



Mid-Year Tech Check 2026: What's Rising and Falling



A note about this e-book



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This e-book is an abridged version of our popular webinar “Mid-Year Tech Check 2026: What’s Rising and Falling.”
For the full webinar, which provides more research and context, please visit our website [here](#).

Mid-Year Tech Check 2026: What's Rising and Falling

Track where innovation momentum originates, then align technology opportunities with market readiness, capabilities, and strategic priorities.



PRODUCT DESIGN AND INNOVATION

Design for manufacturability, integration, scalability, and application performance rather than pursuing technical novelty in isolation.



BRAND

Position innovation around measurable customer value, resilience, health, affordability, and performance instead of unproven technology claims.



SUPPLY CHAIN AND OPERATIONS

Strengthen resilience by integrating technology decisions with sourcing, production capacity, infrastructure, data quality, and refining capabilities.



GROWTH POTENTIAL

Prioritize technologies where rising innovation interest aligns with regulatory support, commercial demand, and realistic pathways to scale.

Key takeaways

01

Pinpoint how to engage the technology options.

Various sources drive innovation interest — isolate where momentum is coming from to shape your strategy.

02

Defend your right to dabble.

Dabbling is a necessary part of innovation — involvement in earlier-stage technologies is critical to long-term success.

03

Monitor tech and market signals in parallel.

Current megatrends create the conditions for technology adoption — market readiness will tip the scale for innovation success.

EXECUTIVE SUMMARY

Innovation momentum is shifting toward execution

Innovation priorities are being reshaped by economic pressure, supply chain risk, regulatory change, energy demand, and the need to generate measurable returns. Across industries, the focus is shifting:

- Oil and gas companies are strengthening resilience.
- Utilities are balancing affordability with grid reliability.
- Chemicals companies are prioritizing performance and manufacturability.
- Industrials are building on infrastructure and supply chain momentum.
- Agrifood companies are refining technologies for commercial execution.
- Medical device companies are connecting diagnosis with intervention.

Leaders should evaluate both innovation interest and market readiness. Technology momentum identifies where to look, but organizational fit, production capacity, customer demand, and supporting infrastructure determine whether an opportunity can generate value.



SHIFTING INNOVATION PRIORITIES

6 themes are defining innovation in 2026

Six connected themes are shaping technology investment across major industries. Together, these themes show that resilience, performance, and commercial execution are becoming central measures of innovation success.

Oil and gas: **Resiliency**

Companies are pursuing energy security, operational efficiency, and protection from fuel and supply volatility.

Utilities: **Affordability**

Grid congestion, data center demand, electrification, and extreme weather are increasing the need for flexibility and optimization.

Chemicals: **Performance**

Companies must improve financial returns while developing materials that deliver stronger functionality and application readiness.

Industrials: **Momentum**

Data centers, infrastructure investment, defense spending, and critical minerals demand are supporting growth.

Agrifood: **Refinement**

Regulatory pressure and cost challenges are shifting attention from novelty to scalable, functional solutions.

Medical devices: **Diagnosis**

Decentralized care and regulatory changes are accelerating diagnostic and wearable technologies.

MEASURING TECHNOLOGY MOMENTUM

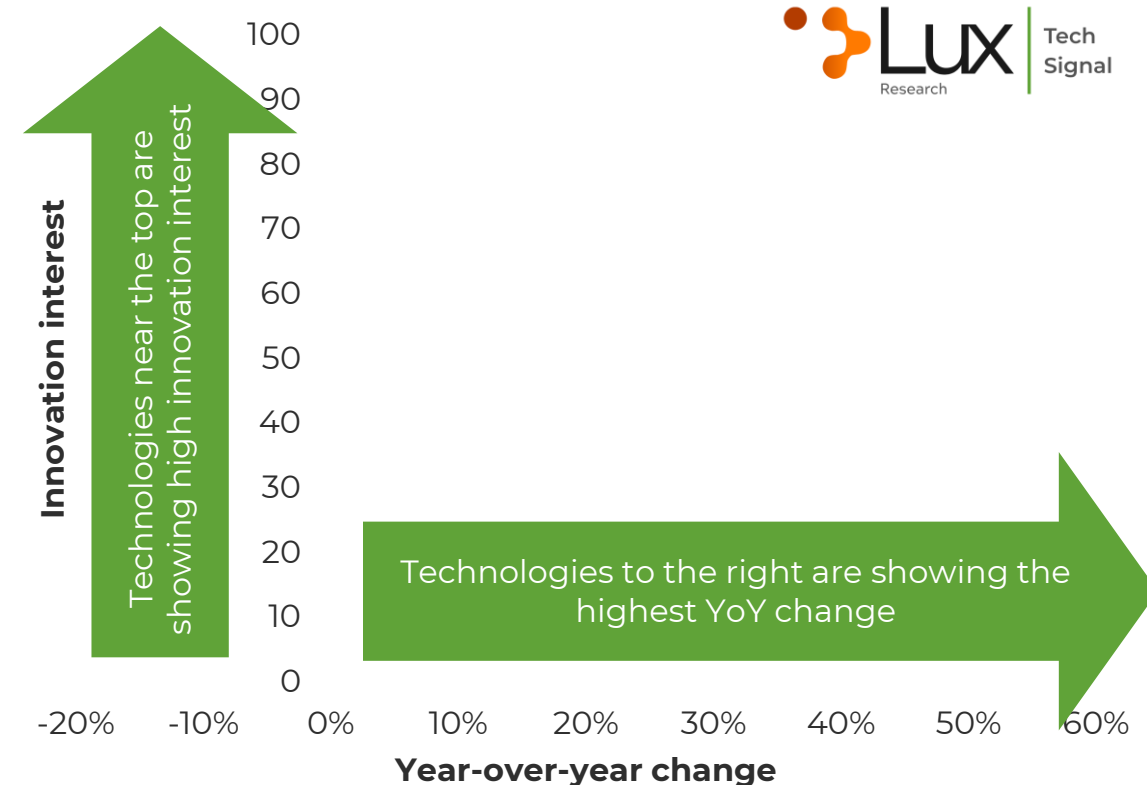
Data reveal what is rising and why

The Lux Tech Signal combines multiple indicators of innovation activity into a normalized signal. Its inputs include patents, academic publications, venture funding, early stage government funding, and Lux proprietary research and data.

Two measures are particularly valuable for executives:

- **Innovation interest** reflects the overall size and growth of a technology ecosystem. It indicates how much scientific, financial, and commercial attention a technology is receiving.
- **Year-over-year change** measures recent momentum. It helps identify technologies that continue to accelerate despite already having substantial activity.

Neither measure should be used alone. A technology may have high interest but declining momentum, suggesting maturity or fading attention. The purpose is not to rank technologies mechanically. It is to identify where deeper analysis, experimentation, partnership, or investment may be justified.



High-temperature thermal storage is gaining momentum

Thermal energy storage is moving beyond broad, low-temperature applications toward high-temperature systems for industrial heat.

Innovation is increasingly focused on:

- Latent heat storage
- Thermochemical storage
- High-temperature materials
- Integration with industrial steam and heat systems

Thermal storage lets companies consume electricity when prices are lower and use stored heat when demand or energy costs rise. This can cut fuel exposure, improve energy resilience, and limit price volatility.

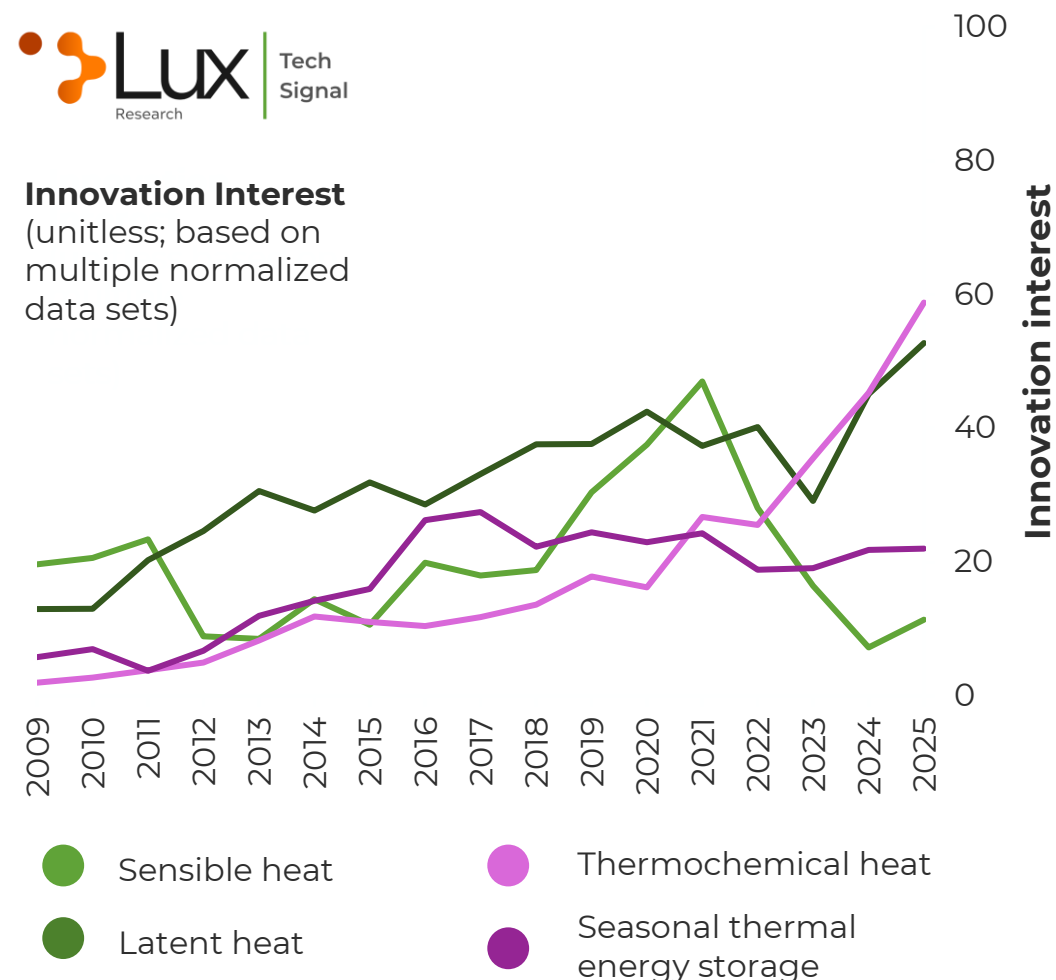
Government support is also helping projects advance.

However, these systems aren't standardized, plug-and-play projects. Temperature requirements, steam quality, facility configuration, and process integration vary by application.

Next step: Companies should deploy proven storage technologies in lower-temperature applications today while monitoring energy prices and government support for higher-temperature opportunities.



Innovation Interest
(unitless; based on multiple normalized data sets)



DERMS* is becoming a strategic utility platform

Electricity systems are facing load growth after decades of relatively stable demand. Data centers, EVs, distributed generation, and extreme weather are placing new pressure on grid infrastructure.

DERMS provides a software layer that can help utilities manage this pressure.

The technology is expanding beyond basic monitoring and control to support load management, grid-edge flexibility, energy bill reduction, microgrid coordination, electricity market participation, and optimization across diverse distributed assets.

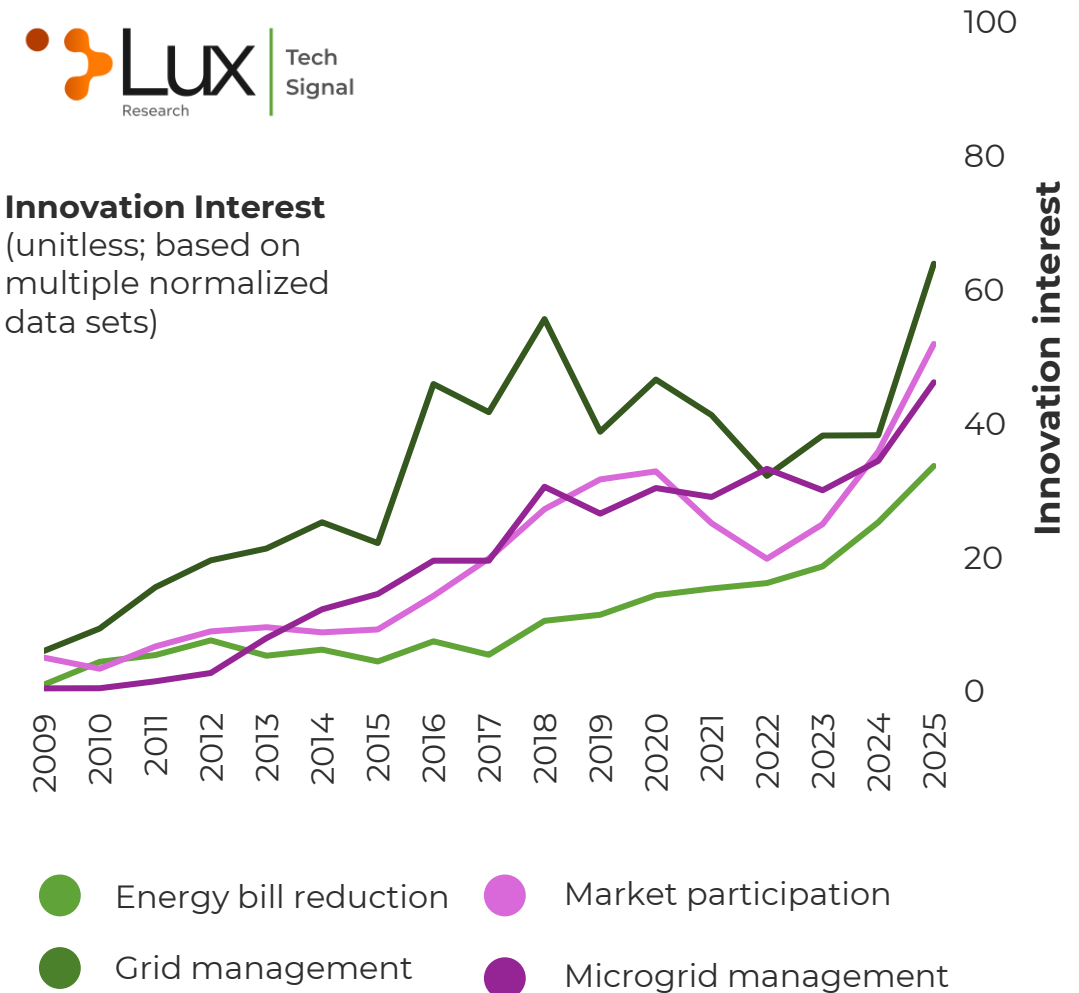
Storage systems and EVs will make these platforms increasingly important because they can respond dynamically to changes in supply, demand, and pricing.

Competitive advantage will depend on interoperability, data quality, asset diversity, and optimization capabilities.

Next step: Utilities should build or acquire platforms that can integrate multiple asset types. AI may improve orchestration, but reliable data and system integration will remain the foundation of long-term platform leadership.



Innovation Interest
(unitless; based on multiple normalized data sets)



Novel electronic materials must move from discovery to integration

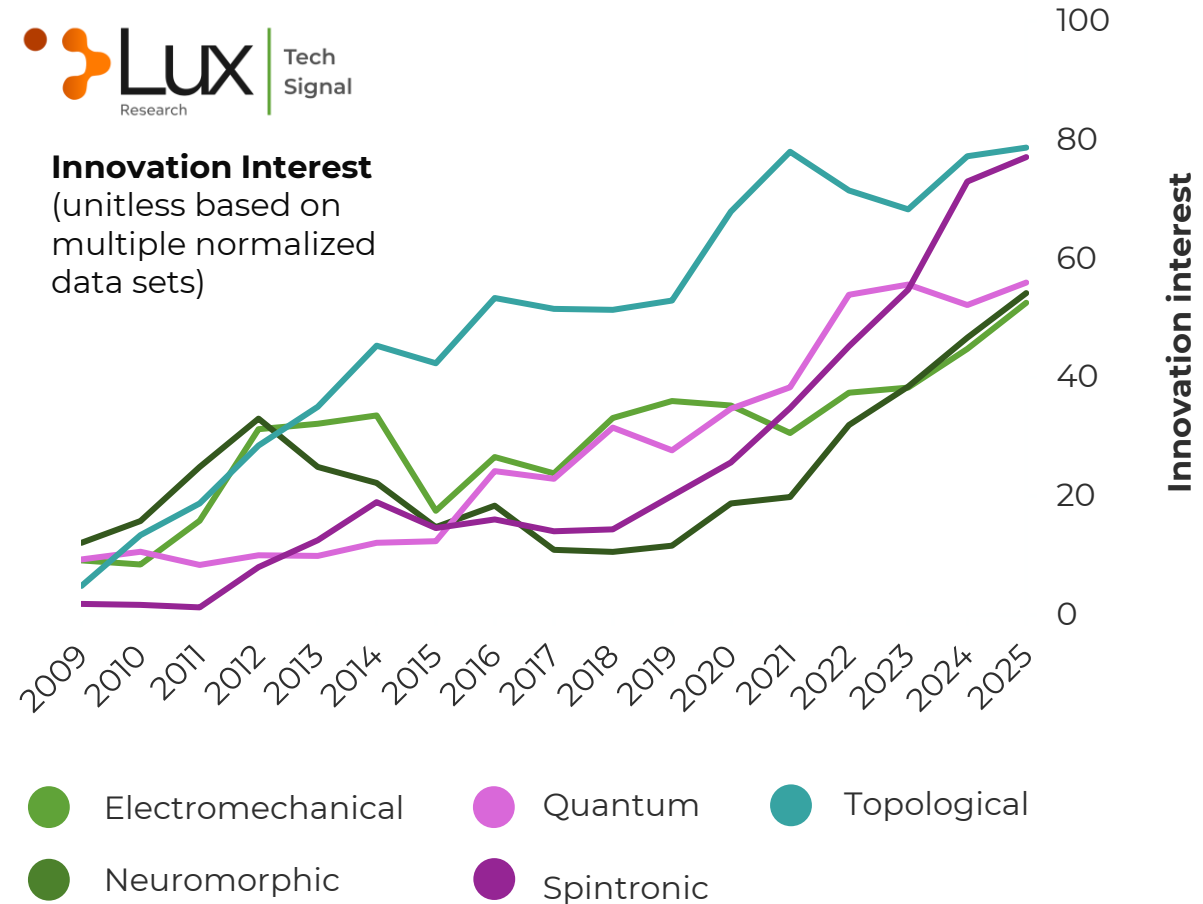
Chemicals companies are renewing their focus on advanced materials, but superior material properties alone won't create commercial success.

The most important shift is from material discovery toward integration. Developers must demonstrate that materials can be processed consistently, incorporated into semiconductor manufacturing, and designed into commercially relevant devices.

Performance is therefore becoming multidimensional. It includes:

- Functional properties
- Manufacturing compatibility
- Process reliability
- System integration
- Application readiness

Next step: Chemicals companies should prioritize codevelopment with device manufacturers and semiconductor partners. Near-term opportunities are more likely to emerge from targeted applications than from broad investment in material novelty.



Critical minerals extraction requires value chain integration

Demand for critical minerals is rising alongside investments in electrification, defense, and data centers. The strategic priority is shifting from locating resources to building resilient, domestic, and diversified supply chains.

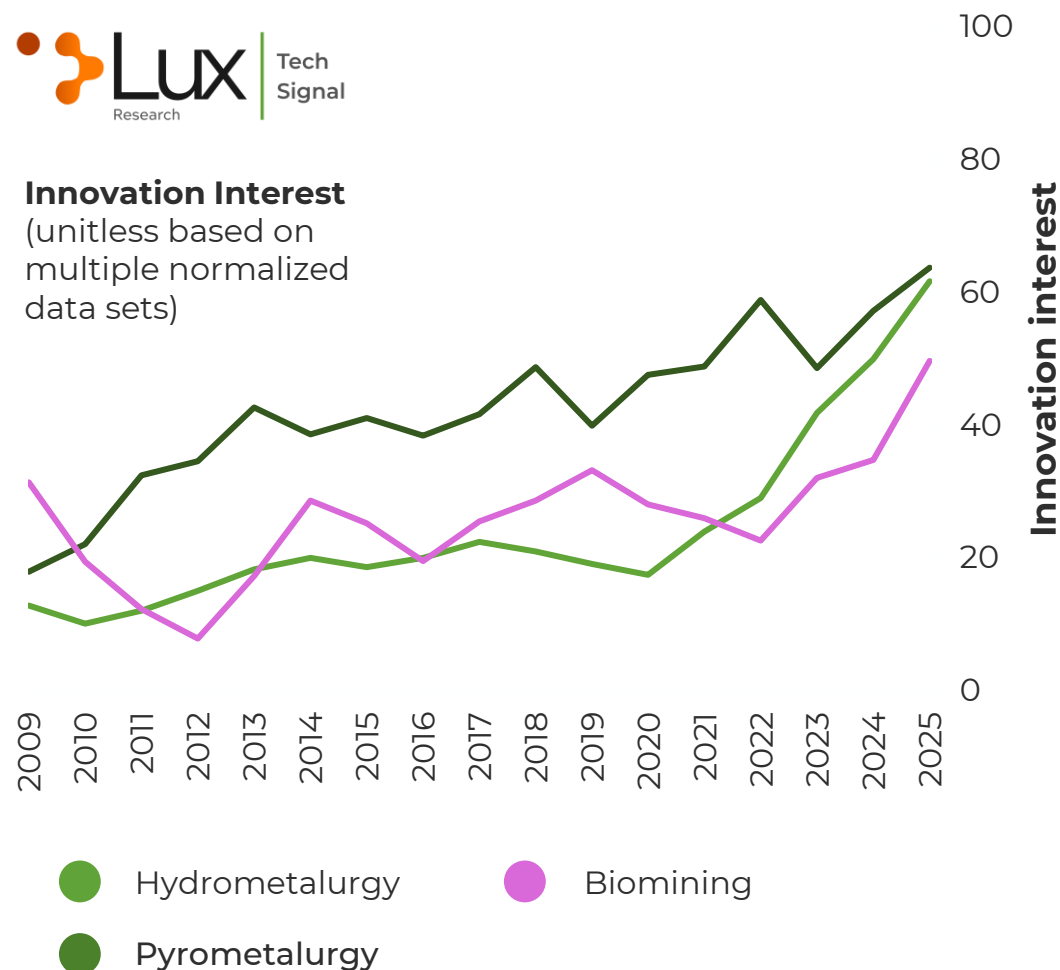
Novel extraction technologies can improve recovery rates, water efficiency, existing mining infrastructure, unconventional resource access, and brines and oilfield processing.

Direct lithium extraction is particularly well aligned with near-term industrial needs because it may be deployed alongside existing operations and can offer a more targeted path to new supply.

Hydrometallurgy also presents strong near-term opportunities. Biomining remains promising, but its longer development horizon may require government support and patient capital.

Extraction alone won't resolve supply vulnerabilities. Long-term competitiveness depends on connecting extraction with refining, processing, recycling, and end-users.

Next step: Companies should prioritize commercially relevant extraction and refining capacity while treating more exploratory technologies as longer-term strategic investments.



Innovation in food additives is moving from novelty to execution

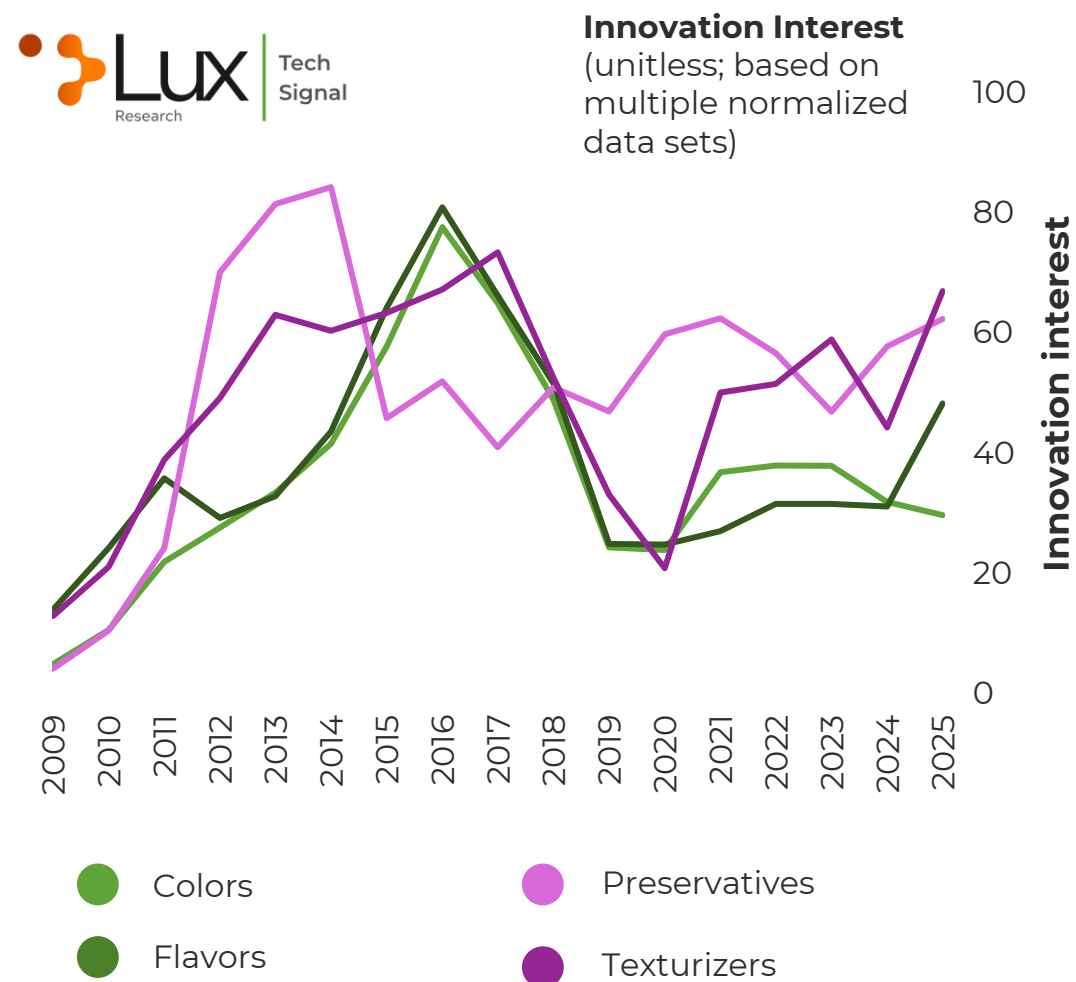
Food additive technologies have moved through an initial innovation cycle. Companies are now deciding which platforms can reach commercial scale and deliver measurable value.

Texturizers are regaining momentum as companies apply existing technologies to consumer expectations around taste, mouthfeel, and product quality.

Preservatives remain important because food safety continues to be a fundamental industry requirement.

Colors and flavors present a more mixed picture. Regulatory pressure may accelerate reformulation, but production costs and scale-up barriers remain significant. Volatility in ingredients such as cocoa is also increasing interest in flavor alternatives.

Next step: Companies should prioritize regulation-ready platforms that deliver functional performance and can approach cost parity. Commercial execution, not scientific novelty, will determine which technologies succeed.



Consumer health wearables are moving from monitoring to intervention

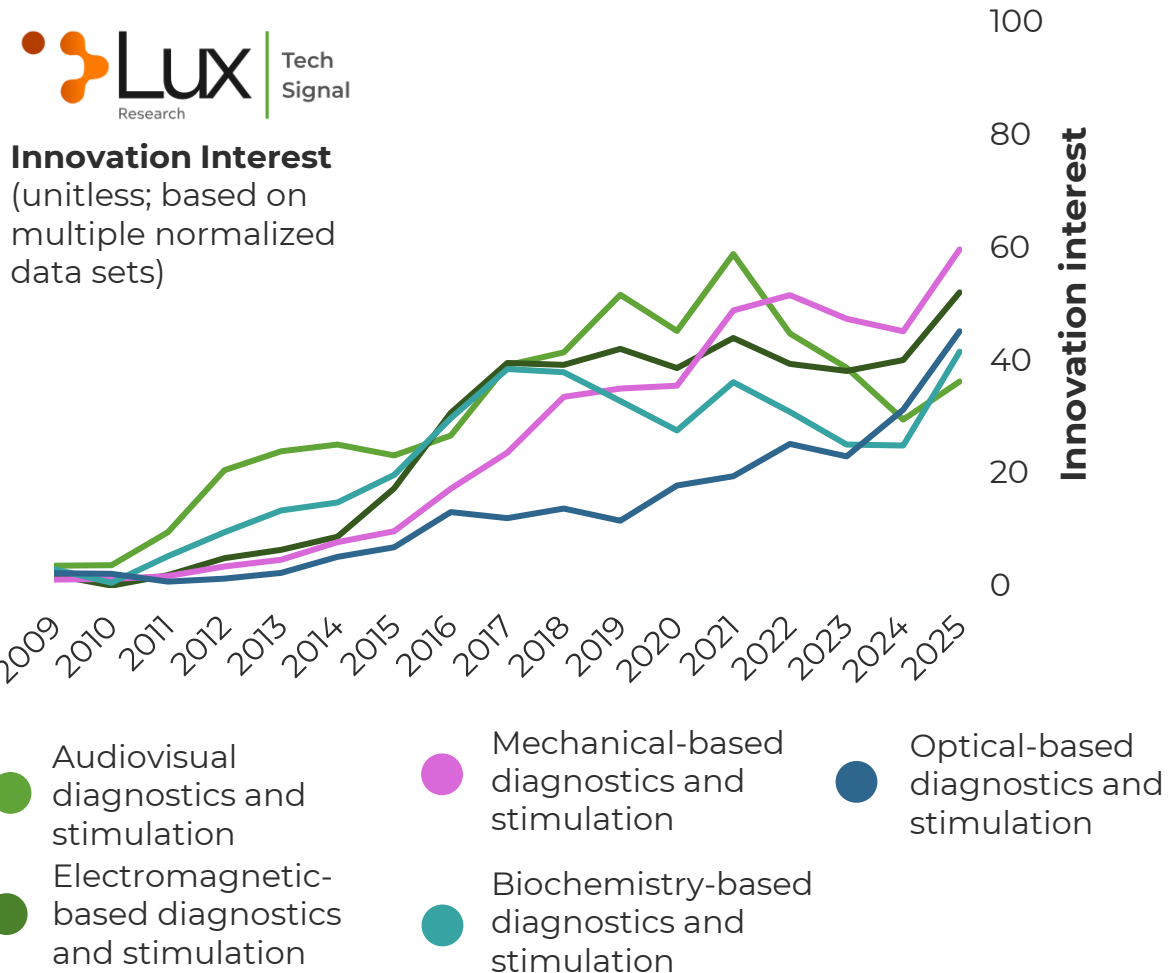
Wearable technologies are evolving beyond stand-alone devices that collect health data. The emerging model combines diagnostics, analytics, and therapeutic intervention within a connected platform.

A closed-loop system can detect a physiological signal, interpret the signal using AI, recommend or deliver an intervention, measure the patient's response, and adjust treatment over time.

Medical device companies are increasingly acquiring diagnostic platforms that already have strong clinical validation. Validation is critical because healthcare remains a conservative investment environment, and regulatory approval requires time, capital, and evidence.

The strongest competitive positions will come from integrating multimodal sensing, clinically validated analytics, and therapeutic capabilities.

Next step: Companies should prioritize platforms with clear clinical pathways and sufficient financial runway. Technologies with unresolved accuracy, validation, or integration challenges should remain in exploratory portfolios rather than near-term commercialization plans.



SEGMENTING INNOVATION INTEREST

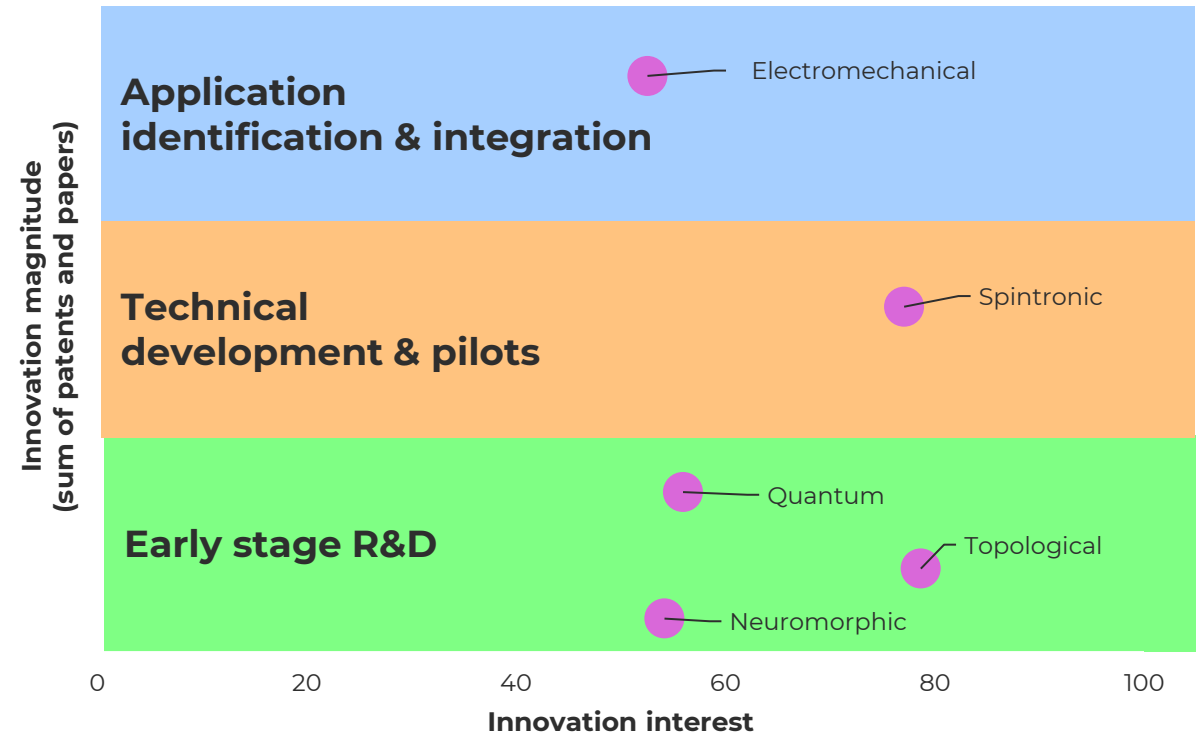
Match your innovation activity to technology maturity

The Lux Tech Signal combines signals from science, investment, and commercialization. But innovation interest alone doesn't reveal how mature a technology is or what action a company should take. Innovation magnitude, including the volume of patents and academic papers, adds that context. Technologies with similar levels of interest can sit at very different stages of development.

That distinction should shape innovation strategy:

1. **Early stage R&D:** Explore technologies with high interest but a limited body of established research.
2. **Technical development and pilots:** Test technologies with growing evidence but unresolved implementation questions.
3. **Application identification and integration:** Focus mature technologies on specific use-cases, systems, and commercial opportunities.

Executives should use both interest and magnitude to determine not only what to pursue but also how to pursue it.



DISCOVER AND DABBLE

Use technology momentum to decide when to experiment

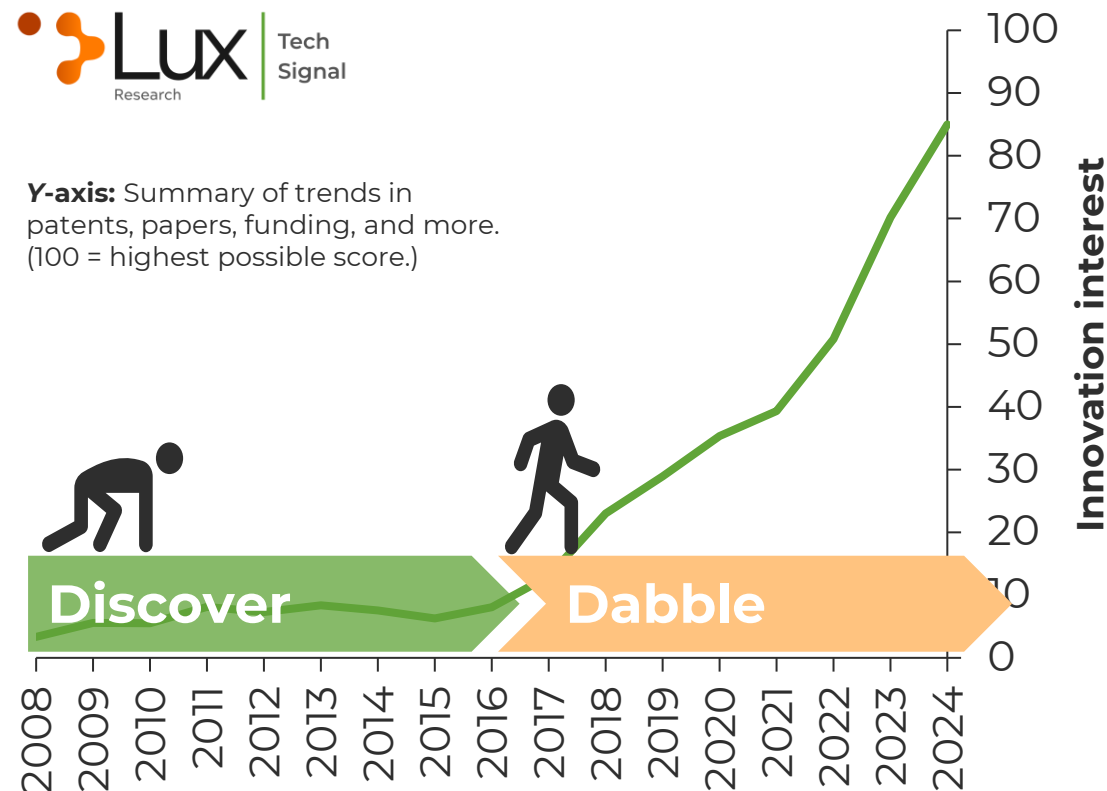
Technology scouting should not begin only after an innovation becomes obvious. Companies need mechanisms for engaging before the market direction is fully established.

The Lux Tech Signal can help identify two important stages:

1. **Discover:** A low or relatively flat signal may indicate an area where no dominant technology direction has emerged. Companies should explore broadly and identify potential solutions to unmet needs.
2. **Dabble:** A sharp upswing signals growing activity, but the eventual winners and applications may still be uncertain. This is the time to experiment, build partnerships, and develop firsthand knowledge.

Dabbling is valuable precisely because the outcome is uncertain. Small-scale engagement can reveal technical constraints, potential applications, and organizational implications before a technology becomes strategically urgent.

Executives should protect room for experimentation. Waiting for certainty can mean waiting until competitors have already developed the capabilities and knowledge needed to act.



BEYOND TECHNOLOGY READINESS

Market readiness is the key to growth

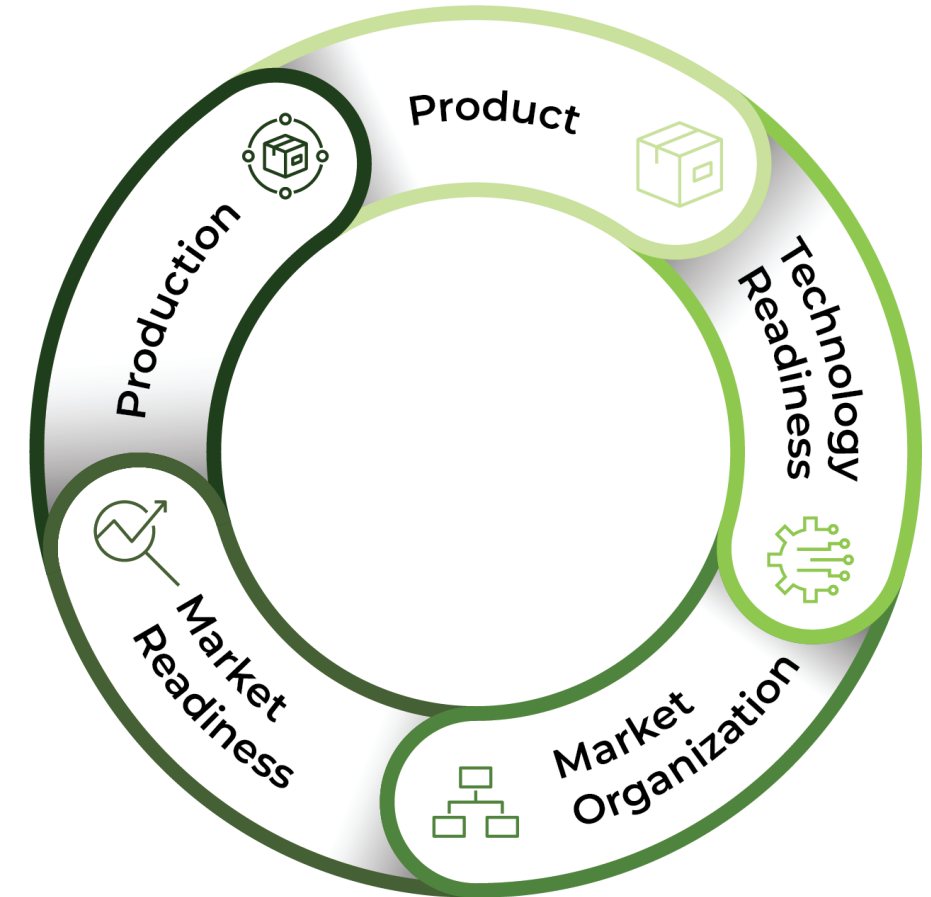
A rising technology signal is not the same as a viable business opportunity.

Before committing significant capital, executives need to understand the broader ecosystem surrounding an innovation. Technology readiness is only one component.

Five factors should be evaluated together:

1. **Product:** Is there a compelling and differentiated offering?
2. **Technology readiness:** Can the technology perform reliably at the required scale?
3. **Market organization:** Are partners, infrastructure, channels, and supporting ecosystems in place?
4. **Market readiness:** Are customers prepared to adopt and pay for the solution?
5. **Production:** Are the materials, manufacturing capacity, engineering skills, and supply chains available?

Executives should monitor technology and market signals in parallel. The best opportunities emerge when innovation momentum and market readiness begin to converge.



About Lux

Lux Research fuels innovators to not only imagine what's possible in the future but also operationalize innovation success in the near term. We deliver research and advisory services to inspire, illuminate, and ignite innovative thinking that reshapes and grows businesses. Using quality data derived from primary research, fact-based analysis, and opinions that challenge traditional thinking, our experts focus on finding truly disruptive innovations that are also realistic and make good business sense.

The “Lux Take” is trusted by innovation leaders around the world, many of whom seek our advice directly before placing a bet on a startup or partner — our clients rely on Lux insights to make decisions that generate fantastic business outcomes. We pride ourselves on taking a rigorous, scientific approach to avoid the hype and generate unique perspectives and insights that innovation leaders can't live without.



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