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Driving impact of RDI through collaboration

Sustainable industrial renewal increasingly depends on company-driven ecosystems rather than isolated firm-level innovations.

This policy brief examines how the Business Finland Lead Company model can generate systemic impact through long-term collaboration, ambitious research agendas and improved impact metrics.

Drawing on the Sandvik's Lead Company journey, it offers concrete recommendations for strengthening ecosystem structures, knowledge flows and impact-oriented governance to accelerate research, development and innovation (RDI) -driven growth and reinforce the international competitiveness of Finnish industry.

Key takeaways

- **Build collaborative structures that last**: Lead Company ecosystems should establish long-living structures that attract and retain partners even after the funding period ends.
- **Develop metrics that capture and accelerate systemic impact:** Ecosystems need systemic impact metrics that make system-level impacts visible and provide strategic direction steerable beyond technology and firm-level measures.
- **Strengthen knowledge flows between projects**: Knowledge flow between the projects of the same Lead Company program should be essentially improved to increase the impact from the research.

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beyond the obvious

Learnings and recommendations from Sandvik Lead Company Journey

Business Finland launched the Lead Company Initiative in 2020 to accelerate large-scale, research, development and innovation (RDI)-driven growth and strengthen the international competitiveness of Finnish industry through public–private collaboration. In this model, leading Finnish companies commit to ambitious RDI investments and take on the role of ecosystem orchestrators. Sandvik's SHIFT'25 program was among the first to pilot this new approach. SHIFT'25 set out to electrify and digitalize heavy-duty mobile machinery by developing globally scalable solutions for the mining sector.

This Policy Brief summarizes the impact assessment conducted for the SHIFT'25 program and presents key recommendations for industry actors, ecosystem leaders, and the funding agencies overseeing Lead Company programs. Aim was to generate understanding how collaboration within the Lead company ecosystem has been organized, and how different cooperation models have generated impact. As one of the pioneering Lead Companies, Sandvik's journey provided not only impactful results but also important learning experiences. Sandvik initiated practices that will drive renewal and sustainable impact beyond the end of SHIFT'25. At the same time, the assessment highlights areas related to knowledge flow between projects of the program where future Lead Company programs could be strengthened to achieve even greater impact.

Overall, SHIFT'25 demonstrates that sustainable growth and global competitiveness are increasingly rooted in company-driven ecosystems where the progress is channelled through high-ambitious research agenda rather than individual company performance. By combining strong technological ambition with systemic collaboration, Sandvik and its partners have laid the foundation for Finland's leadership in digital and green mobile machinery. Their experience offers valuable guidance for future Lead Company programs: ensure continuity beyond project cycles, enhance the visibility of impact, and strengthen the connection between RDI investments and long-term societal and economic value creation.

Sustainable growth and competitiveness are built in company-driven ecosystems, where a shared, high-ambition research agenda aligns actors, investments and long-term impact.

Collaborative structures that endure over time

The scale of RDI challenges linked to the digital and green transition required new forms of collaboration. This need led to the establishment of the SIX Mobile Work Machines (SIX MWM) cluster in 2020, bringing together mobile machine manufacturers, key technology providers, and research institutions & universities. SIX MWM cluster is much more than just Sandvik's SHIFT'25 ecosystem. In fact, in Autumn 2025 there were in total five Business Finland Lead companies in SIX MWM: Sandvik, Ponsse, Kalmar, Danfoss, and Nokia. Also, activities within SIX MWM goes beyond technology research and development to impact the operating environment of the machine builder companies. Currently SIX MWM coordinates a shared research and innovation

roadmap, fosters a long-term talent pipeline through educational programs, and influences national and European policy — including contributing to the National Mobile Machine Growth Strategy 2035.

The cluster's evolution illustrates how a Lead Company program can seed lasting industry structures. Yet the recommendation is not to replicate SIX MWM everywhere; while not every Lead Company needs a cluster, each should define what kind of long-term structures can sustain collaboration and impact, ideally built through joint effort rather than by the Lead Company alone.

Metrics to accelerate systemic impact

The digital and green transitions require systemic solutions, making traditional RDI metrics (e.g., RDI spending, patents, headcount) insufficient. The traditional input–output logic does not reflect how innovation actually happens in ecosystems. Systemic impact emerges through interactions in multi-actor collaboration, shared knowledge and cumulative knowledge flows, shared infrastructure, and long-term capability building — phenomena, that are not visible in conventional KPIs.

What gets measured shapes what gets built: without systemic impact metrics, ecosystems cannot be meaningfully guided toward long-term industrial and societal value creation.

A systemic impact assessment should consider:

- **Ecosystem success factors**: shared vision, effective collaboration practices, diverse actor mix, and enabling structures (e.g., IP frameworks, funding continuity).
- **Company-level impacts**: capability strengthening, adoption of co-created solutions, business model renewal, revenue or export growth.
- **Business environment impacts**: improved access to testbeds, faster scaling of validated use cases, new value networks and companies, increased attractiveness for investment.
- **Societal and environmental impacts:** contributions to sustainability (CO_2 reduction, circularity), safety and wellbeing, employment, and policy or agenda-setting effects.

Developing robust systemic metrics is a research challenge but essential to support effective steering of RDI investments and industrial renewal. It is crucial for directing resources where they create the greatest societal and economic benefit.

Knowledge flow between projects

Ecosystemic RDI depends on the ability of actors to learn from one another. The impact assessment revealed a need to significantly improve knowledge flow between projects under the same Lead Company program. Co-innovation projects within the same program often

operate too independently due to governance structures and constraints related to knowledge protection. Current governance practices often emphasize knowledge protection over sharing, leading to duplicated work—such as multiple projects independently conducting similar state-of-the-art analyses. As a result, opportunities for synergy and learning remain underutilized. Instead, projects could build directly above knowledge created in another project within the same program.

Ecosystem impact does not scale through isolated projects, but through shared knowledge, cumulative learning and intentional connections between RDI efforts.

Introducing stronger business logic into RDI projects can also help connect technological achievements with market pathways and reveal complementarities across projects.

Three actions are recommended:

- **Break down silos**: Improve program-level coordination by both the Lead Company and Business Finland, and adapt consortium agreements to explicitly allow and encourage knowledge sharing.

- En**courage employee exchange**: Domestic industry–academia exchange, especially within the Lead Company program, should be recognized and encouraged, not only international researcher mobility.

- **Balance technology and business perspectives:** Introducing stronger business thinking into co-innovation projects can support downstream impact by helping connect technological achievements with market pathways and reveal complementary opportunities across projects within the same Lead Company program.

References

Paasi, J., Hyytinen, K. / Valkokari, K (2026). Driving Impact of RDI Through Collaboration: The Sandvik Lead Company Journey. Models, Impact, and the Future of Industrial Renewal. (Internal customer report).

Paasi, J. Valkokari, K., Rantala, T., Nystén-Haarala, Lee, N. Huhtilainen,L. (2013). Bazaar of Opportunities for New Business Development – Bridging Networked Innovation, Intellectual Property and Business, Imperial College Press, London.

Paasi, J. & Nieminen, H. (2026). Tekojen systeemi. SIX-aloitteen tarina nykyhetkeen ja tulevaisuuteen. https://www.six.fi/tekojen-systeemi

Valkokari, K., Paasi, J., Nysten-Haarala, S., Nuottila, J. & Hurmerinta-Haanpää, A. (2024) Governance mechanisms and practices in project-based interorganisational collaboration for innovation. International Journal of Project Management. Volume 42, Issue 8, November 2024. https://doi.org/10.1016/j.ijproman.2024.102652

Valkokari, K., Hyytinen, K. & Leväsluoto, J. (2024) Living Labs as Enablers for Collaborative Innovation – Exploring Success Factors and Impacts In: Journal of Innovation Management. 12, 3, p. 158 -174. https://doi.org/10.24840/2183-0606_012.003_0007;

Valkokari, K., Hyytinen, K., Kutinlahti, P. & Hjelt, M. (2022) Collaborating for a sustainable future - ecosystem guide. https://publications.vtt.fi/julkaisut/muut/2021/Collaborating_for_a_Sustainable_Future.pdf