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JRC99720

EUR 27668 EN

PDF ISBN 978-92-79-54228-2 ISSN 1831-9424 doi:10.2791/745099 LF-NA-27668-EN-N

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How to cite: Ciampi Stancova, K. and J. Sörvik (2015); **Assessment of strategies for ICT investments using European Structural and Investment Funds: reflections from experts and practical examples**. European Commission, Joint Research Centre, Institute for Prospective Technological Studies, Spain. EUR 27668 EN; doi:10.2791/745099.

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Abstract:

**Assessment of strategies for ICT investments using European Structural and Investment Funds: reflections from experts and practical examples**

DG Connect and DG JRC have been supporting MSs and regions in fostering the ICT dimension of planned investments under ESIF. As part of this activity, assistance has been given to seven EU regions. This paper provides a systematic summary of the experts' findings and discusses critical issues pointed out in the expert reports and at an expert workshop.

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## Executive summary

### Policy context and key conclusions

In the 2014–2020 programming period of the European Structural and Investment Funds (ESIF), European Union (EU) Member States (MSs) and regions have to comply with a number of *ex ante conditionalities* (EACs). Depending on the type of information and communication technology (ICT) investments that they want to make, MSs and regions are required to develop a Digital Growth Strategy (DGS), a Next-Generation Network (NGN) plan or a Research and Innovation Strategy for Smart Specialisation (RIS3).

Since 2013, DG Connect and the DG Joint Research Centre - Institute for Prospective Technological Studies (IPTS) have jointly provided support to regions in preparing their strategic documents and fostering the ICT dimension of planned ESIF investments.<sup>1</sup> One line of activity has been to provide external expert assistance to regions and MSs. In their work, the experts have identified a number of critical issues related to the strategy development for the 2014–2020 programming period. As part of this activity, assistance has been given to seven EU regions: Abruzzo, Apulia, Italy; Burgundy, France; Łódzkie, Poland; Sicily, Tuscany, Italy; and West Romania, Romania.

This paper provides a systematic summary of the experts' findings and discusses critical issues pointed out by the experts in their reports and at an expert workshop for mutual learning.<sup>2</sup>

### General observations

Many of the identified issues are specific to each region, but a comparative analysis of the reports indicates issues that are shared among two or more regions:

- Issues that are critical for the development of strategic documents for ICT investments include the following:
  - Many regions have a low level of administrative capacity and lack proper capabilities to develop strategic documents for ICT investments.
  - Many regions are not sufficiently aware of the requirements for strategy development.
  - There are problems in the coordination of activities carried out between different governance levels when developing strategic documents for ICT investments.
  - Many regions experience challenges with stakeholder involvement and the entrepreneurial process of discovery.
- The experts have also experienced a number of challenges in carrying out their assessment work:
  - They have experienced ambiguities in the assessment methodology, which created uncertainties about how to carry out the work.
  - They have experienced difficulties in accessing relevant sources of data.

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<sup>1</sup> At the IPTS, this activity has been run by the Smart Specialisation (S3) Platform, which was set up in 2011 to support regions, MSs and European Commission services in developing and implementing RIS3 (see <http://s3platform.jrc.ec.europa.eu>).

<sup>2</sup> In April 2014, DG Connect and DG JRC (S3 Platform) organised a workshop in Brussels, Belgium, to train experts in specific technical areas on how to evaluate strategic documents and how to face challenges and barriers in this work.

- There have also been issues related to multi-level governance and areas of competences, which created challenges in engaging with the right stakeholders.

### **Specific observations**

The experts have created assessments reports with suggestions for how the regions could improve the development of their strategies; below, we list the main points from these reports:

**Abruzzo** – the expert recommended that the regions develop the analysis of the regional capabilities for specialisations more deeply, for two main reasons: (1) to improve the analysis that could lead to better understanding of the area of investments and (2) to allow for more active engagement of stakeholders. The expert also recommended that the region open up the strategy development process to civil society, and reinforce international cooperation to enhance it.

**Apulia** – the expert recommended that the region enhances the regional analysis by collecting more data on both the supply and the demand sides for ICT. In addition, the region ought to develop further the local capabilities to assess state aid and to implement more effective business models for the delivery of next-generation local access networks.

**Burgundy** – the expert pointed out that the NGN plan needs to be based on a cost-benefit analysis of different solutions and possible impacts on growth and employment. The region should also explore further available digital services and tools, as well as entrepreneurs' needs, to advance the creation of suitable digital platforms. In the domain of culture and tourism, the entrepreneurial process of discovery needs to be improved to allow for the identification of domains of cultural activities.

**Łódzkie** – the expert encouraged the region to work more intensively with ICT for regional development. In addition, he suggested that the region should prepare a thorough analysis of regional strengths, potential, opportunities and weaknesses, as well engage actively with regional stakeholders to better understand their needs and demands.

**Sicily** – the expert proposed that all regional actors, especially those linked to digital growth and ICT, should be included in the steering group. The analysis could be enriched by benchmarking with other regions in Europe, which could lead to better identification of possible synergies and complementarities in the value chains. It was also suggested that the region be more active in exploring collaborative opportunities in smart specialisation with other more distant EU regions.

**Tuscany** – the expert recommended that a stakeholders' platform be set up, including it in the future governance structure for the regional Operational Programme (OP). The region could also make better use of the outcomes of consultations and working groups, and capitalise on national activities.

**West Romania** – the experts recommended that the regional representatives work in two different but interconnected ways: one technical – to create a regional digital agenda – and the second one political – to coordinate the regional development agency's activities and the central government (multi-level governance). The key regional actor that drives ICT efforts in the region is the regional development agency, which could play the role of initiative taker and coordinator, and could interface with the different stakeholders.

## **Recommendations**

Considering the major issues in the development of strategies for ICT investments using ESIF, the following recommendations have been made:

1. Regions ought to enhance their strategic ICT capabilities.
2. Regions need to invest more in coordination with other governance levels, policy domains and sectors.
3. Regions need to update their knowledge of ESIF requirements.
4. Regions need to make greater effort in institutionalising stakeholder involvement in the strategy design and implementation processes.
5. Regions need to better balance the planned investments among different ICT objectives.
6. The European Commission should provide training and targeted support to enhance administrative capabilities in the MSs and regions.

To improve the support provided by experts, there is a need to:

1. reduce the ambiguities in the assessment methodology, and improve the tools and the training of the experts;
2. better prepare the experts by providing more supportive documentation beforehand;
3. ensure that the regions have the right competencies;
4. further clarify the nature and the extent of the support provided by the European Commission to the regions.

## 1. Introduction

In the 2014–2020 programming period, the European Union (EU) Member States (MSs) and regions – in order to receive European Structural and Investment Funds (ESIF) for information and communication technology (ICT)-related activities – have had to develop strategies and define planned investment. The two main strategy types are a Digital Growth Strategy (DGS) or a Next-generation Network (NGN) plan. Planned ICT investments are envisaged under the Operational Programmes (OPs) Thematic Objectives 2 (TO2), where TO2.1 relates to DGSs and TO2.2 relates to NGN plans and broadband investments. However, as ICT covers a large number of cross-cutting technologies and ICT investments will also be carried out in other fields, other strategies and TOs also relate to ICT, specifically research and innovation (TO1) and small and medium-sized enterprise (SME) support (TO3), which require the development of a Research and Innovation Strategy for Smart Specialisation (RIS3) and/or a Small Business Act. ICT investments are therefore guided by many strategic documents.

Different strategies should all meet the *ex ante conditionalities* (EACs) and they can be submitted as a single document or as a framework of documents. For example, for a DGS, the EAC mandates that the strategy needs to include information on budgeting and prioritisation actions, an analysis of balancing support for demand and supply of ICT, indicators to measure progress and an assessment of the need to reinforce capacity-building in public administrations. Investments in broadband are guided by an NGN plan, for which the EAC mandates a need for an economic analysis of existing private and public infrastructure and planned investments, as well as a description of sustainable investment models that enhance competition and stimulate private investment. In addition, non-funding measures, such as better coordination of planning, rules for sharing physical infrastructure and cost-reduction measures, have to be included.

DG Connect and DG JRC<sup>3</sup> have been supporting MSs and regions in fostering the ICT dimension of planned investments under ESIF. One of the targeted support activities that the Smart Specialisation (S3) Platform has provided is the support of an external expert. This support is intended for assisting regional policy makers and administrations directly in the regions. An independent expert, knowledgeable of ICT, development policies and EU policies, was the one responsible for carrying out the assessment of regional ICT strategies.

The assessment work was done with the use of an assessment grid<sup>4</sup> that followed a step-wise approach for evaluating DGSs and NGN plans. It contains a number of questions related to different steps of strategy development, priority setting, stakeholder involvement, monitoring and evaluation, etc. It also covers specific elements of EACs for

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<sup>3</sup> As smart specialisation was a challenging new concept for research and innovation policy and as investments in research and innovation under the ESIF were likely to increase notably, in 2012 DG Regio and DG JRC set up the Smart Specialisation Platform in the Institute for Prospective Technologies (IPTs) to provide guidance and hands-on support for regions and MSs to develop their RIS3s. It supports regions, MSs and other Commission services through (1) the development of guidance material, such as the Digital Agenda Toolbox (<http://s3platform.jrc.ec.europa.eu/dae-toolbox>) and the RIS3 guide (<http://s3platform.jrc.ec.europa.eu/s3pguide>), (2) the arrangement of workshops and peer reviews, (3) support to Commission services in the assessment of Partnership Agreements, Operational Programmes and RIS3s, (4) online tools, such as the Eye@RIS3 (<http://s3platform.jrc.ec.europa.eu/s3-tools>) and (5) the provision of experts that assess the regions' strategy work and how it might improve.

<sup>4</sup> [http://s3platform.jrc.ec.europa.eu/documents/10157/334751/Update\\_assessment-grid\\_final\\_7-7-2014.pdf](http://s3platform.jrc.ec.europa.eu/documents/10157/334751/Update_assessment-grid_final_7-7-2014.pdf)

digital growth (TO2.1) and NGN (TO2.2). The eight steps of the assessment grid follow the structure of the guidance presented in the Digital Agenda Toolbox:<sup>5</sup>

- context of the Strategic Policy Framework;
- analysis;
- governance;
- priorities;
- policy mix;
- synergies with other programmes and funds;
- monitoring and evaluation;
- recommendations.

The experts assessed regional strategic documents and carried out interviews with local stakeholders. In some regions, the DGS or NGN plan was not yet developed and/or there were no references to digital growth in the RIS3. In such cases, the experts had to use other sorts of regional/national sources that, at that time, could be considered as the framework for the strategy development. Most of the expert recommendations were provided as inputs on how to prepare more concise and integrated documents, assess and capitalise on regional strengths and create value for the region. The expert work thus made an important contribution to the understanding of regional capacities, potential and opportunities in terms of ICT deployment and use.

To strengthen this support activity, DG Connect and the S3 Platform organised a workshop in April 2014 to train experts from different specific technical areas on how to evaluate ESIF strategic documents and how to face challenges and barriers in this work. This paper provides a systematic summary of the expert findings and discusses critical issues pointed out by the experts during their field work and expert workshop in Brussels, Belgium.

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<sup>5</sup> <http://s3platform.jrc.ec.europa.eu/dae-toolbox>

## 2. Commonalities

In the assessment work of the seven EU regions, the experts have identified a number of critical issues related to strategy development. Although many of the issues are specific to each particular region, a comparative analysis of the expert reports shows that some issues are common to two or more regions. The common issues are summarised in this chapter and each regional case is discussed in Chapter 3.

### 2.1 Critical issues in the development of ICT strategies

#### 2.1.1 Low administrative capacity and a lack of capabilities

A common observation by the experts was that the regional authorities were lacking key knowledge and capabilities to develop proper strategies. In particular, they were lacking knowledge of the Digital Agenda for Europe (DAE) and ICT sectors in general, which further hampered the quality of the possible outcome.

In many regions, the strategies were being designed by public officers with limited up-to-date knowledge of the sector, and with little access to ICT expertise. There was a lack of both appreciation of the digital contribution to other industry values (e.g. transportation, health care, education, financial services, professional services, manufacturing) and knowledge of newer and potentially enabling digital services (e.g. cloud, e-Government, big data, e-Learning, future internet, internet of things (IoT), smart cities). There was also still too much focus on tangible (and often costly) infrastructure (e.g. one region spent a very large share of financial resources on fibre to the home (FTTH) networks in comparison with the investments in ICT uptake and services). Furthermore, the strategies were being designed without knowledge of the final budget, thus leaving many good ideas underfinanced or without any financial resources.

- Low general awareness of the DAE, including good practice and strategies for regional innovation and development in the field of digital growth.
- Lack of sector-specific knowledge and understanding of digital strategies.
- Lack of appreciation of the digital contribution to other industries.
- Differences among the regions in terms of timeframe, readiness and maturity (some regions are lagging behind in preparations while others are advancing).
- Lack of leadership in strategy development,

#### 2.1.2 Lack of awareness of requirements with regard to strategy development

There seemed to be little knowledge of the formal requirements in terms of EACs related to strategy development. In addition, when interacting with the regions, the experts gained the impression that the officers developing the strategies were too involved in other activities, which made distracted them from the ICT priorities. Moreover, some were of the opinion that the ambitions set out for the strategy development and for the DAE were too optimistic and that it would be hard to meet the goals.

- Little knowledge of the overall process of the development of ICT strategies.
- Poor awareness of the EACs for ICT investments and the implications for the development of the DGS, NGN plan and RIS3.
- Poor information and/or lagging behind in preparation of the documents.

### **2.1.3 Problems in the coordination of governance levels in strategy development**

There were challenges related to the coordination of activities, both horizontally between different policy domains and vertically among different governance levels, institutions and agencies (regional and national).

- Lack of understanding of links between ICT strategy documents, DGS, NGN plan and RIS3, as well as innovation policy and digital policy.
- Strategies prepared at national level without providing examples/links to regional activities.
- Need for alignment of fragmented ICT frameworks, especially when there is a framework of documents rather than one single document.

### **2.1.4 Challenges with stakeholder involvement and the entrepreneurial process of discovery**

There were challenges with regard to the involvement of civil society and stakeholders in the development of ICT-related strategies. First, the stakeholders were initially not responsive and were difficult to engage. One of the reasons was a lack of stakeholder participation culture, with stakeholders not accustomed to direct consultations. Government officials also lack the skills and experience required to consult and engage regional stakeholders. The stakeholder involvement procedure seemed to be a top-down rather than bottom-up process.

- Stakeholder involvement was a top-down rather than a bottom-up process.
- Lack of 'stakeholder participation' culture.
- 'Business as usual syndrome' prevented positive change.

## **2.2 Critical issues in the development of ICT strategies**

### **2.2.1 Unclear assessment methodology**

The experts had doubts about how to assess the strategies despite the support of the assessment grid. They were not clear on how to assess the different parts and different strategic documents where different EACs applied. The experts themselves found it hard to know the exact requirements for each EAC and what the exact thresholds for accepting something as good enough were.<sup>6</sup>

- Unclear assessment and evaluation methodology.
- The grid developed to support the assessment process might be too rigid and not suitable for certain specific priorities.
- Limited knowledge of DGS, NGN plan and RIS3 specificities, as well as EACs for TO1, TO2.1, and TO2.2.
- Lack of information on what is good enough to meet requirements.

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<sup>6</sup> This led to a change of the Assessment grid, where the requirements under the different EACs were more clearly separated in the document.

### **2.2.2 Lack of access to relevant sources of data**

The experts often struggled to get access to relevant strategic documents and relevant data. There was a lack of accurate data on current infrastructure vis-à-vis performance in relation to the DAE goals. Some felt that the regional stakeholders presented an overly optimistic picture and lacked realistic views of possible challenges. This could have been the result of their general positive attitude, but potentially also because of their misunderstandings regarding the role of the expert in assessing the strategy. Some regions might have thought that the assessment exercise could have an influence on the outcomes of the OP negotiations.

- Lack of availability of relevant documents (regional/national), data, etc.

### **2.2.3 Multi-level governance issues**

When there was not a single document as a basis for the ICT strategy, experts found it hard to assess the frameworks composed of a number of separate documents and different supportive material. In some cases, it was hard to identify which institution or person was in charge of the process and responsible for the documents (framework). This was especially complicated when national and regional documents complemented or replaced each other without any specific reference to each other.

- Poor coordination between strategies when the strategy is not one single document but a framework. It is hard to search for relevant documents.
- Complicated to understand ICT-related strategies prepared at national level without providing links to regional activities.

### 3. Cases of regions visited by experts

Altogether, seven EU regions have been visited and assessed by the experts: Abruzzo, Apulia, Italy; Burgundy, France; Łódzkie, Poland; Sicily, Tuscany, Italy; and West Romania, Romania. The objective of this chapter is to point out specific issues and to provide recommendations that can be of value to other EU regions and MSs. Each case is structured to include general information on the region (background information) and regional DGS status, elements and development. At the end of each section, there is a discussion on possible follow-ups and options available to each region (recommendations).

It is important to keep in mind that each case is unique and that the information provided is time specific and based on the evaluation of the experts contracted by the European Commission. This leads to another observation: successful policies and processes that suit one region do not have to necessarily lead to positive results in other regions. Although there is evidence that structurally similar regions can have similar issues in terms of economic and technological development, simple copying of policy instruments, procedures and governance systems that proved to be efficient in one region can be harmful in another one. Therefore, the objective of this chapter is to illustrate cases of regions that requested assistance in the form of strategy assessment and that sought expert advice for their DGS development and implementation.

The experts assessed regional DGSs (when available) and/or elements of digital growth in regional RIS3. In some regions, the DGS had not yet been developed or put in place and/or there were no references to digital growth in the regional RIS3. In such cases, the experts had to use various regional/national materials that, at the time, could have been considered the baseline for the DGS. The expert recommendations were provided most often as an input on how to prepare more concise and integrated documents, assess and capitalise on regional strengths and create value for the region.

#### 3.1 Abruzzo<sup>7</sup>

##### 3.1.1 Background

Abruzzo is an Italian region located in the central-eastern part of the country. The total population of Abruzzo is 1,333,939 (as of 1 January 2014).<sup>8</sup> It is organised in four provinces, each of approximately the same population size.

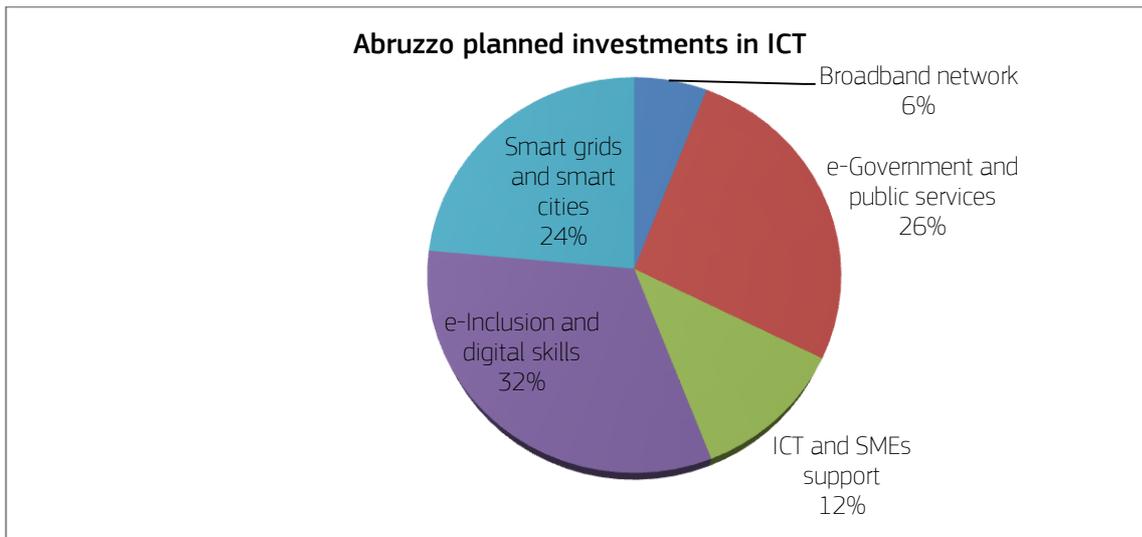
The region is planning a number of investments in ICT through different ESIF programmes. ICT activities will be specifically funded from regional OP, national OP, European Social Fund (ESF) and trans-border cooperation programmes (Figure 1). The data show that financial allocations will be mainly in the areas of e-Inclusion, e-Accessibility, e-Learning and e-Education services and applications, e-Government services and applications and intelligent energy distribution systems.

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<sup>7</sup> This section is based on expert assessment work done by Eurico Neves in the region of Abruzzo in winter 2014. He summarised his findings in the report entitled 'Expert assessment of the DAE/ICT component of the Smart Specialisation Strategy of Abruzzo' that he finalised in March 2014. Information provided in this section is thus based on his expertise and does not reflect the opinion of the European Commission.

<sup>8</sup> <http://www.tuttitalia.it/abruzzo/42-province/popolazione/> (accessed 06/02/2015).

Figure 1: Percentage of main planned investments in ICT in Abruzzo, Italy



Note: The percentages indicated are estimates in the regional OP, national OP and trans-border cooperation programmes, broken down to regional level based on the type of region and population size.

### 3.1.2 DGS status, elements and process

The documents provided for the assessment of the regional DGS activities consisted of the regional RIS3 and the regional DGS entitled *Agenda Digitale Regione Abruzzo – 2014–2020*. At the time, the DGS was a working document and it was not publicly available. It was prepared as an independent document, but should be merged with the regional RIS3.

The DGS listed a number of digital priorities identified in the region: 'infrastructures and IT security' (broadband access), 'digital citizenship' (e-Government), 'digital health' (telemedicine), 'digital skills and inclusion' (regional territorial services). However, the process of selecting the priorities seems to have taken a top-down approach, on the basis of the analysis, and there was no indication of any broad stakeholder consultation. The expert pointed out that the region lacked sufficient stakeholder involvement in the development of the strategy and that the process of entrepreneurial discovery was almost non-existent.

The expert also emphasised that involvement of civil society was of crucial importance for two main reasons: first, to understand the needs of civil society and the social and cultural barriers to ICT penetration, and, second, civil society could stimulate the interest of households and individuals in high-speed internet connection and ICT products.

### 3.1.3 Recommendations

In this context, the expert recommended that the analysis of the regional context for specialisations be developed further, allowing for more active engagement of stakeholders, opening the process to civil society and reinforcing international cooperation.

First, the expert recommended that the analysis that supports the strengths, weaknesses, opportunities and threats (SWOT) analysis and implementation plan be enriched by including data from the business sector, such as the relative weight of the ICT sector in the regional economy, the use of e-Commerce, research and development investments in ICT, sales of ICT products and services, and company creation in the sector. It could also be useful to investigate different aspects of ICT skills and qualifications that could drive the demand for ICT services and supply businesses with specific assets such as knowledge, skills and expertise.

Second, the expert suggested that active involvement of the business sector in DGS development and implementation be promoted in order to improve the understanding of the regional entrepreneurial dynamics and better respond to businesses' needs and stimulate ICT investments. Businesses could be involved in some form of working groups, which could be organised around the main ICT topics such as infrastructure, smart cities and health. The region and the local actors could definitely benefit from the integration of the DGS with the RIS3, building on an entrepreneurial process of discovery.

Third, civil society could be involved through targeted awareness campaigns, training courses or special school classes. Finally, the expert recommended that the region be open to international partners and to reinforcing international cooperation in the area of digital activities (identified domain) and co-funding of actions with international programmes (e.g. Horizon 2020, the Joint Programming Initiative (JPIs), the European Innovation Partnership (EIPs), European Territorial Cooperation (INTERREG). Cooperation could provide additional financial or human resources and it could also improve learning processes and contribute to the creation of critical mass.

## **3.2 Apulia<sup>9</sup>**

### **3.2.1 Background**

Apulia is an Italian region located in the south-east of the country. The total population of Apulia is 4,090,266 (as of 9 October 2011).<sup>10</sup> The region is characterised by mainly rural areas and some urban areas. The latter are well served by broadband services.

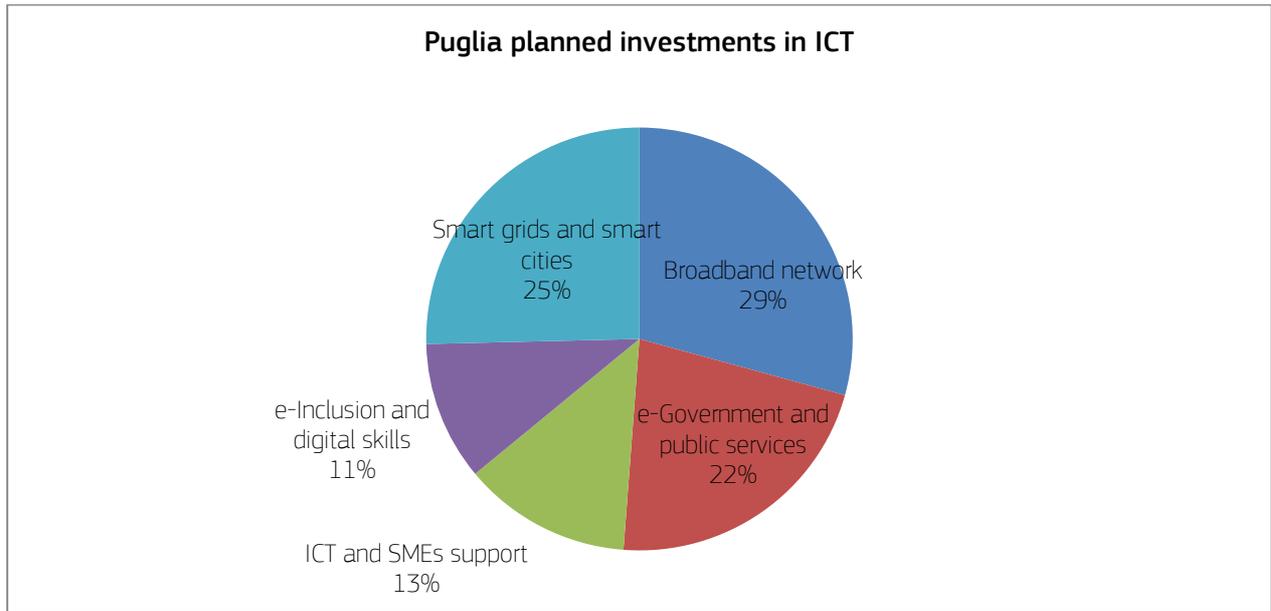
The region is planning a number of investments in ICT through different ESIF programmes. ICT activities will be specifically funded from the regional OP, national OP, ESF and trans-border cooperation programmes (Figure 2). The data show that financial allocations will be mainly in the areas of e-Government services and applications, intelligent energy distribution systems and ICT services and applications for SMEs.

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<sup>9</sup> This section is based on the expert assessment work done by Roger Williams in the region of Apulia in spring 2014. He summarised his findings in the report entitled 'Digital Growth Strategy Assessment Review – Final', which he finalised in June 2014. Information provided in this section is thus based on his expertise and does not reflect the opinion of the European Commission.

<sup>10</sup> <http://www.tuttitalia.it/puglia/statistiche/popolazione-andamento-demografico/> (accessed 04/02/2015).

Figure 2: Percentage of main planned investments in ICT in Apulia, Italy



Note: The percentages indicated are estimates in the regional OP and national OP and trans-border cooperation programmes, broken down to regional level based on the type of region and population size.

### 3.2.2 DGS status, elements and process

The expert assessed two regional documents: the RIS3 (as of March 2014) and the *Digital Agenda* (as of May 2014). The DGS of the region of Apulia was prepared as both a summary within the RIS3 as well as an independent concise document: the *Digital Agenda* (the DGS). The DGS was based on the same evidence that was used for the RIS3. The expert claimed that 'there is a clear intent to ensure the development of an integrated Digital and Innovation strategy, with ICT providing an aspect of innovation in itself while also being an enabler of innovation in other sectors'.

The DGS consultation process engaged more than 250 entities (people, public institutions and private organisations, including clusters and industrial districts) from a range of business sectors and identified more than 500 needs. While the consultation was the backbone of the strategy development process, a wider collaborative engagement was planned to improve the relationships between businesses, citizens and research bodies. The aim was to establish partnerships that would take responsibility for monitoring, governance and the delivery of the strategy. Many of these business actors were located or were active in one of the 18 business districts that were the core elements of the region's economic-productive system.

In general, it was found that better application of ICT – including network infrastructure, e-Commerce, e-Services, etc. – would be of benefit to these businesses. There is a demand for ICT, but there is also a need for a better analysis to understand the most appropriate measures for policy intervention.

The challenges that were identified by the regional representatives included poor uptake of ICT and a lack of digital inclusion, access to skills and efforts to make the region an attractive place to live and work. These issues were structural and the regional DGS attempted to address them while building on regional strengths.

In addition, the expert pointed out that there was poor vertical communication between regional- and national-level public actors. Likewise, there was poor dialogue and collaboration horizontally in the region between different actors and there was a lack of a collaborative culture. The expert also noted that there was some resistance towards using ICT in the public sector, in private companies and among citizens. Finally, the

expert mentioned that the region was not sufficiently disseminating and stimulating the re-use of its knowledge and potential in order to leverage further innovation.

### **3.2.3 Recommendations**

The region could enhance the analysis and obtain more information on both the supply of and demand for ICT, which could be the basis for more evidence-based policies. The region needs to develop their local capabilities to assess state aid and implement effective business models to deliver next-generation local access networks.

To address poor vertical and horizontal dialogue, public authorities should engage with supply-side representatives including local SMEs and large companies. One possible approach could be to set up 'living labs', in which ideas and actions are tested within relevant communities, which take ownership of them to develop and implement the actions. Living labs are thus one way to engage SMEs in digital innovation and implementation of DGS. However, the participation and engagement of SMEs should be stimulated (e.g. joint ownership of activities and results). Stakeholder involvement could also help to better understand how to develop means of providing access to public data that are of use to citizens and industry.

Stimulating innovation in public services could also be a cornerstone for the models to facilitate fibre to the premises (FTTH) and fibre to the cabinet (FTTC) solutions. To that end, a plan for the deployment of fibre infrastructure intended to provide FTTC/FTTH solutions for all citizens in the region needs to be prepared. Innovation in public services could be used to boost innovation and improve ICT uptake and digital skills of the population. This approach could be another way of stimulating innovation and overcoming resistance to the use of ICT.

The expert suggested that collaborative visions of ICT enablement be developed for every relevant sector in the region, including more traditional ones. The vision could be further enriched by international elements. Therefore, the region could explore and analyse linkages, collaboration and value chains that exist between the region and other regions, and draw conclusions for the regional DGS. It is essential to understand the economic opportunities that international collaboration creates. The expert also proposed that goals be regularly assessed to determine if they are in line with what is feasible and desirable for the region (including impact assessment and goal achievement).

## **3.3 Burgundy<sup>11</sup>**

### **3.3.1 Background**

Burgundy is a French region located in the central part of the country. The total population of Burgundy is 1,631,000 (as of 1 January 2008).<sup>12</sup>

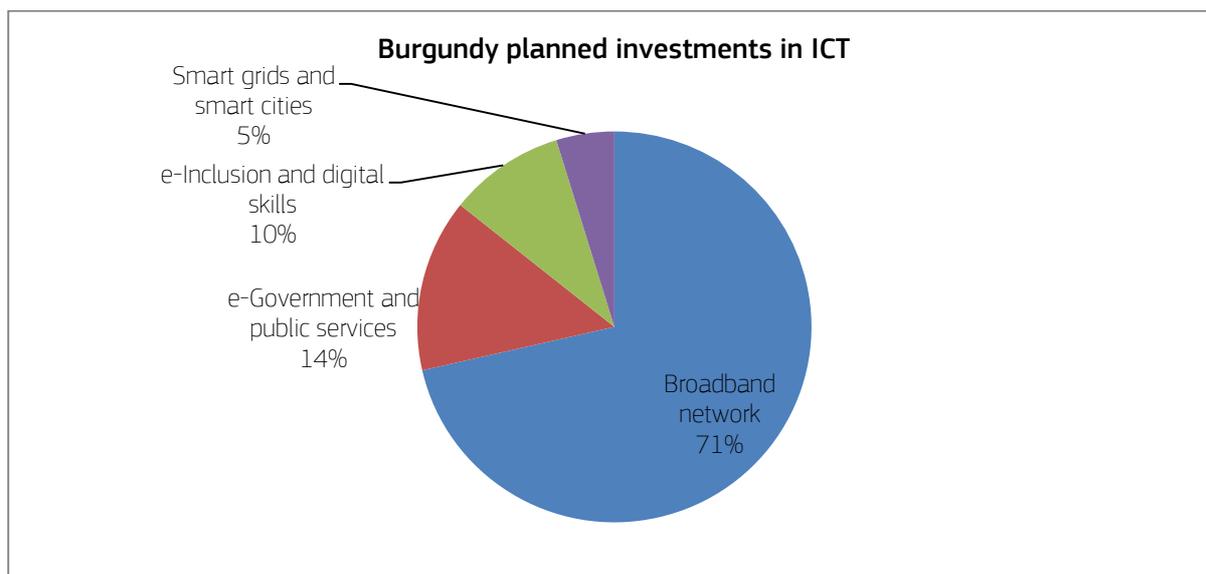
The region is planning a number of investments in ICT through different ESIF programmes. ICT activities will be specifically funded from the regional OP, the national OP, the ESF and trans-border cooperation programmes (Figure 3). The data show that financial allocations will be mainly in the area of high-speed broadband network.

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<sup>11</sup> This section is based on the expert assessment work done by Nicos Komninos in the region of Burgundy at the beginning of 2013. He summarised his findings in the report entitled 'Expert assessment of the DAE/ICT component of the Smart Specialisation Strategy of Bourgogne'. Information provided in this section is thus based on his expertise and does not reflect the opinion of the European Commission.

<sup>12</sup> <http://en.wikipedia.org/wiki/Burgundy> (accessed 17/02/2015).

Figure 3: Percentage of main planned investments in ICT in Burgundy, France



Note: The percentages indicated are estimates in the regional OP, national OP and trans-border cooperation programmes broken down to regional level based on the type of region and population size.

### 3.3.2 DGS status, elements and process

The expert assessed the regional RIS3 of Burgundy (*La Stratégie Régionale d'Innovation en Bourgogne: Vers une spécialisation intelligente*) and carried out interviews and facilitated focus group discussions.

The digital component (the DGS) is an integral part of the Burgundy RIS3, although it is presented as a separate document. The RIS3 defines five strategic domains of specialisation and three transversal axes, including the dissemination and use of digital technologies. The digital component of the RIS3 included three chapters at the time of the expert visit to the region: (1) broadband infrastructure – next-generation access networks, (2) entrepreneurial services and (3) governance.

The expert appreciated the consistency and comprehensiveness of the DGS in terms of strategic planning of ICT activities. He specifically pointed out that the DGS covers various regional digital growth aspects including infrastructure, services and governance.

He appreciated the attempt of the local authorities to address the issue of the current territorial and digital divide by investing heavily in NGN and high-speed internet. In addition, the development of the ICT sector and of ICT as an enabler of innovation, productivity and the competitiveness of SMEs were well planned. The objective was to address the low SME performance in the digital economy. According to the statistics presented by the expert 'the national average for companies that have "low web intensity" was 50% in 2011. In Burgundy, this figure was even lower, 70% of the companies had "low web intensity", placing the region among the four less digitally advanced regions of the country'. Therefore, the region planned to: (1) create a high level of availability of digital services to enterprises, called the 'digital portfolio', and (2) initiate a regional plan to facilitate the access of companies to digital services.

Finally, the DGS includes a series of digital services for citizens in the domains of culture, vocational training and health. The business models and implementation of such digital services relied heavily on public action and funds. E-Training is an important service that builds on accumulated local experience. Two main domains of e-Health services implementation are telemedicine and personal medical files.

The DGS received strong support from the Regional Council and regional stakeholders during the development process. In addition, it was evident that the Regional Council services were collaborating with the national authorities and the regional stakeholders, and there existed a coordination approach in the governance of the digital system. On the other hand, the expert considered that the DGS had weak elements, lying in the serious imbalance in the foreseen distribution of funds and investments among the various chapters/components of the strategy. The development of NGNs, and FTTH solutions in particular, took a great share of the available financial resources. Consequently, the available funds for the development of platforms and e-Services would be reduced as a result of FTTH absorbing most of the regional and the European Regional Development Fund (ERDF) funding over the next 10 years. This means that it could be very difficult to achieve objectives envisaged in areas such as entrepreneurial services and e-Services.

Burgundy intended to invest heavily in NGNs and use ERDF funding to decrease the digital and territorial divide between urban and rural areas. The objective was also to connect central and peripheral areas and make the region an attractive and affordable place in which to work and live. It is estimated that 250,000 households will be served by the FTTH deployment; this represents between 35% and 40% of households in Burgundy. The expert argued that 'the total government investment for the project is estimated at € 850 million (total investment – revenue generated by commercialisation of infrastructure) which is additional to private investments. Local authorities are aware that the net investment for the deployment of very high speed in Burgundy (50% coverage in 2020 and 100% in 2025) requires a continuous funding of € 105 million per year, until 2025'.

Another weakness of the DGS pointed out by the expert was a weak entrepreneurial process of discovery, especially in the area of digital services to the citizens. The expert specifically argued that 'it is not clear how wide and inclusive has been the public consultation for the elaboration of the digital strategy in the domain of culture and tourism'. Although e-Health is a domain of high priority, the data available in the DGS did not allow for a more in-depth analysis of the strategy and the action plan in this domain.

### **3.3.3 Recommendations**

Based on the previous analysis, the expert made a number of recommendations in the areas of NGN, digital entrepreneurial services, digital services in the domain of culture and tourism, vocational training and governance of digital systems.

First, he argued that the deployment of FTTH solutions needs to be evaluated in terms of costs and benefits with respect to other solutions and the possible impacts on growth and employment. Public administration should explore options on how to reduce civil engineering-related costs of FTTH solutions through coordination measures between telecom infrastructure and utility companies (water, energy, transport, etc.). This is closely linked to the issue of access to the infrastructure. The expert suggested that an 'open and non-discriminatory access' model be used for the operation of public FTTH, under which the infrastructure operator is not a service provider, as this reduces any incentive for favouritism.

Second, it is essential to explore available digital services and tools, as well as the needs of entrepreneurs, to advance creation/exploitation of the most suitable digital platforms. Local stakeholders have to be involved in the identification of the viable business model, and the definition of the action plan, flagship projects and the digital policy mix related to the DGS.

When it comes to digital services in the domain of culture and tourism, the expert pointed out that the entrepreneurial process of discovery needs to be improved to identify domains for cultural activities that will enhance the competitive advantage of the region. In relation to this, he stressed that the domains need to be better connected to

the following RIS3 domain: 'quality of the environment, food and nutrition at the service of well-being and consumers'. Similarly, it could be effective to link vocational training to the transversal axis of RIS3, which foresees the development of skills linked to competitiveness. Overall, the expert suggested that the priority sectors of smart specialisation according to the RIS3 and the domains of the Digital Strategic Plan be connected.

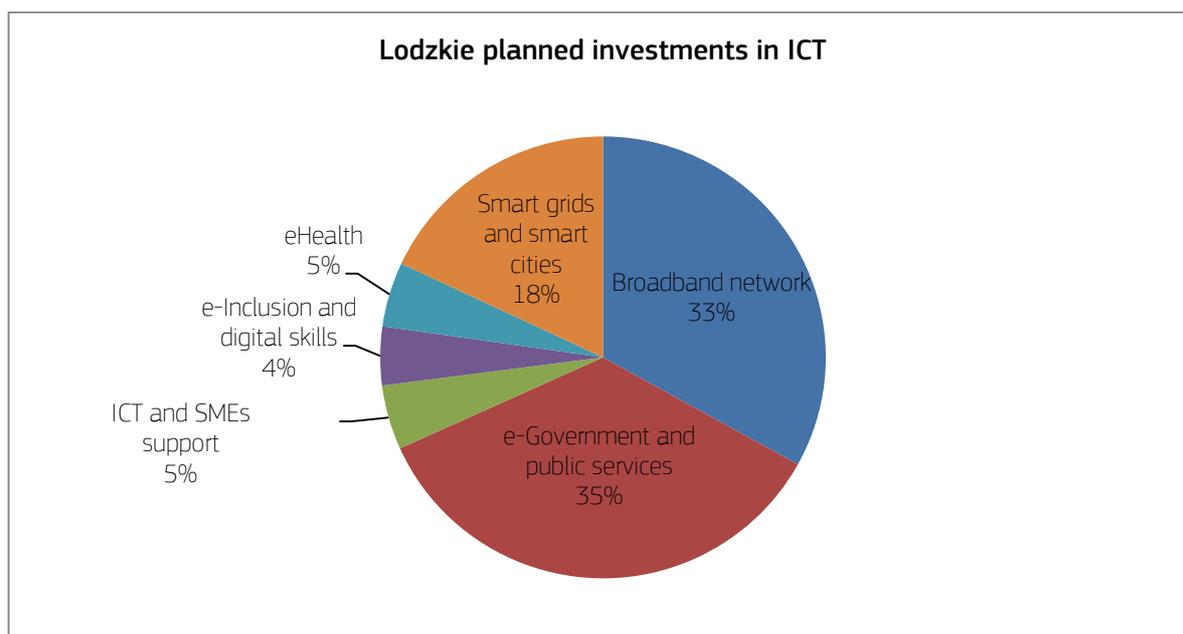
### 3.4 Łódzkie<sup>13</sup>

#### 3.4.1 Background

Łódzkie is a Polish region located in the central part of the country. The total population of the region is 2,508,464 (as of 30 June 2014).<sup>14</sup> It is one of 16 regions (voivodeships) in Poland. The region is characterised by a mix of urban areas with broadband services and extensive rural areas where there is no NGN plan and only a small percentage of the population has access to broadband.

The region is planning a number of investments in ICT through different ESIF programmes. ICT activities will be specifically funded from the regional OP, national OP, ESF and trans-border cooperation programmes (Figure 4). The data show that financial allocations will be mainly in the following areas: high-speed broadband network, e-Government services and applications, and intelligent transport systems.

Figure 4: Percentage of main planned investments in ICT in Łódzkie, Poland



*Note: The percentages indicated are estimates in the regional OP and national OP and trans-border cooperation programmes, broken down to regional level based on the type of region and population size.*

<sup>13</sup> This section is based on the expert assessment work done by Roger Williams in the region of Łódzkie in autumn 2013. He summarised his findings in the report entitled 'DAE Assessment Review – Final Version', which he finalised in January 2014. Information provided in this section is thus based on his expertise and does not reflect the opinion of the European Commission.

<sup>14</sup> [http://pl.wikipedia.org/wiki/Wojew%C3%B3dztwo\\_%C5%82%C3%B3dzkie](http://pl.wikipedia.org/wiki/Wojew%C3%B3dztwo_%C5%82%C3%B3dzkie) (accessed 05/02/2015).

### **3.4.2 DGS status, elements and process**

The expert who visited the region assessed the regional RIS3 (*LORIS 2030*) and a draft of the *Digital Poland* programme. There was no specific regional DGS in preparation and the RIS3 document did not contain a specific chapter on digital growth. However, the RIS3 'makes reference at several points both to the use of IT as enabling technologies for other industries and to IT as an industry in itself (Williams, 2014)'.

The RIS3 described a range of baseline measures for ICT/'information society'. The measures within the document present very positive aspects of digital development in Łódzkie central administrative region. However, outside this area, the situation appeared to be significantly different. In particular, in five districts along the southern border, there were no NGNs and only 0.15% of the population had access to basic broadband (2 Mbps), which contrasts with the DAE goal of 100% by 2013. Clearly, this significant difference needs to be tackled through appropriate policies and investments. In addition, there was insufficient access to e-Services and public administration and no evidence that such e-Services were effectively promoted to citizens and businesses, which caused a gap between demand and supply. In general, the expert noted that there was insufficient understanding of demand and availability in the region.

The expert also pointed out that the region suffered from a serious outflow of qualified people, mainly young people with university education. The low talent-retention capacity could partly be related to quality of life in terms of ICT accessibility and exploitability.

### **3.4.3 Recommendations**

Although there was no regional DGS in the region of Łódzkie and the region was covered by the national strategy *Digital Poland*, the expert encouraged the regional representatives to further explore the potential and contribution of ICT to regional development. By understanding better the regional situation, the local representatives could better articulate and put forward their needs vis-à-vis participation in the *Digital Poland* programme.

In order to improve understanding of the overall situation in the region, a thorough analysis of regional strengths, potential, opportunities and weaknesses is essential. As a part of the exercise, a comparative analysis could be conducted. Specifically, the region could compare its current position against the DAE key performance indicators for the whole country. The analysis could also be enriched by the examination of the potential impact of planned ICT investments on RIS3 targeted industries in, as well as outside, the region. In addition, foreign investments in ICT made in the region could be evaluated in order to understand how to use and build on these factors to generate indigenous innovation and growth.

It is essential to improve understanding of the local demand for ICT and link it to possible local availability, including the demand and availability in rural communities and businesses (e.g. service providers). To this end, the region should engage more deeply with the regional stakeholders and gather information on their demands and needs. The objective should be to create a joint vision of ICT and stimulation of demand (e.g. by support campaigns). In order to improve access to rural communities, the region could use tools to stimulate demand and increase uptake. This is linked to improvement of ICT capacities in the region, which is one of the possible measure that could be used to decrease emigration of young educated people to other parts of Poland and Europe.

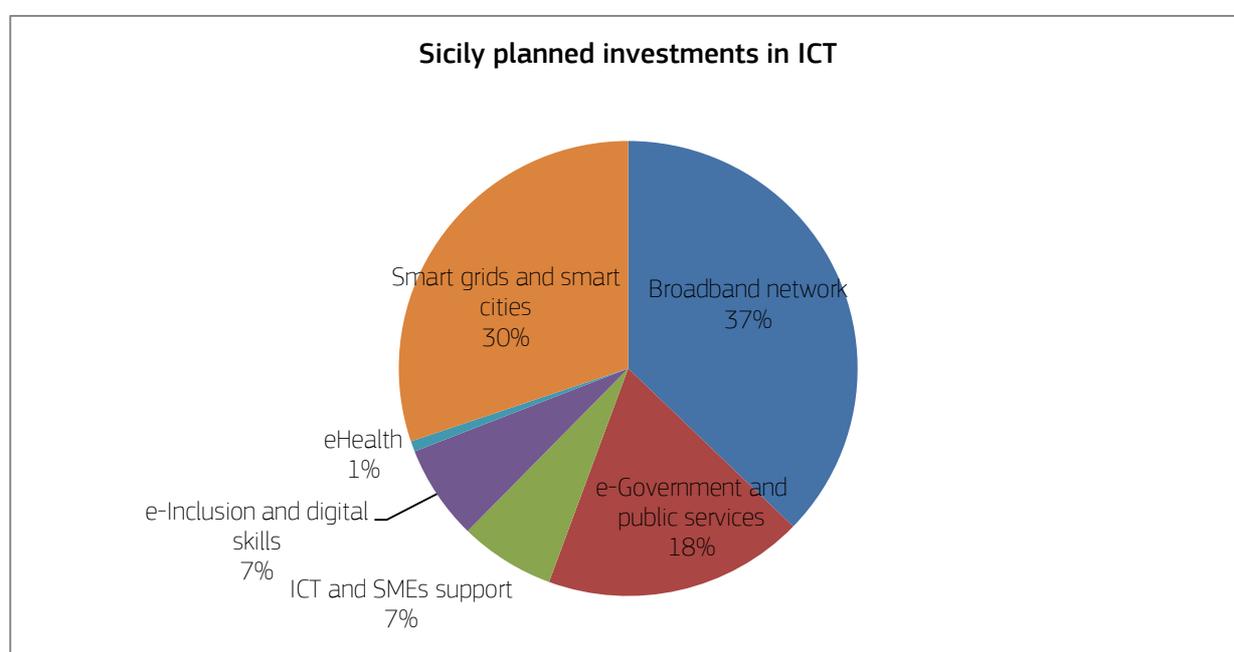
## 3.5 Sicily<sup>15</sup>

### 3.5.1 Background

Sicily is an Italian region located in the southern part of the country. The total population of Sicily is 5,094,937 (as of 1 January 2014).<sup>16</sup> It is organised in nine provinces, of which Palermo (1,275,595) and Catania (1,115,704) are the most populated. Approximately 18.7% of the territory has NGN coverage of at least 30 Mbps and 378 municipalities (out of 390) have high-speed broadband.<sup>17</sup>

The region is planning a number of investments in ICT through different ESIF programmes. ICT activities will be specifically funded from the regional OP, national OP, ESF and trans-border cooperation programmes (Figure 5). The data show that financial allocations will be mainly in the following areas: intelligent energy distribution systems, e-Government services and applications, and other types of ICT infrastructure/large-scale computer resources/equipment.

Figure 5: Percentage of main planned investments in ICT in Sicily, Italy



*Note: The percentages indicated are estimates in the regional OP and national OP and trans-border cooperation programmes, broken down to regional level based on the type of region and population size.*

### 3.5.2 DGS status, elements and process

The expert assessed the elements of the digital growth part of the regional RIS3, specifically Chapter 6, which we hereafter refer to as the DGS. The region identified six digital priorities:

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<sup>15</sup> This section is based on the expert assessment work done by Jose Manuel San Emeterio Perez in the region of Sicily in late spring 2014. He summarised his findings in the report entitled 'Assessment of the Digital Strategy of the Region of Sicily', which he finalised on 26 August 2014. Information provided in this section is thus based on his expertise and does not reflect the opinion of the European Commission.

<sup>16</sup> <http://www.tuttitalia.it/sicilia/> (accessed 11/02/2015).

<sup>17</sup> Jose Manuel San Emeterio Perez (2014). 'Assessment of the Digital Strategy of the Region of Sicily' finalised on 26 August 2014, p. 17.

- Digital infrastructures: development of next-generation access networks, data centres, and cloud and digital identity.
- Digital citizenship.
- Skills and digital inclusion (strengthening the application of ICT: online services, digital inclusion, participation in network application and promotion of digital culture and administrative capacity).
- Digital growth, economy of knowledge and creativity, start-up, research and innovation: promoting the use of ICT in business.
- Social innovation and smart cities.
- Digital health.

Moreover, ICT was also identified as a key enabling technology supporting different thematic areas of smart specialisation. ICT will thus play a key role in ensuring access to social services, citizenship, markets, better living conditions and better framework conditions for business activity, among others.

The expert found that the DGS was well integrated in the RIS3 and the analysis of the region was present, but a more concrete picture of the digital regional situation and an accurate baseline against which the DAE could be monitored needs to be developed. There is also a need for more intensive coordination between regional and national levels. The responsibilities of private companies and universities in the strategy implementation are not entirely clear. Furthermore, more opportunities in international cooperation need to be developed, which can be done by first identifying possible cooperation opportunities, valuable models and examples.

The expert stated that the integration of the DGS into the RIS3 was successful and complete. The strategies shared analysis, governance system, mechanisms for implementation, policy mix, etc. The comprehensive analysis focused on the regional macroeconomic situation, the production system and market scenarios, an innovation potential analysis, the regional technological assets, public research system analysis, and *ex post* evaluation of 2000–2006 and 2007–2013. A benchmark analysis was provided, but only with respect to other Italian regions and within three areas: (1) human resources, (2) the creation of knowledge and (3) measures to create an innovation ecosystem. As regards governance structure, the bodies were shared between the DGS and RIS3 and comprised:

- *A steering group* – representatives of the public sector, business community, universities and public research institutes, civil society.
- *A technical unit* attached to the Presidency department to perform functions of analysis and planning, management and coordination, monitoring and evaluation.
- *Thematic working groups* focused on the selected priorities.

In addition, the DGS agenda was led by one specifically appointed person working at the regional public authority.

### **3.5.3 Recommendations**

As it was planned to implement the digital agenda together with the RIS3, the expert recommended that the steering group be inclusive of all regional actors, especially those linked to digital growth and ICT.

Benchmarking with other regions in Europe could enrich the regional analysis and help identify possible synergies and complementarities in the value chains. To provide a more comprehensive picture in terms of regional performance and capacities, it is essential to improve analysis of regional demand and supply (e.g. workforce supply in ICT sectors).

Sicily identified complementary sources of European funding including COSME (programme for SMEs), Horizon 2020, Creative Europe and territorial cooperation

programmes (TCPs). However, participation in thematic networks and collaboration with other European regions interested in similar smart specialisation domains need to be strengthened. Although it was planned to implement some activities in collaboration with Tunisia and Malta (TCPs), the expert suggested a that a more active approach be taken in creating collaborative opportunities in smart specialisation with other more distant EU regions.

## **3.6 Tuscany<sup>18</sup>**

### **3.6.1 Background**

Tuscany is an Italian region located in the central-western part of the country. The total population of Tuscany is 3,750,511 (as of 1 January 2014).<sup>19</sup> It is organised in 10 provinces, of which Florence, with 1,007,252 inhabitants, is the biggest and Massa-Carrara, with 200,325 inhabitants, is the smallest.

The expert assessed the elements of the regional DGS integrated in the RIS3 (referred to as the DGS in this section) and other regional innovation and ICT strategies from the period 2007–2013.

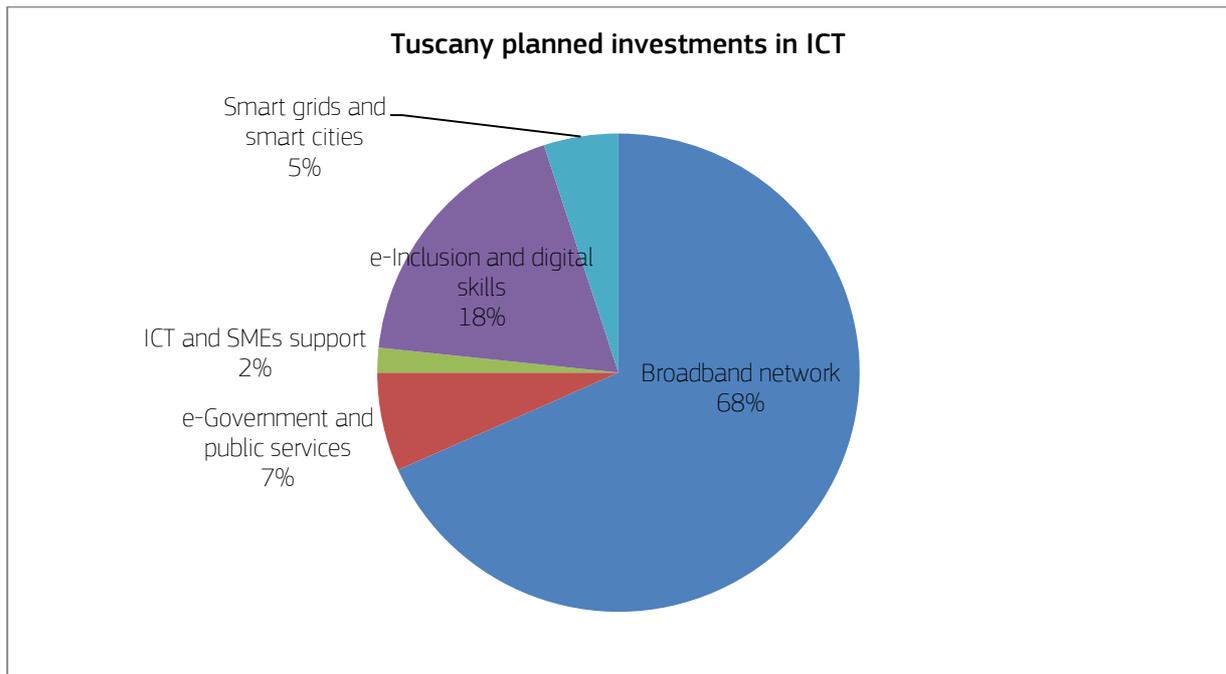
The region is planning a number of investments in ICT through different ESIF programmes. ICT activities will be specifically funded from regional OP, national OP, ESF and trans-border cooperation programmes (Figure 6). The data show that financial allocations will be mainly in the following areas: high-speed broadband network, and e-Inclusion, e-Accessibility, e-Learning and e-Education services and applications.

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<sup>18</sup> This section is based on the expert assessment work done by Eurico Neves in the region of Tuscany in winter 2014. He summarised his findings in the report entitled 'Expert assessment of the DAE/ICT component of the Smart Specialisation Strategy of Tuscany', which he finalised in March 2014. Information provided in this section is thus based on his expertise and does not reflect the opinion of the European Commission.

<sup>19</sup> <http://www.tuttitalia.it/toscana/19-province/popolazione/> (accessed 06/02/2015).

Figure 6: Percentage of main planned investments in ICT in Tuscany, Italy



*Note: The percentages indicated are estimates in the regional OP and national OP and trans-border cooperation programmes, broken down to regional level based on the type of region and population size.*

### **3.6.2 DGS status, elements and process**

When the expert visited the region in winter 2014, the development of the DGS was at a very early stage. In fact, the development of the DGS, the RIS3 and the regional OP were running in parallel, and the RIS3 and the DGS were seen as instruments for the OP.

In terms of stakeholder involvement, the process was only at its beginning, so it was too early to evaluate, and the DGS was being discussed only within the bounds of the regional authority without any direct involvement of external stakeholders. As a result of internal analyses and discussions, as well as work of an inter-departmental working group, the following DGS priorities for investments had emerged: e-Government including infrastructure for e-Governance, e-Governance services for citizens and e-Governance services for companies. However, the expert pointed out that other, horizontal, priorities and in particular digital inclusion and ICT for research and innovation were worthy of addressing. Since the DGS was in an early (draft) stage, it was hard to assess how ICT was supporting inter-related priority areas such as tourism, energy and cultural heritage.

### **3.6.3 Recommendations**

The expert suggested that a stakeholder involvement platform be set up that should also be included in the future governance structure of the region's OP. It is essential to involve local stakeholders in the preparation and implementation phases to ensure their commitment, high-impact contribution and willingness to share risks. At the same time, the regional authority should highlight advantages and benefits of active participation of the stakeholders in the platform.

The expert recommended that better use be made of the outcomes of consultations and working groups, and that national activities be capitalised on. The region should specifically extract the main conclusions from the working groups and communicate the main elements of the DGS to the public by using different communication/dissemination means. The expert noted that the region should consider widening the range of ICT

activities and including horizontal priorities such as digital inclusion and ICT for research and innovation. He recommended that the integration and complementarity between the DAE and the RIS3 be ensured so that support to ICT products and services does not fall into a 'no man's land' between services.

Furthermore, the expert recommended that other regions be observed to look at what they are doing in terms of DGS development and implementation, and selection of priorities for investments. This could be useful to draw relevant lessons for the region and reinforce international and trans-regional cooperation to raise additional funding for ICT activities (e.g. INTERREG and Horizon 2020).

## **3.7 West Romania<sup>20</sup>**

### **3.7.1 Background**

West Romania is a Romanian region located in the western part of the country, and it borders Hungary to the north and Serbia to the west. The capital city of the region is Timisoara, which is one of the biggest cities in the country, with a total population of 303,708 (as of 20 October 2011),<sup>21</sup> while the total population of the region is 1,828,313.<sup>22</sup> West Romania is one of eight regions in Romania and it is further divided into four counties. The region is characterised by one larger urban area and large rural areas.

The region is planning a number of investments in ICT through different ESIF programmes. ICT activities will be specifically funded from the regional OP, national OP, ESF and trans-border cooperation programmes. The data show that financial allocations will be mainly in the following areas: e-Inclusion, e-Accessibility, e-Learning and e-Education services and applications, and digital skills; e-Government services and applications; and intelligent transport systems.

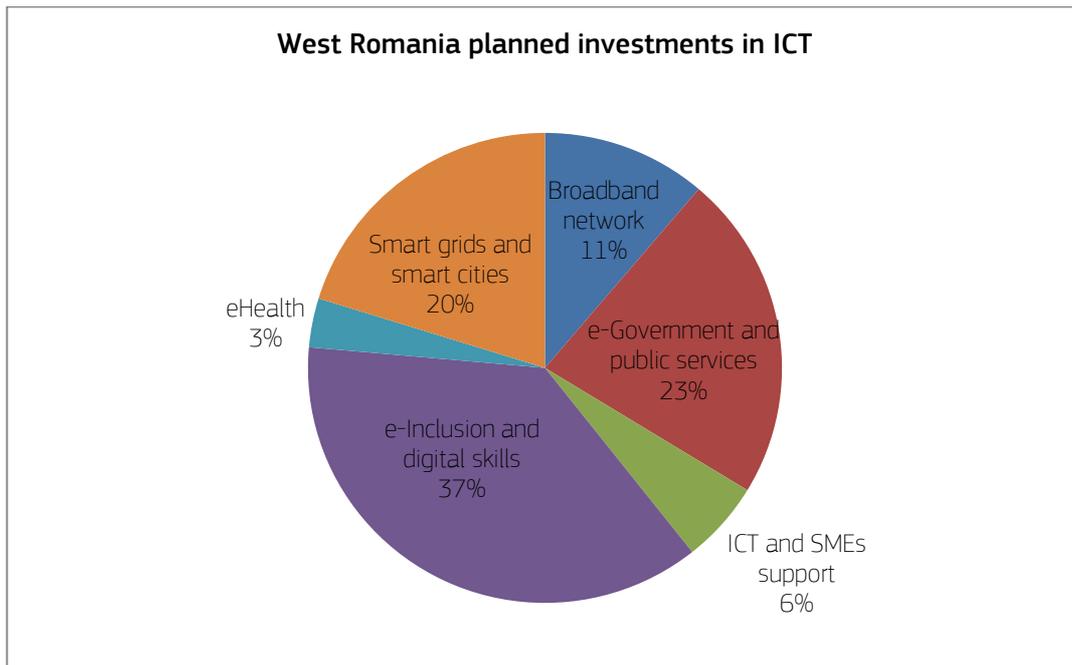
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<sup>20</sup> This section is based on the expert assessment work done by Marco Forzati and Crister Mattsson in the region of West Romania in winter 2014. They summarised their findings in the report entitled 'Expert assessment of the DAE/ICT Strategy of Western Romania', which they finalised in May 2014. Information provided in this section is thus based on their expertise and does not reflect the opinion of the European Commission.

<sup>21</sup> [http://www.timis.insse.ro/cmstimis/rw/resource/comunicat-date\\_provizorii\\_rpl\\_2011\\_timis.pdf](http://www.timis.insse.ro/cmstimis/rw/resource/comunicat-date_provizorii_rpl_2011_timis.pdf) (accessed 12/02/2015).

<sup>22</sup> [http://en.wikipedia.org/wiki/Romania#Administrative\\_divisions](http://en.wikipedia.org/wiki/Romania#Administrative_divisions) (accessed 12/02/2015).

Figure 7: Percentage of main planned investments in ICT in West Romania



Note: The percentage indicated are estimates in the regional OP and national OP and trans-border cooperation programmes, broken down to regional level based on the type of region and population size.

### 3.7.2 DGS status, elements and process

The experts pointed out that the administrative and political organisation of the country was under revision. Romania was devolving power from the centre to the regions. At the time of the experts' visit, the regions did not have any decision-making power and the local administrations were only executive bodies of the central government. The regional development agencies that were responsible for the allocation and distribution of ERDF funding had very limited competencies and impact on the national strategy and policy setting. Although regional administration could hardly take political or financial responsibility for the DGS, the situation could change after the new regional governance system was implemented.

Therefore, the experts consulted mainly national documents and one regional document that were available at that time: (1) *Strategies for the promotion of broadband services and infrastructure: a case study on Romania* and (2) the *Development strategy for ICT competitiveness pole* (Forzati, and Mattsson, 2014:13). The first document was prepared by the national regulatory authority (ANCOM), and the Ministry of Communications and Information Society (MCSI). The second document focused in particular on the region of West Romania and contained a SWOT analysis of West Romania. Furthermore, it presented some targets, but without any concrete plan; for example, it was not clear how infrastructure was going to be delivered.

The regional strategy identified some general competitive advantages for the region, such as:

- growing regional economy (traditional industrial area; business locations; clustering);
- strategic location (border area, international airports);
- high quality of human resources (young, good coverage of all qualification levels, diversity and multiculturalism);
- good quality of life (low cost of living, tourism, unique natural elements, rich natural resources)

- advanced services (customer services, headquarters for multinational company).

It also included a SWOT analysis and identified three general areas of competitive advantage: automotive, textiles and ICT. However, the experts questioned the process of selection of these priorities. It was not clear to what extent a proper entrepreneurial process of discovery had been carried out to identify these areas and if and how regional actors were involved in it.

Finally, the regional strategy lacked information on affordable, good-quality and interoperable ICT-enabled private and public services; increased ICT uptake by citizens; cross-border initiatives within ICT; both demand for and supply of ICT in a sustainable way; activities to reach the EU high-speed internet access targets (NGN); and improvement of demand-side conditions and, in particular, public procurement as a driver for innovation.

### **3.7.3 Recommendations**

The experts recommended that the regional representatives work in two different but interconnected ways: one technical – writing a regional digital agenda – and the second political – coordination of the regional development agency’s activities and the central government (multi-level governance). When it comes to the latter, the experts suggested overcoming the multi-level governance challenge in the following ways:

- Formal collaboration should be established between the four county governments (which currently hold the local administrative power) within the current legislative framework.
- The regional development agency should take the initiative to produce a Regional Digital Agenda.
- The regional development agency located in the region should take on a coordinating and intermediating role. Specifically, it should set up meetings with relevant authorities from the four counties (as well as the major stakeholders) to ensure alignment of the new agenda with the broader county and regional policy, so that it has a political mandate.
- The four county governments should gather information on and commit to the new regional DGS in a formal way (document signing, county council decision, etc.).

The experts identified the regional development agency as the key regional actor playing the role of initiative taker, coordinator and interface with the different stakeholders. The agency could develop its competencies and experience when it comes to ICT and development. The agency should work to keep contact both with the county governments (to ensure the political backing that will be needed for a comprehensive digital agenda to be effective) and with the major stakeholders (to ensure that the agenda is relevant and efficiently defined).

## 4. Conclusions

The regions provided positive feedback on the support given by the experts. They reported that the expert support had made an important contribution to the understanding of regional capacities, potential and opportunities in terms of ICT deployment and use. The main issues and recommendations in each region that were identified by the experts are summarised in Table 1.

Table 1: Main issues and recommendations

Region	Issues	Recommendations
<b>Abruzzo</b>	Selection of the priorities in a top-down manner	Link selection of priorities to entrepreneurial discover process
	Lack of good stakeholder involvement	Allow for more active engagement of stakeholders, opening the process to civil society
		Promote active involvement of the business sector in DGS development and implementation
		Enrich the analysis that supports the SWOT and implementation plan by including data from the business sector
<b>Apulia</b>	Poor vertical communication between regional- and national-level public actors	Engage with supply-side representatives including local SMEs and large companies (e.g. living labs) and join this with the work of the national authorities
	Poor uptake of ICT and a lack of digital inclusion and access to skills	Prepare a plan for the deployment of fibre infrastructure intended to provide FTTC/FTTH solutions that could be used to boost innovation, improve ICT uptake and digital skills of the population
		Prepare a plan for the deployment of fibre infrastructure intended to provide FTTC/FTTH solutions that could be used to boost innovation, improve ICT uptake and digital skills of the population

		Enhance the analysis and get more information on both the supply and demand sides
<b>Burgundy</b>	Business models and implementation of digital services rely heavily on public actions and funds	Involve local stakeholders in the identification of a viable business model and the definition of the action plan
	The development of NGNs accounts for a large proportion of the available financial resources	Evaluate the deployment of the FTTH solution in terms of costs and benefits with respect to other solutions
	Weak EDP, especially in the area of digital services to citizens	Improve the EDP to identify domains that should also be connected to RIS3 domains
<b>Łódzkie</b>	No specific regional DGS in preparation in the region covered by the national programme	Explore the potential and the contribution of ICT to regional development
<b>Sicily</b>	Insufficient coordination between regional and national levels	Create an inclusive steering group composed of all regional actors and join this with the work of the national authorities
	Benchmark analysis provided, but only with respect to other Italian regions	Undertake benchmarking with other regions in Europe and identify synergies and complementarities in the value chains
		Identify cooperation opportunities, valuable models and examples
<b>Tuscany</b>	Horizontal priorities, in particular digital inclusion and ICT for research and innovation, need to be addressed	Consider widening the range of ICT activities and including horizontal priorities such as digital inclusion and ICT for research and innovation
		Set up a stakeholder involvement platform that should also be included in the future governance structure of the region's OP
<b>West Romania</b>	Lack of information on affordable, good-quality and interoperable ICT-enabled private and public services; increased ICT uptake by citizens; cross-border initiatives within ICT; both demand for and supply of ICT in a sustainable way;	Try to overcome multi-level governance challenge, establish formal collaboration between the four county governments and encourage the regional development

	activities to reach the EU high-speed internet access targets (NGN); and improvement of demand-side conditions and, in particular, public procurement as a driver for innovation	agency to take the initiative to produce a Regional Digital Agenda.
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For the development of strategic documents for ICT investments under ESIF, the following recommendations can be made:

- Regions need to give themselves the opportunity to benefit from the potential of ICT. In order to better exploit ICT, regions ought to enhance their capabilities. Specifically, public authorities need to train their personnel in ICT, recruit staff with needed skills and engage with skilled external experts.
- Regions need to invest more in coordination and alignment of activities and strategies and improve communication and collaboration with other segments of the government in order to create synergies among different policy domains.
- Regions need to increase their efforts in developing efficient mechanisms for stakeholder involvement. Stakeholders have been involved in many regions in the development and design phase of the strategy. Their role is equally important during the second, implementation, phase, when they will work on specific projects to meet previously defined objectives. However, in some places, procedural and governance mechanisms need to be revised in order to ensure direct involvement of stakeholders and smooth implementation.
- Some regions need to improve their knowledge of EU ICT policies. The European Commission makes available a large number of publications (e.g. guidance documents for the Digital Agenda and OPs). In addition, better interaction with European Commission services can improve regional learning processes and the delivery of public policies in ICT.
- In terms of budget and ICT spending, it is important to find a good expenditure balance and dedicate sufficient resources to all objectives.

To improve the support provided by the experts:

- The contractor needs to be sure that the experts have access to key people in the region, and that the relevant documents and other sources of information are accessible. Communication and documents need to be in a language that the expert can understand.
- It is essential to ensure that the institution requesting the expert services has the mandate and power to act on and implement the experts' recommendations.
- It is essential to clarify the nature and extent of the services provided by the experts, the outcomes of the experts' work and possible follow-ups.
- The ambiguities in the assessment methodology need to be reduced; the assessment grid provided to the experts needs to highlight and explain more clearly specific requirements (EACs) within each of the steps. There is also a need to provide more training to the experts to prepare them for the field work.

- It is important that the European Commission selects experts who have a good knowledge of both technical areas and regional development policies and who possess analytical, communication and writing skills. Furthermore, they should have appropriate language and interpersonal skills.

Most of the recommendations mentioned above relate to the strategy design phase. However, regions now need to move into the implementation phase. This will require new approaches in the delivery of expert services. One possible approach is to focus expert work on the issues related to the implementation of approved OPs and strategies related to ICT-based growth, including calls, projects, policy mixes and selection criteria.

Another line of action is to help those regions that have not fulfilled the EACs and do not have their strategies in place. These regions seem to be in need of technical and policy support and require advice on their action plans.

Finally, based on the experts' experience, regions need to improve their ICT skills in public institutions, including units directly responsible for implementation of the Digital Agenda. Thus, some regions need to receive sustained support to coach and re-train/up-skill their staff in an effective way. Our recommendation is that a limited number of priorities be selected and a list of specific services that can be offered to the regions be developed.

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doi:10.2791/745099

ISBN 978-92-79-54228-2

