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DigiBEST
PEER REPORT REVIEW:
CASE STUDY OF TRØNDELAG, NORWAY

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List of Abbreviations

AF	Application form
AP	Advisory Partner
BDRM	Business Digitalization Regional Road Maps
DESI	Digital Economy and Society *Index*
CV	Curriculum Vitae
EC	European Commission
eIDAS	EU regulation on electronic identification and trust services for electronic transactions in the European Single Market
EU	European Union
GP	Good Practice
HP	Hosting partner
ICT	Information and Communication Technologies
IE	Interreg Europe
JS	Joined Secretariat
LP	Leading partner
MC	Management Committee
MoEPRD	Ministry for Environmental Protection and Regional Development
PP	Project partner
PR	Peer Review
PRM Guidelines	Peer Review Methodology Guidelines
PRR	Peer Review Report
RS	Regional Studies
SH	Stakeholder
SG	Steering Group
SP	Sending partner
SME	Small and medium enterprise

1. Introduction

The purpose of the activities undertaken during the Peer Review (PR) of the Trøndelag region, located in the heart of Norway, was to carry out an analysis, according to the standards dictated by the DigiBEST project, on the digitization of micro, small and medium-sized enterprises (SMEs), focusing on identifying the barriers that hinder the process. In addition to a purely technical analysis on the digitization of SMEs, the project also included the assessment of the actions taken by the hosting partner (HP) in the recent past and within which policy framework these actions were been inserted. In addition, best practices were identified at both Norwegian and international level, in order to understand what were the excellences of the territory and what new good practices could be possible. Finally, based on the field research made and desk research, particular attention was paid to the issues of the circular economy and, more generally, the sustainability of medium and long-term development.

The objectives of this PR were many, the experts wanted both to provide a framework for reading the state of digitalization of SMEs from an external point of view, and to suggest possible solutions and recommendations for the digital transition of the region and, finally, to provide ideas for development of the territory as a whole, beyond just digitalization policies (for more information, see the final chapter of this report).

The PR of the Trøndelag region was carried out by two groups of external experts from two different sending partner (SP) countries (Italy and Spain). More information on the team of experts is described in Chapter 2 of this report.

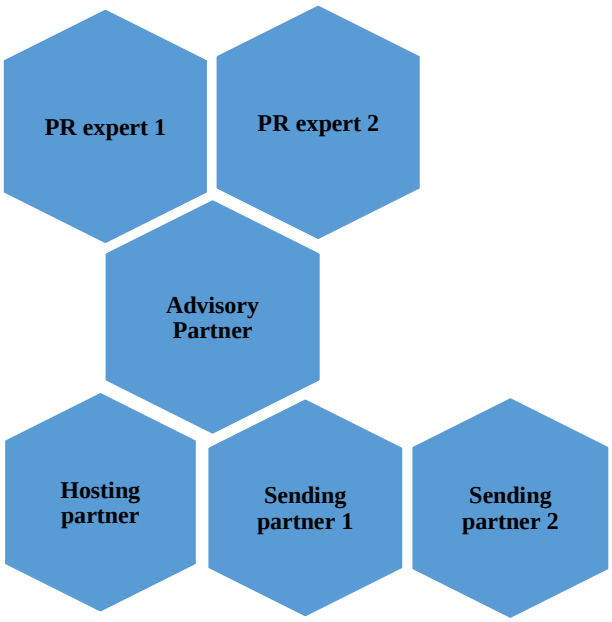
During the development of the PR, which preceded the drafting of the PRR, the work was organized in two phases, a first study of the documentation suggested and provided by HP during field research, with an in-depth study of the similarities and divergences with respect to the state of digitalization of SMEs in the various contexts involved (HP and SP) and a second moment characterized by a close dialogue (called desk research) between the experts, the lead partner and the HP. In the dialogue with HP, the possibility of interviewing the stakeholders involved was of fundamental importance.

Along the field research period, the experts were able to consult the documents suggested by HP and verify, through research and analysis of databases, which were the main characteristics of the area analysed. In particular, it was useful to analyse the information provided in the letter prepared by HP, paying special attention to the digital development in place. During this phase, to compare the digitalization situation between SP and HP, the experts also studied the state of digitalization of both SPs. Other information available publicly concerning the socio-economic situation, the milestones of the region's digital strategy and good practices were obtained and studied mainly from Internet resources. The materials studied during field research provided the experts with general impressions on understanding the position of HP in terms of digital development and revealed what the potential problems and main challenges for the digitalization of Trøndelag could be. The experts note that the main limitation at this stage of PR experts was that some of the relevant information related to policies and digitalization was in Norwegian, a language not widely used outside Norway and, therefore, searching for information online was difficult to experts, more than expected.

2. Presentation of the Peer Review team

According to PRM Guidelines the PR process involves collaboration of different PPs and all together they form a PR team. PR team is represented by Advisory partner (AP), Hosting Partner (HP), two sending partners (SP) and two PR experts. Structure of PR team is illustrated in Figure 1 below.

Figure 1. Structure of the Peer Review team.



The University of Latvia acts as the AP. AP is responsible for the PR methodology and checks if this methodology is taken into account during the PR process. If necessary, AP consults and provides guidance to other members of the PR team regarding methodology and other issues related to the PR process. During the PR of the Trøndelag region, AP participated in all the field research meetings and also actively participated in the conversations, thus contributing to the PR brainstorming process. AP was also actively involved during the launch period providing instructions and advice on how to organize and perform desk research and field research based on best practices.

During the Trøndelag Region PR process, the Trøndelag County Council acts as the HP. HP's role is to organize and host public relations events that are part of the field research phase. In addition, before and after the PR event HP was responsible for communicating with other members of the PR team by providing supporting PR documentation and coordinating the PR event agenda, which is shown in Appendix 1 and 2.

During the PR process of the Region of Trøndelag, the Province of Granada acts as one of the SPs, representing Latvia. Sviluppo Basilicata spa acts as another SP, representing Italy. SP's responsibility within the PR process is to hire an external PR expert and coordinate communication between HP and the PR experts from the SP country / region during the PR process. In the contract with PR Expert SP can also indicate specific objectives for PR experts in order to adopt HP's GP and facilitate the development of the digital transformation of SP.

Both SPs have delegated their own PR experts. SP of Italy as PR Expert has hired Protiviti Inc, which is represented by three experts. SP of the Province of Granada has hired as PR expert to Jaime Martinez-Brocal as a freelance with two additional experts from his team who participate in the PR process. PR experts are responsible for implementing PR according to the PRM Guidelines. During the process, PR experts must jointly carry out desk research and research analysis in the field and on the basis of information obtained during these activities to prepare the PRR. Desk research should be done on the basis of information and documents provided by HP and SP, as well as other publicly available documents and information prior to the PR event.

During the field research, PR experts should obtain further information through meetings, interviews and discussions on the digitization situation in the Trøndelag region, organized by HP. After the field research, in a month's time the experts are expected to prepare the PRR, which should provide elaborated conclusions and recommendations on how to facilitate the promotion of digital transformation of SMEs and micro-enterprises by improving HP's policy tools described in the RS. The list of PR team participants is presented in Appendix 6.

According to the PRM Guidelines, both PR experts must agree on how they are dividing their tasks during desk research, field research and PRR preparation. PR experts are jointly responsible for the quality and timely preparation of PRRs. Tasks and objectives of both PR experts are described in chapter 4.

3. Peer Review implementation

3.1 Desk research sources

Table 1. PR desk research findings

No.	Source of literature, document or information on the website reviewed or analysed	Date	Main findings and conclusions
1	ACTION PROGRAMME 2020-2021 - for the strategy «Value Creation Trøndelag.	01/10/2021 - 19/10/2021	The role and the importance of the regional plans (bioeconomy, circular economy, ocean spaces, smart communities). The impact of all of them on sustainability and the Agenda 2030.
2	Strategy for innovation and value creation in Trøndelag, 2017.	01/10/2021 - 19/10/2021	Analysis of the general framework of Trøndelag and the role of coordination of all programs and action plans. The role of the current tools such as University, Technology, Research, among others.

3	DESI: Norway https://dunapress.org/wp-content/uploads/2020/06/DESI2020-NORWAY-eng.pdf DESI: Spain https://digital-strategy.ec.europa.eu/en/policies/desi-spain DESI: Italy https://digital-strategy.ec.europa.eu/en/policies/desi-italy	01/10/2021 - 5/11/2021	The situation of all countries in the Digital Economy and Society Index, and the difference between them.
4	European Commission, 2018, 2017; European Investment Bank, 2019; OECD, 2017; Interreg Europe, 2018; DIGIBEST REGIONAL ANALYSIS TRØNDELAG COUNTY COUNCIL NORWAY REVIEWED - V.02	01/10/2021 - 10/11/2021	Finding the barriers and solutions for the SMEs digitalization.
5	https://www.sdgaccountability.org/working-with-informal-processes/raising-awareness-through-public-outreach-campaigns/	01/11/2021 - 14/11/2021	Finding information about the concepts related to chapter 7.
6	https://kissflow.com/digital-workplace/collaboration/what-is-collaboration/		
7	https://www.marketlinks.org/good-practice-center/value-chain-wiki/business-enabling-environment-overview		
8	https://www.un.org/en/academic-impact/capacity-building		
9	https://corporatefinanceinstitute.com/resources/knowledge/finance/what-is-finance-definition/		
10	https://www.merriam-webster.com/dictionary/economics		
11	https://www.safeopedia.com/definition/2878/policy		

3.2 Field research

During the field research, the PR experts participated in an introductory meeting with the County of Trøndelag representative (Norwegian regional level and Hosting Partner), where were discussed the political framework and general information on the traits of digitization of the region. After this meeting, more encounters followed with stakeholders, attended by all the experts of the two Italian and Spanish teams. More information about queries raised during desk research is available in appendixes 3 and 4. The interviews were conducted in parallel thanks to a set of questions provided by both teams on the basis of their skills. All stakeholders brought their point of view highlighting successes and critical issues. In particular, everyone stressed the difficulty of involving micro-enterprises in the digitization processes and, at the same time, the importance of the activities carried out by the incubators and business gardens in the area. At the end of the PR event, the PR experts presented their preliminary results and

suggestions to HP. The information about the activities carried out by the PR team during the field research can be found in Appendix 7.

4. Objectives and tasks of the PR Experts

4.1 Objectives and tasks of the PR experts from Italy

As for the Italian PR Experts, it is a contract between Sviluppo Basilicata Spa and Protiviti Government Services Srl. The main objectives of the contract concern:

- Execution of the PR process by evaluating the digital transformation policies of the Hosting Partner Country.
- Analyse best practices and available resources.
- Provide views and new perspectives to support and enhance good practices in the Trøndelag Region.

The experts were asked to work on desk research and field research by Protiviti Government Services Srl. Regarding the desk research, the PR experts according to the contract were asked to investigate the situation of the country of HP and focus on issues related to the digitization of SMEs and government support available to SMEs, referring to policies and best practices in place. As regards the field research, contractually the experts were required to enhance a critical and stimulating discussion during the PR Event, providing creative ideas in order to collect the opinions of the SH actively involved in the particular context analysed and providing suggestions and ideas for improvement practices currently in use.

Their in-depth work analysis of the issues and comparison with the SH involved in the process would be summarized in the PRR aiming to raise awareness of institutions and SMEs themselves on emerging opportunities: in particular, PR Experts are asked for ideas on how to improve communication, training and awareness on digitization tools and the application of these ideas.

4.2 Objectives and tasks of the PR experts from Spain

Regarding Spanish SP (Provincial Council of Granada) has contracted to Jaime Martínez - Brocal as PR expert leading his two expert team who has been responsible for implementation of PR according to PRM Guidelines.

The main task for PR Experts was to perform PR process according to PRM Guidelines by evaluating digital transformation policies, GPs and support instruments, and to identify suggestions and recommendations for HP about how they could improve their digital transformation process. In addition, PR Experts were asked to prepare suggestions about possibilities to take over and implement GPs of HP to SP's country.

Besides direct objectives of PR process attributed to HP, during the desk research PR Experts were asked to study SP's RS about digital transformation situation in Norway and its influence on entrepreneurship, including information about SME and microenterprise digital transformation policies and support instruments, as well as DESI results. PR Experts were asked to study HP's GPs, policy instruments, strategies and conclusions about them based on

HP's RS and other available information. After review PR Experts are supposed to provide conclusions and suggestions on how HP's GP's could be potentially implemented in Norway in order to facilitate development of SME and microenterprise digital transformation in Norway.

At the end, PR Experts should prepare these suggestions about GPs and present them to SP. Based on these suggestions PR Experts should provide suggestions for elaboration of a road map and action plan to facilitate following areas of SME and microenterprise digitalisation:

1. Awareness raising among entrepreneurs of the benefits of using ICT solutions in business.
2. Development of entrepreneurial competencies and corporate environment (mentoring programs, technology audits, individual consultations, management training) to promote the digital transformation of entrepreneurs.
3. Digital transformation and cybersecurity issue integration into business support initiatives.

5. Characteristics of the SMEs digitalization

5.1 Country level of digitalization

The data shows a trend situated in a higher level in the digitalization and build-up of skills in the Norwegian society, but the SMES are a bit behind in implementing digital tools, despite the municipalities, public sector, is developing digital services fast. Norway is one of the best performers regarding basic or above basic digital skills in Europe, although the division between the rural parts and the larger cities in Norway is big[1]. It is a sign of centralization, and that most high skilled jobs are found in the cities. Oslo, Bergen, Stavanger and Trondheim have some suburbs, but they are small cities. In Trøndelag this is also the case. The axis from Orkanger through Trondheim and to Steinkjer is characterized by Trondheim as a city (200 000 inhabitants), and the rest as small towns[2].

In Trøndelag there is a high percent of people that normally have access and uses internet very often. Trøndelag have a strength in research and development activities, if comparing to the rest of the country and Europe. The region has municipalities that do very well in the cultural field. The aquaculture (aquafarming) industry has contributed to employment growth for parts of the Trøndelag coast[2]. Still, 72% of new jobs in Trøndelag have been created in Trondheim in the period from 2010 to 2018 [2]. Trøndelag experiences a steady growth within all the main areas of economic activity. It is significant that **92% of the businesses in the region have less than 10 employees and represents 23% of the employment** (public and primary sector not included). They are vulnerable in light of digital transformation [2].

5.2 General impressions on digitalisation in Trøndelag province

The impressions made from the desk and field research could be grouped into four categories:

[1] Norway DESI https://dunapress.org/wp-content/uploads/2020/06/DESI2020-NORWAY-eng.pdf
[2] DIGIBEST REGIONAL ANALYSIS TRØNDELAG COUNTY COUNCIL NORWAY , REVIEWED - V.02

A) Technology Infrastructure

A high level was observed in technology infrastructure (connectivity, 5G network coverage, basic hardware disposal, etc.) which is not a limiting factor in digitalization in this area.

We consider that Trøndelag has a good technology infrastructure even when there is an opportunity to increase its development for SMEs in rural areas.

B) Public Institutions

There is a development of business digitalization through the entrepreneurial and innovative ecosystem, where the different players act in coordination: Trøndelag County Council, SIVA, business gardens,incubators, and Innovation Norway by funding and advisory activity

The main **challenges** that might be: **Increase the number of companies** mainly SMEs in the system and spread the support digitalization they could obtain, and **to increase added value** through course of action beyond the financial support.

C) ICTs providers/suppliers

For Trøndelag there is an efficient and well-structured supply of ITC companies concentrated especially in large companies and urban environment. There is a possible gap gap between skills, and culture in general and innovation because rural area always tends to be a little behind the growing of innovation and trending in economics. It can be crucial for the kind of technologies of objectives to be reached out.

The main **challenges** that could be a potential supply in rural areas and small businesses, to have providers with a focus on digitalization in small businesses, and to understand which is the best technologies can fit to their needs. Also, what technology should be applied to each sector. Also, improve innovation ecosystem in some sectors beyond energy, sustainability, and the circular economy.

D) ICTs market demand

There is a lack of knowledge and qualified staffing (digital management and technology) in the SMEs, so they have difficulties to take advantage of the full potential of new technologies in its business models.

The two main challenges in this area would be the transfer of knowledge to improve skills (especially in digital strategy and technology) and attracting qualified ICT personnel to SMEs.

5.3 Main barriers for SMEs digitalisation

There are several barriers for Trøndelag and the main findings are the following (*European Commission, 2018*[3]*, 2017*[4]*; European Investment Bank, 2019*[5]*; Nordregio 2020; OECD, 2017*[6]*; Interreg Europe, 2018*[7]*; DigiBEST Regional Analysis Trøndelag County Council Norway reviewed - V.0*[2]):

1. SMEs do not have enough knowledge in digital Management and Technology in SMEs.
2. There is a lack of capacity of SMEs to attract qualified people in new technologies to SMEs or rural areas.
3. Public institutions need to increase encourage and attract more technology-based projects in rural environments and managed by SMEs.
4. Limited supply in the technology in the rural environment and small businesses.
5. Lack of access to information about support instruments and public funding possibilities in rural areas.
6. Problems in Public purchasing services and products.
7. Difficulties in competition with SMEs companies.

5.4 Possible solutions

We think of some possible solutions that can help Trøndelag. **First**, in the Education by Transferring knowledge. **Second**, improve communication about Information of Technologies benefits for SMEs, information from Public Institutions to SMEs related to services and tools available, and Information from ICTs suppliers to SMEs. **Third**, in order to become big, we propose set up clusters or hubs to aggregate or cooperate between SMEs to do many things, for example, public purchase and contracts to develop, and do aggregation methods to let SMES become a big company, also to bring new qualified people to work in the companies. **Forth**, subside digital projects with focus in rural areas in order to make it possible for small companies to adopt new technologies with lower ROI (return on investment).. **Fifth**, Promote virtual/remote work environments.

[3] European Commission, 2018. Integration of Digital Technology. Digital Economy and Society Index Report 2018 Integration of Digital Technologies. [WWW Document] URL https://ec.europa.eu/information_society/ newsroom/image/document/2018-20/4_ desi_report_integration_of_digital_ technology_B61BEB6B-F21D-9DD7-72F1FAA836E36515_52243.pdf (accessed 4.28.20)

[4] European Commission, 2017. 2017 SBA Fact Sheet Denmark. [WWW Document]. URL http://ec.europa.eu/DocsRoom/ documents/26562/attachments/8/ translations/en/renditions/native (accessed 5.28.19).

[5] European Investment Bank, 2019. The digitalisation of small and medium enterprises in Ireland. Models for financing digital projects. Executive Summary [WWW Document]. URL https://www.eib.org/attachments/thematic/ digitalisation_of_smes_in_ireland_summary_ en.pdf (accessed 5.27.19).

[6] OECD, 2017. Going Digital: Making the Transformation Work for Growth and WellBeing. Meeting of the OECD Council at Ministerial Level. Paris, 7-8 June 2017 [WWW Document] URL https://www.oecd.org/ mcm/documents/C-MIN-2017-4%20EN.pdf (accessed 6.12.19).

[7] Interreg Europe, 2018. SKILLS+ project: Joint Peer Reviews Report. [WWW Document] URL https://www.interregeurope.eu/skillsplus/ (accessed 6.12.19)

5.5 Comparison between host country and sending countries

We chose to compare Norway[1] with Spain[8] and Italy[9]. Spain ranks out 11th of 28 EU Member States in the 2020 edition of the Digital Economy and Society Index (DESI) based on data prior to the pandemic.

Spain ranks 2nd in the EU on digital public services thanks to its well-timed implementation of a digital-by-default strategy throughout its central public administration. The country performs well also in the area of connectivity. Spain is below the EU average on the human capital indicators. Though it is improving its scores, almost half of the Spanish population still lack basic digital skills and 8% have never used the internet.

Italy ranks 25th out of 28 EU Member States in the 2020 edition of the Digital Economy and Society Index (DESI). Data prior to the pandemic shows that the country has a good ranking in terms of 5G preparedness, as all the pioneer bands were assigned and the first commercial services were launched. There are significant gaps as regards Human Capital. Compared to the EU average, Italy records very low levels of basic and advanced digital skills. The number of ICT specialists and ICT graduates is also well below the EU average.

Norway has an outstanding performance in most DESI indicators as it is shown in Table 2. Norway ranks 3rd in the 2020 DESI edition having indicators such as connectivity and use of internet services (Table 3) as the top dimensions in continue evolution over the last five years, always above the EU average. A more extensive comparison for each indicator can be found in Appendix 8.

Table 2. Desi score: Spain, Norway and Italy (2020)

DESI score 2020				
Indicators	**Spain**	**Norway**	**Italy**	**EU average**
DESI Index	57.5	69.5	43.6	52.6
DESI: connectivity	60.8	65.8	30.0	50.1
DESI: human capital/digital skills	47.6	65.9	32.5	49.3
DESI: use of internet services by citizens	60.8	80.6	44.5	58.0
DESI: integration of digital technology by business	41.2	59.0	31.2	41.4
DESI: digital public services	87.3	84.9	67.5	72.0

Source: *Different Reports (*Digital Economy and Society Index (DESI) 2020 For Spain, Norway and Italy*)*

Table 3. DESI score: Norway (2020)

DESI score 2020			
Indicators	**Norway**	**EU average**	**Difference**
DESI Index	69.5	52.6	16.9
DESI: connectivity	65.8	50.1	15.7
DESI: human capital/digital skills	65.9	49.3	16.6
DESI: use of internet services by citizens	80.6	58.0	22.6
DESI: integration of digital technology by business	59.0	41.4	17.6
DESI: digital public services	84.9	72.0	12.9

[8] Spain https://digital-strategy.ec.europa.eu/en/policies/desi-spain

[9] Italy https://digital-strategy.ec.europa.eu/en/policies/desi-italy

[10] http://www.mineco.gob.es/portal/site/mineco/menuitem.b6c80362d9873d0a91b0240e026041a0/?vgnextoid=3a4d41617b464610VgnVCM1000001d04140aRCRD https://www.mapa.gob.es/es/ministerio/planes-estrategias/estrategia-digitalizacion-sectoragroalimentario/

Source: *Joint Report (Digital Economy and Society Index (DESI) 2020, https://dunapress.org/wp-content/uploads/2020/06/DESI2020-NORWAY-eng.pdf).*

As regards the main policies, actors and instruments promoting digitalisation, you can find in chapter 6, in which, specifically, the existing policies, the actors involved at national, regional and local level, and the tools and projects dedicated to the digitization of the Trøndelag region will be analysed.

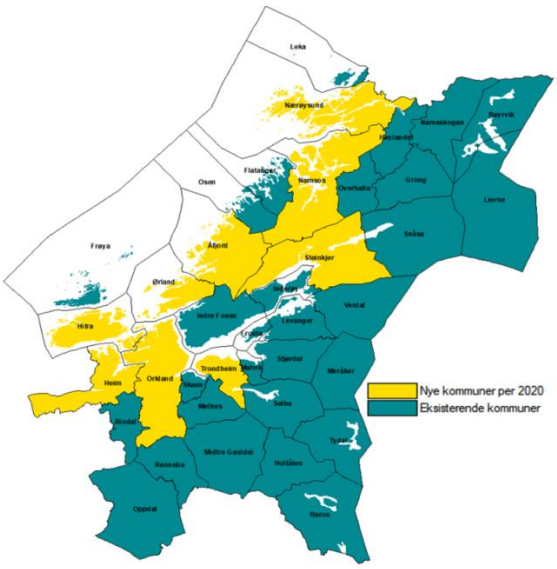
6. Policy context

To analyse the policies on the digitization of SMEs in the Trøndelag region, some aspects that emerged both from the desk analysis and from the interviews conducted as part of the study visit must first be considered:

- The policies for digitization are the responsibility of **both the national government** (which implements them through specialized public companies) **and the regional government**, that is the County, which can intervene by contributing financially and decline the initiatives according to the needs of the territory it represents;
- There is a widespread and consolidated public **interventionism**, typical of the models of government of the Scandinavian countries, especially at the county level and at the national level;
- **Ultra-broadband** is already widespread even in marginal territories, so there is the physical infrastructure necessary for the success of the policy;
- The region is medium in size and has a **limited administrative complexity** which, however, is in the process of settling (after the merger between two Counties in 2018, which gave rise to the current geographical perimeter of the region, last year several mergers of municipalities took place - municipalities from 48 in 2019 to 38 in 2020, the following map shows in yellow the new municipalities created and in green those that have not undergone changes);[10]

[10] https://www.trondelagfylke.no/vare-tjenester/plan-og-areal/kart-statistikk-og-analyse/nyhetsarkiv-kart-og-statistikk/faktafredag---nye-kommuner-i-2020/

Figure 2. Administrative reorganisation of municipalities



Source: Great Norwegian Encyclopedia[11]

- The **geography** of the region is relevant in the planning of policies for SMEs; the County, in fact, consists mainly of 3 homogeneous areas: the coast, the mountain and the central area, more urbanized. The capital is located along the Trondheim Fjord and the six municipalities on the Orkland - Stjørdal axis have 61% percent of the population. This area is increasingly establishing itself as an "attractor" of new professionals thanks to the job and social opportunities, offered in particular by the capital Trondheim.[12]The digital Study Visit showed that the central belt of the region has reached a good level of development and access to services and that, in recent years, financing measures have been subsidized for the development of the activities of the coastal area. On the other hand, the theme of mountain areas and the involvement of local companies in the implementation of regional development policies seems more heartfelt. However, a complete look emerges from policy makers at the local development of the region as a whole, including the mountain range. The County, specifically, has shown awareness and has put itself on the line trying to bring out the new needs dictated by the changes in context and the complexities encountered during the implementation phase of the policies on the digitization of SMEs. For example, it has been repeatedly pointed out that small and micro enterprises are still difficult to intercept.
- Incubators and business gardens have played, and continue to play, a crucial role in the implementation of digitization policies, both as a recipient of part of the funds and as an implementer of activities in the area, as can be seen from the description of the *Industry 4.0 Trøndelag* initiative. The peculiarity of these actors lies in their nature: they are at the same time the result of a public policy and the expression of a service provided, generally, by private subjects. This combination and their involvement in the policies of the County places them, in this context, as "intermediate bodies" able to guarantee a **"multilevel governance"** capable of creating synergies between public and private. The level of integration guaranteed by incubators and business gardens is, therefore, both vertical (in the relationship with national actors, with the Region and in the proximity to municipalities) and horizontal

[11] https://media.snl.no/media/139779/standard_tr%C3%B8ndelag_2020_b.png
[12] https://snl.no/Tr%C3%B8ndelag

(in the relationship with individual companies and in the role of "animator" of business networks).

It is also essential to take into account what has already been done in past years. The Appendix 9 summarizes the path that the County (regional administrative level) and some relevant national actors (SIVA and Innovation Norway) have put in place in recent years.

As can be seen from the graphic representation in Appendix 9, the Trøndelag region, for several years, has been working on the theme of the digitization of SMEs, both on the front of the creation of awareness and on that of the activation of operational projects that involve at the same time small and micro enterprises and the "facilitators" subjects.

This last theme, specifically, was addressed thanks to the initiative "**Industry 4.0 Trøndelag**", to which a specific analysis must be dedicated, not only for its relevance, but also as an express request of the partner during the project. Specifically, PR is required to evaluate the initiative against its strengths and weaknesses and its effectiveness as a method to facilitate digital transformation in small/ micro enterprises (through Business Garden, regional incubators and R&D&I) and as a policy in general. Finally, the partner asks for feedback on how *Industry 4.0 Trøndelag* can be further developed. This feedback can be found in Appendix 10.

We believe that the policy objectives are current and relevant and that the "incremental" approach adopted in the development of the policy itself is optimal to accompany the growth of the awareness of policy makers to that of the partners in the territory and of the individual companies benefiting from the interventions. We also think that the experience of incubators and business gardens is extremely positive and must be valued and extended: without distorting their mission, they can become strategic partners of the County in the future reshaping of the digitization policies of SMEs, also offering a "showcase" for the best practices of the territory.

The points of improvement that follow represent a suggestion that will then be lowered into the reality of the County.

- **Sectorization and localization**. The path taken by the County in seeking specific answers to the needs of the individual Industries is certainly an indication of sensitivity towards the issue. The partner could deepen and enrich its analysis through detailed data:
    - Adopting a zoning for "homogeneous areas" (dictated both by geographical factors and by the potential for sectoral development of the territory).
    - Conducting a study on quantitative data (number of SMEs, size, employees, turnover, propensity to export).
    - Choosing some realities (through a top-down selection) to be involved in the qualitative analysis on the propensity to digitization. In this case, the involvement of universities and research centres would be desirable.

  The research should be conducted with the aim of understanding, in addition to the objective dynamics, what are the reasons why companies in certain sectors are led to settle in specific territories, what their real needs are and which, among these, can be supported by digitization projects. Finally, an increasingly "rich" database may also prove useful in other situations.

- Involvement of **small and micro enterprises.**
  This point is closely linked to the previous one. A more articulated policy, which can be modulated on the basis of the needs emerged from the territory, helps to make projects more effective. For example, the type of interventions (training, grants, consultancy) and the percentage of co-financing of the same (100% public contribution or co-financing of the project both by the public body and by the company) can help to attract the realities less sensitive to the theme (projects with "zero expenses") and to empower those more attentive to digitization (in the latter case, in the company, by co-financing the intervention, a flywheel is triggered that helps to seek the maximum effectiveness of the planned actions). In this case, fundamental partners turn out to be business gardens and incubators. Still with regard to the involvement of small and micro enterprises, in order to cover the areas that would remain uncovered by sectoral and articulated policies (in some cases more complex to understand) it could be useful to use "tax levers" or "one-off vouchers" for the purchase of basic products for digitization, both hardware and software. Fundamental for the success of these interventions is the use of extremely simplified accounting reporting tools, which can be addressed by the company itself without the need for intermediaries / consultants. In this case, top-down communication and information on the opportunities offered are fundamental.

- Focus on an **ecosystem vision.**
  In the involvement of SMEs, a factor of crucial importance is the presentation of the intervention as a possibility to derive an advantage in economic terms and global growth of the business. It is therefore essential to link digitalization to concrete examples of competitive advantage (containing quantitative data on the reduction of time to carry out a process, quantification of the added value produced by human resources "freed" from the tasks of repetitive processes, etc.) and to experiences, if relevant, of circular economy / creation of networks of companies that "entrust" specialized services to the outside, too expensive if dealt with individually. In this case, the policy maker should carefully evaluate the economic sustainability of the interventions in the medium term: once the public aid is over, the new processes and new policies adopted by the SMEs must be able to sustain themselves. Fundamental partners are business gardens and incubators.

- Creation of **networks** and stakeholder involvement.
  In a more advanced phase of the policy, it is desirable that the synergies created through projects and targeted actions on the territory are transformed into a stable collaboration: this approach, in addition to having positive implications on the business of individual companies, even the largest, allows to reduce the complexity of the territorial analysis thanks to the constant and immediate comparison of the actors involved in the territory. The dialogue with business gardens and incubators becomes constant and immediate and the County can count on sudden feedback in case of difficulties or needs dictated by context factors that, sometimes, it is difficult to oversee from the centre. In this case it would be interesting to understand the role of the administrations in which the County is articulated and to evaluate the opportunity of their possible involvement. Of vital importance, for the success of this policy, is the involvement of the County as orchestrator and attentive listener of the instances.

Finally, it may be useful to draw on **the patterns of setting up strategies typical of European programming.**

From what emerged during the study visit, there is a particular attention from the County of Trøndelag to the issue of evaluating policies and their results. In addition to the fruitful participation in projects, such as DigiBEST, aimed at creating debate and comparison on the implementation of a single policy, it could be useful to set up a targeted and constant self-assessment path throughout the implementation of the initiatives. The strategic approach adopted to date necessarily provides for multiple documents (also descended from national and international strategies) subsequently translated into action plans: the articulated path of realization of these outputs should be given greater diffusion.

A possible strategy would be to create simple and effective reports on **i)** context analysis complete subdivision into areas/sectors of interest, **ii)** ex ante and pre-conditionality evaluation, **iii)** setting of objectives, expected results and targets, **iv)** ongoing monitoring (open data forecasting), **v)** output and ex post evaluation. Of particular relevance, for the policy maker, is access to data in real time: this allows you to correct the shot in case of changes in the context, deviation from the objectives or lack of effectiveness of the actions devised.

7. Main barriers for SMEs digitalization and possible solutions

Regarding to chapter 5 we have seen that there are different barriers and possible solutions, in this chapter we will focus more on these barriers, by dividing them in different categories:

1) **Awareness rising and Collaboration**.

Awareness-raising is a process that seeks to inform and educate people about a topic or issue with the intention of influencing their attitudes, behaviours and beliefs towards the achievement of a defined purpose or goal[13].

And the best way to define collaboration would be to outline it as the process of two or more people or organizations working together to complete a task or achieve a goal. It is also defined as two or more people working together to achieve shared goals [14].

Table 4. Barriers and solutions related to Awareness and Collaboration.

Barriers	Solutions
a) SMEs do not have enough knowledge in digital Management and Technology SMEs.	Transferring educational knowledge (example: training courses online and on-site (Remote).
b) There is a lack of capacity of SMEs to attract qualified people in new technologies to SMEs or rural areas.	Improve communication about Information of Technologies benefits for SMEs, Information from Public Institutions to SMEs related to services and tools available, and Information from ICTs suppliers to SMEs.

[13] https://www.sdgaccountability.org/working-with-informal-processes/raising-awareness-through-public-outreach-campaigns/
[14] https://kissflow.com/digital-workplace/collaboration/what-is-collaboration/

c) There are several separate initiatives within the field (at the national, regional and local levels). There are no coordinated regional efforts.	A solution would be why the country council a being as an entity without financial interest had a more relevant role and had more support from the rest of the player as within the business gardens, also digital transformation and cooperation is needed to be coordinated.
d) Problems in Public purchasing services and products.	Subside digital projects in rural areas in order small companies contract new projects about new technologies. And promote virtual/remote work environments.

Source: Prepared by PR experts, based on the field research analysis and desk research

2) **Enabling Corporate Environment and Capacity Building**.

The business enabling environment includes norms and customs, laws, regulations, policies, international trade agreements and public infrastructure that either facilitate or hinder the movement of a product or service along its value chain[15]. And Capacity-building is defined as the process of developing and strengthening the skills, instincts, abilities, processes and resources that organizations and communities need to survive, adapt, and thrive in a fast-changing world. An essential ingredient in capacity-building is transformation that is generated and sustained over time from within; transformation of this kind goes beyond performing tasks to changing mindsets and attitudes[16].

Table 5. Enabling Corporate Environment and Capacity Building

Barriers	Solutions
a) Lack of rural ecosystems where businesses can cooperate to overcome lack of skills and specialist personnel, SMEs are to some extent detached from the urban competence institutions (universities etc) and environments. Urban-rural divide (gap.)	They can build ecosystem. And county council can orchestrate regional ecosystems with R&D, and other actors.
b) Public institutions need to increase encourage, and attract, more technology-based projects in rural environments and managed by SMEs.	In order to become big, we propose setting up Clusters or hubs to aggregate or cooperate between SMEs to do many things for example in public purchase and contracts to develop, and do aggregation methods to let SMES become a big company, also to bring newly qualified people to work in the companies.
c) SMEs companies can't afford to hire ICT specialists/ professionals, especially difficult to recruit them in rural areas. Also, often unclear for SMEs what kind of specialists they need.	They can establish pool of competent professionals and sharing service. Also, several businesses can hire professionals together.

[15] https://www.marketlinks.org/good-practice-center/value-chain-wiki/business-enabling-environment-overview
[16] https://www.un.org/en/academic-impact/capacity-building

d) Lack of rural ecosystems where businesses can cooperate to overcome lack of skills and specialist personnel.	The Industry 4.0 Trøndelag project can be a first step for creating this

Source: Prepared by PR experts, based on the field research analysis and desk research

3) **Financial and Economics.**

Finance is defined as the management of money and includes activities such as investing, borrowing, lending, budgeting, saving, and forecasting [17]. And the economics a social science concerned chiefly with description and analysis of the production, distribution, and consumption of goods and services[18].

Table 6. Financial and Economics

Barriers	Solutions
a) There is many possibilities for funding through Innovation Norway, banks. But few investors.	A solution could be for this increase financial local tools or programs to incentive local taxes.
b) Lack of access to information about support instruments and public funding possibilities. Due to the "lack of coordinated public support funding for development projects" it can be difficult to find out what exactly a SME can be entitled to get regarding public support.	This will be a challenge on national level.

Source: Prepared by PR experts, based on the field research analysis and desk research

4) **Policy and Security**

Policy and Security are rules, principles, guidelines or frameworks that are adopted or designed by an organization to achieve long term goals[19].

Table 7. Policy and Security

Barriers	Solutions
a) Centralized digital competence. The tendency that digital competence and skills are centralized to urban areas may be a reason for SMEs in rural areas experiencing a double digital divide.	A solution for this the national level polices need to be changed.
b) Brain drains. There is Structural challenge. And, People want to live in urban areas. Also, there is a double digital divide (urban-rural).	They need to find mechanisms to compensate. For example, some online presence of workers.

[17] https://corporatefinanceinstitute.com/resources/knowledge/finance/what-is-finance-definition/
[18] https://www.merriam-webster.com/dictionary/economics

[19] https://www.safeopedia.com/definition/2878/policy

c) Lack of coordinated public support funding for development projects. Inflexible and rigid structures/guidelines for (cross) financing large projects where participates public bodies like County Council, Innovation Norway, SIVA, SMEs and R&D structures. Time consuming and difficult to meet all the different demands.	It is difficult to improve/change the national level policy for county-level authorities

Source: Prepared by PR experts, based on the field research analysis and desk research

8. Relevance of Good Practices

In the Trøndelag Region, within the DigiBEST project, five applicable and relevant GPs (Circular Economy[20], Industry 4.0[21], Incubators and regional, national and international networks[22], Bioeconomy-Forestry-DistrikForsk[23], Guadalinfo - a social network of inhabitants in Andalusia[24]) have been highlighted as applicable and relevant to ease through entrepreneurship through creation of new SMEs and micro-enterprises, digital awareness and the increase of digital skills among the general population, managers of SMEs and micro-enterprises and their employees.

Circular economy[25]

The Norwegian government has been able to involve and enhance the contribution of the financial and business sector in the formulation of the Strategy. The consultancy firm Deloitte was commissioned to carry out an external review to provide part of the knowledge base for the document, and delivered three reports. These reports come from a meeting involving more than 50 key representatives from 12 different sectors, interest groups and research institutes, and written input from almost 90 different stakeholders. Furthermore, the business sector has worked systematically on the preparation of roadmaps for green competitiveness in various branches.

The Strategy fits well into the framework of European plans and the overall strategies on the circular economy, notably into the framework of the various environmental targets that the country must achieve. For example, the document goes hand-in-hand with the gradual reduction of CO2 emissions on the way to a Norwegian low emission society by 2050.

The Norwegian National Strategy may be of interest to other territories as it may provide an enlightening example of how to involve the business sector in drafting a strategy on implementing circularity. It also provides a good example of a document that fits well into the framework of European strategies on the topic. Along the line of the Norwegian strategy, other national strategies must also start from the assumption that the ultimate goal is not simply the implementation of circularity, but the achievement of environmental objectives. Circularity is only a tool, and the Norwegian Strategy rightly emphasises this. Finally, given Norway's already excellent position with respect to environmental targets and SDGs, the

[20] Appendix 11
[21] Appendix 12
[22] Appendix 13
[23] Appendix 14
[24] Appendix 15
[25] https://www.regjeringen.no/no/dokumenter/nasjonal-strategi-for-ein-gron-sirkular-okonomi/id2861253/

different starting situation must be taken into account when transferring the strengths of the Norwegian Strategy to other countries.

The Norwegian National Strategy has succeeded in involving the business sector in the drafting process and cleverly placing the Strategy within the European and global framework on the implementation of the circular economy. Transferring the most interesting points of the Strategy to other regions can be important for their drafting of a good document. Therefore, only some aspects of the Norwegian strategy can be implemented in other contexts: national or regional policymakers wishing to do so must therefore carefully select topics from those in which the situation in their territory is most similar to the Norwegian one.

Given Norway's different starting point in implementing environmental paradigms, the implementation of the Strategy in other contexts can only take place partially, by trying to focus the information transfer efforts on certain topics. For example, promoting sustainable consumption and green innovation in the public sector through the public procurement system, strengthening the role of the recycling industry in the management of material resources and as a supplier of secondary raw materials for use in material cycles, or using legislation and targeted initiatives to improve circularity in the construction and operation of buildings.

The Norwegian Strategy considers it increasingly important to harness the potential of digitalisation in the transition to a circular economy. As part of its digitisation policy, the Government will design the national ICT and data policy to promote the green transition and growth in the business sector, and ensure progress towards Norway's climate, environmental and sustainability goals. However, the Norwegian Strategy does not indicate how to facilitate the digitisation of SMEs, but leaves this task to future legislation.

Industry 4.0[26]

The Industry 4.0 Trøndelag project consists of three phases:

1) The first phase saw the participation 88 companies/145 persons who were able to converse on the topic with the Business gardens and Incubators.

2) The second phase is in preparation and will aim to increase companies' knowledge of the challenges and opportunities related to Industry 4.0. This phase will allow them to increase their digital maturity and create their first digital strategy.

3) Phase 3 will follow Phase 2 and its purpose will be to help companies implement their strategies and establish a closer interaction between small, micro enterprises and the research and development communities. Although it is still difficult for many companies to develop good knowledge of digital technologies, the companies that participated in the first phase reported that they were satisfied with the program, giving it a score of 4.7 out of 6.

[26] https://www.interregeurope.eu/policylearning/news/9891/smart-societies-interregional-cooperation-boosts-digitalisation-in-rural-areas/?no_cache=1&cHash=b4cce43e5dbc92ee45347867f10360f1

SMEs and micro-enterprises represent in almost all European regions the majority of companies in percentage terms. These companies often have a low digital maturity, and in order to survive the technological transformations of Industry 4.0 they need to acquire basic digital skills and then implement them in their industrial contexts. In Norway this transfer of skills is helped by the widespread presence and expertise of the Business gardens and Incubators, which has made it possible to run industry-specific courses and will help in the implementation phase of the project.

Since the challenges of Industry 4.0 are global challenges, other European regions may find the project interesting. In particular, it could help regions where SMEs and micro-enterprises are the backbone of the economy, and where there are business clusters or other institutions that can help business development and innovation.

The acquisition of digital skills by SMEs is a global challenge that every territory must face if it wants its companies to remain competitive in the face of the great technological changes of the Fourth Industrial Revolution. Promoting the 4.0 transformation of companies is, together with the challenge of environmental sustainability, the most important growth factor for companies in the coming.

SMEs and micro-enterprises often have low digital maturity, and often lack the expertise, time and money to embark on a necessary digitalization process. To achieve the necessary digital development, they need to build basic digital skills and understand how to implement enabling technologies. For SMEs, the problem is often where to find the necessary information and where to turn for expertise and familiarity with Industry 4.0 concepts.

The Industry 4.0 Trøndelag project intends to bring the experience of local business gardens and incubators and incubators to SMEs through the involvement of external experts that allow SMEs to design courses together with skilled and reliable external partners with the aim of supporting companies in their digitization. through the implementation of e-skills managed by competent professionals.
In this way, the project aims to increase standardisation in the development of Industrial 4.0 working methods and to increase cooperation between industries in the region. The aim is also to establish greater interaction between small, medium and micro enterprises and the R&D community, as collaboration between the two communities is often sporadic, whereas greater interaction could help SMEs to more easily address the barriers related to digitalization.

Regional, national and international incubators and networks

Another BP, in the framework of the DigiBEST program[27], is the development of regional, national and international incubators and networks.

The Industrial Development Corporation of Norway (SIVA)[28] is the government body and national instrument that aims to develop strong regional and local industrial clusters through

[27] https://www.interregeurope.eu/digibest/
[28] https://www.regjeringen.no/en/dep/kmd/organisation/etater-og-virksomheter-under-kommunal--og-moderniseringsdepartementet/Subordinate-institutions/The-Industrial-Development-Corporation-o/id85811/

the ownership of infrastructure, investment and knowledge networks, as well as innovation centres.

The objective is the improvement of national innovation infrastructures as well as contributing to the achievement of the political objectives of the Norwegian government in remote areas and, in this context, contributes to freeing the capacity for innovation and increasing wealth creation in all areas and parts of the country.

The local strategies developed show how local cooperation on urban agriculture provides social benefits in many areas at the same time.

The national strategy aims to help focus attention on opportunities offered by urban agriculture and encourage the preparation of regional and local strategies for urban agriculture, the development of knowledge and dissemination, and the development of new businesses and systems. sustainable food

Through a targeted strategy the goal is to facilitate urban agriculture in cities and towns based on the contribution of the rest of the world and the experience of local work on urban agriculture, the government has chosen to contribute to the achievement of this goal through the following three areas of interest:

1. Sustainable urban and local development
2. Greater knowledge of sustainable food production
3. Increase in sustainable value creation and business development

SIVA also, through the possession of national infrastructures for innovation and business development, aims at the implementation of incubators, business parks, innovation companies, as well as innovation centres. This mechanism allows companies to trigger commercial development in companies and in regional commercial and knowledge environments by reducing barriers to establishment where market mechanisms make it particularly challenging as the creation and development of companies in the business environment will be facilitated and knowledge and will link them into regional, national and international networks.

This project of cooperation, sharing and creation of value through regional, national and international networks finds in Trøndelag a possible digital logistics centre and information dissemination through the co-ownership of the European office of Mid-Norway in Trøndelag in Brussels.

Bioeconomy - Forestry – DistriktForsk

Trøndelag accounting for 23% of national agricultural production and exporting a significant amount of food to other parts of the country is the hub of Norwegian agriculture. Conservation of crop and arable land is the key to the county's productive potential which ensures that most of the land is in operation. Trøndelag has an important supply and processing industry and

manufacturing in the primary link thus lays the foundation for great value creation further down the value chain.[29]

Trøndelag is the engine that fuels collaboration across coastal forestry and enables global synergy between county municipalities.

The Trøndelag County Municipality[30] works effectively with the Trøndelag Forest Industry (SiT) and the Forest Industry Cluster was included in the Norwegian Innovation Clusters National Cluster Development Program and achieved Arena status placing Trøndelag in a prime position regarding the possibility of generating value through the bioeconomy.[31]

In this context, the Regional Program for agricultural enterprises of the Count of Trøndelag is inserted, which aims to give a strategic direction for the regional entrepreneurial work in the agricultural area which is closely correlated with the global commercial development work of the region.[32] All this makes it possible to strengthen cooperation between the actors and the coordination of resources and tools as well as being in line with the Ministry of Agriculture and Food on the revision of regional rural development programs. This program combined with the disbursement of funds can allow the development of the business and the strengthening of value creation in agriculture in Trøndelag, contributing significantly to the strengthening of skills and education in agricultural matters as well as the enhancement of continuous training and further training. of agricultural entrepreneurs.

Another key element of this development and operational program is DistriktForsk[33] which aims to mobilize more district companies and district municipalities to use research in their innovation work, increasing the quality of research projects and using the skills available at research institutions and of education. The target group is district companies and district municipalities with little or no R&D experience.

In order to develop and maintain a successful digitization strategy, it is necessary to raise awareness among companies and continuously measure and evaluate the overall level of digitization progress to adapt GPs and evaluate how the support tools provided together with the " increasing the digital maturity of SMEs and micro-enterprises.

Guadalinfo - a social network of inhabitants in Andalusia

Various local initiatives in Spain have involved citizens to identify solutions for the digital gap at the centre of the digital innovation need, as well as actions for the digital inclusion of women, migrants, the elderly, and people with disabilities (i.e., Guadalinfo).

We would like to highlight one of these initiatives, named “Guadalinfo”. This GP is coordinated by Consortium Fernando de los Ríos. Guadalinfo aims to close the digital gap between urban and rural areas and to encourage full integration into the Knowledge Society.

[29]https://www.trondelagfylke.no/contentassets/b91afe6250b342e9b2d73dc270993796/strategy-for-innovation-and-value-creation-in-trondelag.pdf
[30] https://www.trondelagfylke.no/english/
[31] https://www.trondelagfylke.no/english/
[32] https://www.trondelagfylke.no/contentassets/b91afe6250b342e9b2d73dc270993796/strategy-for-innovation-and-value-creation-in-trondelag.pdf
[33] https://www.trondelagfylke.no/distriktforsk

This social network is a wise example of practical initiatives established to provide citizens with training resources, to offer SMEs and microenterprises tools for digital transformation and the development of a model to encourage cooperation between local bodies.

Currently, Guadalinfo platform has more than 1 million users. The region has improved in IT literacy, more specifically in those towns where Guadalinfo is present, benefiting people, entrepreneurs and SMEs in rural areas and those with more difficulties in accessing ICTs. An important fact is that 53% of the users, for example, are women.

Other applicable GP

Open Data

An applicable tool that aims at the transition of digital skills in the population are open data which constitute a central element in the e-Government strategy of Public Administrations: the opening of public information assets promotes and enhances the transparency of administrations, providing citizens with information on public action, with a view to accountability and accountability; in addition, open data activate participatory processes of stakeholders (citizens, associations, businesses) by making public data available online, with a view to promotion and economic development. The availability of data, in fact, favours their reuse in order to allow users to develop functional applications for the improvement of public services provided to the community, on the basis of public sector datasets.

Activating a strategy for the publication of open data means examining mainly three aspects, governance, data quality, the ability of stakeholders to develop business. A PA data intended for publication is the result of a more or less complex chain of processes, during which further intermediate products are generated: "understanding and governing the structure of this workflow is probably the key element of the entire Open data activities. "

As important as an efficient and effective governance of public data, however, is also the production of quality data, in terms of data update frequency, metadata, user license, and other technical requirements, as functional to the production of quality data. The publication of quality datasets is the prerequisite for encouraging their reuse by businesses and citizens and therefore encouraging the development of the territory: it is therefore necessary to pay particular attention to the ways in which users and / or programs are able to access the data, in this sense it is important to involve stakeholders to identify which datasets are of real interest and, offer users the opportunity to interact with the structure that manages the publication of the data to request any additional information, rather than correct the data itself, thus triggering a virtuous process.

This would offer companies the opportunity to develop their training and their business on integrated detailed information capable of raising awareness of the digital culture and business cooperation.

International Organizations[34]

[34] https://www.forumpa.it/pa-digitale/open-data-cosa-sono-come-sfruttarli-e-stato-dellarte-in-italia/

The approach to the so-called governance of the "public affairs" was established internationally in 2009. On the same day of his inauguration and as a first act, the President of the United States, **Barack Obama**, in fact, published a **memorandum on transparency and Open Government addressed to the executives of its administration**. The Memorandum was followed, just over a year later, by the Open Government Directive, focused on the principles of **Transparency, Participation and Collaboration**.

"International"
In 2010, two international reports presented and recommended the Open Government model as a key for the development of the public sector and the productive fabric: the OECD report "**Towards smarter and more transparent government**" and the **UN Report on the state of eGovernment in the world recommended the adoption of open administrative models**.

"European Union"
In Europe, it is the Malmo **Declaration on eGovernment policies** of 2009 that proposes a first path of opening up to open administrative models.

Agrifood

By exploiting the strength of agriculture within the digital transformation, digital culture and international cooperation program, the "made in" model could be included as GP to develop internationally the food excellence of the county of Trøndelag following the path taken by Norwegian Food Foundation to seek to increase diversity, quality and value creation in the County's food production.

9. Findings and conclusions

After the assessment of the main barriers for the digitalization of SMEs described in the RS, as well as those identified during desk and field research, we can move forward and address some conclusions obtained during this process:

1. **Digitization.** The high level of digitization in Norway is well above the European average. Based on the sources of information consulted and the interviews carried out, Norway presents (compared to the European average in the DESI indicators) a high level of digitization both in infrastructures and connectivity. It also happens for supply, demand, skills and use of the Internet by companies and people.

2. **The business network in the Trøndelag region**. The majority in the business network of Trøndelag are small and medium-sized companies (92% with less than 10 employees) and, especially, those located in rural areas have more difficulties or barriers in the development of their level of digitization to improve their competitiveness in these six areas:

- Difficulties in accessing knowledge in management, marketing and technologies for digital development.
- Difficulties in bringing qualified personnel in ICT to rural areas.
- Limited supply in technology for rural areas and small and medium companies.
- Little access to information on tools and instruments of public institutions that facilitate the development of their level of digitization.

- Problems in purchasing public services and difficulties in competitiveness.

3. **Digital development.** Based on these barriers or difficulties that represent an incentive for digital growth in small and medium-sized companies, especially in rural areas, we propose five large blocks or strategic lines solutions:

- Increase access and transfer of knowledge and training in digital skills in the environment of small and medium-sized enterprises and rural areas.
- On one side, develop information and communication programs about the benefits of adding information technologies and digitization. On the other side, add programs about the services and tools available in public institutions to level up their digital maturity.
- Create, facilitate and promote collaborative groups or clusters of small and medium-sized companies that help them gain dimension in their digital development, both in purchases and sales, as well as in the incorporation of talent and qualified personnel.
- Enhance, promote and attract technology-based projects to rural areas.
- Enhance and promote work systems and environments remotely.

These conclusions allow us to draw some recommendations, plan possible objectives and obtain some benefits.

10. Recommendations

Open data

Giving the actors present in the area the opportunity to take advantage of targeted information for their business, for its development and not least to analyse it in all its aspects could be the winning key to increase employment in the area but above all to limit the early mortality of start-ups.

The development of a platform inspired by the methodologies of **continuous integration** and **continuous delivery**, always keeping in mind the needs of the recipients of the information, identifying and constantly analysing the opportunities for optimizing internal processes could lead to identifying working methods and developing applications which allow a significant reduction in content management times and sometimes to completely eliminate dispersive activities and applications that are now obsolete.

Open Data, Big Data, Fast Data, Multichannel: it is a new way of managing public information assets and obtaining **value from data**, exploiting the potential of the web in daily work processes. The information produced is often represented in an "open pit" mine, as it consists of up-to-date data and metadata concerning the territory and which contain an invaluable intrinsic value, which can benefit citizens, ICT companies and the public administration itself; in particular, a European directive (2003/98 / EC)[35] that encourages the publication of open data (Open Data) defines public sector information as "an important raw material for products and services centred on digital content", to be reused for “Exploit its potential and contribute to economic growth and job creation”.

[35] https://eur-lex.europa.eu/legal-content/IT/TXT/?uri=celex%3A32003L0098

The **mission** could be the implementation of a technological support platform, proposing a working method that enables local actors to rationalize the creation and management of content, with the aim of:

- Simplify internal data production processes.
- Generate data prepared for open publication and facilitate the availability of data (Open Data).
- Increase the ability to build and manage large amounts of data, through the construction of large digital archives (Big Data).
- Favour the updating of data in real time, exponentially increasing its potential value (Fast Data).

Through a series of components and interfaces for the automatic retrieval of information, the platform would have a data model that could significantly facilitate the creation and maintenance of information of public interest; this structure must provide for an **in-depth analysis** that takes into account the models currently in use and conducted in collaboration with the local actors, with the contribution of which this model will be perfected and made "for everyone".

The **objectives** of this model provide for the integration of the platform with the pre-existing information systems, bringing significant **advantages** for the actors involved, in terms of:

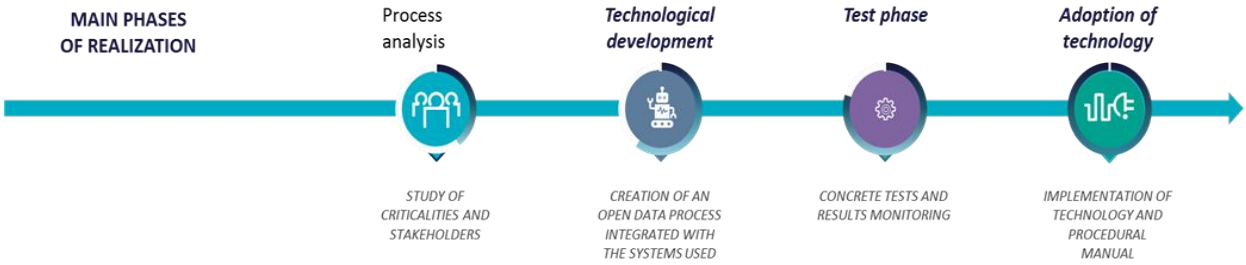
- Reduction of the costs of setting up and maintaining content related to transparency, ensuring the automatic flow of data, from the source to the website.
- Automatic publication of data in open formats (CSV, JSON) in its own catalog, internal to the website of the Entity, shortening the traditional value chain of Open Data.

The **philosophy** of this concept must bring with it the flexibility that allows the actors involved to place the platform at the centre of their information systems, thus achieving the following **objectives at low cost**:

- Simplify any editorial process.
- Prevent data obsolescence.
- Favour the development of multi-channel systems.
- Favour the development of on-line services.
- Encourage the involvement and participation of citizens.

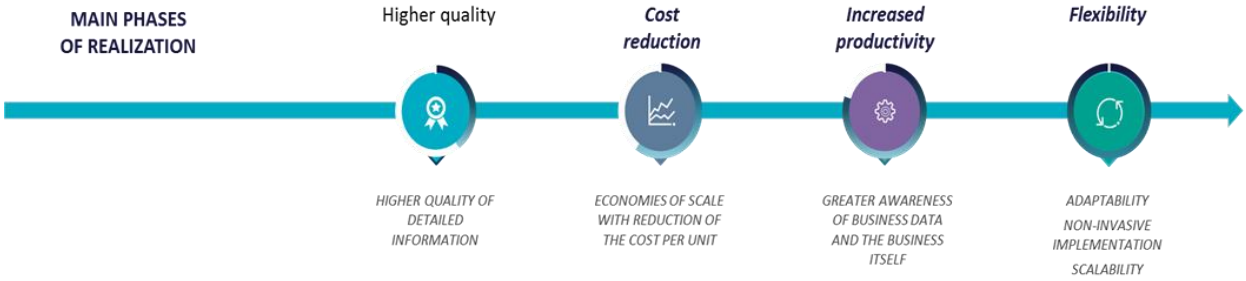
Possible road maps and objectives

Figure 3. Possible road maps and objectives for Open Data



Possible benefits

Figure 4. Possible benefits for Open Data



Agrifood consortium / district

Although, in the general culture of people, Norway is not among the first countries that come to mind when one thinks of good food, but, with the development of the territory based on the quality and excellence of the Trondheim-Trøndelag food product, in addition to boasting 4 restaurants with 1 Michelin star, it was recognized in 2020 European Region of Gastronomy 2022. This development combined with the creation of geographically identified areas, combined with collaboration, collection and sharing of information in perfect synergy, respecting the environment and compliance with shared evaluation objectives, can improve everyone's work with a view to global qualitative and economic growth.

Thinking about quality and the possibility of elevating and qualitatively distinguish the products of the Norwegian territory is not a utopia. Some examples present in the area are full representation such as:

- the Norwegian **Kraftkar**[36] produced by the family company Tingvollost which won the World Cheese Award 2016, a competition in which over 3000 types of Italian and French cheeses were selected.
- the **Dop registration of Gorgonzola**[37], **Parmigiano Reggiano**[38] and **Prosciutto di Parma**[39] took place at the Italian Embassy in Oslo. This recognition identifies a product that complies with a precise production specification and is subjected to controls that guarantee its safety and quality.

[36] https://snl.no/Kraftkar
[37] https://www.gorgonzola.com/notizie-comunicati/registrazione-della-dop-gorgonzola-in-norvegia/
[38] https://www.parmigianoreggiano.com/it/news/la-nazionale-parmigiano-reggiano-vola-in-norvegia-per-difendere-il-titolo-di-miglior-formaggio-a-lat/
[39] http://www.foodandtec.com/it-it/una-targa-di-riconoscimento-dalla-norvegia-per-il-prosciutto-di-parma-dop

- the link between the **island of Røst and the Confraternity of Baccalà di Sandrigo**[40] (Italian town in the province of Vicenza) in the name of the Arctic cod and the typical Italian dish based on Arctic cod (Baccalà alla vicentina).

A cooperation and digitization project combined with Open Data tools would lead to the development of the agrifood and "made in" system with the aim of bringing together SMEs with large companies by creating an iteration based on a series of actions:

- economic;
- techniques;
- environmental;
- qualitative improvement;
- organization of the supply chain;
- of communication;
- development of notoriety;
- and protection of the denomination everywhere in the world.

A consortium or a committee could be fundamental for the market balance between small and large economic realities. The **mission** is to be able to reconcile and collect everyone's information to regulate production and stabilize transformations by actually seeking excellence in the form of a **quality brand**.

All this passes through a **collection and recording of information** relating to production to manage the quality reserve through information tools and data analysis.

A consortium through a **development and excellence policy** should aim to collaborate with companies specialized in sustainable development and in the collection of productive Keys as well as developing an interaction with the university which could increase cultural sensitivity towards an excellent and highly performing production. thanks to the use of new techniques of digitization and optimization of the supply chain at 360 °. The collection and processing of information (open data) and the subsequent publication of information reports would allow the consortium to transfer the knowledge deriving from the research to all consortium members of the supply chain.

To optimize the passage of information and optimize digital and cultural transformation, the consortium should **develop communication actions** aimed at enhancing the variety and diversity of the single product:

- training tools intended for the general public;
- dossier on the foundations of the denomination intended for professionals;
- website, intended for a wider audience;
- public relations and media relations;
- customized visit programs and educational tastings for journalists and experts in the sector.

The **final step** to convert the shares into excellence involves the global defence of the denomination or setting up offices in the reference markets which must contribute to favouring the recognition and defence of the denomination at a regional, national and international level. These branches of the consortium will have the task of reporting the

[40] https://baccalaallavicentina.it/lisola-di-rost/

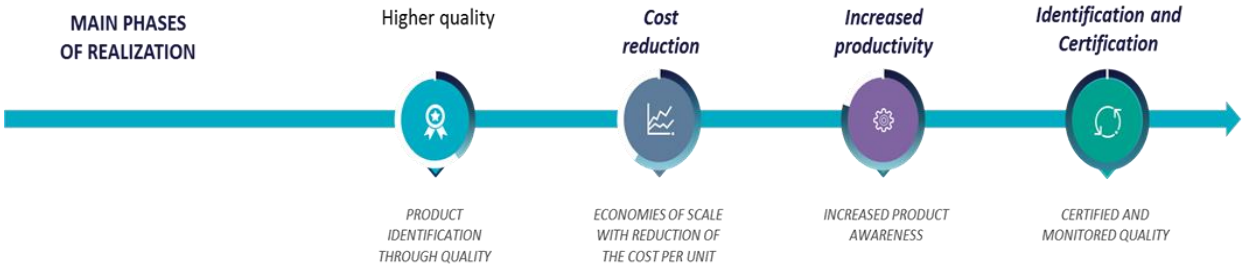
abusive uses of the word "made in ..." so that they cease and do not disperse the goodness of the actions implemented.

Possible road maps and objectives

Figure 5. Possible road maps and objectives for Agrifood

P**ossible benefits**

Figure 6. Possible benefits for Ag



- Social Media, Social Commerce and E-Commerce, since Social Media is used a lot by people, so companies can start selling their products and services through websites, and social commerce platforms such as Instagram, Facebook, and Twitter. Then people can start buying easily from these platforms. But first, companies should have employees who have knowledge in digital marketing or have training courses on how to use these platforms. Useful programs for marketing and management tools such as Constant Contact, Salesforce, SAP, SAGE X3, Microsoft Word etc.
- Training programs is another important area for successful digital transformation, for example, the universities can offer these training where than can be online and face to face training.

APPENDIXES

Appendix 1. *AGENDA Peer Review session, Norway 20th-21st. October.2021*

Wednesday 20.10.2021 - DAY 1				
	Time (Spain)	***Principal Activity***	***Speaker***	***Link for meeting***
1	*08.45*	Peer reviewers and hosting partner (HP) attend a short coordinating/QA session preparing for the event.		https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZGM5NjBjNDgtMzllOC00Njc1LTkyMmYtNjlhZTM1ZTBlMmRm%40thread.v2/0?context=3D%7b%22Tid%22%3a%22b6334d01-13b9-4531-a3a6-532e479d9a1a%22%2c%22Oid%22%3a%2237a6206f-5799-4367-ad88-c118e866fda4%22%7d
2	*09.00*	*Gleny Foslie, Per Erik Sørås, Eistein Guldseth* from Trøndelag County Council		
3	*10.00*	Stakeholders from businessgardens and incubators are available together with *Per Erik Sørås, Eistein Guldseth*		
	11.30	**Coffee break**		
4	*12.00*	*Tina Lihaug Selbæk*, MBA from SIVA, available together with *Eistein Guldseth*, Trøndelag County Council.		
	13.00	**End of session**		

Thursday 21.10.2021 – DAY 2				
1	*13.00*	Presentation and discussion around findings. Session led by the Peer Reviewers. Q&A.	***Eistein Guldseth***	https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZGM5NjBjNDgtMzllOC00Njc1LTkyMmYtNjlhZTM1ZTBlMmRm%40thread.v2/0?context=3D%7b%22Tid%22%3a%22b6334d01-13b9-4531-a3a6-532e479d9a1a%22%2c%22Oid%22%3a%2237a6206f-5799-4367-ad88-c118e866fda4%22%7d
	15.30	**End of session**		

Appendix 2. *Participants and available time slots for interviews/Q&A*

Norwegian hosting partner team including stakeholder's Host for the event, Norwegian project manager and project contact through the whole review process: Eistein Guldseth, eisgu@trondelagfylke.no

Stakeholder	**Gleny Foslie** - *Senior Adviser Gleny Foslie, MSc Trøndelag County Council*
Time Available	**09.00-10.00** (20.10.21)
Summary	Former head of business department in Sør-Trøndelag County Council. Then responsible for regional business development including cooperation/development projects with Business Gardens and Incubators. Broad knowledge about the County Council and cooperating entities on both regional and national level, R&D, Universities. Perspective: Broad, multifaceted, strategy.
Stakeholder	**Per Erik Sørås** - *Senior Adviser, MSc Trøndelag County Council*
Time Available	**09.00-11.00** (20.10.21)
Summary	Working as project developer/manager and strategist within the green sector, BIO- and circular economy. Broad international experience from business development and Interreg projects. Cooperates with Businessgardens, incubators, businesses, R&D, FoU and Universities. Perspective: Engineering, Science, Industrial development.
Stakeholder	**Tina Lihaug Selbæk** - *Senior Adviser, MBA SIVA (Governmental entity)*
Time Available	**12.00-13.30** (20.10.21)
Summary	Working as a Senior Adviser with partnership and strategy development for SIVA – a government owned enterprice, that aot. develop, administers and finance national infrastructure for innovation and industrial development (also businessgardens and incubators). Since 2012 and up to July this year she was CEO for the National Park Businessgarden, and as such also instrumental in realisation of the Industry 4.0 Trøndelag project. Perspective: Management, organisations, partnerships, strategy.
Stakeholder	**Erik Flå** - *Senior Adviser, MSc The National park Businessgarden.*
Time Available	**10-11.30** (20.10.21)
Summary	Business developer and project manager. He works within fields like strategy, economy, business transformation and business establishment. He has broad experience from R&D and project. Development, and has also participated in developing the Industry 4.0 Trøndelag project. Perspective: R&D and Innovation
Stakeholder	**Anne Lein Kristiansen** - *Project manager, MA Tindved Cultural Garden (Businessgarden for creative businesses)*
Time Available	**10-11.30** (20.10.21)
Summary	Works with business consulting, and has a background from R&D as a scientist within agriculture. Broad experience from international business, branding and communication, as a professional photographer and designer. Responsible for a branch in the businessgarden called Spiren. Participant in the Industry 4.0 Trøndelag project. Perspective: Creative businesses.

Stakeholder	**Rasmus Rønning** - *Project manager, MSc/MBA PRONEO (Incubator and consultancy)*
Time Available	**10-11.30** (20.10.21)
Summary	Fields of work include business development, process- and project management, Innovation, digitalisation and automation, and start-ups. He has experience from industrial technology, and has worked with business development in several businesses. Participant in the Industry 4.0 Trøndelag project. Perspective: Business development and technology.

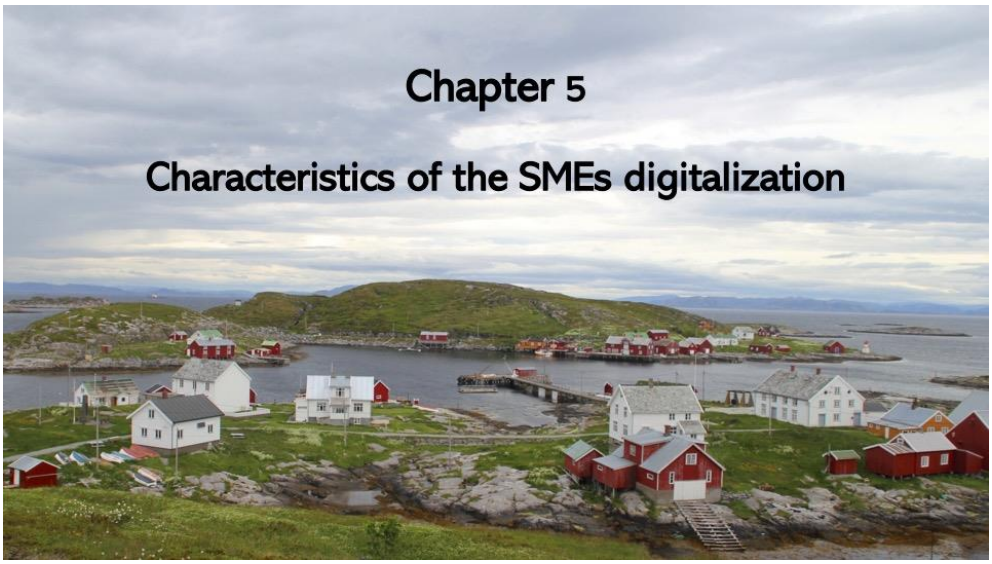
Stakeholder	**Eistein Guldseth** - *Senior Adviser, MSc Trøndelag County Council*
Time Available	**Whole event** 20.-21.10.21
Summary	Main area of responsibility is Digital Transformation strategy and project development/management (for eksempel. Industry 4.0 Trøndelag). Focus on small- and micro businesses. Cooperates also with businessgardens, incubators, R&D/Universities. Main background from private sector, business development and communications. Broad experience from Interreg projects. Project manager for Trøndelag County Council in DigiBEST. Perspective: Sociology, technology/society.

Appendix 3. *Spanish PR Experts presentation*

Trøndelag fylkeskommune

Context

- Coordinate and discuss between Italian & Spanish teams the presentation and discussion around findings will take place today at 13h.
- As agreed in our previous meetings, today, Spanish team are going to focus mainly on Peer Review Report Chapters 5 and 7.
  - **5. Characteristics of the SMEs digitalization**
  - **7. Main barriers for SMEs digitalization and possible solutions**
- In order to be structured replying to key 7 questions suggested by "guidelines for the digibest peer review report", mainly 1 and 3:
  - **CHAPTER. 5 | QUESTION 1. What is the country level of digitalization in EU and national level (source: DESI, national statistics, etc.)**
  - **CHAPTER. 5 | QUESTION 2. What are the PR team's general impressions regarding the level of digitalization of SMEs in the reviewed territory?**
  - **CHAPTER. 5 & 7 | QUESTION 5. Main barriers for SMEs digitalization**
  - **CHAPTER. 7 | QUESTION 6. Possible solutions**



5.1. What is the country level of digitalization in EU and national level (source: DESI, national statistics, etc.)

Trøndelag fylkeskommune

- Regarding to DESI The data shows an upwards trend in the **digitalization and build up of skills in the Norwegian society,** but that businesses are a bit behind in implementing digital tools, while the municipalities, public sector, is developing digital services fast.
- Norway is among the **best performers** regarding basic or above basic digital skills in Europe, the divide among the rural parts and the larger cities in Norway is quite large.
- Trøndelag have a strength in research and development activities, if comparing to the rest of the country and Europe.

Source: DESI

5.2. What are the PR team's general impressions regarding the level of digitalization of SMEs in the reviewed territory?

Trøndelag fylkeskommune

Technology Infrastructure

- **Diagnosis:** High level of digitalization, and a lack in incorporation with technology in small businesses, human capital skills, and competencies.

Public Institutions

- **Diagnosis:** Right development of business digitalization through their entrepreneurial and innovative ecosystem (Trøndelag County Council, SIVA, business gardens and incubators, etc…).
- **Main challenges:**
  1. Attract more companies.
  2. Increasing added value throught enabling environment beyond financial tools

5.2. What are the PR team's general impressions regarding the level of digitalization of SMEs in the reviewed territory?

Trøndelag fylkeskommune

Offers ICT Companies

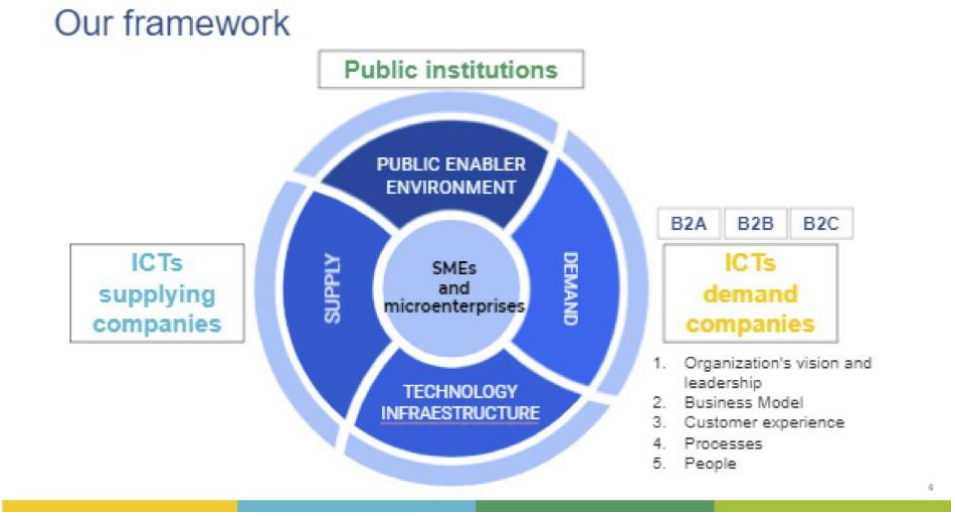
- **Diagnosis:** An efficient and well-structured supply of ICTs companies concentrated especially in large companies and urban environment
- **Main challenges:**

1. A Potential supply in rural areas and small businesses.
2. Improve innovation ecosystem in some sectors such as energy, sustainability, and the circular economy.

Demand

- **Diagnosis:** Lack of knowledge and qualified staffing (digital management and technology) in the SMEs , so they are unable to take advantage of the full potential of new technologies in its business models.
- **Main challenges:**

1. Transfer knowledge to improve skills (Digital Strategy and technology).
2. Bringing talent and skilled, knowledgeable people to small companies.



Trøndelag fylkeskommune

7.1. Main barriers for SMEs digitalization

- SMEs don´t have enough knowledge (digital management and technology) in the SMEs, so they have difficulties to take advantage of the full potential of new technologies in its business models
- There is a lack of capacity of SMEs to attract qualified people in new technologies to SMEs or rural areas
- Public institutions need to increase encourage and attract more technology-based projects in rural environments and managed by SMEs
- Limited offer in the technology in the rural environment and small businesses

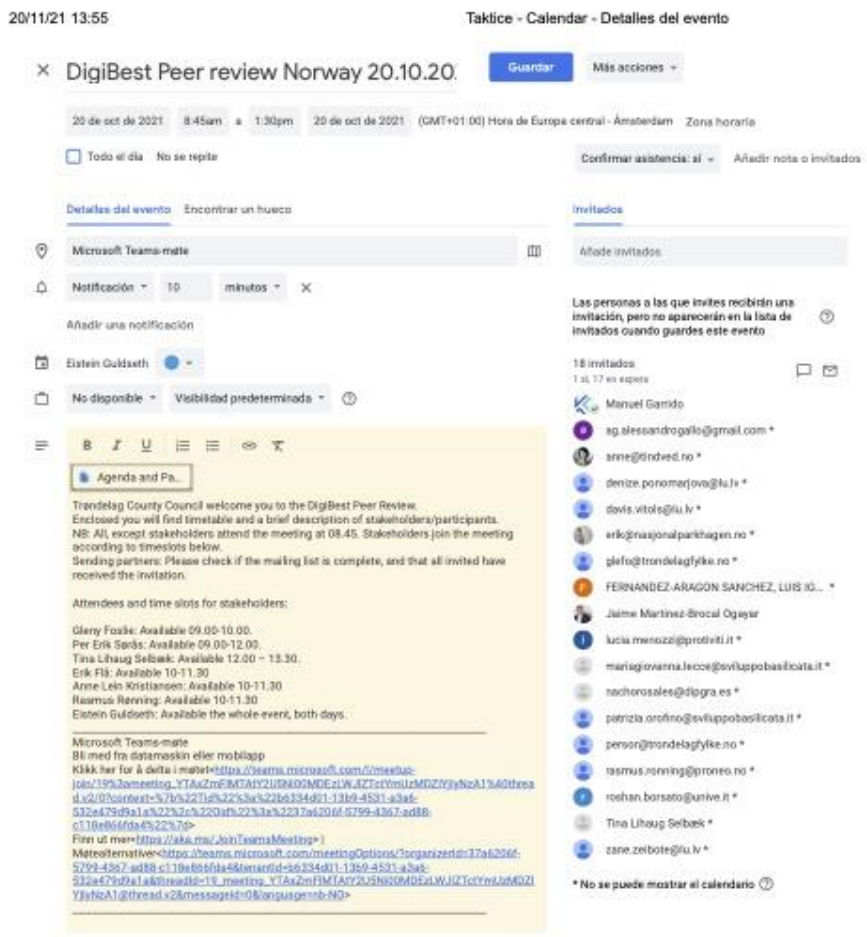
7.2. Possible solutions

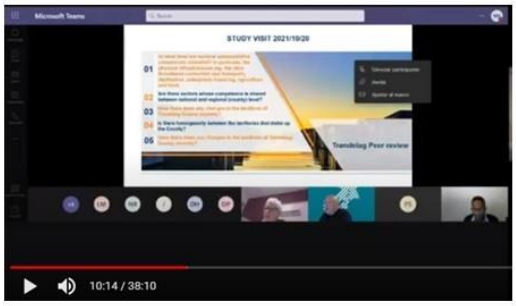
1. Education and Transfer knowledge
2. Improve communication about:
   2.1. Technologies benefits for SMEs
   2.2. From Public Institutions to SMEs related to services and tools availables
   2.3. From ICTs suppliers to SMEs
3. Clusters or hubs to aggregate or cooperate SMEs
4. Subside digital projects in rural areas
5. Promote virtual/remote work environments

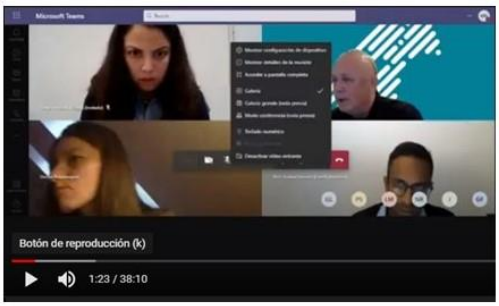
Appendix 4. *Italian PR Experts presentation*

Appendix 5. *Peer Review Invitation and Online Meeting Sessions - Day 1 & Day 2*

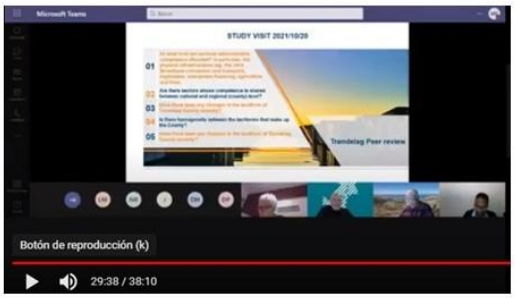
WEDNESDAY 20.10.2021 - DAY 1

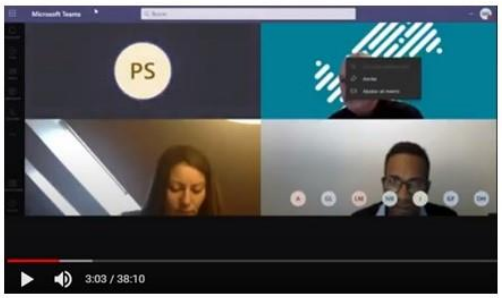




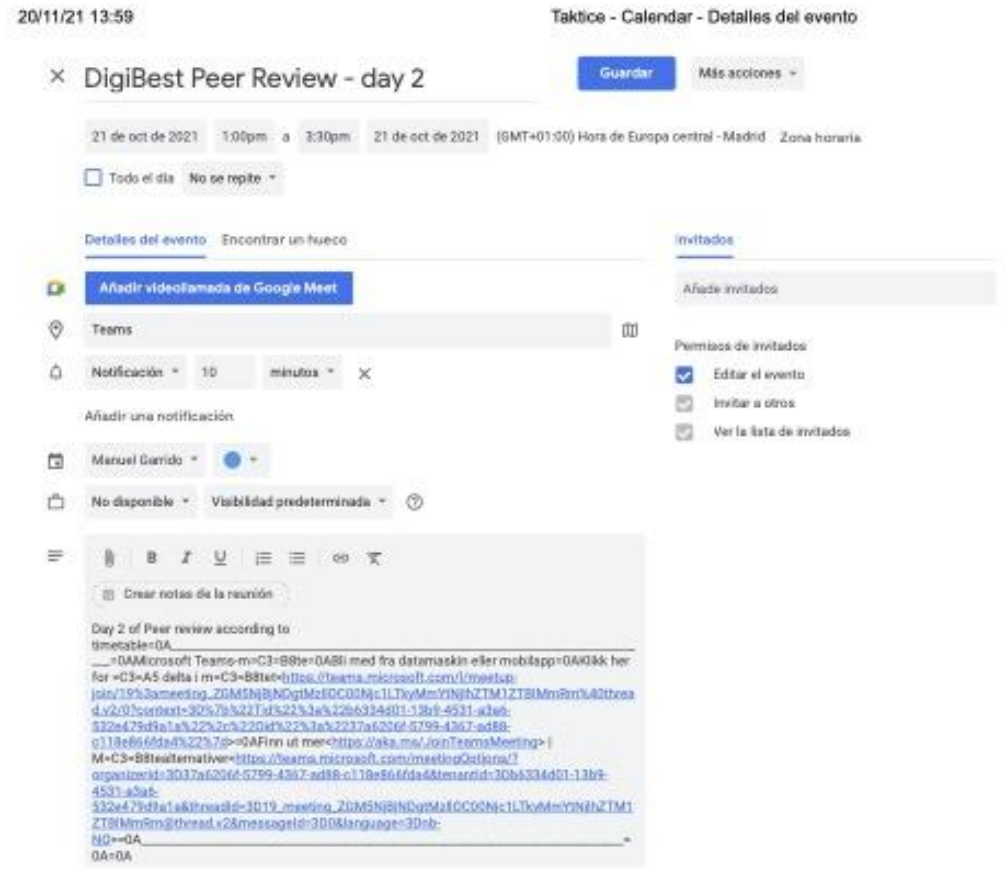


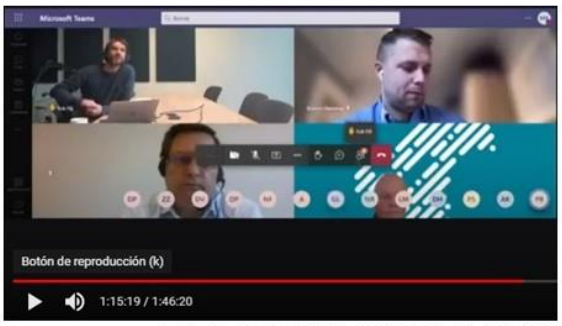
PEER REVIEW ONLINE MEETING SESSION 20th. OCTOBER.2021



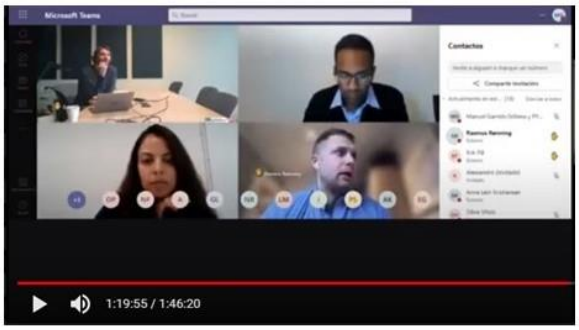


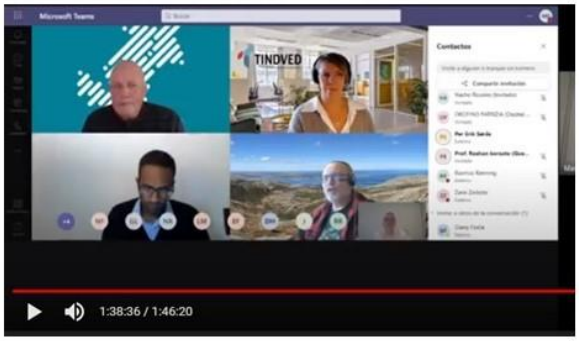
THURSDAY 21.10.2021 – DAY 2





PEER REVIEW ONLINE MEETING SESSION 21ST. OCTOBER.2021





Appendix 6. *Participant list for Trøndelag peer review 2021*

PARTICIPANT LIST FOR TRØNDELAG PEER REVIEW 2021			
REPRESENTATIVES	**ENTITY**	**COUNTRY**	**POSITION**
Representative of Ministry of Environmental Protection and Regional Development of the Republic of Latvia 1	Ministry of Environmental Protection and Regional Development of the Republic of Latvia	LATVIA	DigiBEST Project Manager
Representative of Trøndelag County Council 1	Trøndelag County Council	NORWAY	Project Manager
Representative of Trøndelag County Council 2	Trøndelag County Council	NORWAY	Project Coordinator
Representative of Sviluppo Basilicata spa 1	Sviluppo Basilicata spa	ITALY	DigiBEST Project Management
Representative of Sviluppo Basilicata spa 2	Sviluppo Basilicata spa	ITALY	DigiBEST Finance management and administrative coordination
Representative of Protiviti Italia 1	Protiviti Italia	ITALY	DigiBEST PR expert: Senior Consultant
Representative of Protiviti Italia 2	Protiviti Italia	ITALY	DigiBEST PR expert: Senior Consultant
Representative of Protiviti Italia 3	Protiviti Italia	ITALY	DigiBEST PR expert: Junior Consultant
Representative of Ministry of environmental protection and regional development of the Republic of Latvia 2	Ministry of environmental protection and regional development of the Republic of Latvia	LATVIA	Project Coordinator
Representative of Ministry of environmental protection and	Ministry of environmental protection and regional development of the Republic of Latvia	LATVIA	Head of Digital Skills Promotion Project Division
Representative of University of Latvia 1	University of Latvia	LATVIA	DigiBEST Advisor Partner
Representative of University of Latvia 2	University of Latvia	LATVIA	DigiBEST Advisor Partner
PR Spain Expert Representative 1	Jaime Martínez Brocal Ogáyar	SPAIN	DigiBEST PR expert: Senior Consultant
PR Spain Expert Representative 2	Manuel Garrido Hormeño	SPAIN	DigiBEST PR expert: Senior Consultant
PR Spain Expert Representative 3	Doaa AM Herzallah	SPAIN	DigiBEST PR expert: Junior Consultant
Granada Council Sending Partner (Representative 1)	Luis Ignacio Fernandez-Aragón Sánchez	SPAIN	DigiBEST Project Coordinator
Granada Council Sending Partner (Representative 2)	Ignacio Rosales	SPAIN	DigiBEST Project Management

Appendix 7. *PR field research findings*

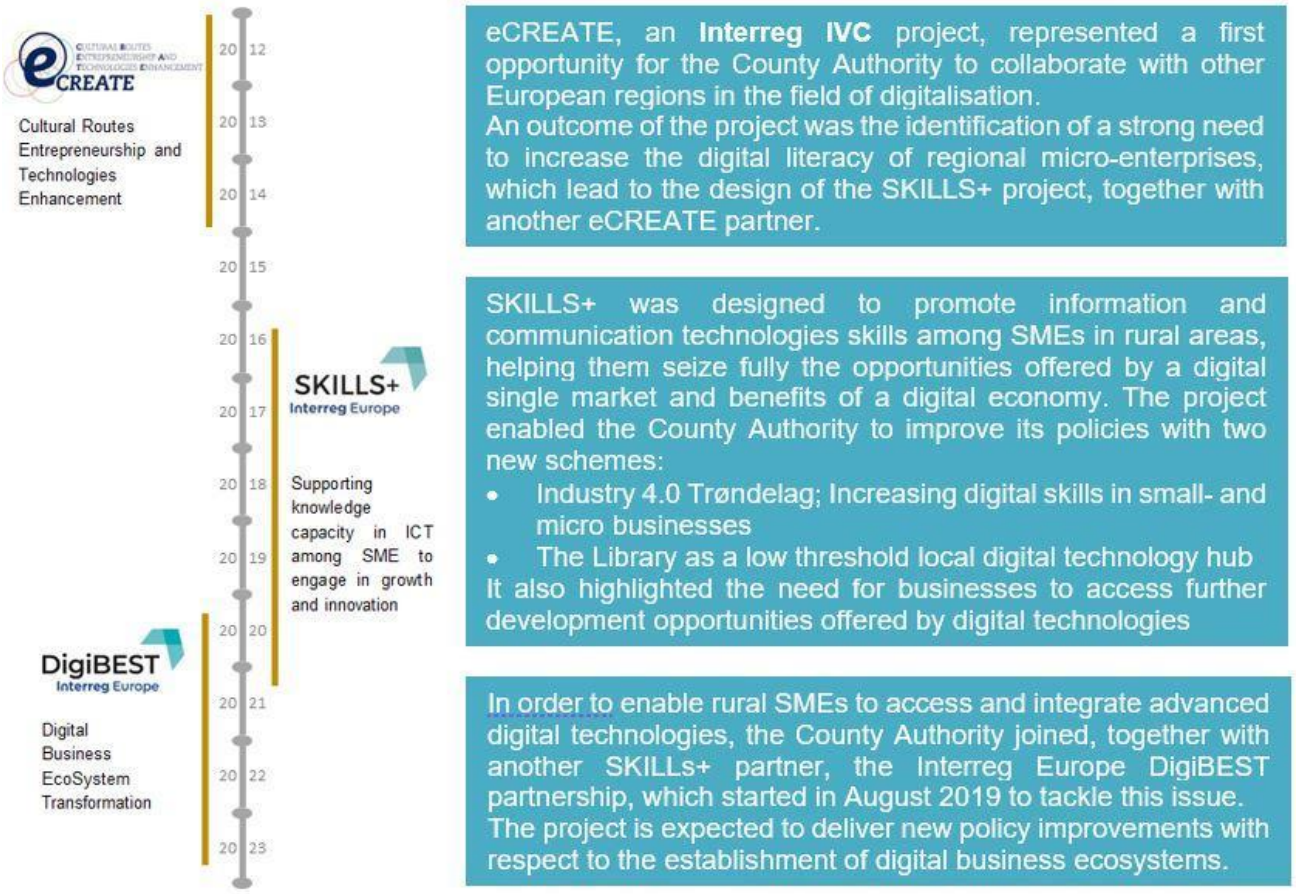
Activity	Where and when	Stakeholders met	Policies and actions discussed
Discussion	Online meeting 20/10/2021	County of Trondelag	General Policy framework including project Industry 4.0 Trondelag, Operative Q&A about stakeholders and interviews
Interview	Online meeting 20/10/2021	Senior Adviser Tina Lihaug Selbæk, MBA SIVA (Governmental entity)	Financial Strategies
Interview	Online meeting 20/10/2021	Senior Adviser Gleny Foslie, MSc Trøndelag County Council	Budget of current programs
Interview	Online meeting 20/10/2021	Project manager Anne Lein Kristiansen, MA Tindved Cultural Garden (Businessgarden for creative businesses)	The analysis of the agrifood supply chain
Interview	Online meeting 20/10/2021	Senior Adviser Gleny Foslie, MSc Trøndelag County Council	The role of partnership
Interview	Online meeting 20/10/2021	Project manager Rasmus Rønning, MSc/MBA PRONEO (Incubator and consultancy)	The role of the start-up in the economic framework of Norway
Interview	Online meeting 20/10/2021	Senior Adviser Per Erik Sørås, MSc Trøndelag County Council	Circular economy and industrial symbiosis
Interview	Online meeting 20/10/2021	Project manager Anne Lein Kristiansen, MA Tindved Cultural Garden (Businessgarden for creative businesses	The potential value of the Made in Norway Label
Interview	Meeting 20/10/2021	Coordination meeting with the Granada Council	Discussion about the situation of Norway and Trondelag
Interview	Online meeting 25/10/2021	Coordination meeting with the Granada Council	Discussion about possible solutions that we can offer for the SMES Digitalization from Identification of the best practices of Spain.

Appendix 8. *Desi score comparison: Spain, Italy and Norway (2020)*

Indicator	Comparison
Connectivity	**Spain's** overall connectivity score has further improved but the rank remains 5th in the DESI 2020. The country performs particularly well when it comes to VHCN coverage. The deployment of FTTP networks continues to be an important feature of the Spanish digital market, covering 80% of households, above the EU average of 34%. Despite the significant differences between urban and rural areas, rural FTTP coverage in Spain reaches 46% of households, significantly above the rates of both EU rural and total FTTP coverage (21% and 34% respectively) [8]. **While Italy** with an overall connectivity score of 50.0, Italy ranks 17th among EU countries. Overall fixed broadband take-up increased by one percentage point compared to 2018. The at least 100 Mbps fixed broadband take-up increased from 9% in 2018 to 13% in 2019. Mobile broadband take-up (89 subscriptions per 100 people) remained stable in comparison to 2018 [9]. However, **Norway** is better than Spain and Italy in connectivity.
The human capital	in **Spain** ranks 16th in the EU on human capital, rising in the ranking since the previous year. Basic digital skill levels remain slightly below the EU average[8]. While **Italy** in 2019, Italy dropped two places and now ranks last in the EU on the Human Capital dimension [9]. Though, **Norway** is also better than Spain and Italy with a 65.9%.
Use of internet services	**Spain** increased since the previous year, with the country performing above the EU average. People in Spain are keen to carry out a range of online activities in line with the rest of the EU, such as making video calls, reading news online or using social networks. Compared to the EU average, the highest ranked activities are taking online courses and playing music, videos and games online. 60% of Spanish internet users use online banking (against the EU average of 66%). 64% of Spaniards shop online, against the EU average of 71%. 15% of Spanish internet users sell online, below the EU average of 23%. These results may indicate a lower perceived level of trust of the internet, which may be holding back Spanish internet users from drawing the full benefits of online services [8]. In **Italy** remains well below the EU average. Its ranking remained the same as in the previous report, 26th out of 28 Member States. The low use of internet services reflects the low level of digital skills. 17% of people living in Italy have still never used the internet; this is almost double the EU average and places the country 23rd in the EU. The most popular online activities are listening to music, watching videos or playing games, followed by making video calls, reading news and using social networks. Doing a course online and selling online are the least popular activities. The indicators remained overall stable over the last year. None of the online activities monitored scored above the EU average, except for video calls, used by 65% of internet users (above the EU average of 60%). This is the only activity that increased significantly since the previous year (from 47% in 2018) [9]. Nevertheless, in **Norway** data show that also they are better than Spain and Italy in this indicator as well.

Integration of digital technology by business	**Spain** ranks 13th among EU countries. Spanish businesses take advantage of the opportunities presented by digital technologies in line with the EU average. 43% of businesses have an electronic information sharing system in place (against the EU average of 34%) and 11% of Spanish businesses access big data analysis (against 12%). 16% of companies use the cloud (18% in the EU) and almost one third have at least two social media accounts to promote their products and services. 19% of SMEs sell online (slightly above the EU average of 18%), though only 7% of all SMEs sell across borders to other EU countries and 9% of turnover is generated by online sales [8]. Even though, in **Italy** ranks 22nd in the EU on the Integration of digital technology. There has been almost no progress on the above indicators, except for the use of social media. The percentage of enterprises using social media increased to 22% (close to the EU average of 25%). The use of cloud services remained stable (used by 15% of Italian enterprises) and just below the EU average (18%). Despite a decrease between 2017 and 2019, the use of electronic information sharing remains higher among Italian enterprises than the EU average (35% of Italian enterprises, against the EU average of 34%). The gap between Italy and the EU is widening regarding e-commerce. Only 10% of Italian SMEs sell online (well below the EU average of 18%), 6% sell across border to other EU countries (8% in the EU), and they generate on average 8% of their turnover from online sales (11% in the EU) [9]. Also, with this indicator data from DESI show that **Norway** is better than Spain and Italy with a 59%.
Digital public services	**Spain** ranks 2nd in the EU on digital public services, well above the EU average. Spain rose by two positions in the ranking compared to the previous year, worth highlighting. This is the chapter in which the country performs best. Indicators show a high level of online interaction between public authorities, citizens and businesses. Spain performs very well on the open data indicator, ranking 2nd with 90% of the maximum score. 82% of Spanish internet users actively engage with e-government services, 6 percentage points more than the previous year. In 2019, Spain continued to improve its rating on pre-filled forms to reach 80 points, well above the EU average of 59. Spain also scored above the EU average on the availability of e-government services for businesses, with 93 points, ranking 11th. Lastly, Spain scored 96 points on online service completion, ranking 8th in the EU and 6 points above the EU average[8]. **Italy** ranks 19th in the EU on Digital public services, as it did in 2019. This places the country below the EU average, even though Italy performs well regarding the offer of digital services and open data. Italy outperforms the EU on online service completion, digital public services for businesses and open data. The low overall ranking of the country is due to the low level of online interaction between public authorities and the general public. Only 32% of Italian online users engage actively with e-government services (compared with the EU average of 67%)[9]. This figure even decreased between 2018 and 2019. But in **Norway** for this indicator is less than Spain but it is better than Italy.

Appendix 9. *Projects on digital business development in Trøndelag*



Source: Interregeurope website[41]

[41] https://www.interregeurope.eu/policylearning/news/9891/smart-societies-interregional-cooperation-boosts-digitalisation-in-rural-areas/?no_cache=1&cHash=b4cce43e5dbc92ee45347867f10360f1

Appendix 10. *Feedback on how Industry 4.0 Trøndelag can be further developed*

Industri 4.0 Trøndelag started from the **assumption** that the fourth industrial revolution (Industry 4.0) is strongly characterized by the use of a series of new technologies that are changing the way we live, work and relate to each other. The Trøndelag County initiative, carried out in close synergy with the initiatives and funding developed at national level (in particular by SIVA and Innovation Norway), saw incubators and Business Gardens in the region as protagonists. In the following table, you can find the main points summarised:

The Need	The **need** that the County has identified in planning the initiative is i) the low digital maturity of most of the companies in Trøndelag (among which 92% have less than 10 employees) and ii) the lack, in the SMEs, of the own resources [42](skills, time and money) necessary to undertake a path of digitization.
The Objectives	Can be summarized as follows: • increase the level of digital competence in 400 micro and small enterprises (through training, industry understanding processes and R&D pilot projects over a period of 3 years); • inspire SMEs to digitally transform their activities and collaborate with other realities; • help companies recruit staff with the right skills; • Start and develop digital development projects in companies; • Standardize and develop services, knowledge pipeline and working methodology in a new business area for commercial gardens/incubators; • obtain the opportunity to participate in pilot/R&D projects with highly specialized partners and with the national funding institution Innovation Norway;
The Methods	The **methods** of carrying out the initiative are such that we have focused on a strong operational support of five business gardens and two business incubators present in the region. In addition, as can be seen from the list of contact points and referents on the County website, there has been a clear attempt to "sectorize" the approaches of business gardens and business incubators that are indicated as referents for certain product sectors (wood industry, construction and construction, tourism, aquaculture, trade, agri-food-circular economy, creative industries, small food industry). At first glance, these realities appear as "collectors of instances / service providers".[43]

[42] https://www.interregeurope.eu/policylearning/news/9891/smart-societies-interregional-cooperation-boosts-digitalisation-in-rural-areas/?no_cache=1&cHash=b4cce43e5dbc92ee45347867f10360f1
[43] https://www.trondelagfylke.no/industri4.0trondelag

Appendix 11. *Norway's National Strategy for a Green, Circular Economy*

Good practice general information	
Title of the good practice	**Norway's National Strategy for a Green, Circular Economy**
Category of the good practice	Please choose one of the categories: ☐ Awareness rising and collaboration; ☐ Empowering tools; ☐ Sustainability instruments; ☐ Enabling environment; ☑Other
Organisation in charge of the good practice	Norwegian Ministry of Environment
Description	
Short summary of the practice	On 16 June 2021, Norway published its National Strategy for a Green, Circular Economy. The document is mainly based on the Circular Economy Action Plan published by the European Union in March 2020, and a great deal of the policy proposals included in the Strategy effectively refer to the EU's present or suggested measures to support the circular economy. The first part of the Norwegian National Strategy focuses on production and product design. The second one introduces issues of consumption by individuals as well as public authorities through public procurement. The third part concerns the need to create a toxic-free environment. Finally, the fourth and last one narrows down on different distinct topics that the Strategy refers to as 'value creation' such as construction and buildings, the bio-based sector, batteries and mobility, and digitalization.
Resources needed	The Strategy makes use of local and regional resources and industry structures throughout the country in developing a circular economy. (Trattandosi di una strategia e non di un progetto, non sono specificate e quantificabili le risorse finanziarie necessarie per l'implementazione)
Timescale (start/end date)	June 2021 – (Non trovo una data di termine temporale del documento, trattandosi di una strategia nazionale può essere che non se sia indicata alcuna)

Evidence of success (results achieved)	The Norwegian government has been able to involve and enhance the contribution of the financial and business sector in the formulation of the Strategy. The consultancy firm Deloitte was commissioned to carry out an external review to provide part of the knowledge base for the document, and delivered three reports. These reports come from a meeting involving more than 50 key representatives from 12 different sectors, interest groups and research institutes, and written input from almost 90 different stakeholders. Furthermore, the business sector has worked systematically on the preparation of roadmaps for green competitiveness in various branches. Furthermore, the Strategy fits well into the framework of European plans and strategies on the circular economy and the environment, and into the framework of the various environmental targets that the country must achieve. For example, the document goes hand-in-hand with the gradual reduction of CO2 emissions on the way to a Norwegian low emission society by 2050.
Potential for learning or transfer	The Norwegian National Strategy may be of interest to other territories as it may provide an enlightening example of how to involve the business sector in drafting a strategy on implementing circularity. It also provides a good example of a document that fits well into the framework of European strategies on the topic. Furthermore, in the same way as the Norwegian strategy, other national strategies must also start from the assumption that the ultimate goal is not simply the implementation of circularity, but the achievement of environmental objectives. Circularity is only a tool, and the Norwegian Strategy rightly emphasises this. Finally, given Norway's already excellent position with respect to environmental targets and SDGs, the different starting situation must be taken into account when transferring the strengths of the Norwegian Strategy to other countries.

Appendix 12. *Industry 4.0 Trøndelag - Digital transformation in SME and micro-enterprises*

Good practice general information	
Title of the good practice	**Industry 4.0 Trøndelag - Digital transformation in SME and micro-enterprises**
Category of the good practice	Please choose one of the categories: ☐ Awareness rising and collaboration; ☑Empowering tools; ☐ Sustainability instruments; ☐ Enabling environment; ☐ Other
Organisation in charge of the good practice	Trøndelag County Council
Description	
Short summary of the practice	The current technological development, referred to as the Fourth Industrial Revolution (Industry 4.0), is heavily impacting Norwegian society. This development is characterised by a large number of new technologies and trends that are changing the way we live, work and relate to each other. Moreover, 92% of the companies in Trøndelag have less than 10 employees. These small companies often have low digital maturity and lack their own resources to embark on a necessary digitalization process. With the Industry 4.0 Trøndelag project, the Trøndelag County Council, together with the County's Business gardens and Incubators (Næringshager og Inkubatorer), wants to offer digital skills development courses for companies through a series of workshops. Each Business Park and Incubators will carry out skills courses for a specific industry sector. The aim is to increase the digital maturity of small businesses to help them overcome the significant technological challenges of the future.
Resources needed	The funding/financial resources used will amount to NOK 10.950.000. www.trondelagfylke.no/vare-tjenester/naring-og-innovasjon/digital-utvikling/digitalt-naringsliv/tilskuddsordning-industri-42.0-trondelag,
Timescale (start/end date)	1st January 2019 - 1st January 2022
Evidence of success (results achieved)	The Industry 4.0 Trøndelag project consists of three phases. 1) The first phase saw the participation 88 companies/145 persons ~~w~~who were able to converse on the topic with the Business gardens and Incubators.

	2) The second phase is in preparation and will aim to increase companies' knowledge of the challenges and opportunities related to Industry 4.0. This phase will allow them to increase their digital maturity and create their first digital strategy. 3) Phase 3 will follow Phase 2 and its purpose will be to help companies implement their strategies and establish a closer interaction between small, micro enterprises and the research and development communities. Although it is still difficult for many companies to develop good knowledge of digital technologies, the companies that participated in the first phase reported that they were satisfied with the program, giving it a score of 4.7 out of 6.
Potential for learning or transfer	SMEs and micro-enterprises represent in almost all European regions the majority of companies in percentage terms. These companies often have a low digital maturity, and in order to survive the technological transformations of Industry 4.0 they need to acquire basic digital skills and then implement them in their industrial contexts. In Norway this transfer of skills is helped by the widespread presence and expertise of the Business gardens and Incubators, which has made it possible to run industry-specific courses and will help in the implementation phase of the project. Since the challenges of Industry 4.0 are global challenges, other European regions may find the project interesting. In particular, it could help regions where SMEs and micro-enterprises are the backbone of the economy, and where there are business clusters or other institutions that can help business development and innovation.

Appendix 13. *Regional, national and international incubators and networks*

Good practice general information	
Title of the good practice	**Regional, national and international incubators and networks**
Category of the good practice	Please choose one of the categories: ☐ Awareness rising and collaboration; ☐ Empowering tools; ☐ Sustainability instruments; ☐ Enabling environment; ☑Other
Organisation in charge of the good practice	Trøndelag County Council
Description	
Short summary of the practice	Another BP, in the framework of the DigiBEST program[44], is the development of regional, national and international incubators and networks. The Industrial Development Corporation of Norway (SIVA)[45] is the government body and national instrument that aims to develop strong regional and local industrial clusters through the ownership of infrastructure, investment and knowledge networks, as well as innovation centers. The objective is the improvement of national innovation infrastructures as well as contributing to the achievement of the political objectives of the Norwegian government in remote areas and, in this context, contributes to freeing the capacity for innovation and increasing wealth creation in all areas and parts of the country. Through a targeted strategy the goal is to facilitate urban agriculture in cities and towns based on the contribution of the rest of the world and the experience of local work on urban agriculture, the government has chosen to contribute to the achievement of this goal through the following three areas of interest: 1. Sustainable urban and local development

[44] https://www.interregeurope.eu/digibest/

[45] https://www.regjeringen.no/en/dep/kmd/organisation/etater-og-virksomheter-under-kommunal--og-moderniseringsdepartementet/Subordinate-institutions/The-Industrial-Development-Corporation-o/id85811/

	2. Greater knowledge of sustainable food production 3. Increase in sustainable value creation and business development The local strategies developed show how local cooperation on urban agriculture provides social benefits in many areas at the same time. The national strategy aims to help focus attention on opportunities offered by urban agriculture and encourage the preparation of regional and local strategies for urban agriculture, the development of knowledge and dissemination, and the development of new businesses and systems. sustainable food.
Resources needed	
Timescale (start/end date)	
Evidence of success (results achieved)	SIVA also, through the possession of national infrastructures for innovation and business development, aims at the implementation of incubators, business gardens, innovation companies, as well as innovation centers. This mechanism allows companies to trigger commercial development in companies and in regional commercial and knowledge environments by reducing barriers to establishment where market mechanisms make it particularly challenging as the creation and development of companies in the business environment will be facilitated and knowledge and will link them into regional, national and international networks. This project of cooperation, sharing and creation of value through regional, national and international networks finds in Trøndelag a possible digital logistics center and information dissemination through the co-ownership of the European office of Mid-Norway in Trøndelag in Brussels.
Potential for learning or transfer	SMEs in European regions represent the majority of companies characterized by a low digital maturity, need to acquire basic digital skills and then implement them in their industrial contexts. In Norway, this transfer of skills is favored by the widespread presence and skills of the Business Gardens and Incubators, which made it possible to carry out specific courses in the sector and will help in the implementation phase of the project.

Appendix 14. *Bioeconomy - Forestry* – DistriktForsk

Good practice general information	
Title of the good practice	**Bioeconomy - Forestry –** DistriktForsk
Category of the good practice	Please choose one of the categories: ☐ Awareness rising and collaboration; ☐ Empowering tools; ☐ Sustainability instruments; ☐ Enabling environment; ☑Other
Organisation in charge of the good practice	Trøndelag County Council
Description	
Short summary of the practice	Trøndelag accounting for 23% of national agricultural production and exporting a significant amount of food to other parts of the country is the hub of Norwegian agriculture. Conservation of crop and arable land is the key to the county's productive potential which ensures that most of the land is in operation. Trøndelag has an important supply and processing industry and manufacturing in the primary link thus lays the foundation for great value creation further down the value chain. Trøndelag is the engine that fuels collaboration across coastal forestry and enables global synergy between county municipalities. The Trøndelag County Municipality works effectively with the Trøndelag Forest Industry (SiT) and the Forest Industry Cluster was included in the Norwegian Innovation Clusters National Cluster Development Program and achieved Arena status placing Trøndelag in a prime position regarding the possibility of generating value through the bioeconomy. In this context, the Regional Program for agricultural enterprises of the Count of Trøndelag is inserted, which aims to give a strategic direction for the regional entrepreneurial work in the agricultural area which is closely correlated with the global commercial development work of the region. All this makes it possible to strengthen cooperation between the actors and the coordination of resources and tools as well as being in line with the Ministry of Agriculture and Food on the revision of regional rural development programs. This program combined with the disbursement of funds can allow the development of the business and the strengthening of

	value creation in agriculture in Trøndelag, contributing significantly to the strengthening of skills and education in agricultural matters as well as the enhancement of continuous training and further training. of agricultural entrepreneurs.
Resources needed	
Timescale (start/end date)	
Evidence of success (results achieved)	Another key element of this development and operational program is DistriktForsk which aims to mobilize more district companies and district municipalities to use research in their innovation work, increasing the quality of research projects and using the skills available at research institutions and of education. The target group is district companies and district municipalities with little or no R&D experience.
Potential for learning or transfer	In Norway, this transfer of skills is favored by the widespread presence and skills of the Business Gardens and Incubators, which made it possible to carry out specific courses in the sector and will help in the implementation phase of the project.

Appendix 15. *Guadalinfo - a social network of inhabitants in Andalusia*

Good practice general information	
Title of the good practice	*Guadalinfo - a social network of inhabitants in Andalusia*
Category of the good practice	Please choose one of the categories: ☐ Awareness rising and collaboration; ☑Empowering tools; ☐ Sustainability instruments; ☐ Enabling environment; ☐ Other
Organisation in charge of the good practice	Consortium Fernando de los Ríos https://www.consorciofernandodelosrios.es/
Description	
Short summary of the practice	What is the problem addressed and the context which triggered the introduction of the practice? Guadalinfo is aimed to close digital gap between urban and rural areas and to encourage full integration into the Knowledge Society. How does the practice reach its objectives and how it is implemented? Guadalinfo shows the opportunities that the use of ICTs offers by carrying out activities for entrepreneurs, SMEs and the community in general. Some activities are dedicated to SMEs, which aim to develop entrepreneurial capacities and increase self-esteem as vital assets for adapting to change. The promotion of virtual entrepreneurial initiatives and support for start-ups aim to produce entrepreneurs capable to manage the continuity of their initiatives, while courses equip entrepreneurs with the skills, they need to operate in the work place. Guadalinfo has also worked to increase the value of website creation by SMEs. The former can thus experience the benefits of trading online while the latter can raise their profile and value. Guadalinfo Centres have created a network for information, communication and learning to generate projects and initiatives among citizens and thereby stimulate the abilities to transform and improve the local areas. - Who are the main stakeholders and beneficiaries of the practice? Guadalinfo is aimed at different ages and groups to train digital skills, improve professional and entrepreneurial skills, promote the digital transformation of SMEs and employment options, access electronic administration, make

	optimal use and secure technology or generate social innovation projects. The offer of activities of the centres is adapted to different ages, circumstances and needs of its users.
Resources needed	The budget for Guadalinfo is about EUR 19,3 million. Guadalinfo has about 800 centres rooted in Andalusia with 800 Local Innovation Agents.
Timescale (start/end date)	2001 – ongoing
Evidence of success (results achieved)	Guadalinfo developed 70.000 activities in 2017, 90.000 in 2018 and 100.000 in 2019. About 10.000 entrepreneurs and 5.000 SMEs participated in one or more activities related to digital transformation in 2019. Currently platform has more than 1 million users. The region has improved in IT literacy in the Guadalinfo towns, benefiting in particular people, entrepreneurs and SMEs in rural areas and those with traditionally more difficulties in accessing ICTs. 53% of the users, for example, are women.
Potential for learning or transfer	The Spanish government (through the public entity RED.ES) launched a grant program to promote the Digital Transformation of SME. This good practice is easily transferable to any region or EU member state. The entity responsible of the programme, through a general invitation, prepares a list of providers of digital advice services: Registry of Advisors. For the incorporation to this Registry of Advisors, an application must be submitted. This programme is an efficient way to transfer funds to SMEs to initiate their digital transformation process. So, SMEs can obtain a specialized and personalized advice service that is specified in the realization of a Digitalization Plan for the incorporation of ICTs in SME processes. Any SME which wants to participate in the program must send all the required documentation in the call.