This paper was presented at the XXXVII ISPIM Innovation Conference, held in Granada, Spain on 07 June to 10 June 2026. ISBN 978-952-65771-2-8.

Shared RDI infrastructures executing foresight from megatrends to SME action

Helena Merikoski*

South-Eastern Finland University of Applied Sciences,
Patteristonkatu 3, Mikkeli, 50100, Finland.
E-mail: helena.merikoski@xamk.fi

Marianne Heikkinen

South-Eastern Finland University of Applied Sciences,
Patteristonkatu 3, Mikkeli, 50100, Finland.
E-mail: marianne.heikkinen@xamk.fi

* Corresponding author

Abstract: European competitiveness increasingly depends on the ability of firms and regions to identify, interpret and apply emerging technologies. For small and medium-sized enterprises (SMEs) strategic foresight often remains abstract. Limited resources, fragmented support services and insufficient access to experimentation environments make it difficult to transform foresight into concrete development actions. This paper presents a practice-based case from South Savo, a sparsely populated region in South-Eastern Finland, where shared research, development and innovation (RDI) infrastructures and the digital innovation hub (DIH) have been developed to support the renewal of local SMEs. Building on earlier work on the accessibility of local RDI environments, the case shows how foresight can be embedded in shared RDI infrastructures, SME engagement and ecosystem events rather than treated as a separate expert exercise. The paper argues that shared RDI infrastructures can function as foresight-executing environments that help SMEs translate megatrends into experimentation, capability building and step-by-step RDI pathways.

Keywords: strategic foresight; shared RDI infrastructures; SMEs; digital innovation hub; regional innovation ecosystem; horizon scanning; digital transformation; experimentation

1 Introduction

European regions and SMEs are operating in an environment shaped by technological disruption, geopolitical uncertainty and increasing pressure to strengthen economic and technological resilience. In this context, strategic foresight is not only a matter of anticipating future change, but also of building the capabilities required to respond to it. The discussion on European technological sovereignty reflects this shift clearly: competitiveness is increasingly tied to the capacity to identify and develop critical

technologies, reduce structural dependence and strengthen domestic innovation capabilities (Crespi *et al.*, 2021; European Commission, 2025).

At the same time, the practical challenge is particularly acute for SMEs. New opportunities related to artificial intelligence (AI), automation and data-driven business models are widely recognised, but many SMEs struggle to translate technology-related foresight into action. Foresight may remain at the level of reports, trends and strategic discussion without leading to pilots, capability development or investment decisions. This gap between awareness and action is especially visible in regions where the business structure is dominated by small firms with limited internal development resources.

This paper presents a practice-based case from South Savo, a sparsely populated region in South-Eastern Finland. It describes how shared RDI infrastructures and a regional digital innovation hub, DIH eSavo, have been developed to support SME renewal and digital transformation. The central proposition of the paper is that foresight becomes more effective when it is embedded in concrete structures that SMEs can access and use. In this case, shared RDI infrastructures, brokering mechanisms, differentiated service pathways and ecosystem events form a practical route through which foresight is converted into experimentation and business development.

The article also builds on earlier work, which examined the accessibility and impact of local shared-use RDI environments for regional companies and highlighted the importance of customer-oriented service design in lowering participation barriers for SMEs (Merikoski, Kantanen and Heikkinen, 2025). The present paper takes the next step. Rather than focusing primarily on accessibility, it examines how shared RDI infrastructures and intermediary support structures can execute foresight in practice. The core argument is that foresight becomes meaningful for SMEs when it is connected to mechanisms that reduce uncertainty and support action.

2 Why foresight often fails to reach SMEs

The need for foresight is easy to justify. The rapid development of, for example, AI, robotics and other digital technologies is changing the skill requirements and competitive conditions faced by SMEs across sectors (World Economic Forum, 2025). Yet the existence of change drivers does not automatically lead to organisational preparedness. For many SMEs, the main challenge is not recognising that change is happening, but identifying what exactly it means for their business, capabilities and development priorities.

Recent evidence from Finland illustrates this gap. The use of AI in SMEs is increasing, but many SMEs still feel that they do not benefit sufficiently from it. Lack of information and lack of expertise remain major barriers (Ministry of Employment and the Economy, 2026). This is a familiar pattern in SME-oriented innovation support where awareness exists, but actionable pathways are weak. SMEs may understand that AI, automation or data-driven business matter, yet still be uncertain about where to start, what to test, what skills to develop and which partner to approach.

This is where strategic intelligence tools such as horizon scanning become relevant. Horizon scanning helps identify weak signals, emerging technologies and early indications of change before they become mainstream. It supports informed decision-making by widening the range of possibilities that organisations consider relevant (Robinson and Doherty, 2025). However, for SMEs, horizon scanning alone is not enough. Signals and scenarios do not create value unless they are connected to practical experimentation, accessible expertise and concrete development opportunities.

In practice, SME support systems often remain fragmented. Different actors provide advice, funding information, technology expertise, training or testing opportunities, but SMEs encounter these services as separate and difficult to navigate. As a result, the route from foresight to action becomes discontinuous. Hence, SMEs receive information about opportunities but not always a practical mechanism for acting on them.

The South Savo case presented in this paper addresses this gap through a simple but important shift in logic. Instead of offering foresight as a stand-alone activity, it embeds foresight into shared RDI infrastructures and innovation support structures that lower the threshold for SME participation and help them to move towards concrete next steps.

3. Shared RDI infrastructures as a practical response

Shared RDI infrastructures can be understood as more than physical environments or technical facilities. In regional innovation practice, they also act as interfaces between knowledge, experimentation and business development. They make future-oriented information visible and usable for different stakeholder groups, most importantly SMEs.

For SMEs, this matters because technology adoption often carries uncertainty. Investing in new solutions requires not only awareness of technological developments, but also confidence that the chosen solution is relevant, feasible and worth pursuing. Shared RDI infrastructures reduce this uncertainty by allowing SMEs to explore, test and discuss emerging technologies before making larger commitments or investments. In this sense, shared RDI infrastructures can function as translation environments between megatrends and concrete business action.

This translational role has at least three dimensions. First, shared RDI infrastructures make emerging technologies tangible. Abstract developments such as AI, digital twins or robotics become easier to understand when SMEs can see demonstrations, interact with experts and assess practical implications for their own business. Second, shared RDI infrastructures reduce the cost and risk of experimentation and early adoption. SMEs rarely have the resources to build their own test environments, so access to shared facilities, expert support and co-development settings lowers the threshold for trying out ideas and identifying realistic next steps. Third, shared RDI infrastructures bring together actors that would otherwise remain disconnected. Higher education institutions, companies, development organisations and innovation intermediaries all hold part of the knowledge needed for SME renewal. So, shared RDI infrastructures create a setting in which these actors can interact around concrete opportunities rather than only around abstract strategies.

From an innovation management perspective, this is significant. It suggests that foresight becomes most useful when it is combined with brokerage, experimentation and ecosystem coordination. The value lies not only in identifying future developments, but in building a regional capacity to act on them.

4 The South Savo case: from infrastructure to action

The South Savon region, located in South-Eastern Finland is characterised by long distances, dispersed settlement and a business base dominated by SMEs and micro-enterprises. In practice, many SMEs operate close to day-to-day customer needs and have limited internal resources for strategic development, technology scouting or innovation management. This makes shared support mechanisms and shared RDI infrastructures particularly important.

South-Eastern Finland University of Applied Sciences (Xamk) has developed a range of shared RDI infrastructures linked to emerging technologies and regional development needs. These include technology environments, expert services and project-based development platforms that allow SMEs to engage with new technologies in practice. In the South Savo context, these shared resources are not only technical assets; they form part of a broader regional capability that can support SME renewal, experimentation and growth.

Against this background, DIH eSavo was established as a regional digital innovation hub (DIH) designed to support the digital transformation of local SMEs. Its role was not to create yet another isolated service, but to act as a one-stop interface that connects SMEs to relevant expertise, testing environments, development opportunities and information on innovation support. Earlier work on DIH eSavo showed that the hub improved the accessibility of local shared RDI environments by applying design thinking, customer-oriented service development and targeted service pathways for different SME groups (Merikoski, Kantanen and Heikkinen, 2025). In that earlier framing, DIH eSavo was primarily positioned as a regional gateway.

The present case extends that perspective. Accessibility is a necessary starting point, but it is not sufficient if companies still do not know how to turn future-oriented information into practical next steps. In this article, DIH eSavo is therefore understood not only as a gateway, but also as a foresight-executing environment. Its value lies in helping companies move from signals of change to experimentation, capability building and step-by-step development.

This role becomes visible in the way DIH eSavo combines shared RDI infrastructures with interpretation and brokerage. SMEs rarely need only general information about AI, data or digital transformation. More often, they need support in answering practical questions: what is relevant for our business? where can we test it? which partner should we contact? what kind of skills do we need first? Through its networks and services, DIH eSavo helps curate and channel such opportunities instead of merely disseminating information. In this sense, the South Savo's regional DIH functions as an intermediary that translates foresight into a navigable development process.

Earlier work identified three SME profiles for the DIH eSavo services: everyday strivers, trailblazers and experts (Merikoski, Kantanen and Heikkinen, 2025). In the context of this paper, these profiles are also useful as differentiated foresight pathways. Everyday strivers need low-threshold support, clear guidance and practical first steps. Trailblazers seek inspiration, emerging technologies and opportunities for experimentation. Experts contribute specialised competence and can strengthen the wider ecosystem through collaboration and visibility.

The DIH Coordinator and project advisory functions are especially important in this regard. Earlier work described the DIH eSavo Coordinator as a practical one-stop-shop service that helps companies identify their digital needs and define the next steps based on business goals (Merikoski, Kantanen and Heikkinen, 2025). From the perspective of the this paper, this is also a mechanism for executing foresight: it turns awareness of future-oriented change into concrete company-level progression.

Regional ecosystem events reinforce this process further. Earlier work described DIH Demo Day as a regional meeting point that showcases RDI results, technologies, competencies and collaboration opportunities for SMEs (Merikoski, Kantanen and Heikkinen, 2025). In the present framing, such events can also be understood as foresight diffusion mechanisms. They make emerging developments visible, support peer learning and create low-threshold encounters between SMEs, researchers, business developers and technology providers. Similarly, the regional DigIT event in South Savo has served as a platform where future technologies and regional digital services are made concrete in a shared setting.

The model is strengthened further by wider ecosystem connections. Collaboration with other regional development platforms broadens the expertise available to SMEs. This is especially important in sparsely populated regions, where no single actor can provide the full range of foresight, experimentation and innovation support required for digital renewal. The practical value of the model developer in South Savo region therefore lies not only in local RDI infrastructures themselves, but in the way they are connected to brokerage, service pathways and ecosystem interaction.

5 Lessons for innovation management practice

The presented case from South Savo region suggests several lessons that are relevant beyond the regional context. First, accessibility is necessary but not sufficient. Shared RDI infrastructures create important opportunities for SMEs, but their impact remains limited if SMEs do not receive help in interpreting relevance and identifying next steps.

Second, brokerage is as important as infrastructure. SMEs need actors that can connect signals, technologies, experts and development options into coherent pathways. In practice, this means that regional DIHs should be understood not only as gateways, but also as translators and orchestrators.

Third, foresight works best when it is embedded in practical environments. Demonstrations, pilots, advisory interaction and shared infrastructures make future-oriented developments easier to test, discuss and assess.

Fourth, ecosystem events and visible meeting points matter. Foresight is not only analytical, its also relational. In practice, SMEs often move towards experimentation after seeing examples, meeting relevant actors and recognising that emerging technologies can be approached in manageable steps.

Finally, context-sensitive innovation management matters. In regions dominated by SMEs, sparse networks and limited development resources, one-size-fits-all approaches are unlikely to work. What matters is the ability to create accessible, credible and differentiated entry points into innovation and digital transformation.

6 Conclusion

This paper has described how shared RDI infrastructures and a regional innovation ecosystem can help convert foresight into practical SME action. In presented case from the South Savo region, foresight is not treated as a separate expert exercise, but as something executed through shared RDI infrastructures, brokerage, differentiated service pathways and ecosystem interaction.

The main practical insight is straightforward. In practice, SMEs benefit most from foresight when they encounter it through tangible environments, guided experimentation and accessible support structures. Shared RDI infrastructures can provide this bridge by helping translate technological megatrends into concrete opportunities, learning processes and step-by-step development pathways.

For innovation management practitioners, the implication is clear. If the goal is to strengthen SME renewal in a volatile technological environment, it is not enough to produce better foresight information. Equal attention must be given to the structures through which that information becomes actionable. In this sense, shared RDI infrastructures and regional innovation networks can play a central role in connecting foresight with innovation in practice.

References

Crespi, F., Caravella, S., Menghini, M. and Salvatori, C. (2021) ‘European technological sovereignty: An emerging framework for policy strategy’, *Intereconomics*, 56(6), pp. 348–354.

European Commission (2025) *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Artificial Intelligence Continent Action Plan*. COM (2025) 484 final. Available at: https://digital-strategy.ec.europa.eu/en/library/ai-continent-action-plan (Accessed: 26 March 2026).

Merikoski, H., Kantanen, M. and Heikkinen, M. (2025) Local RDI environments and their accessibility and impact for regional companies: Case DIH eSavo, in Viljakainen,

K., Chekalskaia, D. and Weaver, C. (eds.) *Innovation*. Xamk Beyond 2025. Kouvola: South-Eastern Finland University of Applied Sciences, pp. 137–149.

Ministry of Employment and the Economy (2026) *SME Barometer, Spring 2026*. Helsinki: Ministry of Employment and the Economy. Available at: https://tyomarkkinatori.fi/en/news/kevaan-2026-pk-yritysbarometri-on-julkaistu (Accessed: 26 March 2026).

Robinson, D.K.R. and Doherty, D. (2025) *Strategic intelligence tools for emerging technology governance: A policy primer*. OECD Science, Technology and Industry Working Papers, 2025/22. Paris: OECD Publishing.

World Economic Forum (2025) *The Future of Jobs Report 2025*. Geneva: World Economic Forum.