

# Summary report of study visits

## InnoCAPE – WP2



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## 1. Background

InnoCAPE project <https://innocape.eu/about/> addresses the target groups of public authorities, shaping digitalization policies on national level, and digital innovation hubs (DIHs), the key players in implementing those policies. The secondary target group is SMEs in traditional industry sectors (like wood, motor, textile, fishing, etc.), which are targeted on the level of European Commission as lagging behind in digital innovation and require additional support to enable their digital transformation. The project envisages to involve around 1k representatives of SMEs in project activities of building awareness, testing digitalization tools, and implementing pilot projects of digitalization.

The InnoCAPE consortium consists of 3 public authorities from Lithuania, Latvia, and Estonia and 8 digital innovation hubs from Lithuania, Latvia, Estonia, Finland, Sweden, and Norway, accompanied by 6 public authorities as associated partners.

Project activities are laid out with the aims to increase the knowledge, skills and competence of public authorities and DIHs, enable the benchmarking of BSR countries in terms of digital maturity, increase the readiness of SMEs to meet the challenges of Industry 4.0, and develop a cooperation framework for support and showcasing the digital innovation potential of the region. The capacity of public enablers will be strengthened through knowledge exchange and increased competence, macro regional networking, and shared use of human and technical resources.

The aim of the WP 2 of the InnoCAPE project (Increasing competence of DIHs and public authorities) is to increase the knowledge, skills and competence of public authorities and DIHs as enablers of digital innovation and Industry 4.0. The Work Package will help to learn the needs / skills gap of SMEs and DIHs in the BSR, gain more expertise in the area of Industry 4.0, build visibility and trust among SMEs and nurture digital innovation hubs with competencies to pursue their designated mission. Accordingly, public authorities will increase their competence on how to strengthen DIHs through policymaking. Increasing capacity of DIHs as digital innovation enablers will eventually enhance uptake of Industry 4.0 solutions by SMEs, helping to achieve policy goals set by public authorities, strengthen the economic competitiveness of the BSR on macro regional level, and contribute to building the single digital market in Europe. The outcomes of the WP will contribute to the aims and objectives set out in EUSBSR and Europe 2020.

This report summarizes a part of the activities executed in the WP 2: Group of activities 2.1, titled “Learning from case studies”. The report also outlines a summary of good practices, supported by additional cases identified throughout the project.

## 2. Implementation of the work

In the beginning of the InnoCAPE project, University of Oulu compiled a template which set the guidelines for identifying and describing case studies of successful digitalization policy and digitalization projects in SMEs. The proposed template was discussed during kick off meeting M2 (February 18-19, 2019 in Vilnius, Lithuania), and the final version was outlined and deployed after the meeting. The template consists of the following sections:

- General guidelines and criteria
- Company or public enabler / public authority
- Reasons for digitalization
- Description of the solution or a policy and a project
- Implementation process

- Funding
- Challenges
- Impact / benefits
- DIH activities
- Further Improvements
- Alternatives
- Digital maturity and AI maturity assessment tools.

The template (*attachment 1*) was used as a guideline for reporting by the partners organizing the study visits (*table 1*).

*Table 1. Study visit hosts, dates and locations.*

Study Visit no.	Organizer / Host	Date(s)	Location
1	Digital Norway	22-23.5.2019	Oslo
2	Seinäjoki University of Applied Sciences	16-17.9.2019	Seinäjoki
3	University of Oulu	23.9.2020	Remote
4	RISE Research Institutes of Sweden AB	15.12.2020	Remote
5	Umeå University	11.5.2021	Remote

Due to the Covid-19 pandemic worldwide escalation, and the following restrictions in travelling, the study visits 3 to 5 were organized remotely.

The organizers delivered reports of the study visits. The reports (attachments 2,3,4,5 and 6) were evaluated, and after some modifications, accepted by University of Oulu. These reports are publicly available from the InnoCAPE project website; <https://innocape.eu/>.

### 3. Organizations presented in the Case Studies

The case studies presented 8 companies, 2 platforms and one project facing digitalization related challenges, each having a slightly different perspective and needs for digitalization (*table 2*).

#### 3.1 Oslo Study Visit

**DNB** is Norway's largest financial services group and one of the largest in the Nordic region in terms of market capitalization. The Group has close to 7000 employees, and is Norway's oldest private bank, established in 1822. The Group offers a full range of financial services, including loans, savings, advisory services, insurance and pension products for retail and corporate customers. DNB's bank branches in Norway, in-store postal and banking outlets, Post office counters, Internet banking, mobile services and international offices ensure that the company are present where their customers are. DNB is a major operator in several industries, for which the company also have a Nordic or international strategy. DNB is one of the world's leading shipping banks and has a strong position in the energy sector, and the fisheries and seafood industry /2/.

**DigitalNorway - Toppindustrisenteret AS** is a non-profit industry-driven initiative for enabling Norwegian businesses to succeed in digitization. The initiative aims to become an arena that builds, connects and drives digitization projects across SMEs, institutes and industry giants. Digital Norway is the centre force and the hub for several expert networks. Together with Digital Norway there are 18 dedicated owners and strategic partners, as well as academia and strong regional innovation environments. These contribute to develop useful services and tools for digitization, as well as facilitate and build strong, professional networks across

disciplines and industries. Digital Norway has 18 committed owners and strategic members, as well as academia and strong regional innovation environments. These help to develop useful products, services and tools for digitization, and to facilitate the establishment of strong professional networks across disciplines and industries. It has an efficient and competent working environment with 16 full and part time employees based at the Research Park in Oslo. Digital Norway also has strong regional partners in the scaling mechanism that gives Digital Norway the power to reach out to businesses across the country. Digital Norway share expertise and experience on how digital technologies are used by SMEs and work together to provide services to this market. Digital Norway's roles are to ensure that all Norwegian companies have access to this knowledge and the network they need to work with digitization. Digital Norway believes this should be as simple and accessible as possible, for as many people as possible.

Table 2. Organizations involved in study cases.

Study Visit No. / Location	Name of the Organisation / Project / Platform	Role	Industry / Target
1 / Oslo	DNB	Company	Banking
	DigitalNorway - Toppindustrisenteret AS	Non-profit Company	Several target Industries
2 / Seinäjoki	Kyrö Distillery	Company	Distillery business
	MSK	Company	Automotive - Vehicle Cabins
	Finn-Power	Company	Machinery, services and maintenance for metal manufacturing
3 / RISE (Remote)	Monitor ERP Systems AB	Company	Manufacturing Companies
	Arginta Engineering	Company	Complex machinery and equipment for Large-Scale customers
4 / University of Oulu (Remote)	Finwe	Company	Solutions and ready-to-use products for industrial, media and business users
	Reboot lot Factory	Project	Facilitation of digital transformation in manufacturing industry
5 / Umeå University (Remote)	Martin Rosvall / Infobaleen	Platform	AI-powered platform to better plan and execute sales and marketing activities
	SCDI AI Business Lab	Platform	Platform research and a resource for external partners venturing into AI

### 3.2 Seinäjoki Study Visit

**Kyrö Distillery** was founded in 2012 and specializes in rye-based spirits. The distillery received its permit in 2014. Kyrö Distillery produces gin and whiskey out of whole-grain rye. In addition to rye, the gins contain twelve dry and four freshly distilled herbs.

The distillery is situated in an old dairy in Isokyrö in Ostrobothnia, Finland, “in the middle of nowhere”. The aim is still to become the world’s best-known rye distillery. The company has grown from three persons into 30 people in a few years.

The Company was founded by Miika Lipiäinen, Mikko Koskinen, Kalle Valkonen, Miko Heinilä and Jouni Ritola /3/.

**MSK** is the leading European manufacturer of smartest cabins offering selected customers full service; including design, prototyping as well as low, mid and high-volume cabin production supported by plastic parts.

MSK Group has four solutions divisions (MSK Plast, MSK Cabins, MSK Matec Germany and MSK Matec Slovakia) and two brands divisions (Junkkari and Juncar). The 100 % family owned company was established in 1950 under the name Maaseudun Kone Oy. It has a factory floor of 60 000 m<sup>2</sup> and employs 800 experts. Turnover is around 175 M€. Contract manufacturing represents 90 % of the production, 10 % is own products. MSK delivers 10 million parts annually. The biggest customers are Valtra, Rocla, Sandvik and Sampo Rosenlew.

MSK Cabins has 200+ employees. The main factory and office are in Kauhava, Finland /3/.

**Finn-Power:** In 1969 Jorma Lillbacka established a company in Alahärmä under the name of Lillbackan Konepaja and started to produce grimping machines under the trademark Finn-Power. In 1994 the company was divided in two companies: Lillbacka Powerco Oy for the grimping machines and Lillbacka Oy for the sheet metal technology.

In 2002 Lillbacka Oy was sold to an investment company and at that time the name changed to Finn-Power Oy. Six years later the investment company sold it to Prima Industrie Group.

Under Prima Power brand, Finn-Power is producing turret punch presses, bending machines and other sheet metal manufacturing products. As the Machinery Division of Prima Industries, it is also offering service and maintenance for the products.

### 3.3 Remote Study Visit organized by RISE Research Institutes of Sweden AB

**Monitor ERP System AB:** was founded in 1974 and was initially called Verkstadsteknik Persson & Co. It was then a pure consulting company in production technology. In the late 1970s, the development of a time calculation program began, later expanded to MPS systems. Since 1982, the company has been supplying MPS systems. The number of employees was then six people. In 1993, the company changed its name to Monitor Industriutveckling AB. In the autumn of 2012, the company took another step towards the future and changed its name to Monitor ERP System AB. Today's operations include Monitor business systems and consulting assistance for manufacturing companies.

The business includes development, sales, training, consulting and support within the MONITOR business system. The company currently has more than 300 employees in Finland, Noorway, Poland, China, Malaysia and Sweden, most of them are stationed at the head office in Hudiksvall, Sweden. Most software development also takes place there.

In Sweden, all training and sales take place in-house. Outside Sweden, Monitor has its own companies and partners that handle sales and training. Monitor has partners in Denmark, Germany, Estonia, Latvia and Lithuania. Monitor is currently installed at approximately 4,500 companies in over 30 countries. Monitor is currently translated into 15 languages.

The company has an annual turnover 50 MEuro and is very profitable (approx. 20% on turnover). The company has a unique profitsharing system for all staff, and more the 30 MEuro has been shared since 2010. For year 2020 almost 4 million Euros were shared with the staff.

**Arginta Engineering:** was established in 1991 and from there growing as a production company of high value-added products. The company offers machinery/equipment manufacturing services to brands that are well-known worldwide. The top priority of the company is to provide the best quality products and reliability to its customers. Arginta has more 250 people employed in their workshops and has customers in Baltics as well as Netherlands, Sweden and Finland. The company is involved in a variety of industries: energy, pulp and paper, oil and gas, heavy lifting, construction, packing, wood processing, mining, sound control, water treatment, renewable energy and so on.

Arginta specializes in non-standard equipment manufacturing and sells manufacturing time (hours). The company offers open calculations based on the hours spent in the workshop. After assessing the manufacturing hours in each working center and multiplying this by an hourly rate, the accurate cost level for production is calculated. Working in this way provides the possibility to share experience with the customer in the best manner.

Arginta is an integrated manufacturing company with a full supply chain based on complex machinery and equipment.

### 3.4 Remote Study Visit Organized by University of Oulu

**Finwe** is a Finnish SME, which is a special ops team focusing on intelligent ways of using video: video analytics, 5G live streaming, AI cameras, VR video, videogrammetry. Finwe builds custom solutions and ready-to-use products for industrial, media and business users /4/.

**Reboot IoT Factory** is a co-innovation project with the company consortium (ABB, GE Healthcare, Nokia, Ponsse, Kongsberg Maritime, Sulzer ja Scanfil) and research partners (VTT Ltd, University of Oulu, Aalto University and Åbo Akademi). The core objective of the Reboot IoT Factory project is to facilitate a digital transformation in manufacturing industry. The participating factories are on a high stage in digitalization, meaning they have specialized technology teams able to develop and implement digitalization POCs, their sales teams are investing in identifying, engaging and managing the potential customers, the supply chains are connected making optimization a possibility, Furthermore, Reboot project ensured the vital connection of integrating research expertise into their roadmap. Each factory also has a digitalization strategy, which reflects on large manufacturing digitalization programs established abroad. Reboot IoT Factory implemented a number of resources, processes and practices to successfully combine ICT and manufacturing in competitive and sustainable way. From SME point of view, Reboot IoT Factory targeted scalable and high value-adding solutions based on data and software, meeting global price points and leading to export possibilities /4/.

### 3.5 Remote Study Visit Organized by Umeå University

**Martin Rosvall / Infobaleen.** Martin is a Professor in Physics at Umeå University and Chief Science Officer at Infobaleen. Infobaleen provides an AI-powered platform that turns massive amounts of data into insights that companies use to better plan and execute sales and marketing activities. In his presentation, Martin will

focus on the challenges and opportunities of Machine Learning (ML), including how to see through the hype, how it works, how to leverage it, and how it needs to be transparent and combined with automation to provide value in practice /5/.

**The Swedish Center for Digital Innovation (SCDI)** is a research center consisting of researchers from the University of Gothenburg, Umeå University and Stockholm School of Economics. The newly instated SCDI AI Business Lab is located at Umeå University where it will serve as a platform for conducting research and as a resource for external partners that are venturing into AI. Presenting the lab will be Lars Öbrand, Associate professor in Information Systems and Lab Coordinator /5/.

## 4. The Wrap-Up of the Study Reports

### 4.1 Reasons for digitalization

The reasons for digitalization in the companies involved in the case studies were very naturally emerged from business development perspective. Typically, the motivation for digitalization was not so much targeted towards any certain ICT –technology, instead the companies were looking for solutions related to certain customers or companies' internal business operations. For instance, the following reasons were mentioned:

- DNB: The bank services for large international enterprises are mainly people based, and it was felt that this business area had some potential for improved customer experience related to applying digital technologies as part of their service offering. The business area for large international enterprises (Large Corporates International – LCI) therefore wanted to get more insight into how managers and employees perceived the digital maturity of the business area, and based on this, identify measures that needed to be implemented to increase the digital maturity of the business area.
- DigitalNorway: build cross-cutting expertise, to develop cross-functional technologies, to develop crossborder businesses, to develop cross-border regulations and to make sure that the management can operate across.
- Kyrö Distillery: Digital marketing to increase domestic and international sales
- MSK Cabins: Digital solution for production logistics and machinery, marketing, CRM, ERP, Reporting, EDI integration with SAP, remote work.
- Finn Power: Industry 4.0 is changing workplaces and the ways of working. There was a need to study explores new ways for people and machines to work together. The basis for digitalization started from the idea that one best knowing the job is the person doing it.
- Finwe: Automatic Inventory in Manufacturing Detecting and counting module racks with private 5G network for end customer (Nokia).
- Monitor ERP System: Digitalization is the very idea of company and the ERP system is the base for supply chain management in Industri 4.0.
- Arginta Engineering: The possibility to work efficiently with different customers and to be competitive in supplying industrial products to customer in and out of Lithuania.
- Reboot IoT Factory -project and platforms offered a more comprehensive approach to digitalization. The digitalization effort/services offered by these entities was targeted to a larger number of companies and public organizations, focusing on a certain ICT-technology offering or to a certain business sector.
- SuperIoT AI DIH of Oulu university (<https://www.superiotai.dih.fi/>) was a partner in Reboot IoT Factory project. Reboot IoT Factory is the first pilot within the Finnish digitalization program Reboot



IoT Finland. The core objective of the Reboot IoT Factory project is to facilitate a digital transformation in manufacturing industry.

- Infobaleen provides an AI-powered platform that turns massive amounts of data into insights that companies use to better plan and execute sales and marketing activities.
- SCDI AI Business Lab serves as a platform for conducting research and as a resource for external partners that are venturing into AI.

## 4.2 Implementation of digitalization

The companies implemented the digitalization processes by:

- Acquiring a subcontractor or subcontractors
- Participating in the public-funded projects
- Using companies' own resources, or
- Combining the above-mentioned methods (*table 3*).

Digital Norway (which is as non-profit organization unlike the other companies) aims at providing practical targeted assistance to the SME sector with The Digitization Guide, Digital Maturity Indicator (DMI) online tool, Competence Network, and Digital courses. The organization also actively participates in national and EU projects.

The Reboot IoT Factory -project created a concept which offers agile co-creation and experience sharing within real-world production environments. The project offers funding for SME companies to implement their Proof of Concept –projects within real-world production environments of large-scale manufacturing companies (*table 3*).

The platforms have constituted their offering according to related target industry and/or ICT-technology. The projects (*table 3*).

More specific and case by case information regarding the implementation of digitalization is presented in the study visit reports in the attachments 2,3,4,5 and 6.

*Table 3. Description of the solutions and funding sources in the Study Cases.*

Organisation / Project / Platform	Role	Industry / Target	Solution	Funding (If announced)
DNB	Company	Banking	A comprehensive wide-ranging process	Subcontracting agreement
DigitalNorway - Toppindustrisenteret AS	Non-profit Company	Several target Industries	Offering of tools and methods for digitalization	n/a
Kyrö Distillery	Company	Distillery business	Deployment of several digital marketing tools	Own funding
MSK	Company	Automotive - Vehicle Cabins	Utilization of commercial tools for digitalization	Own funding
Finn-Power	Company	Machinery, services and maintenance for	Participating in Horizon 2020 Factory2Fit EU-project	EU-funding

Organisation / Project / Platform	Role	Industry / Target	Solution	Funding (If announced)
		metal manufacturing		
Monitor ERP Systems AB	Company	Manufacturing Companies	ERP system	Own funding
Arginta Engineering	Company	Complex machinery and equipment for Large-Scale customers	Interoperable Systems implementation	Own funding
Finwe	Company	Solutions and ready-to-use products for industrial, media and business users	Participation in Reboot IoT Factory project	Business Finland
Reboot IoT Factory	Project	Facilitation of digital transformation in manufacturing industry (Industry 4.0)	Provision of agile co-creation and experience sharing within real-world production environments	Business Finland
Martin Rosvall / Infobaleen	Platform	AI-powered platform to better plan and execute sales and marketing activities		?
SCDI AI Business Lab	Platform	Platform for conducting research and a resource for external partners that are venturing into AI		?

### 4.3 Challenges and their solutions

The reported challenges were very closely related to the case in question. However, similar challenges may arise in various occasions and therefore it is useful to present a summary of the reported challenges and their solutions.

**DNB** faced the first challenge during the initial phase of the project. The process required information about employees of the company. DNB has a very strict policy for allowing any third parties with information about employee's information that was necessary to identify the role and organizations of the respondents. The solution was to establish a new data processing agreement between the subcontractor and DNB. Another observation was the risk of a bias in the answers gathered from the company personnel. Subsequently, quite a lot of effort was put into making the statements as neutral as possible, and the options for reply captured what type of activity the organization was supposed to perform rather than a scale ranging from "not

satisfactory” to “very satisfactory”. Another challenge with surveys like this is that employees tend to have a bias in their reply when statements focus around their own knowledge and impact. This was mitigated by only providing statements where they were challenged to reveal their impressions of the organizations rather than their own role. A third challenge is to balance the statements in such a way that it was clear to the respondents on what they were supposed to reply to, and this making the replies comparable, and at the same time providing statements and options for replies that would encourage discussions and reflection. The decision was to have statements that would encourage discussions and an indicator of the success was that employees expressed that “finally we have an opportunity to have a meaningful discussion about what it means to be a digital company”.

**MSK** reported a challenge related to the size of the company; MSK rarely get access to EU-financed projects, but indirectly through suppliers, this is possible. Currently the suppliers of MSK are participating in projects concerning the efficiency and monitoring of production.

**Finn Power** provided a clear list of challenges and solutions related to their business:

- Unexpected failures can be hard to solve, as manuals do not include everything. In these cases, it is crucial to get experienced workers to share their silent knowledge. Solution was a Web-based application aiming to increase knowledge sharing among technicians.
- In highly automated metal processing lines, intense customer training is needed. On-site training is not sufficiently efficient. Therefore a virtual training solution is needed. Solution was online training in a realistic factory environment well before the actual machinery has been implemented at the customer site.
- In the increasingly digitalized working environments, it is more and more difficult to see the achievements and results of one’s work. Solution was a web-based solution for providing data-driven, personal feedback to factory operators.

More information about the results and the Factory2fit -project can be found at:

[https://factory2fit.eu/deliverables\\_and\\_downloads/](https://factory2fit.eu/deliverables_and_downloads/).

One of the unsolved challenges for **Reboot model** is engaging SMEs earlier and tighter in to co-innovation process. Their role was to provide solutions in the end of Proof of Concept (PoC) track. Earlier engagement would speed up implementation to the production and allows SME to consider taking a leading role when scaling up the PoC. For this, time spent in Reboot ecosystem would allow SME to benchmark the product idea with multiple Reboot factories and gain confidence to the business case. Another challenge with SMEs is to find ones that have capability to scale to factory network, grow their business and start export activities. In another case, SME is so small that their possibilities to grow or take product responsibility is quite unrealistic.

**Monitor ERP Systems AB** is as a ERP system supplier among the smaller companies, with competition from giants as Microsoft and SAP. However, while the Monitor ERP system is focusing on SME and industry and production while others are more generic, the Monitor ERP is highly appreciated by customers.

The system has all the time to up to date and being constantly developed and improved. Also, evolution steps have to be launched. Recently the system release G5 was launched, and tenths of MEuros has been invested before this release.

The company is in continues need of requiring developers, testers and consultants. Different ways of attracting top level staff are used as, profit sharing, providing of apartments, top class office and sponsorships.

Introduction of the system into a new country takes vast investments in country package and support. Local language as well as VAT-rules, logistic setups and tax rules are just some examples to be implemented. The company therefore focus on fewer markets with high footprint, and when going to a new market it's done in cooperation with a bigger customer.

**Arginta Engineering** While working with different customers and with different types of products and specifications the company has to have a spread of competence and system interoperability. While working with Creo and Solid Edge a wide range of customers can be handled. In the next step in supply chain integrations with ERP system gives comprehensive solutions and quality assurance. Still more integration can and will be done between systems to give full flexibility and transparency through the company, but the components are in place.

#### 4.6 Impact and benefits

The main benefit for **DNB** was an increased and common understanding of what it takes to succeed in using digital technologies to improve performance and value creation to customers. Another benefit was to have concrete actions that a majority Case Study Report of the organization could agree to, a realistic implementation plan and individuals responsible for implementations of the agreed recommendations. More specifically, a new role as digital ambassador was described and implemented in each business unit, allowing for more opportunities and visibility for ambitious employees. An interesting perspective from the interviews was that although DNB is a big corporation in Norway, it is a small bank in world scale and is therefore considered to be well positioned as agile and forward-looking.

The service spectrum of **Digital Norway** is an essential part of the services offered to the SME sector and it aims to provide practical targeted assistance to the SME sector.

**MSK Cabins** reported improvements includes less load on shoulders, knees and back. Error free installations rose from 47,1 % (2015) to 79,5 % (4/2017). Sick leaves decreased from 1,55 % (2015) to 0,84 % (1-4/2017). Load measurement is now one of the company's KPI:s.

**Finn Power** reported also positive impacts:

- Web-based application aiming to increase knowledge sharing among technicians can serve as a communication channel, an information exchange hub and a valuable knowledge repository as well as an educational system. Integration of production information and messaging is valuable and timesaving in getting guidance. Gamification might motivate workers to share knowledge.
- Online training can be scheduled optimally which shortens training time. The training supports understanding and dealing with exceptional situations, e.g. disturbances in production. Expected impacts include Increased productivity and job satisfaction, a lower threshold to start using a manufacturing line independently.
- The web-based solution for providing data-driven, personal feedback to factory operators raises spirits at work, helps employees recognize their strengths as well as their development needs. In the long term, the application can assist employees to develop their working habits.

**Reboot** has significantly opened doors for SMEs that does not have direct means to discuss with large players SME-field has gained significant revenue boost and references by factory subcontracting. As a result, over ten new SMEs are also now part of factory ecosystem and even several SMEs are expanding their business from one factory to many.

**Monitor ERP Systems** has created a system that gives SME's possibility to easy implement the baseline for Industry 4.0 and to control of Supply Chain of the company.

**Arginta Engineering** gives customers in Baltics and northern Europe quality assured and efficient production while using digital engineering system integrated with supply chain and production.

#### 4.7 DIH activities

The InnoCAPE -project participants (DIHs) were very closely involved in the presented cases:

**Digital Norway** implemented the service for **DNB** in its entirety and managed the process, prepared the survey, analyzed the results, conducted the interviews, conducted the management of workshop, and provided the final report with recommendations to top management of the business area.

**Kyrö Distillery, MSK Cabins** and **Finn Power** are all in close co-operation with **SeAMK** within the frame of data and digitalization. The co-operation includes i.e. participation in national and EU project activities and educational co-operation with students.

SuperIoT AI DIH of **University of Oulu** was partner in **Reboot IoT Factory** project. Reboot IoT Factory is the first pilot within the Finnish digitalization program Reboot IoT Finland.

**Monitor ERP systems** is in close cooperation with **RISE Research Institutes of Sweden** (Part of MIGHTY EDIH). Cooperation and contacts has been for many years and most recently AI and Cyber Security is of most interest and where national and EU-projects have been part of funding.

#### 4.7 Further Improvements

The ideas for further improvements are closely related to the case in question. These ideas can, however, be valuable to other and/or future digitalization efforts, and therefore a summary is outlined as follows:

**DNB** reported that in an early stage it was decided that only a selection of employees should receive the survey, and that the results should be aggregated at level 2 in the organization. In a subsequent delivery to another large organization, all employees were given the opportunity to reply, and the results were aggregated to the 3rd level in the organization. This gave much more solid foundation to base the recommendations on and resulted in even more engagement in the organization.

**Kyrö Distillery** sees the fact that the competitors do not understand their customers as one of the biggest opportunities. The Company wants to develop target marketing. The aim is to track bottles to the final customers. When knowing where in Germany and Berlin e.g., the products are popular, one could use more targeted social media marketing around the bars in question. The company wants to understand the customer in the key area better and the tracking would help that. Therefore, a CRM-system is also being developed, so that the sales calls can be made to where there seems to be demand. The barrel system will be put into a data system, when possible, to track the whisky production process.

**MSK Cabins** continues development and is now searching for a solution to measure factory-level total productivity.

**Finn Power** suggested that the developed Web-based application aiming to increase knowledge sharing among technicians could be extended to become a part of a bigger communication platform, between the equipment provider and their customers, aiming at strengthening their relationship.

For the future of **Reboot model**, several development issues have been identified. The most important is to scale-up proof-of-concepts for rapid and large impact for the benefit of factories and SMEs. Improvement is also needed in a PoC development pace and shortening their lifespan from whole project length to few sprints. Third challenge is related to transparency of research and co-operation. We have plenty of methods for experience sharing, but there is always room for improvement in means and engagement of people.

One of the challenges that **Infobaleen** is currently facing concerns how to distil years of research and technical expertise into a solution that solves their customers' problems, but also how to successfully communicate that solution in a way that makes it understandable to the general public. This challenge is further exacerbated due to the fact that the inner workings of AI-based solutions are generally complex and difficult to explain to those without expertise.

Infobaleen see great potential in developing its platform further and leveraging its flexibility to launch new modules and products based on it. For this purpose, having one leg in academia and the other in business is useful for Infobaleen, not least since they have access to both students and researchers whose ideas and solutions may be integrated into the business endeavor.

Monitor ERP system have identified AI and Cyber Security as main areas for further cooperation with RISE EDIH. The companys cloud solutions are very cost efficient for the customers but it also puts extra focus on Minitor to have top of the line Cyber Security.

#### 4.8 Digital maturity and AI maturity assessment tools.

Digital maturity tool has been exploited only in **DNB** case. The case study report (*attachment 2*) summarizes that as part of the diagnosis phase, a digital maturity assessment tool was used to reveal how employees and managers view the digital maturity of the company. This assessment is based on 13 statements covering management, technological expertise, innovation and customers where the respondents are requested to provide their degree of agreement to each of the statements.

The results were collected and analyzed for each business unit. Examples below for the statements related to management:

To what extent does your immediate superior promote innovation and explore the use of new technologies?

- 45% of respondents state that this is true to a great or very great extent
- However, the variation between sections is large, ranging from 25% in [one unit] to 64% in [another unit]
- Only 7% of respondents state that this is true to a little or no extent, but also here the variation is large, ranging from 1% in [one unit] to 14% in [another unit]

To what extent does LCI have incentives (KPIs/measurement parameters) that promote innovation?

This question received the largest variation in responses. The impression from the interviews we have conducted indicates is that most KPI's relate to quantitative measures, while KPI's related to behavior and approach to innovation – that are more qualitative measures - seems to be lacking.

## 5. Conclusions and recommendations

Altogether, 11 digitalization cases were presented in the study visits. The reported *challenges* were strongly dependent on the background and needs related to each case. The cases presented by companies were directly contributing into their business and/or business development, whereas the presented platforms were focused on certain ICT technology. Reboot Finland IoT -project was targeted to SMEs to test their products and solution real-world manufacturing & production environments.

The companies *implemented* the digitalization processes by

- Acquiring a subcontractor or subcontractors
- Participating in the public-funded projects
- Using companies' own resources, or
- Combining the above-mentioned methods.

Digital Norway (which is as non-profit organization unlike the other companies) offering provides practical targeted assistance to the SME sector with The Digitization Guide, Digital Maturity Indicator (DMI) online tool, Competence Network, and Digital courses. The organization also actively participates in national and EU projects.

The Infobaleen- and SCDI AI Business Lab -platforms had constituted their offering according to related target industry and/or ICT-technology.

The Reboot IoT Factory -project created a concept which offers agile co-creation and experience sharing within real-world production environments. The project offers funding for SME companies to implement their Proof of Concept –projects within real-world production environments of large-scale manufacturing companies.

The funding for the presented cases was organized via direct funding (subcontracting), own work, EU-funding and national funding (Business Finland) sources. It is also worth to mention that public funding typically requires own funding from the participating organizations.

All cases reported positive impacts and benefits generated by digitalization efforts. The reports state positive outcomes for instance in:

- performance and value creation to customers
- compiling realistic digitalization implementation plan and individuals responsible for implementations
- practical targeted assistance to the SME sector
- individual workload
- amount of error free installations
- well-being at work → decrease in sick leaves
- gamification as a motivator to share knowledge
- online training shortening the training time
- data-driven, personal feedback to factory operators raises spirits at work, helps employees recognize their strengths as well as their development needs
- SMEs have gained significant revenue boost and references by factory subcontracting.
- the focus of AI, CS (and HPC) to be supplied by EDIHs are of interest for SMEs

The presented ideas for further improvements were also case-specific, in many occasions the implementation of the improvement will be carried out in a continuation projects.

The InnoCAPE -project participants (DIHs) were very closely involved in the presented cases. Surprisingly, only one case (DNB) exploited Digital Maturity (DMA) tool to identify the initial state of organization for compiling a plan for digitalization.

Recommendations:

- The sharing of good practice must be continued, and more advanced countries / actors can continue to act as “mentors”, considering the situation and capacity of the target group / country.
- In particular, training projects and “awareness raising” type cooperation should be concretized, for example, with new EU projects.
- The use of the DMA tool should be preferred. The problem is that there are dozens, if not hundreds, of tools and choosing the right one can be challenging. However, the tool provides a cookie for the implementation plan and, at its best, can identify the target organization's progress in digitalization.
- eDIH preparations are underway in the EU. It appears that both industry-specific and technology-based eDIHs are emerging. It is advisable to network with these actors and choose domestic or foreign eDIH partners that suit your needs.



## Annexes

### Annex 1

Link to template/guideline for reporting study visits/case studies: <https://bit.ly/33v4E42>

### Annex 2

Link to study visits organised by DigitalNorway: <https://bit.ly/DN-cases>

### Annex 3

Link to study visits organised by SeaMK: <https://bit.ly/SeaMK-cases>

### Annex 4

Link to study visits organised by University of Oulu: <https://bit.ly/Oulu-cases>

### Annex 5

Link to study visits organised by RISE: <https://bit.ly/RISE-cases>

### Annex 6

Link to study visits organised by Umeå University: <https://bit.ly/Umea-cases>