



Roadmap for Digital Transformation in the Upper Styria Region



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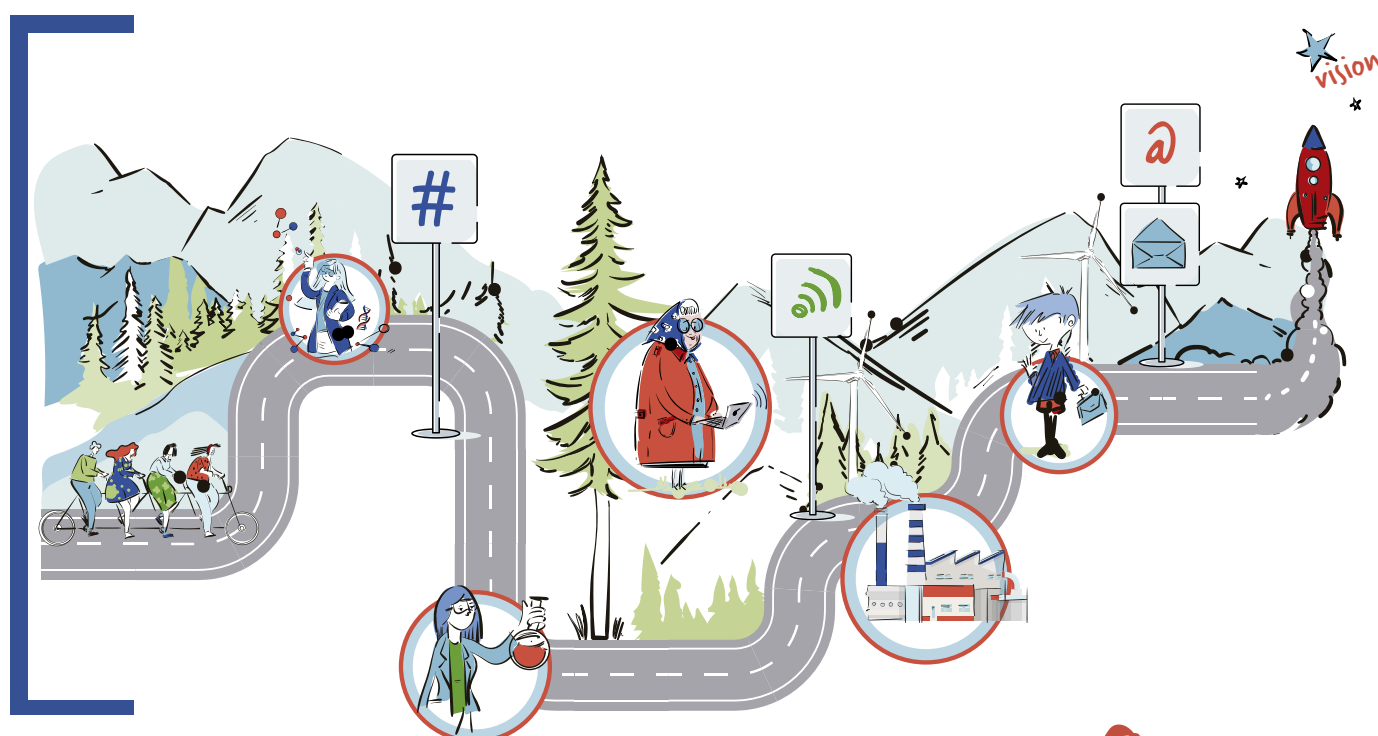
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Introduction to the Roadmap

The roadmap at hand is a strategic developmental plan for the next five years, letting the Upper Styria region be able to undergo transformation to become a digital region. This roadmap was created together with stakeholders already operating in the region or those who are seeking to operate in the region. Among the groups of stakeholders are representatives active in the fields of science, research, professional training, the economy, the public sector and society. In order to observe the development trajectory from different points of view, care was taken during the entire roadmap process to pay attention to topics such as diversity, and consider forward-looking, responsible principles. In addition to that, the current situation in the region was taken into consideration. In order systematically support this approach, the concept of “Responsible Research & Innovation” (RRI) favoured by the European Commission was factored into all of the steps. In the roadmap at hand, issues relating to general and scientific professional training, communication with members of the public and equality issues emerged. These issues mentioned are the core elements of RRI. The initiatives and the support for were developed in the EU funded projects DigiTeRRI (GA Nr. 873010). The Montanuniversitaet Leoben, the Zentrum for angewandte Technologie and the Standort and Marketing Bruck an der Mur GesmbH are involved on a regional level.

Further information on the project can be found at www.digiTeRRI.



Where are we today?

The Profile

Each roadmap starts by taking stock of the region. Current documents already accessible, professional literature and initiatives were screened; information on the activities and competencies of those based in the region were collected and an analysis of the stakeholders was carried out. All of the information was compiled and a profile with regard to the digitalisation status in the region was created.

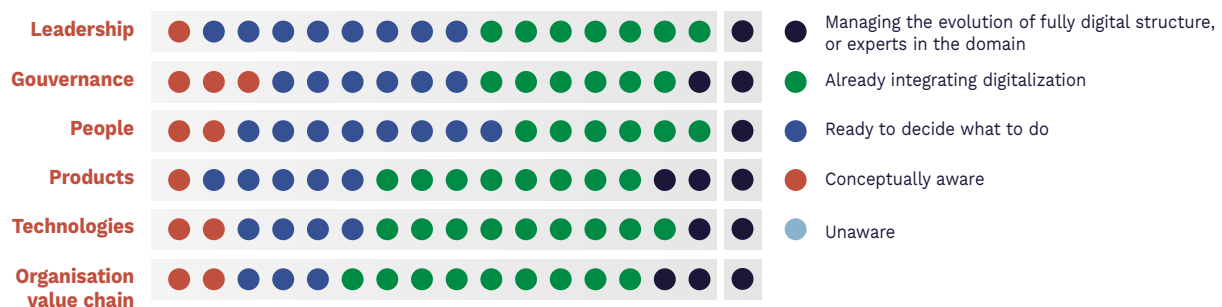


Figure 1: Status of the digitalisation in individual fields

Figure 1 attests to the region already having good conditions for a transformation to digitalisation. The assessment was made on the basis of the analysis of 16 initiatives in the region. The green fields stand for a high level in relation to digitalisation. Approx. 50% of the initiatives analysed demonstrate that digital solutions have already been well established. Approx. 30% of the initiatives are currently at the introductory stage and a minority of initiatives are only in the early stages. Patent analyses and publication analyses have already shown there to be an emphasis in the fields of mechanical engineering and automation. The current strategy for economic affairs up to 2025 has declared digitalisation to be a strategic field of action for Styria. Plans for introducing broadband fibre glass cabling to the public domain have nearly been completed and their implementation is being accelerated. What is less noticeable are promotional offers for members of the public in the fields of professional training and the digital services in public spaces. Many of the initiatives currently being promoted are largely unknown to the stakeholders. Lighthouse projects are lacking and the demand for further applications for digital solutions persists. The manufacturing industry has thus already begun implementing digitalisation solutions.

Small and mid-sized companies show a tremendous need to catch up in the field of digitalisation, yet they are endeavouring to make progress. They are on the lookout for experts who can support them on this journey. The job market is lacking in specialized personnel to accelerate the move to digitalisation in companies.

The Upper Styria region is not attracting many digital natives to establish their living and working spaces here; in contrast, many young people continue to choose to leave the region. The demographic shift towards an ageing population among the regional population remains at a constant.

After taking stock, creating a vision is the second step in developing a roadmap. The vision is the framework for the future of the region which is to continue beyond the roadmap phase. The vision was prepared working together with select stakeholder representatives in a core group and with other representatives in the region. **Figure 2** shows the visualisation of the vision that was worked out.



DigiTeRRI GA n° 873010.

What do the objectives for Transformation look like?

Some main fields emerged from the vision and have been consolidated into so-called domains.

The following domains were generated for the DigiTeRRI Roadmap:

- Knowledge and skills
- Networks & collaboration
- Technology
- Infrastructure
- Culture and values
- Leadership, business & market
- Communication

Representatives from all of the groups of stakeholders were involved within the scope of defining goals.

Together with the stakeholders in the region, more than 35 sub-goals were worked out within the domains defined. These goals should be realised within the next 5 years. They were then analysed and consolidated into thematic groups. The objectives that were developed are to be achieved throughout the entire period and thus require a consistent target tracking of initiatives by defining milestones.

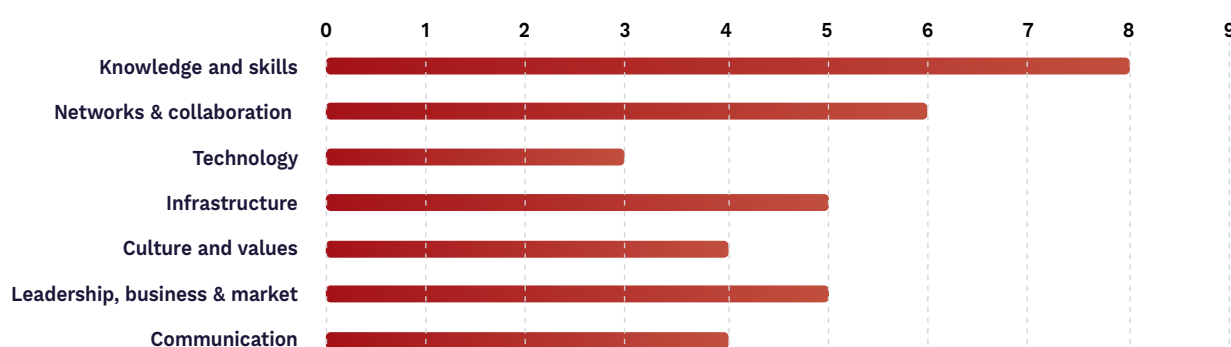


Figure 3: The number of goals in each respective domain

Taking the core topic / domain **Knowledge & skills** into consideration, Figure 3 shows that eight goals have been defined. The domain **Networks & collaboration** has six goals. Five goals were defined for both core topics **Leadership, business & market** and **Infrastructure**. Four goals each were defined for **Culture and values** and for **Communication**. Three goals were worked out for the core topic of **Technology**.

The most number of goals have been defined in the domain **Knowledge & skills**. The objectives are: developing proposals, extending knowledge and acquiring skills on digitalisation topics, applying digital solutions and using digital devices. The accessibility of new needs-oriented professional training programmes that will be offered in line with the requirements of respective stakeholders – from an elementary level up to mid-career professional training – is to be viewed as a general objective. Further development of the proficiency level of working with digital solutions has been advancing rapidly; adapting the training opportunities throughout the entire period of the next five years seems to be necessary. There is a need for training at all age and qualification levels. The professional training programmes created are to correspond to the profile of requirements that has been created for competencies required (as role models) for the region. The job profiles to be created are meant to offer incentive for young people and provide transparency on future career opportunities. Gender aspects are to be integrated when creating new job profiles; incentives and optimum working conditions are to be created particularly with women in mind.

Networks & collaboration is the second most important domain for expediting regional transformation. This domain is comprised of forming networks, establishing a promotion of cooperation initiatives and exchange up to the joint realization of measures. Quite often these goals of this domain are in interaction with other domains such as knowledge and skills, science and the economy. The results of this collaborative work are summed up in creating a comprehensive platform. This platform combines all of the digital proposals and competencies in the region and operates as a central hub that will keep emphasis on the topic of digitalisation in the region at a constant. In addition, the development of projects and initiatives from and with members of the public will be intensified through this platform and realised with the support of the public authorities. The goals mentioned in the values and culture or communication and regional marketing domains also show evidence of close cooperation with the objectives in networks, cooperation and collaborative work.

In general, the domain **Infrastructure** has an effect on all of the other domains, since any progress in digitalisation is only able to be achieved with the help of a modern and well-developed infrastructure. The success of any of the measures carried out within the scope of realisation depends on the infrastructure available. The goals in the field of infrastructure consist of the large-scale expansion of the terrestrial fibre glass cabling network and the related connections to a 5G high performance network and the implementation of applications for companies as well as those in the private and public sectors. The goal is basically to utilise digital solutions and to boost a product range in public space.

A further objective in the **Infrastructure** domain is the provision of regional and supra-regional resources from the public and private authorities so that the measures that are developed are effective and are able to be realised swiftly.

Interface with other domains is not only found within the accessible networks, but also in the data available (open data) with a higher quality and in business models that utilise this data commercially for the benefit of society. Initial concrete ideas on how to implement this might be found in a warning system for severe weather and environmental catastrophes as particularly are found in the Alpine locations in the region.

The target definitions in the domain of **Leadership, business & market** and **Infrastructure** serve in the region as a motor for growth, value creation and boosting the regional level of awareness. One of the central elements is the economy, and companies that have demonstrated a great commitment to the implementation of digital solutions. They stand for innovation and advanced development, surviving on the global market. A manifold and thriving economy makes the region attractive for those moving to the region, as an appealing workplace environment is able to be offered. The leadership role in the field of digital solutions applications has to be recognisable outside of the region as well. No company may be excluded from accessing digital solutions. Commercial enterprises also have to be fit for digital solutions and such business approaches. All of the core topics extend to the entire time period for observing the progress of the roadmaps.

The target domain **Culture and values** is equivalent in importance than communication and regional management. Even if the domain culture and values only has few objectives to be taken into consideration, it is the key for implementing all objectives of the other domains. If the goals developed are not found within the scope of regional values, achieving those objectives is doomed to failure. The change in culture and values brought about by digitalisation means that all of the stakeholders and everyone in the region will face a great challenge. It will interfere with our lives and will shape a large part of our social interactions, privately as well as professionally. Since the digital world represents the Great Unknown for many people, we tend to approach it with caution. Any geographic barriers that already exist in collaborative work will vanish, allowing the chances found in supra-regional collaborative work to come to light. This, however, requires being open to other cultures and ways of working in a very short time. Women will have to experience a much greater sense of equal opportunity. Professional training programmes in MINT subjects will initiate new and manifold opportunities and will have to be designed to be attractive for women and families. Continuous advanced development and tapping into new fields with knowledge and learning has to be classified in the region as a valuable commodity and has to be strengthened.

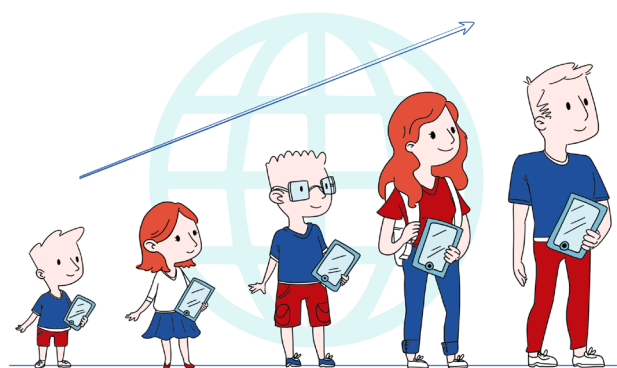
All of the efforts and activities in the region in the field of digitalisation have to be accompanied by a regional marketing scheme to ensure perceptibility and visibility. The domain **Communication** has to reflect the values, the culture, the strengths and development potential, needs and opportunities in the region in every aspect. In order to put emphasis on the appeal of a digitalised region, supplementary initiatives need to be introduced to highlight the desired image. One central goal is the creation of a comprehensive interactive platform for the region, meant for stakeholders from outside the region, which places the region's self-image in the best possible light.

Measures for achieving the objectives

Measures have been proposed in order for the objectives to be able to be achieved in five years at the latest. Some 50 measures were analysed and thematically classified in the descriptions below.

Digital Transformation in the Field of Education

The purpose of education and training is to be clearly defined and communicated to all those involved. Digital competencies are to be built upon, starting in kindergarten and continuing through to the university level. Some



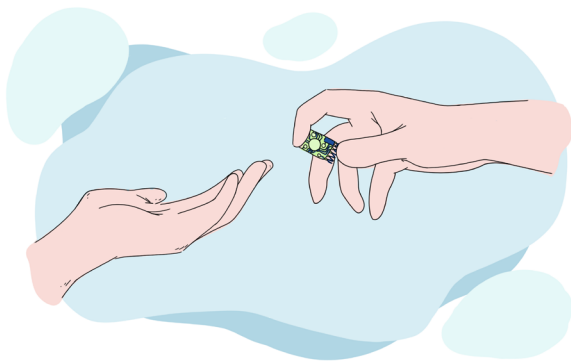
projects have already been initiated utilising labs designed for pupils and to support teaching staff. Interdisciplinary work among the various subject areas is to be intensified. Professional training is to be designed to meet the needs of new job profiles. Networking amongst the training facilities and an exchange of knowledge with all those affected are essential objectives here. A transnational exchange in online training is to be boosted throughout the region. The educational opportunities and initiatives are to be communicated widely and made known throughout the region as well.

Cities, Municipalities, the Public Sector

Cooperation among cities, municipalities and rural regions with regard to digitalised solutions is to be intensified. A regular exchange on the current state of the art, best practises and project ideas is to take place. Realising standardised, user-friendly leading projects in the region is something to strive for. Comprehensive consulting services with respect to financial assistance and access to what is needed are to be offered to members of the public, start-ups and companies in the region. Financial assistance for digitalisation projects has to be made available.



Technology and Knowledge Transfer



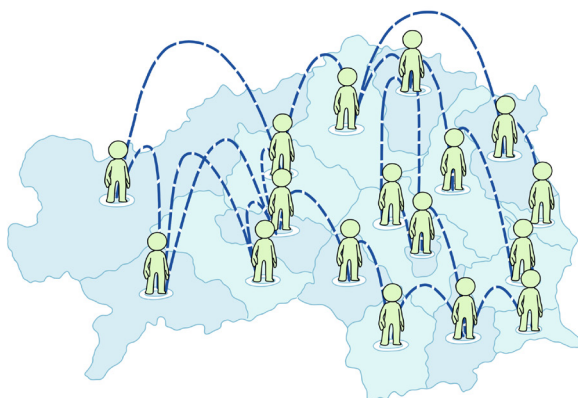
Private individuals, companies and the public sector should have access to e-services and be able to utilise them accordingly. New business models will be generated with the help of new technology such as artificial intelligence. Research-oriented lighthouse projects will be implemented in the region and will contribute to progress being made throughout.

Creating Work-environments and countering the Lack of skilled Labour

The needs of those in the workforce, and the state of the art as well, have been subject to constant change. Employers and the public sector need to react to this accordingly and place a well-functioning digital infrastructure at everyone's disposal. The parameters for all of this need to be set in order to encourage much needed highly qualified experts in the field of digitalisation to settle and stay in the region. New digital job profiles have to take gender needs and society's urgency for work-life-balance into consideration. Thus, girls and women will be empowered into gaining a foothold in technical professions.



A universal Platform for Networking



A new multi-functional platform for exchange is to be established for all of the stakeholders involved. The platform is to serve as a visualisation of the present situation in various fields and is to counteract any bottlenecks in the job market or in the training sector by providing the information needed. Deriving from that, the individual stakeholders will be able to gain access to various initiatives. Some of the activities might be the presentation of events or projects relevant to citizens. Data already available should be linked with real-time information. It might be conceivable for those living and working in the region to be given the latest information on avalanche, storm or flood warnings. Any e-services the region might need have to be developed and be made available to those living and working in the region.

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