

Innovation

Inside Sweden's Innovation Matrix

G. Tomas M. Hult

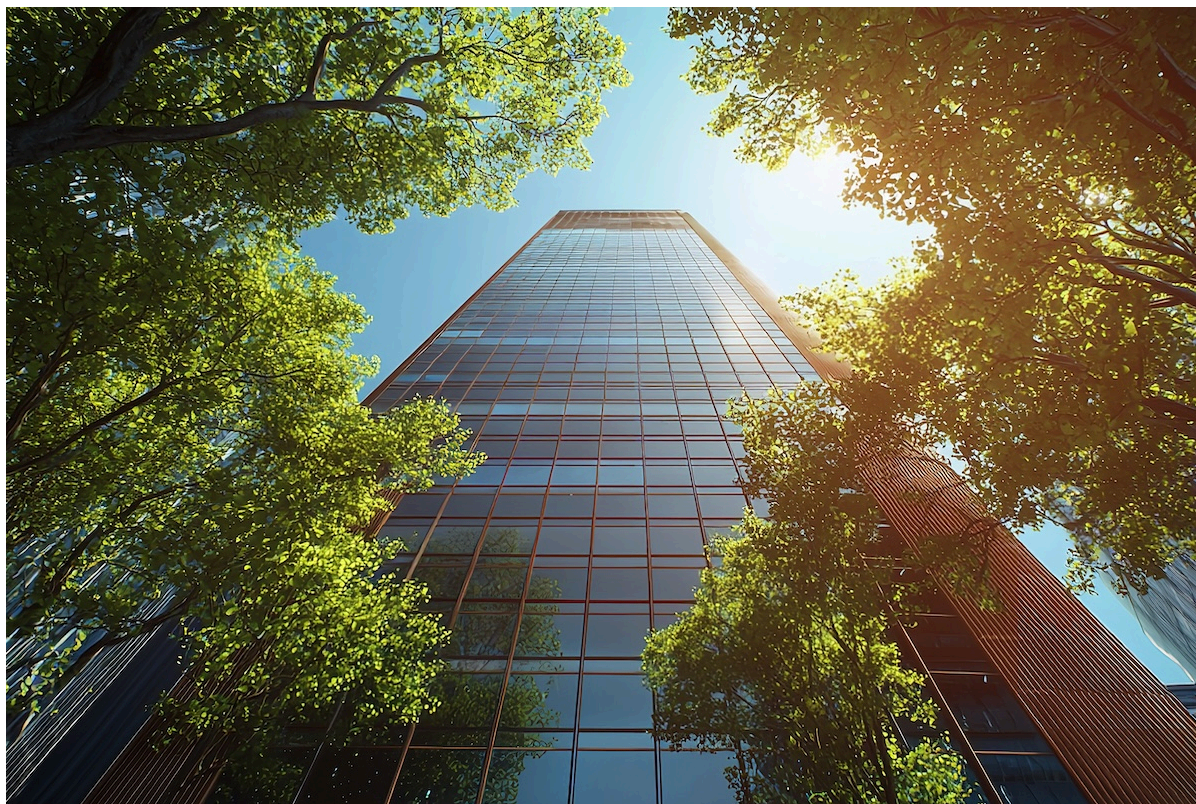


Image Credit | Farkhanda

Unlocking Sweden's blueprint for systematic innovation breakthroughs.

Swedish firms punch above their innovation weight by combining stable governance and national brand equity with rapid internal pivots and open collaborations. In the 2×2 Innovation Matrix, I lay out four areas that capture “Sweden’s Innovation Matrix – core innovation engine, ecosystem assets, accelerating internal cycles, and fluid partnerships – and reveal 12 mechanisms behind the country’s innovation leadership. Executives can use the matrix and mechanisms as a roadmap to audit strengths, pinpoint gaps, and set bold innovation targets – such as circularity goals – then work backward to secure resources, alliances, and processes.

RELATED ARTICLES

Hetemi, Ermal, Jonas Söderlund, Sofia Pemsel, and Anna Jerbrant. “**Value Pathways in Emergent Programs: Tackling Grand Challenges in the Swedish Transportation Industry.**” *California Management Review* 67, no. 3 (2025): 21–54.

Gil, Nuno, and Sara Beckman. “**Escaping the Governance Trap: Insights from New Infrastructure Development ‘Megaprojects.’**” *California Management Review* 67, no. 3 (2025): 5–20.

Heeren, Jasper, Vareska Van De Vrande, Henk Volberda, and Erik De Waard. “**Closing the Innovation Performance Gap: Open Innovation in Military Bureaucracies.**” *California Management Review* 66, no. 3 (2024): 116–36.

RELATED TOPICS

[Strategy](#)

[Management](#)

[Corporate Governance](#)

[International Partnerships](#)

Introduction

In March 2024, **SSAB** – a global leader in steel production – launched the world’s first emission-free steel powder. It is produced entirely with recycled SSAB Zero steel and fossil-free energy that enable customers to 3D-print bespoke, CO₂-neutral components across industries. Then, in October 2024, SSAB and **Parmaco** announced plans to construct the world’s first fossil-free steel concept building in 2025. They plan to use pilot deliveries of HYBRIT-produced steel (i.e., Hydrogen Breakthrough Ironmaking Technology) in the entire structure to demonstrate how construction can be both high-quality and carbon-neutral.

In April 2025, **Spotify** rolled out MoodSense, an AI-driven playlist engine that ingests biometric signals from customers’ wearables (e.g., Fitbit, Oura) to curate hyper-personalized music mixes that fit these customers’ tastes and interests better than ever. Within two months, Spotify users’ engagement time climbed by 18 percent as the AI model continuously retrained itself on cross-platform listening data. This success proved that internal R&D cycles blended with external developer APIs can reshape the consumer experience.

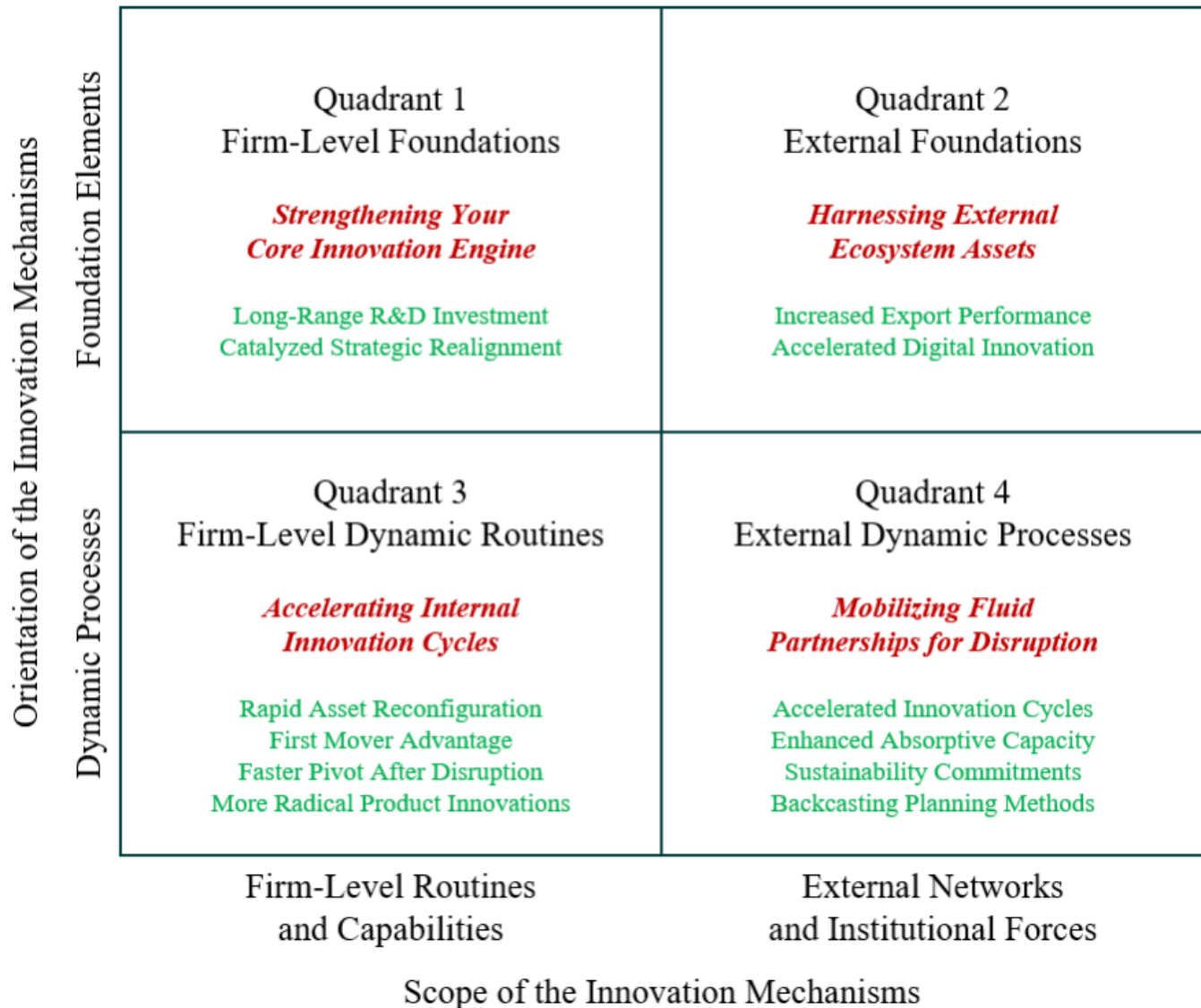
In May 2025, **Volvo** redefined innovation in vehicles by integrating Google’s Gemini AI chatbot. Gemini allowed drivers and passengers to speak in a natural voice to plan routes, access digital manuals, and just-in-time AI value in their Volvo cars. This was an innovative upgrade that increased Volvo’s satisfaction scores by 22 percent. Also in 2025, the debut of Volvo’s ES90 sedan equipped with dual Nvidia Drive AGX Orin supercomputers ushered in real-time AI-powered active safety. Safety has long been a trademark of Volvo, but this innovation slashed collision warnings by **40percent** in beta trials.

These cases are some of the proof-points of how Sweden’s innovation ecosystem blends internal R&D investment (Volvo), coalition-driven sustainability (SSAB), and rapid data-centric pivots (Spotify). In contrast, many firms struggle to sustain innovation, particularly in effectively integrating internal strengths with external opportunities for consistent breakthroughs. Sweden’s Innovation Matrix provides a clear roadmap to address this challenge. Swedish firms **systematically combine** their internal capabilities with external

networks within this “Swedish innovation ecosystem” to **habitually come up with** breakthrough innovations. To capture this repeatable formula, I propose an “Innovation Matrix” that maps twelve core mechanisms across two innovation dimensions: Scope (firm-level versus external) and Orientation (foundational versus dynamic).

To fully grasp Sweden’s Innovation Matrix, it is best understood as a managerially focused 2×2 matrix that is built around 12 core mechanisms (see figure). These mechanisms fall along two axes: “Scope of the Innovation Mechanism” and “Orientation of the Innovation Mechanism.” The horizontal axis distinguishes firm-level routines and capabilities (originating within firm boundaries) from external mechanisms (broader institutional forces and networks). The vertical axis is scaled from foundation elements (relatively stable policies or strategic assets) to dynamic processes (evolving routines and adaptive behaviors). Using those two dimensions results in four quadrants: (1) Firm-Level Foundations, (2) External Foundations, (3) Firm-Level Dynamic Routines, and (4) External Dynamic Processes.

Sweden's Innovation Matrix:
Core Innovation **Focus** and **Mechanisms**



Strengthening Your Core Innovation Engine

Quadrant 1 captures how stable **governance structures** and long-term policy assets strengthen a firm's core innovation engine and provide the bedrock for sustained innovation. In this quadrant, firms focus on multiyear R&D commitments into their corporate strategic "charters." Such patient **R&D investment**, formalized through board-level mandates or internal funding policies, shields a firm's research programs from short-term financial pressures and also preserves the firm's technological **momentum**. At the same time, proactive strategic realignment – triggered by consistent policy signals like carbon taxes or industry regulations – can reorient the firm's priorities toward emerging

innovation agendas for the betterment of society before market shifts dictate such a change. Together, these foundational routines and policy commitments create a reliable innovation framework within which firms can pursue breakthrough projects that are anchored by a long-term innovation strategy without the fear of abrupt resource withdrawal.

Case Proof-Points. In Quadrant 1, firm-level foundations anchor the remarkable enduring innovation of Swedish firms (i.e., mechanisms involving long-range R&D investment and catalyzed strategic alignment). For example, **ABB**'s governance includes union-nominated seats that ensured a \$500 million annual R&D allocation during the 2008-2009 economic downturn (i.e., the Great Recession). This illustrates a focus on long-range R&D investment that ultimately allowed ABB's **China joint venture** to launch by 2014, which then significantly outpaced competitors in their market space. Likewise, Sweden's 1991 **carbon tax** created institutional pressure that catalyzed strategic alignment at SSAB. Partnering with Vattenfall and LKAB to form HYBRIT, SSAB built a hydrogen-based pilot plant in Luleå in northern Sweden by 2023 – two years ahead of schedule – and secured Volvo Trucks and Scania contracts for carbon-neutral steel. Together, these case proof-points illustrate how embedded stakeholder voices and even a coercive policy can result in positive yields regarding early legitimacy and competitiveness.

Harnessing External Ecosystem Assets

Quadrant 2 highlights how harnessing external ecosystem assets, including institutional ties, provides credibility and resources for innovation. Given this foundation, firms can leverage strong **brand reputations** and rich data repositories that have been acquired through longstanding customer **relationships** and/or regulatory reporting to signal legitimacy in new global markets and new technological domains. Similarly, a firm can accelerate its **digital innovation** efforts by leveraging comprehensive data assets – rooted in trusted external networks – which then can enable the firm's rapid development and deployment of advanced digital solutions. By anchoring innovation efforts in these stable external foundations, firms can mobilize both institutional support and stakeholder confidence to make sure that their strategic initiatives gain both traction and scale beyond firms' own internal capabilities.

Case Proof-Points. In Quadrant 2, institutional and networked foundations work via mechanisms such as increased export performance and accelerated digital innovation. For instance, **H&M** leveraged Sweden's sustainability reputation to launch its "Conscious Collection" of recycled-polyester and organic-cotton apparel as "sustainably Swedish." This resulted in a 12 percent year-over-year revenue growth versus 4 percent for its core lines. The country-firm dynamic also resulted in the opportunity to secure a 5-7 percent price premium in Germany and the United States. These price premiums were directly connected to the reduced adoption friction among customers because H&M relied on established legitimacy networks (i.e., "sustainably Swedish"). Similarly, Swedish startups like **Voi Technology** often tap open government data (e.g., public transit schedules, geospatial mapping, energy usage) to fuel accelerated digital innovation. By integrating Stockholm's open transit API in 2019, Voi achieved a 28 percent higher utilization rate than competitors and, upon expansion to Sweden's second-largest city, Göteborg ("Gothenburg"), cut unauthorized parking violations by 40 percent. In Stockholm, Voi captured 35 percent of the dockless e-scooter market by late 2020.

Accelerating Internal Innovation Cycles

Quadrant 3 captures how agile internal processes and capabilities can accelerate a firm's internal innovation cycles and continuously renew its innovation trajectory. Through rapid asset **reconfiguration**, firms can redeploy their resources (e.g., talent, technology, and funding) across innovation projects in real-time and also shift the focus to emerging innovation priorities without any undue or unnecessary bureaucratic delays. When disruptions arise – whether they are disruptive technological breakthroughs or disruptive supply-chain shocks – these faster capabilities to pivot after such disruptions allow firms to make immediate strategic course corrections and preserve their momentum and competitive positioning. These same dynamic routines also support more radical innovations by institutionalizing **iterative experimentation** and cross-functional collaboration. Firm-level dynamic routines implant an automatic level of **agility** into a firm's operational fabric that ensures continuous innovations materialize regularly that are both systematic and scalable.

Case Proof-Points. In Quadrant 3, internal routines drive continuous innovation via several mechanisms, such as rapid asset reconfiguration, first-mover advantage, faster pivot after disruption, and more radical product innovations. For rapid-asset reconfiguration, **IKEA** paired a central R&D hub in Älmhult, Sweden with decentralized decision rights in markets like India and China. This enables local teams in those countries to adapt core designs, such as modular kitchens, very efficiently to fit urban country-specific preferences. For first mover advantage, **Ericsson** established cross-functional “Global Field Enablement Pods” in Singapore that customized its Blue Planet SDN/NFV platform within four months, helping the firm secure anchor contracts in South Korea and India well ahead of competitors. In terms of faster pivot after disruption, Spotify leveraged a **VINNOVA** grant from Sweden’s innovation agency to replace its peer-to-peer (P2P) model with a cloud-based microservices architecture in under 9 months, and by doing so doubled its user growth. **King’s** culture of celebrating “fast failures” enabled the firm to launch more radical product innovations, which is exemplified by Candy Crush Saga’s billion-dollar success after two earlier prototypes failed.

Mobilizing Fluid Partnerships for Disruption

Quadrant 4 portrays how strategic networking and adopting a firm-level fabric of engaging in fluid collaborations can mobilize fluid partnerships for a firm’s disruptive innovations and its innovation performance. Swedish firms often partner with external R&D consortia and technology clusters to co-develop innovations. As such, enhanced absorptive capacity emerges as firms build **systematic practices** (e.g., joint workshops and shared databases) that help them scan, interpret, and assimilate knowledge from universities, startups, and industry peers. A firm’s **sustainability commitments** often materialize as part of multi-stakeholder alliances to make sure that innovation efforts align with environmental and social goals. This creates a virtuous cycle where external pressures and shared values propel innovative breakthroughs. Swedish firms’ “backcasting” planning also helps them engage diverse ecosystem actors in envisioning the future states of a project, and then working backward to define concrete steps to reach these goals. Together, these dynamic external processes form an **ecosystem** in which co-creation, collective learning, and strategic foresight generate advantages beyond what internal efforts could achieve.

Case Proof-Points. In Quadrant 4, dynamic external processes propel breakthrough innovations for Swedish firms. The mechanisms in play in Quadrant 4 include accelerated innovation cycles, enhanced absorptive capacity, sustainability commitments, and “backcasting” planning methods. For accelerated innovation cycles, **Volvo and Haldex**, as a collaborative example, leveraged Göteborg’s high-trust cluster to co-prototype the next-gen electronic brake valves, and by doing so co-filed three patents a year ahead of less-coordinated competitors. Through enhanced absorptive capacity, **Tetra Pak’s** participation in the Horizon 2020 FoodPack consortium let its engineers rapidly integrate advanced nano-coating technologies and introduce a high-barrier line in China 12 months ahead of schedule. This boosted the local market share by 8 percent. In terms of sustainability commitments, **SKF’s** cross-functional teams designed EcoSense bearings from recycled materials and mandated the use of ISO 14001 suppliers. The result was a Vestas offshore contract that delivered 12 percent greater energy efficiency than incumbents. IKEA’s **backcasting** planning methods – as an example, from its 2030 climate-positive goal to securing \$2.85 billion in renewable investments – accelerated its circular-product prototypes (e.g., furniture made entirely from recycled plastic) and fast-tracked biogas installations in its factories.

Charting Your Innovation Roadmap

Swedish firms combine patient, long-term-focused R&D, strong brands that often connect to Sweden, and very innovative and agile teams to punch above their weight. To follow Sweden’s example, you must assess both your internal and external assets across the four quadrants: core innovation engine, ecosystem assets, accelerating internal cycles, and fluid partnerships.

Ask yourself:

- **Quadrant 1 (core innovation engine):** Do we have secure, long-term R&D commitments and governance structures that protect innovation through market volatility and disruptive breakthroughs, and preserve technological momentum?
- **Quadrant 2 (ecosystem assets):** Are our brand reputation, data repositories and data sources, and policy connections being leveraged to signal legitimacy, fast-cycle-time

anchoring, and unlocking new markets and digital domains?

- **Quadrant 3 (accelerating internal cycles):** Can our firm rapidly reconfigure its strategic resources – such as talent, technology platforms, R&D budgets, and intellectual property – and pivot when logical and opportunistic innovative disruptions can occur that would maintain the firm’s competitiveness and first-mover advantage?
- **Quadrant 4 (fluid partnerships):** Are we as a firm actively tapping industry consortia, innovative research clusters, and multi-stakeholder alliances to co-create breakthroughs and scale innovations faster than competitors?

Map your current capabilities against these questions and identify gaps in the 12 mechanisms in the “Innovation Matrix.” Perhaps your firm’s alliances lack policy engagement, or your teams lack rapid-pivot routines. Set a clear target: “By 2030, 50 percent of our portfolio will be **circular**” – and work backward. Determine the investments, skills, partners, and regulatory steps needed to reach that milestone. Co-fund pilot projects with government agencies, join open-data networks for real-time customer insights and build deliberate feedback loops that guide the rerouting of strategic resources toward high-impact and innovative ideas.

By balancing internal foundations (Quadrant 1), external ecosystems (Quadrant 2), agile routines (Quadrant 3), and fluid partnerships (Quadrant 4), your firm can generate continuous breakthroughs, build resilient competitive advantage, and inspire teams to define the next frontier of products and services.



G. Tomas M. Hult [Follow](#)

G. Tomas M. Hult, PhD, is an executive with the American Customer Satisfaction Index (ACSI); coauthor of Global Supply Chain Management; and professor at the Broad College of Business, Michigan State University. Dr. Hult is on the Expert Networks of the World Economic Forum and the UN’s World Investment Forum.