant pains and solutions for European deep-tech scaleups.



Note 1. 'Deep tech' is "a group of emerging technologies based on scientific discoveries or meaningful engineering innovations, seeking to tackle some of the world's fundamental challenges". For example: artificial intelligence, advanced materials, blockchain, photonics, etc. (IESE Business School, 2022).

Note 2. 'Scaleups' or 'scaling companies' refers to a subset of high-growth firms that have successfully navigated the early startup phase and entered a period of rapid growth. (Journal of Business Venturing, 2003) (Organisation for Economic Co-operation and Development, 2021). They have an average annualized growth rate of more than 40% for at least two out of three years and have at least 10 employees at the beginning of this period. Moreover, they are 10 years old or younger. 'Scaling' is the organizational and strategic routines by which firms grow exponentially through the expansion, replication, and synchronization of resources and practices over time. (Journal of Management Studies, 2023).



“Deep tech is key to a brighter future. To fully harness this potential, we need to empower the scaleup companies that will help innovation flourish in Europe.”

Iliana Ivanova

European Commission | Commissioner for Innovation, Research, Culture, Education and Youth.

Source: EIC Scaling Club’s Ignition Forum in Brussels, April 2024.



“In Europe, we need to attract private investors in the later growth stage of companies for rapid scaling up, especially in deep tech. [...] When we launched this initiative, the EIC Scaling Club, the objective was to create a community with the relevant stakeholders on the sides of technology, investment, and advising to provide additional means to the most promising innovative companies, [...] the ambitious scaleups that will drive Europe’s technological leadership.”

Jean-David Malo

European Commission | Director of European Innovation Council (EIC) and SMEs Executive Agency (EISMEA).

Source: EIC Scaling Club’s online interview, April 2024.

Note. The European Innovation Council’s Scaling Club is a curated community where more than a hundred European deep-tech scaleups, with the potential to build world-class businesses and solve major global challenges, come together with investors, corporate innovators, and other industry stakeholders to spur growth.

Scaleup Series – Roadmaps of 10 Challenges

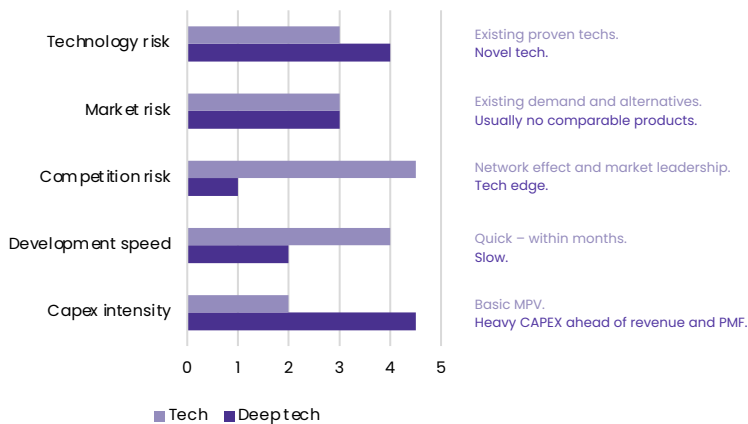
1. Go-To-Market Strategy
2. Strong Board
3. Investment Thesis
4. Lead Investor
5. Corporate Partnerships
6. Leadership and Talent Development
7. Gender and Diversity Balance
8. European and Institutional Partnerships
9. Building an Ecosystem
10. Policy and Regulatory Framework

Note: These are the most frequent challenges that European deep-tech scaleups face, according to the previous edition of this initiative and the European Innovation Agenda announced in July 2022. Please, keep in mind that some of the challenges are related. Moreover, the ten publications are complementary.

Deep-tech startups are different

They need longer time-horizons, higher CAPEX, with higher tech and market risks associated.

Figure 1. Comparison of deep-tech vs. non-deep-tech startup characteristics

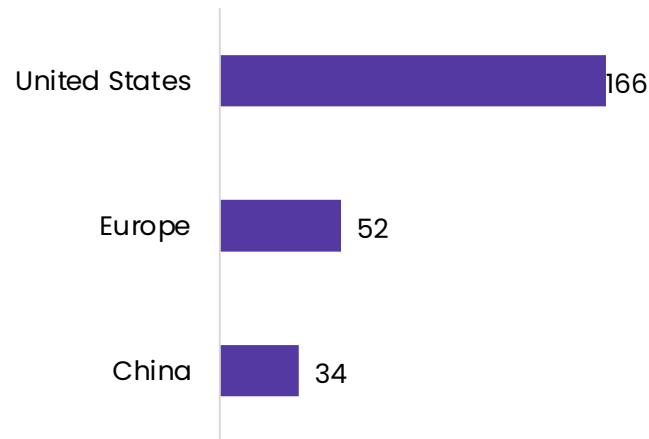


Source: IESE (2021) and McKinsey (2022). **Note:** CAPEX is capital expenditure. MPV is minimum viable product. PMF is product-market fit.

Growth opportunity in Europe

Europe has the potential to grow its venture capital (VC) investment in deep-tech startups.

Figure 2. Global VC investment (\$ billion) in deep-tech startups by headquarters (2020–2022)



Source: Dealroom (2022). **Note:** China investment is partially representative due to limited visibility. In this measurement, Europe also considers the UK.

Strong board effectiveness

A strong board strategy is crucial for companies. Yet, most of them don't implement it effectively.

Only 40% of European deep-tech companies had non-executive directors on their boards. This suggests that at least 60% might not have formal boards.



However, an effective strong board strategy opens doors to networks, allows to identify a competent team, and provides credibility in the market.








A 'board' refers to a group of individuals elected or appointed to oversee the activities and governance of an organization.

Source: BCG (2022) and Journal of Management (2019).

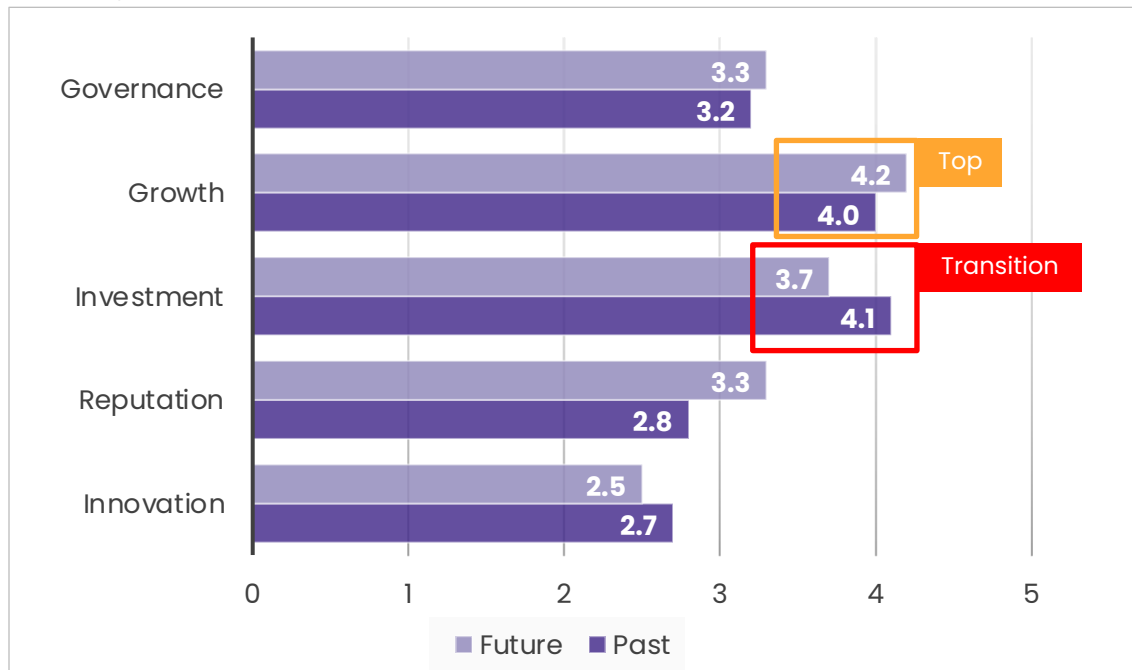
2. Core development areas

| | | | | |
|--------|----------|-------|-----------|------------|
| Market | Customer | Sales | Expansion | Operations |
|--------|----------|-------|-----------|------------|

| | | Core development area | Priority actions | Description |
|----|---|--|---|--|
| 1. |  | Governance: Leadership development | Board complementarity | Adjust the board's composition to fill knowledge and network gaps |
| | | | Board specialization by committees | Group it in committees to allow a detailed exploration of specific areas |
| | | | Independent directors | Secure unbiased guidance by avoiding conflicts of interest |
| | | | CEO evolution and succession | Board support for the CEO evolution (from tech to commercial) and the succession |
| 2. |  | Growth: Market expansion | Market entry strategy | Seek guidance from the board on new markets and market entry |
| | | | Partnerships identification | The board facilitates alliances to accelerate growth and market access |
| | | | Market trends tracking | Leverage the board to identify market trends |
| | | | New markets' compliance | Gather board advice on regulatory compliance, especially in new markets |
| 3. |  | Investment: Strategy and network | Investor engagement | Get board advice on strategies to inform the company's potential to investors |
| | | | Funding opportunities | Leverage board networks to attract funding |
| | | | Financial strategy | Oversee financial strategies, with the board, for investor appeal |
| | | | Milestones design | Establish achievable milestones in collaboration with the board |
| 4. |  | Reputation: Brand and visibility | Industry events | Involve the board in industry events to enhance the company's reputation |
| | | | Media relations strategy | Gather board insight on media engagement approach to enhance brand visibility |
| | | | Visibility boosting | Leverage board professional networks to increase company visibility |
| | | | Brand championing | Promoting the company's value via board members to amplify its brand |
| 5. |  | Innovation: New ideas | Feedback listening customers and board | Seek feedback from customers and the board to adjust the strategies |
| | | | Innovation culture | Enhance a strong innovation culture guiding the company to scaleup |
| | | | Innovation strategy | Get innovation board advice, aligned with market needs and company capabilities |
| | | | Intellectual property strategy | Receive board advice on protecting innovations through intellectual property |

Most relevant areas

During past vs. future (year)



For companies vs. other stakeholders

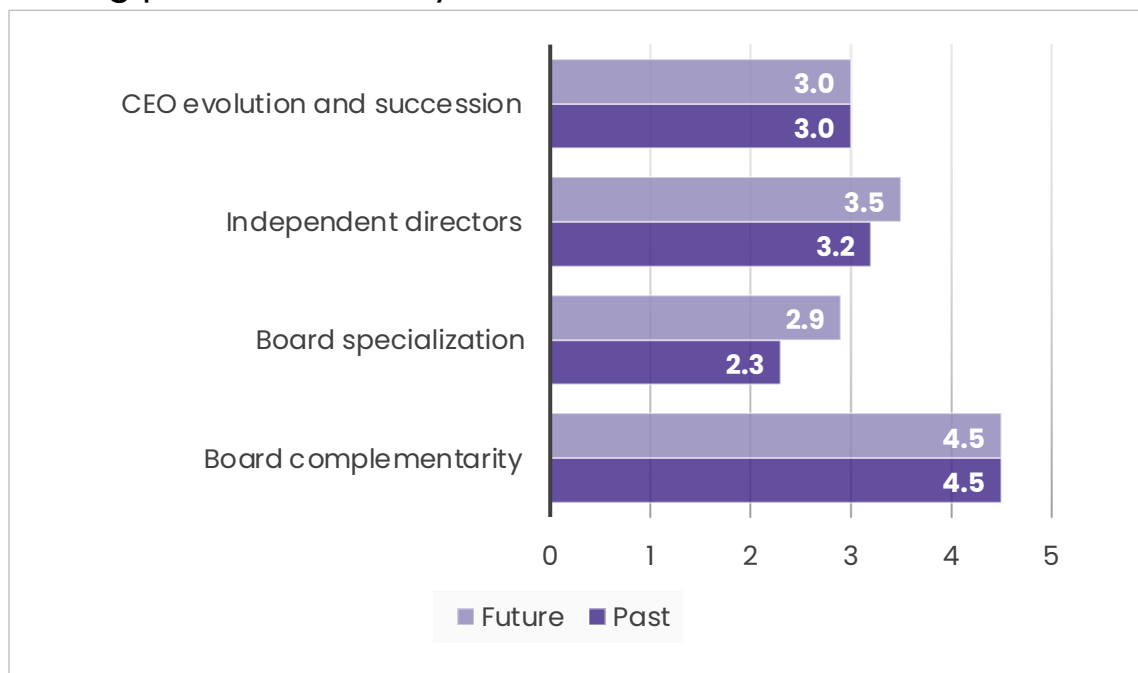


Notes: In the horizontal axis, 0 means “least important” and 5 refers to “most important”. Past and future refer to the previous and the next year. Data were reviewed at the date of publication.

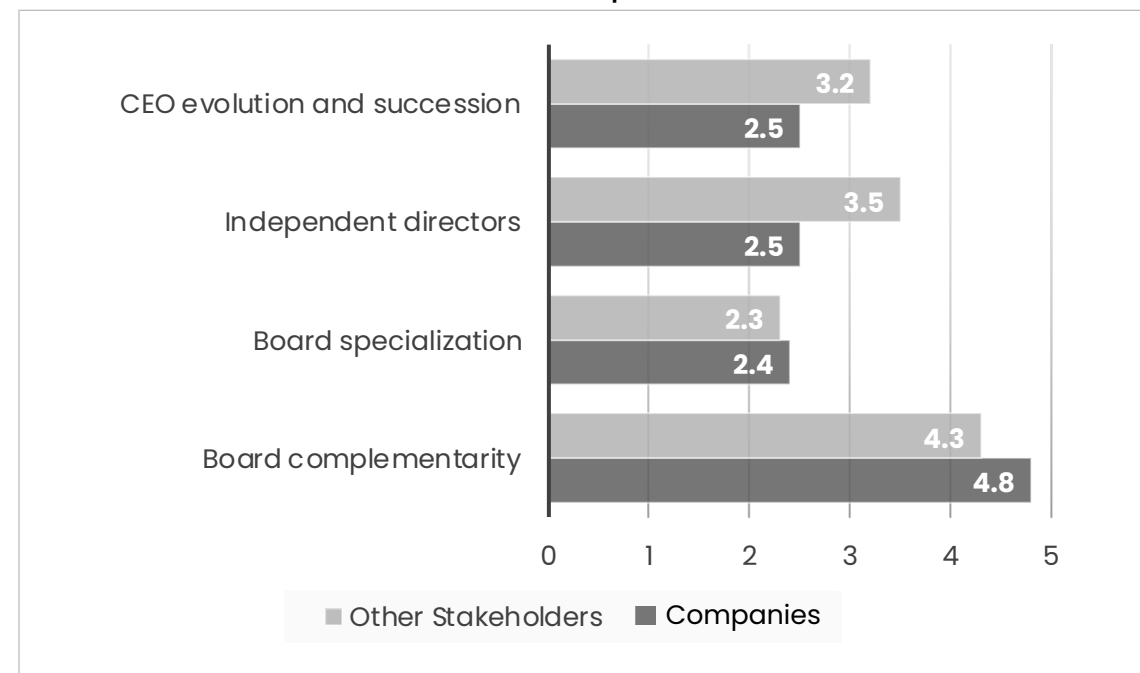
Source: Prepared by the authors (see Annex 3: Methodology). N = 39 (38% are companies and 62% are expert stakeholders including investors, corporations, mentors, and policy makers).

Most relevant actions

During past vs. future (year)



For companies vs. other stakeholders



Notes: In the horizontal axis, 0 means “least important” and 5 refers to “most important”. Past and future refer to the previous and the next year. Data were reviewed at the date of publication.

Source: Prepared by the authors (see Annex 3: Methodology). N = 39 (38% are companies and 62% are expert stakeholders including investors, corporations, mentors, and policy makers).

Do's and Don'ts

| DO's | DON'ts |
|---|--|
| Separate roles between the board and executive management to ensure accountability. | Avoid micromanaging executive functions. The board should focus on oversight and strategic guidance. |
| Set up subcommittees to focus on specific areas such as technology, risk, and talent management. | Avoid having a one-size-fits-all approach to board responsibilities: specialization is key. |
| Include tech advancements relevant to your industry within your regular updates to your board members. | Do not let board members fall behind on the latest tech trends that impact your business. |

Source: Expert workshops.

Insights

| | |
|---|---------------------|
| "Venture capital financing brings investor's liquidation preferences* vs. founders' ordinary shares. Independent directors are crucial for governance and company-building experience." | Jean-Michel Deligny |
| "We should always have a succession plan available." | Elodie Pantel |

Assessing priorities

According to the previous slide's data:

- **Top relevant aspects:** Adjusting the board's composition to fill knowledge and network gaps (above 4.3/5.0 in most cases).
- **Top transitions:** Increase in board specialization (+0.6/5.0).
- **Top misalignments:** Companies see as a lower priority securing unbiased independent directors (-1.0/5.0) than stakeholders do. While stakeholders prioritize the CEO evolution and succession more (+0.7/5.0) than companies do.

Case in point

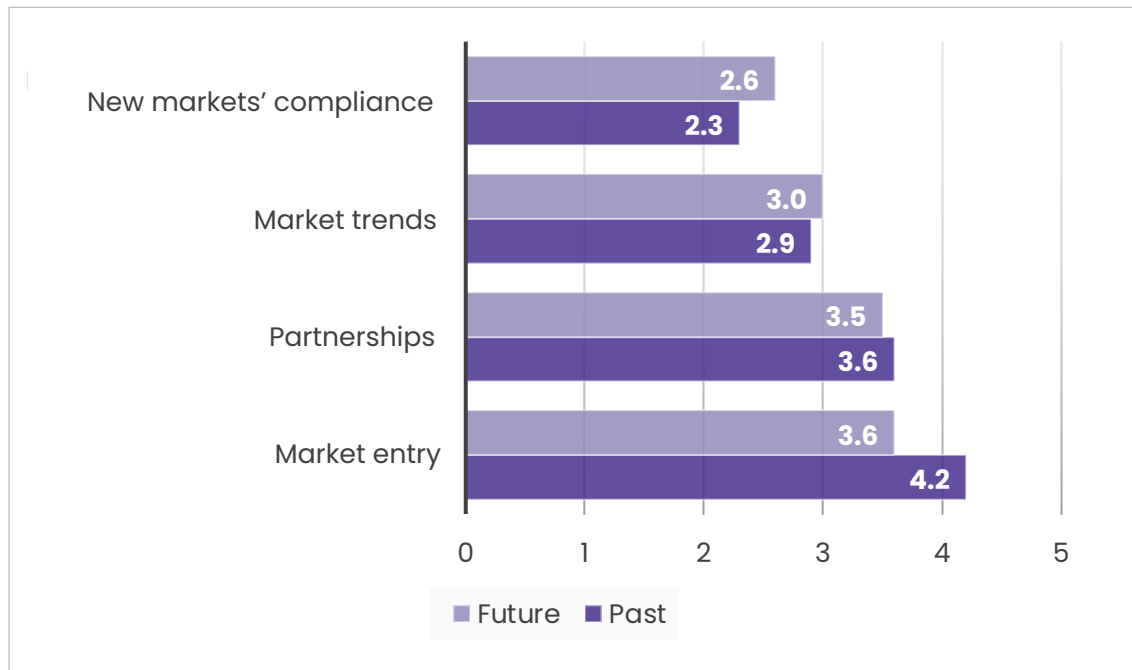


This French quantum computing company leveraged its network to attract individuals with extensive experience in management and advanced technologies. A crucial factor for navigating the complexities of the quantum arena was securing independent directors.

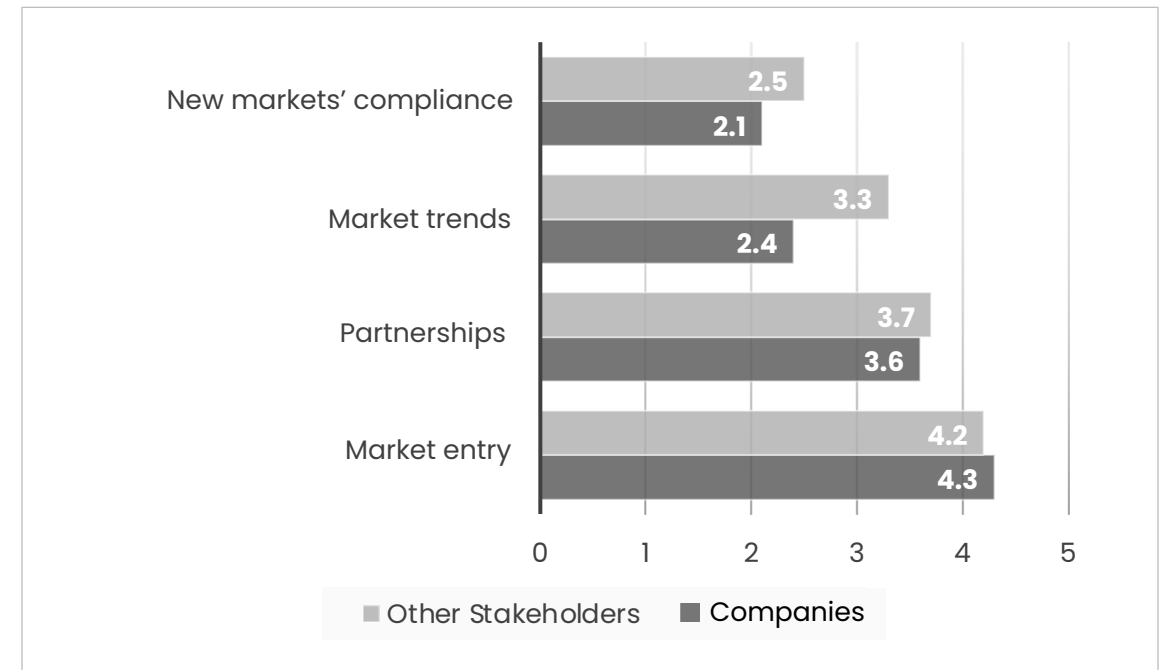
Source: Pasqal.

Most relevant actions

During past vs. future (year)



For companies vs. other stakeholders



Notes: In the horizontal axis, 0 means “least important” and 5 refers to “most important”. Past and future refer to the previous and the next year. Data were reviewed at the date of publication.

Source: Prepared by the authors (see Annex 3: Methodology). N = 39 (38% are companies and 62% are expert stakeholders including investors, corporations, mentors, and policy makers).

Do's and Don'ts

| DO's | DON'ts |
|---|--|
| Use your board members' network to secure strategic partnerships for growth. | Do not neglect the board potential to open doors to new markets and opportunities. |
| Ensure experience in scaling companies within your board members, particularly in deep-tech sectors. | Avoid having a board composed only of academics or individuals without practical scaling experience. |
| Review and adapt the board's structure and processes regularly to align with the company's growth stage. | Do not keep the board structure static. It should evolve with the company's maturity and needs. |

Source: Expert workshops.

Insights

| | |
|--|--------------------|
| "An open dialogue with top management is fundamental to align growth strategies with board decisions." | Michael Hochholzer |
| "Regular board meetings are crucial for navigating the rapid scale-up phases that deep-tech companies face." | Daniel Kahn |

Assessing priorities

According to the previous slide's data:

- **Top relevant aspects:** Seek guidance from the board on new markets and market entry (above 3.6/5.0 in most cases).
- **Top transitions:** A decrease in market entry (-0.6/5.0), while increasing new market's compliance (+0.3/5.0).
- **Top misalignments:** Companies rate market trends as a lower priority (-0.9/5.0) than stakeholders do.

Case in point

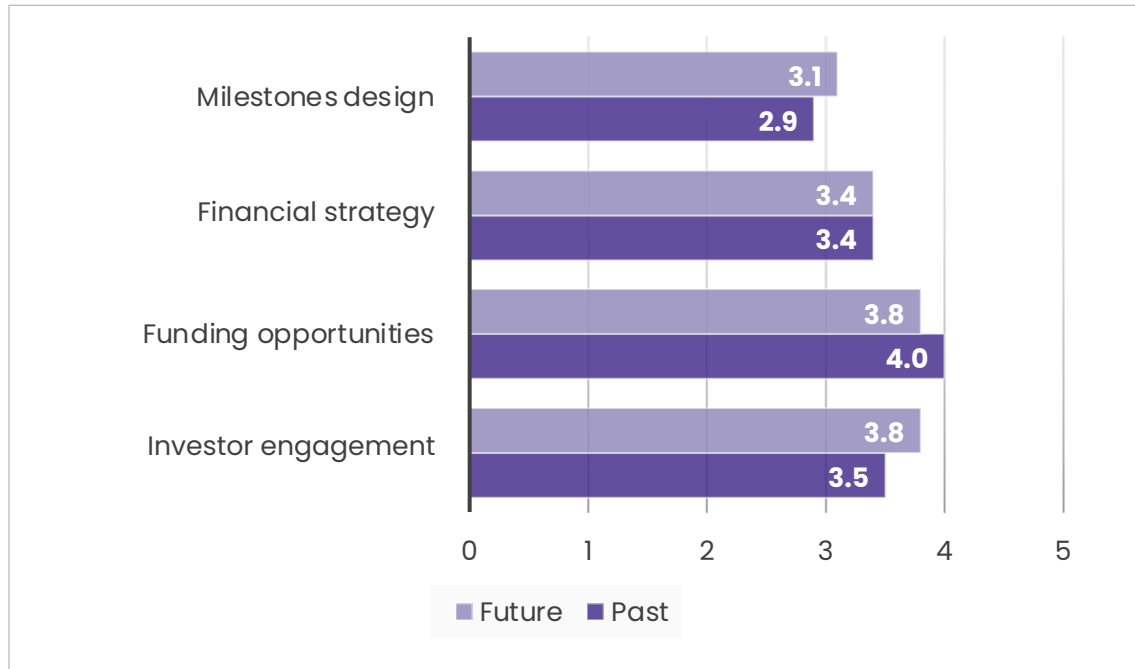


This AI-driven drug discovery scale-up has leverage its board expertise for growth and new market penetration by incorporating seasoned professionals with extensive experience in the pharmaceutical and biotechnology industries. It enabled to secure high-profile collaborations, extend market reach, and support its market entry strategies with local expertise.

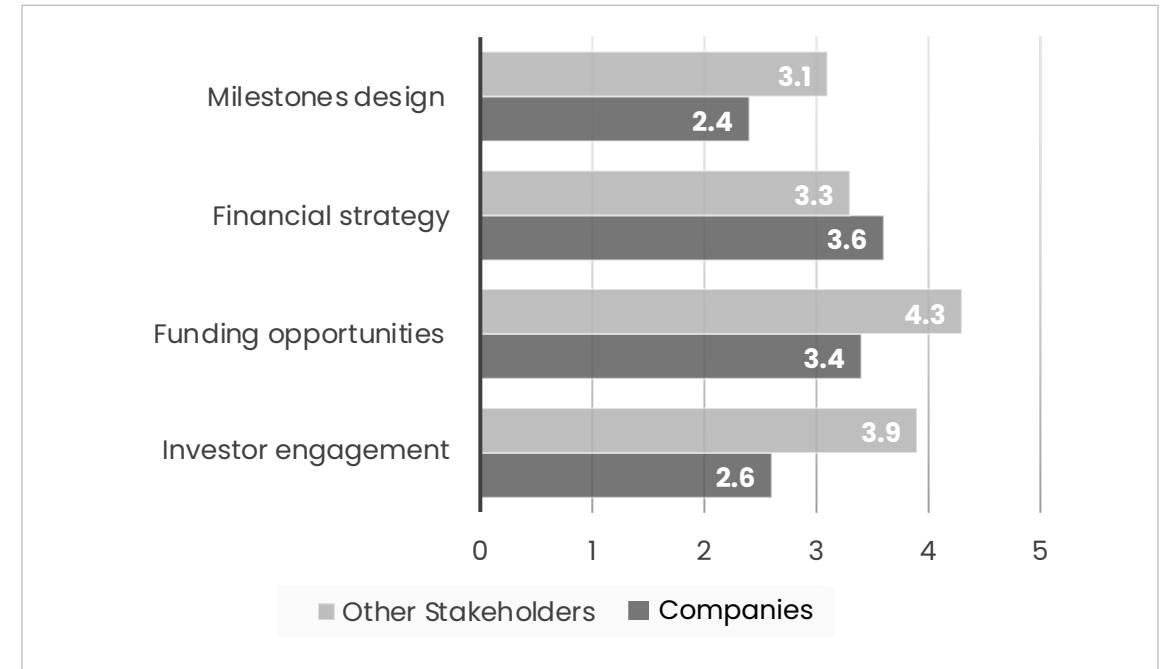
Source: Exscientia.

Most relevant actions

During past vs. future (year)



For companies vs. other stakeholders



Notes: In the horizontal axis, 0 means “least important” and 5 refers to “most important”. Past and future refer to the previous and the next year. Data were reviewed at the date of publication.

Source: Prepared by the authors (see Annex 3: Methodology). N = 39 (38% are companies and 62% are expert stakeholders including investors, corporations, mentors, and policy makers).

Do's and Don'ts

| DO's | DON'ts |
|--|--|
| Leverage board members' connections to secure funding from top-tier investors who understand deep tech. | Avoid depending on a limited pool of investors. Diversify your funding sources. |
| Ensure transparency in performance and financial reporting to build investor trust. | Avoid hiding or glossing over financial difficulties. Transparency builds trust with investors. |
| Incorporate financial experts who understand the intricacies of deep tech investments. | Do not overlook the importance of having financially savvy board members who can scrutinize investments. |

Insights

| | |
|--|--------------|
| "Strategic investments in cutting-edge technology are vital, and our board's rigor in financial oversight ensures sustainable growth." | Prunier Rémi |
| "Leverage your board's reputation to attract future investments." | Kaija Pöysti |

Assessing priorities

According to the previous slide's data:

- **Top relevant aspects:** Leverage board networks to attract funding (above 3.4/5.0 in most cases).
- **Top transitions:** Just minor shifts such as an increase (+0.3/5.0) in investor engagement.
- **Top misalignments:** Stakeholders prioritize more investors engagement (+1.3/5.0) and milestones design (+0.7/5.0) than companies do.

Case in point

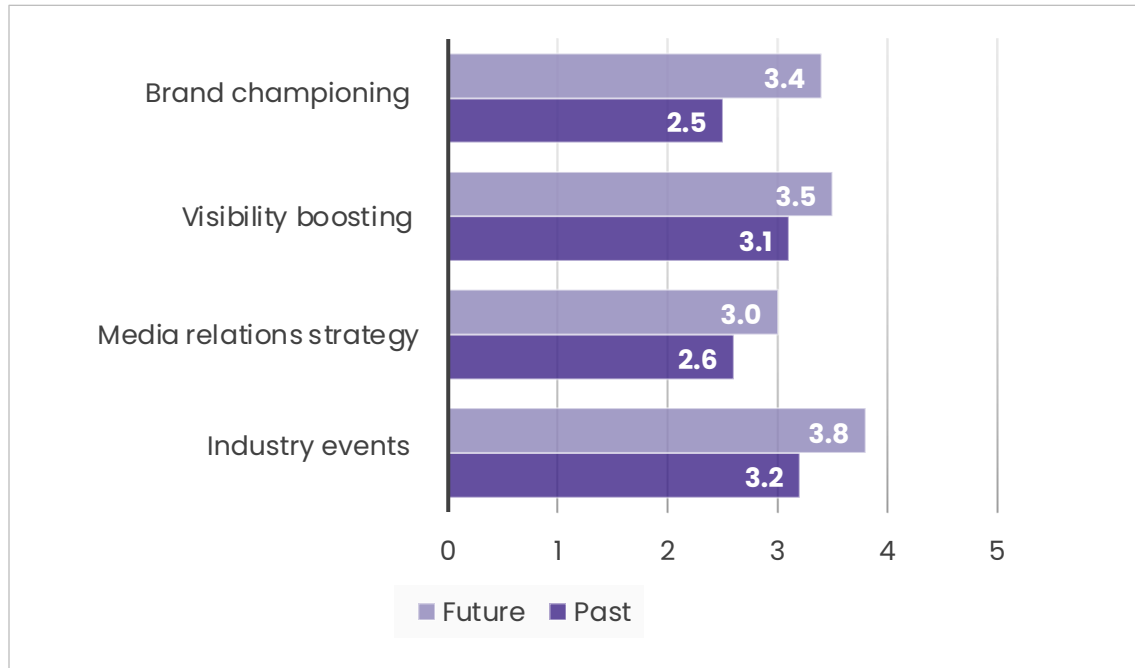


The company has developed a board with pharmaceutical and AI expertise that increases its credibility and attracts investors confident in their ability to deliver commercially viable drugs. This reduces the perceived risk for investors.

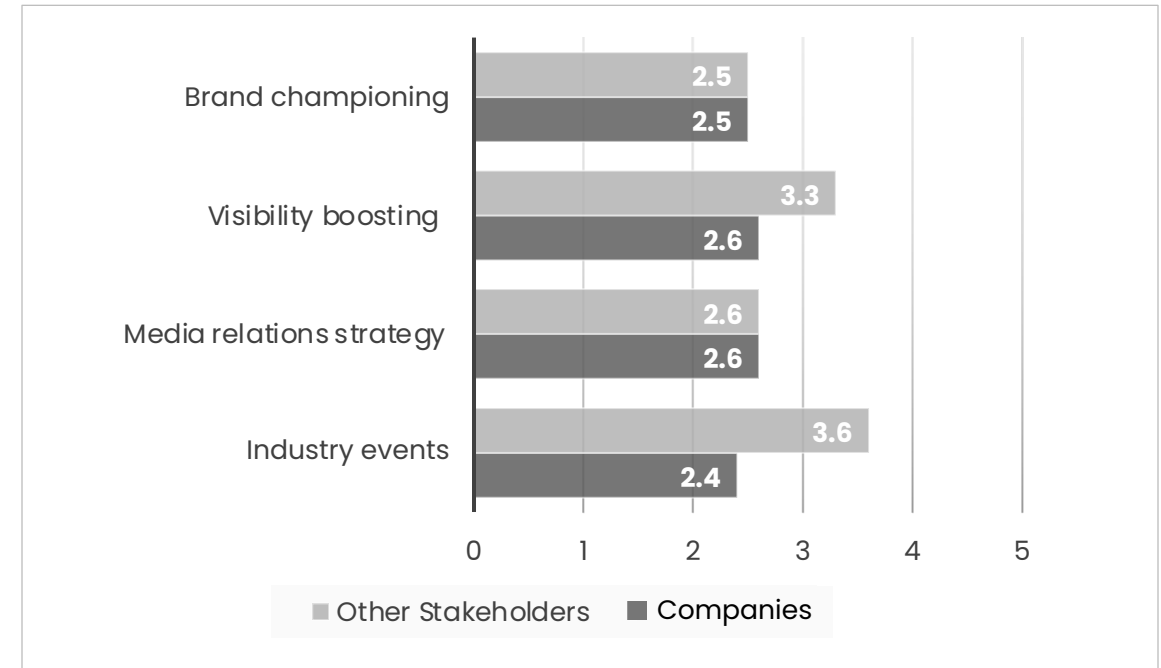
Source: Evox Therapeutics.

Most relevant actions

During past vs. future (year)



For companies vs. other stakeholders



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Source: Prepared by the authors (see Annex 3: Methodology). N = 39 (38% are companies and 62% are expert stakeholders including investors, corporations, mentors, and policy makers).

Do's and Don'ts

| DO's | DON'ts |
|--|---|
| Leverage them for crisis management. Engage their expertise and experience. Often, they have faced similar challenges. | Don't keep the board in the 'dark'. Avoid withholding critical information or delaying communication. |
| Develop a communication strategy for board activities to enhance the company's public image. | Do not underestimate the importance of publicizing the board's strategic decisions and successes. |
| Use the board's collective expertise to drive corporate social responsibility (CSR) initiatives. | Avoid neglecting CSR as it can significantly impact the company's reputation and stakeholder trust. |

Source: Expert workshops.

Insights

| | |
|---|---------------|
| "Take the time to make the board useful for your reputation and strategic moves." | Gozard Lampic |
| "Build trust and avoid micromanagement." | Marta García |

Assessing priorities

According to the previous slide's data:

- **Top relevant aspects:** The actions are lowly prioritized. Yet, involving the board in industry events to enhance the company's reputation is highlighted a bit (above 2.4/5.0 in most cases).
- **Top transitions:** Significant increase (+0.9/5.0) in brand championing.
- **Top misalignments:** Stakeholders rate industry events of a higher priority (+1.2/5.0) than companies do.

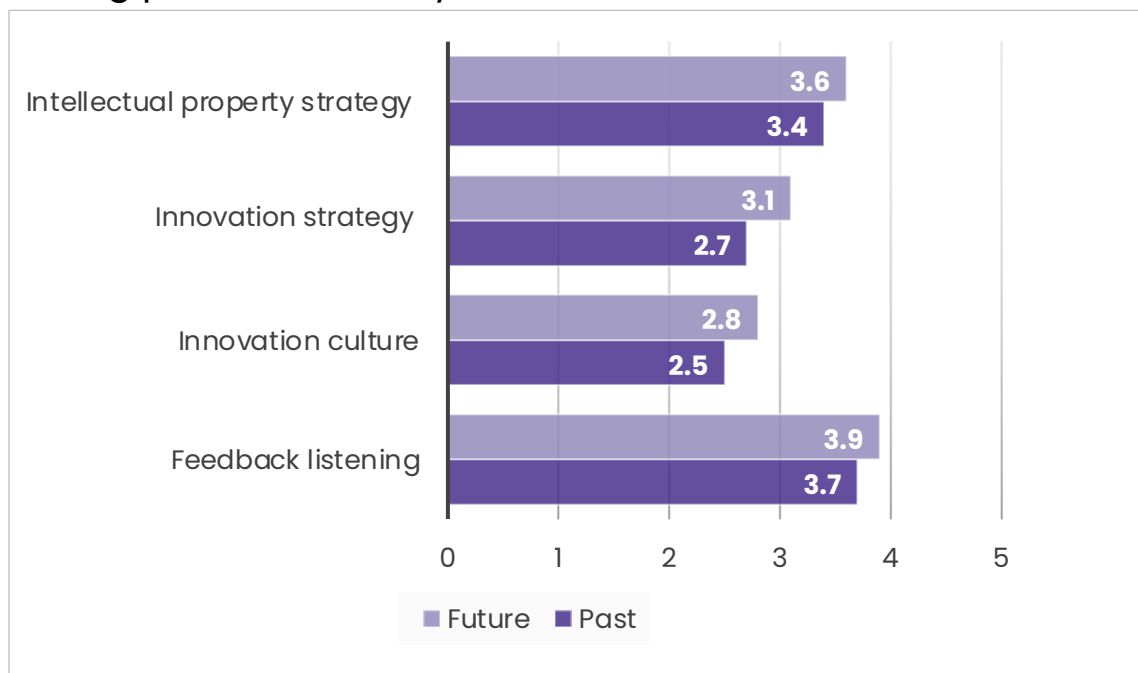
Case in point

BB Biotech Its board has implemented several actions to develop its reputation: boosting transparency and credibility through regular reports on research and development; strategic partnerships with reputable academic and industry organizations; a clear and consistent communication; and a comprehensive review of public perception to learn and continue improving.

Source: BB Biotech.

Most relevant actions

During past vs. future (year)



For companies vs. other stakeholders



Notes: In the horizontal axis, 0 means “least important” and 5 refers to “most important”. Past and future refer to the previous and the next year. Data were reviewed at the date of publication.

Source: Prepared by the authors (see Annex 3: Methodology). N = 39 (38% are companies and 62% are expert stakeholders including investors, corporations, mentors, and policy makers).

Do's and Don'ts

| DO's | DON'ts |
|---|---|
| Foster an innovation-friendly board culture that rewards creative risk-taking and experimentation. | Do not penalize failures in innovation. They are often a cornerstone to success. |
| Encourage board members to participate in innovation workshops and stay engaged with R&D activities. | Avoid board members to become disconnected from the company's innovation strategy. |
| Implement regular innovation reviews in board meetings to keep track of progress, challenges, and opportunities. | Avoid neglecting board dynamics and relationships. It can lead to conflicts and a lack of cohesion that hinders innovation. |

Source: Expert workshops.

Insights

| | |
|--|--------------------|
| "Innovation is not just a department, it is a mindset that needs to pervade the entire organization." | Orestis Trasanidis |
| "The board's focus on filling knowledge gaps ensures that innovation permeates our organization, enhancing our competitive edge in deep tech." | James Banal |

Assessing priorities

According to the previous slide's data:

- **Top relevant aspects:** Seeking feedback from customers and the board to adjust the strategies (above 3.7/5.0 in most cases).
- **Top transitions:** Minor increases in priority such as the innovation strategy (+0.4/5.0).
- **Top misalignments:** Stakeholders values the intellectual property protection more (+1.1/5.0) than companies do.

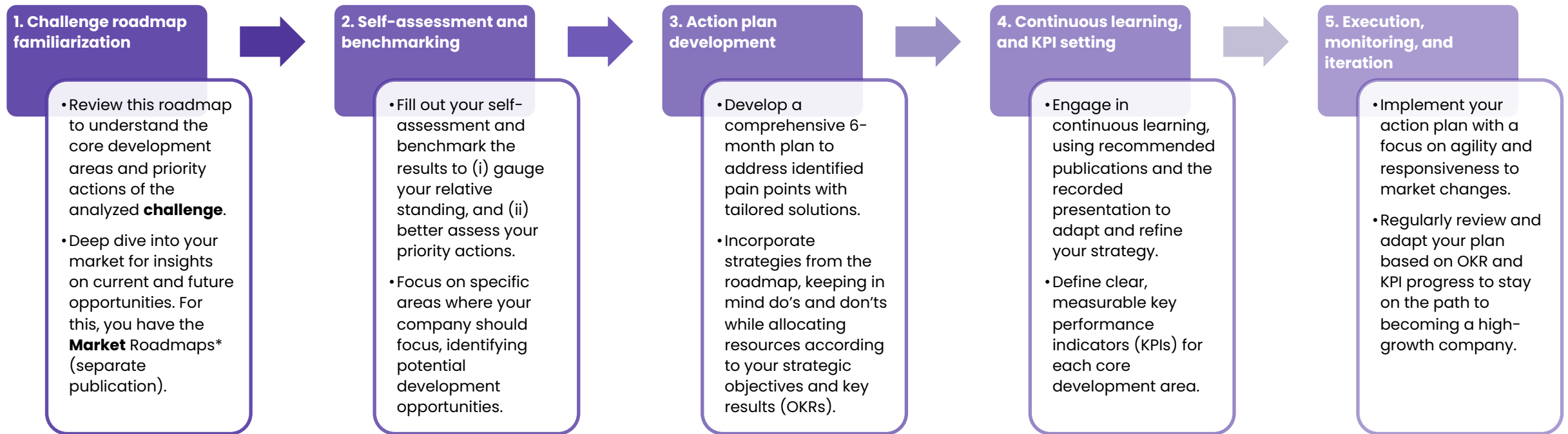
Case in point

ASML

Its board integrates feedback mechanisms to secure that customers and stakeholders directly influence their innovation process, ensuring that their product development is aligned with customers need. They monitor social media and online forums, implement satisfaction surveys, and have customer advisory boards where key clients can provide direct feedback.

Source: ASML.

A five-step guide for preparing an action plan in your core development areas



Source: Prepared by the authors. **Note:** The Market Roadmaps are another series of publications of the EIC Scaling Club.

1) Self-assess your company with this survey (only 5')

What has been and will be your most relevant priority **actions**?



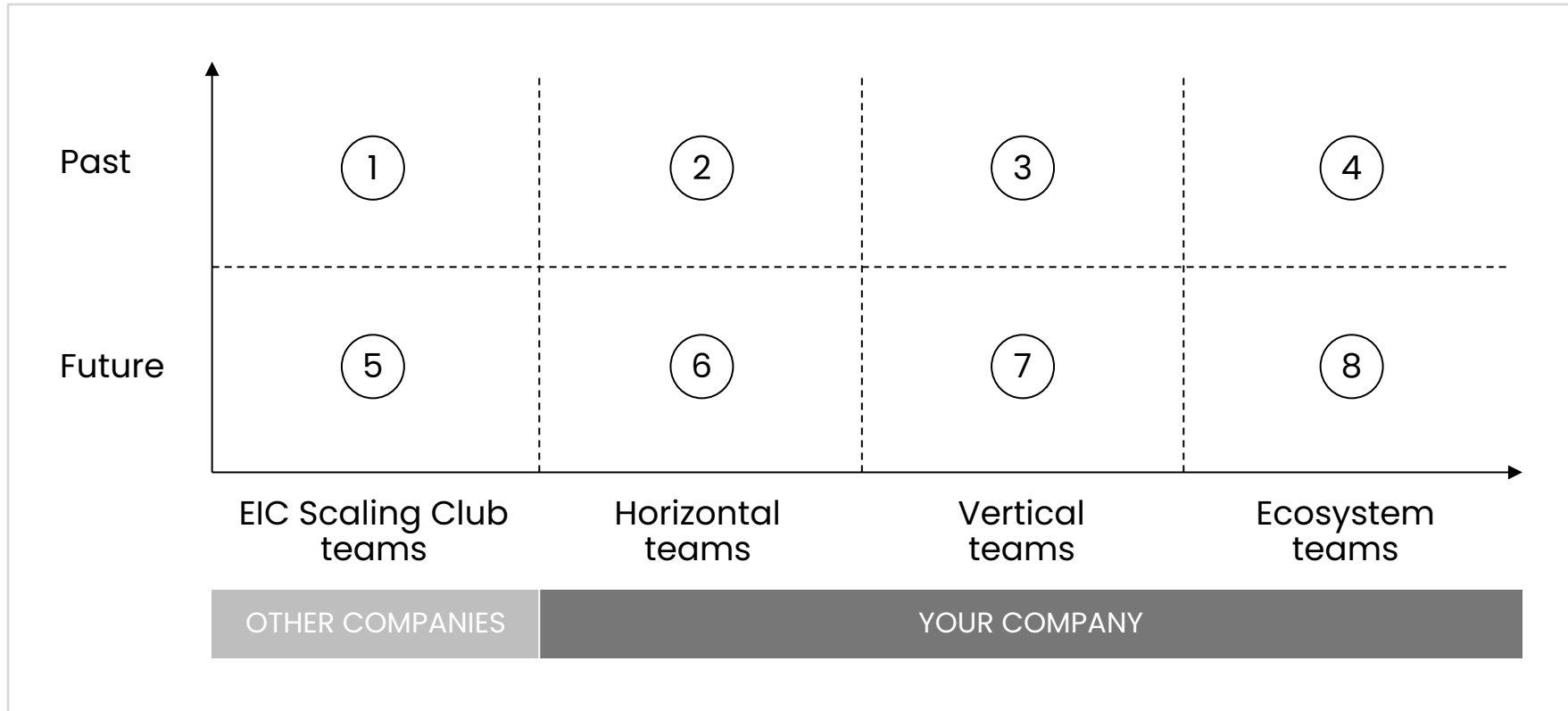
2) Benchmark yourself against the analyzed sample

Which **areas** are you going to improve?
What should be your main **objectives**?
How are you going to **measure** them?



Note: Data were reviewed at the date of publication.

Then, you can annually compare your results from multiple angles



Target groups for comparison

- **EIC Scaling Club teams:** between you (*the company's CEO*) and the analyzed sample of companies in this document.
- **Horizontal teams:** between you and other peers (e.g., other executive committee members or cofounders) or between departments at the same company level (e.g., sales, product development, talent).
- **Vertical teams:** between you (*the company's CEO*) and departments below you.
- **Ecosystem teams:** between you and other stakeholders (e.g., investors, advisors, clients).

Source: Prepared by the authors.

Potential dashboard for core development areas with OKRs

Zoom into the objectives and key results that you may track and improve based on your self-assessment

| Area | 1. Governance | 2. Growth | 3. Investment | 4. Reputation | 5. Innovation |
|--------------------|---|---|---|---|--|
| Objective | <ul style="list-style-type: none"> Establish a robust governance framework to ensure compliance and operational efficiency across all business processes. | <ul style="list-style-type: none"> Achieve 30% annual growth through strategic market expansion and innovative product development. | <ul style="list-style-type: none"> Achieve a 25% increase in investment by leveraging the board's network and strategic partnerships. | <ul style="list-style-type: none"> Achieve a 20% improvement in company reputation through strategic media and visibility initiatives. | <ul style="list-style-type: none"> Increase innovation effectiveness by 25% through a supportive innovation culture and increase the board's oversight. |
| Key results | <ul style="list-style-type: none"> Achieve 100% compliance with regulatory standards by implementing automated compliance tracking systems. Reduce governance-related incidents by 40% through bi-monthly internal audits and targeted employee training programs. Increase stakeholder satisfaction with governance practices to 90% by enhancing transparency and communication. | <ul style="list-style-type: none"> Increase annual revenue by 25% through the launch of three new product lines. Expand into five new international markets, achieving a 20% market share in each. Grow the customer base by 30% by enhancing the sales funnel and optimizing lead conversion rates. | <ul style="list-style-type: none"> Achieve a 15% increase in investor engagement and participation through enhanced communication. Attract at least three new funding tickets through private investors or government grants. Strengthen the company's oversight by implementing financial reporting improvements to achieve an 100% accuracy level of the reported information. | <ul style="list-style-type: none"> Increase positive media mentions by 30% annually through targeted public relations campaigns. Secure featuring articles in top industry publications quarterly. Achieve a 50% increase in social media engagement through impactful content and community interactions. | <ul style="list-style-type: none"> Implement feedback loops with customers and board members, achieving a 20% increase in actionable insights. Increase innovation efficiency by 25% through streamlined processes and resource optimization. Launch two breakthrough products aligned with board-defined innovation. |

Source: Prepared by the authors. **Note:** This is just an example.

Potential dashboard for core development areas with KPIs

Zoom into the key performance indicators you may track and improve based on your self-assessment

| Area | 1. Governance | 2. Growth | 3. Investment | 4. Reputation | 5. Innovation |
|------------------------|--|---|--|--|--|
| KPIs to track | <ul style="list-style-type: none"> Thought Leader Partnerships: Measure of strategic collaborations with industry influencers and experts. Trend Prediction Accuracy: Evaluation of the precision in forecasting market and technology trends. Foresight ROI: Calculation of return on investment from proactive future-oriented initiatives. | <ul style="list-style-type: none"> ARR Growth Rate: Percentage increase in annual recurring revenue over a defined period. Employee Growth Satisfaction: Measure of employee satisfaction and engagement in growth-oriented environments. Successful Pivot Rate: Percentage of successful transitions to new business strategies or models. | <ul style="list-style-type: none"> Investor Engagement Score: Measures quality and frequency of interactions with potential and current investors. Funding Success Rate: Tracks the percentage of funding goals achieved in each investment round. Return on Investment (ROI) for Funded Projects: Assesses the financial returns generated from projects funded by investors. | <ul style="list-style-type: none"> Investor Complaints: Number of complaints from investors regarding various aspects of operations or returns. Timely Audits and Compliance Reports: Percentage of audits and compliance reports completed on schedule. Deep-Tech Risk Mitigation: Effectiveness in identifying and reducing risks associated with deep-tech innovations. | <ul style="list-style-type: none"> Innovation Success Rate: Percentage of innovation projects successfully launched or implemented. Time to Market: Average time taken to bring new innovations to market from ideation to launch. Customer Adoption Rate: Percentage of customers adopting new innovations or features within a specified period. |
| Visual elements | <ul style="list-style-type: none"> Bubble Chart: Bubble sizes indicate thought leader partnership's strength, ideal for visualizing relationships. Bar Graph: Provides a clear visual gauge of trend prediction accuracy in percentage terms. Line Graph: Illustrates trends and comparisons in Foresight ROI over time or against benchmarks. | <ul style="list-style-type: none"> Growth Curve: Illustrates the trajectory of ARR growth rate over time, showing revenue expansion trends. Radar Curve: Visualizes employee growth satisfaction across multiple dimensions for a comprehensive assessment. Timeline: Tracks successful pivot rate evolution over periods to monitor strategic transitions. | <ul style="list-style-type: none"> Radar Chart: Compares multiple dimensions of investor engagement metrics across different criteria. Funnel Chart: Illustrates progression and success rates of different funding stages. Waterfall Chart: Breaks down ROI contributions from different projects showing cumulative impacts. | <ul style="list-style-type: none"> Sentiment Chart: Illustrates trends in investor complaints sentiment and frequency for actionable insights. Calendar Heatmap: Displays timely audits and compliance reports' completion rates over time, highlighting compliance periods. Risk Dashboard: Provides an overview of deep-tech risk mitigation effectiveness with key risk indicators. | <ul style="list-style-type: none"> Innovation Pipeline Funnel: Illustrates innovation success rate at each stage of the innovation process. Gantt Chart: Tracks time to market by showing project timelines and milestones. Adoption Curve: Displays customer adoption rate over time for new innovations or features. |

Source: Prepared by the authors. **Note:** This is just an example. To visualize this, there are plenty of business intelligence tools such as Tableau and Power BI.

Boards of Directors: 5 Pillars to Withstand Turbulent Times

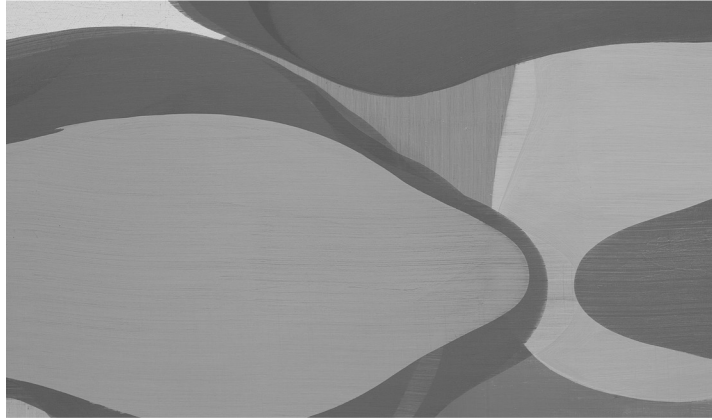


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Methodology

This study was conducted to shed light on how European deep-tech scaleups can better develop their **strong board**. To achieve this, the research team has conducted literature reviews, interviews, onsite and online workshops, surveys, and more.

- **Literature review:** comprehensive analysis of studies published in relevant academic journals, industry reports, news platforms, and secondary data, to name a few.
- **In-depth interviews (3 experts):** later, a semi-structured interview protocol was developed with fixed open-ended questions. Each interview's introduction phase was established to align definitions, reduce ambiguity, and focus the scope – ensuring a common understanding. Four interviews were conducted and analyzed to validate the measurement indicators of core development areas and priority actions, among other factors.
- **Expert workshops and survey (61 experts):**
 - Afterward, four online and onsite workshops were moderated for further validation while gathering insights and primary data about the indicators, securing diversity in terms of geography, industry, and gender. Moreover, the selection of companies (and stakeholders' portfolios) aimed to be within a similar company's maturity stage. These companies were selected by a committee of experts based on their past and future potential results. These workshops were also developed to validate the framework for the self-assessment of companies, among other factors. Lastly, an additional survey was used.
 - A total of 61 experts were involved, encompassing scaleups, investors, corporations, media, policymakers, and mentors. In several cases, a triangulation process was applied using multiple data sources to ensure the validity of the information and gain a comprehensive understanding of this phenomenon.
 - The team analyzed the answers through several stages, including coding and classification of responses by repetition of keywords and frequency of concept reference, to identify initial categories. Several tests were conducted to develop a robust classification, avoiding redundancy and securing completeness. Data was quantified and visually analyzed, with percentages reflecting the relative importance of each aspect, rounded to the nearest unit. Three researchers carried out this process, increasing the robustness of the results. The entire study underwent a review by four additional peer reviewers, including three academics and one practitioner.

The study's primary challenges were the ambiguity of terminology used in the industry, creating a robust categorization that was neither too fragmented nor too aggregated, the limited size of the sample, the company's sector diversity, and the scope of companies' maturity stage. Countermeasures were put in place to address these challenges, as described in this section. The research team acknowledges the complexity of the phenomenon and the opportunity for further analysis, gathering more indicators within a bigger sample to better understand co-relation factors.

| Maturity of companies | Smart mobility | Digital security and trust | Next-gen computing | Renewable energies |
|--|--|--|--|--|
| <p>Overall group: N: 48</p> <p>Valuation (€M): Average: 57.8 St. Dev: 62.10 N: 22 (46%)</p> <p>Fundraised (€M): Average: 34.8 St. Dev: 38.2 N: 34 (71%)</p> |  |  |  |  |

Source: Pitchbook and Dealroom (2024 June 14). **Note:** The analyzed companies are a subset of this group. The information is based on the latest available data. "St. Dev." refers to the standard deviation. "N" refers to the size of available data for the chosen metric. Data were reviewed at the date of publication.

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Source: Companies' website.

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