

Expert assessment of the DAE/ICT Strategy of Western Romania

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Authors/experts: Marco Forzati, marco.forzati@acreo.se
Crister Mattsson, crister.mattsson@acreo.se

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Acreo Swedish ICT AB
Electrum 236
16440 Stockholm

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1 Introduction

The Institute for Prospective Technological Studies (IPTS), based in Seville (Spain) hosts the S3 Platform (S3P) was established by the European Commission's DG Regional Policy (DG REGIO) to provide professional advice to EU Member States and regions for the design of their Research and Innovation Strategies for Smart Specialisation (RIS3).

Experts Crister Mattsson and Marco Forzati have received from the European Commission the task to assist Region West Romania the region in taking stock of the current situation in terms of local Digital Agenda Strategy, and discuss the developing the ICT policy. The goal of the assignment is to identify potential weaknesses and propose measures to improve the current situation.

Crister and Marco have made one journey and met the Regional Development Agency for West Romania in Timisoara on 13 February 2014. During the meeting at the agency office they were presented the strategy for ICT and the plans for development of the region as Regional Cluster for ICT. They were also guided in the city centre and shown on-going renovation work, including the underground deployment of currently aerial communications cabling. After the meeting they have received further material on regional initiatives and strategy work.

Crister and Marco's area of expertise is within broadband infrastructure, and the assessment may be nuanced consequently. It also became evident, during and after the visit in Romania, that there was not a clear alignment of expectations between the experts, the Regional Development Agency and the European Commission. This undoubtedly depended on this being one of the very first assignments in the scheme.

2 Current situation

This chapter gives an overview of the situation of West Romania in terms of ICT development, as well as policy framework. Due to the current unclear situation in terms of political/administrative organisation in Romania (currently in transition phase towards the creation of proper regional governments), much of the analysis is referring to the national situation. Some of the information contained in this chapter is copy/paste and is mainly intended to give a quick picture of the situation to the Commission.

2.1 Information gathered

The discussions during the visit in Timisoara highlighted that there is no local digital agenda at least intended as a clear policy document. We have received the following documents:

1. ROMANIAN PARTNERSHIP AGREEMENT FOR THE 2014-2020 PROGRAMMING PERIOD, First Draft
2. Towards an S3 & Digital Agenda strategy for West Region Romania
3. Romanian Electronic Communications Market – statistical data report
4. Strategies for the promotion of broadband services and infrastructure: a case study on Romania
5. *“Development strategy for ICT competitiveness Pole”*
6. promotional investment and tourism material about West Romania

The documents also referred to a National Digital Agenda for Romania:

7. Strategia Nationala privind Agenda Digitala pentru Romania (in Romanian)

Finally some material is available on the European Commission’s Europa website:

8. <https://ec.europa.eu/digital-agenda/en/scoreboard/romania>

Document 1 and the material at the website 8 assesses the situation of Romania in terms of ICT and competitiveness, in comparison to the rest of the EU. It identifies areas which need most support and proposes priorities for funding of projects and schemes. It does not set out a strategy on how to close the gaps, nor a list of actions on how to achieve that.

Document 2 is a powerpoint presentation which identifies competitive advantages of West Romania (Automotive, Textile, ICT). The document lacks

reference to a plan on how to exploit those. It contains a couple of slides. There are a few slides on “Digital Agenda” but those only list the current situation of Romania and West Romania with respect to the DAE.

Document 3 is a powerpoint presentation which shows the evolution of a number of broadband and ICT indicators between 2010 and 2012.

Document 4 is a report by the ITU, describing the status and the different strategic initiatives at national level, from the national regulatory authority (ANCOM), and the Ministry of Communications and Information Society (MCSI). MCSI is responsible for setting goals and developing strategies for the telecommunication sector, while ANCOM is the independent regulator of the telecommunication sector, with the primary responsibility of developing competition in the sector.

Document 5 is what comes closer to an ICT strategy. It contains a SWOT analysis of West Romania, it presents some targets but lacks concrete plan and notably fails to mention how prerequisite infrastructure is going to be delivered.

2.2 Statuts in Romania and West Romania

Most of the information collected refers to Romania, but is in most cases relevant for the West Romania Region.

2.2.1 ICT and competitiveness

In addition to the potential of ICT as a growth sector, ICT plays an important role in improving business efficiency and extending market reach. Considerable caution is needed in interpreting Romania's position on the Digital Scoreboard as regards business use of ICT: this is potentially misleading due to the distinctive structure of the business base with the large scale of self-employment and very small agricultural holdings. Although only 36% of Romanian businesses have a website compared with 71% on a European level, this represents substantial take-up among businesses that would benefit from having a website.

As regards e-commerce, however, there is a clear deficit both on the supply side (only 5% of SMEs with 10 - 250 employees selling online, compared with 13% at an EU level) and on the demand side (5% all individuals and 11% internet users buying online compared with 45% and 59% for the EU27 in 2012)¹. Although the large company share of turnover from e-commerce

¹ Source: Digital Scoreboard 2012.

has doubled in three years, at 6% it is less than a third of the EU average.

The low trust of citizens in electronic systems is identified as a significant barrier to the adoption of e-commerce. In addition to improving internet access and stimulating computer use, development of the digital marketplace in Romania will require consumer confidence to be built in the security of personal data and financial transactions and also consumer law around online purchase of goods and services. This needs to be complemented by development of the regulatory framework on cross-border e-commerce, online payment and delivery and will be supported by a framework dedicated to easy resolution of the abuses and disputes specific to e-commerce.

ICT development in government has potential to improve the competitiveness of the business environment, to increase public sector efficiency and to reduce bureaucracy. In 2011, only 63% of Romanian enterprises were using the Internet for interaction with public authorities, compared with an EU27 average of 87%, whereas only 31% of the citizens were using e-Government services (the European target for the end of 2015 is 50%). However, to significantly improve the efficiency and flexibility of e-government environment, action will be needed to:

- improve the interoperability of electronic systems.
- rationalise and consolidate government ICT and e-government systems which have hitherto developed in a fragmented fashion.

2.2.2 The People and Society Challenge

Computer skills are a challenge for the educational reforms in Romania, taking into account that, in 2011, Romania registered the highest share (61%) in EU27 of population between 16-74 years old with no computer skills². There is a clear generational and educational divide in computer skills, positively correlated with age and educational level.

On the other hand, the percentage of individuals aged 16-74 years using the Internet regularly (at least once a week) has registered in Romania a steady increase up to the value of 43% in 2012. Nevertheless, 48% of all Romanians have never used a computer. In terms of **territoriality**, the situation is similar in West Romania.

Use of ICTs in the classroom is close to the EU average. Commendably high percentages of teachers are using ICT in more than 25% of lessons, close to the EU average at all grades. However, this has been achieved in the context of

² Source: Eurostat, Information Society Statistics

low levels of equipment. There are few interactive whiteboards and data projectors in Romanian schools at any grade. Improving the availability and quality of hardware and software in schools is a priority in the context of the National Competitiveness Strategy strand Preparing Generation 2050.

As noted above, Romania has significant education and skills deficits in the workforce. The further development of *e-education* will enhance access to LLL, "second chance" education and to training for those who are not provided with opportunities in their workplace. West Romania per se claims to have a relatively higher competence and higher education.

2.2.3 Infrastructure Challenge

The Digital Agenda for Europe targets and Romania's position relative to these are shown below. It may be seen that Romania has particular gaps with the EU Targets in relation to NGA broadband access, overall internet use and digital literacy, reflected in significant shortfalls in e-commerce by business and citizens.

Objective 2020	EU Targets	Current ³ situation RO
Covered by broadband	100% by 2013	89.8% (2012)
Covered by broadband above 30 Mbps	100% by 2020	63.7% (2013)
Subscriptions to fixed broadband above 100 Mbps	50% by 2020	18.9% (2013)
Population to buy online	50% by 2015	5% (2012)
Population to buy online cross-border	20% by 2015	1% (2012)
SMEs to make online sales	33% by 2015	5% (2012)
Difference between roaming and national tariffs	to approach zero by 2015	
Regular internet usage overall	75% by 2015	43% (2012)
Among disadvantaged people	60% by 2015	24% (2012)
Population that has never used the internet	15% by 2015	48% (2012)

³ Sources: <http://ec.europa.eu/digital-agenda/en/scoreboard/romania>; ANCOM

Citizens using e-Government	50% by 2015	37% (2012)
Returning completed forms	25% by 2015	4% (2012)
Key cross-border public services, online	100% by 2015	N/A
Public investment in ICT R&D	doubled to €11b by 2020	€27.3m (2011)
Energy use of lighting (%)	reduced by 20% by 2020	N/A

By 2012, basic broadband covered 89.8% of homes in Romania (compared 95.5% in the EU). Progress towards delivery of basic broadband has been delivered in Romania by exploiting existing fixed infrastructure and mobile broadband. However, the step change to NGA speed access will require fibre optic fixed network to achieve.

Recent consultations with operators⁴ concerning the existence of infrastructure and the intention to invest in a total of 12,487 rural localities resulted in the identification of 2,268 localities where there are no broadband networks either in the local loop area, or in the backhaul area, and where there is no justified intention to invest expressed by private operators.

In the absence of public sector intervention, by 2020, in terms of **territoriality**:

- with limited exceptions, the market will deliver the Digital Agenda targets in urban areas, with 90% of households will be covered by fixed NGA infrastructure affording 100 Mbps access.
- there will be significant market failure in rural areas⁵ and less than 50% of households will be covered with speeds over 30Mbps while the percentage of households with access at speeds over 100Mbps will not exceed 20%.

It is claimed that public investment in 2014-20 will take place in the framework of the National Plan for Development of NGA Infrastructure, targeting areas subject to market failure and informed by GIS-based mapping

⁴ Source: ANCOM, 2013.

⁵ According to ANCOMs biannual reports the demand for broadband internet services increased starting from 2006 with respect to both fixed and mobile technologies (http://www.ancom.org.ro/statistici-comunicatii_2003) and according to data provided by significant market players within the workshops dedicated to drafting the NGA National Plan was estimated the developing potential.

of the existing communications infrastructure to be completed by ANCOM in 2014⁶.

The level of broadband take-up in Romania (16.6 connections per 100 population) is much lower than the EU 27 average⁷ (28.8) reflecting the country's low level of digital literacy (48% of Romanians have still never used a computer). The resulting thinness in market demand continues to be a major factor in market failure in the delivery of broadband services.

According to MSI, in 2012, 43.8% of households had Internet access via a fixed broadband connection, compared with an EU average of 75.6%. In terms of **territoriality**, most of these were located in urban Areas where 60.3% of households were connected, more than double the rate in rural areas (23.47%). Urban-rural disparities reflect a combination of income levels, the availability of computers in the home, and digital literacy. Access to basic broadband, previously a significant obstacle, is diminishing as the RoNet initiative is rolled out.

Increased levels of take-up, particularly in Romania's rural areas, are fundamental to Romania's transformation to an information society and to avoiding digital exclusion as public and private services are increasingly delivered online.

2.2.4 Administration and government challenge

The analysis reveals Romania's continuing and, in some cases, widening disparities with the EU across a broad spectrum of issues. Accordingly, in the 2014-20 period, Romania will make investments using ESIF resources under all 11 Thematic Objectives that relate to the EU2020 strategy.

The selection of Thematic Objectives relates to West Romania's alignment with and potential contribution to the five Challenges and the related main development needs.

2.3 West Romania and the DAE policy context

West Rumania is a region comprising four counties, with a total population of 1.9 million, a regional GDP of €12 billion and a per-capita GDP of roughly 50% of the EU average. There are over 40 thousand SMEs, total export is €5.2 billion, and unemployment is below 4%. The region has 7

⁶ In accordance with Law no. 154/2012

⁷ Highlighted in Commission Services Position Paper (October 2012) p7.

public universities and 7 private ones, with a total of 3164 teachers and over 20,000 students graduating every year of a total 72,000.

The policy mix we have been presented is focusing on establishing a cluster of ICT, incubator centre and co-location for ICT. This of course interesting and can drive the development, but without an ICT-infrastructure to support that it will be problematic to get success.

The main opportunities for future regional development are

- New programming period 2014-2020 oriented on strategic projects
- Exploiting the critical mass of international partnership gained within INTERREG projects
- Taking the key decisions for optimal impact of the regional innovation strategy for smart specialisation:
 - Correlation between *planning and programming* documents at regional and national level
 - Innovation as *regional priority*
 - RDAs as regional innovation policy-makers
 - *Regional funds* for innovation
 - RDAs as regional fund managers
 - Mechanisms for *monitoring* at regional and national level

The region assesses these to be their competitive advantages:

- Regional Economy: growing region; traditional industrial area; business locations; clustering
- Strategic location: border area; TEN T Network; international airports
- High Quality of Human Resources: young; good coverage of all qualification levels; diversity and multiculturalism
- Quality of Life: good cost of living; tourism; unique natural elements; rich natural resources
- Advanced Services: Costumers services; headquarters for multinational companies

The key challenges identified by west region: to stay attractive

- strategic planning and programming
- offering professional services to investors
- putting into practice the business support instruments...

The solution is to make the West Region a smart specialization region.

The strategy identifies the use innovation to address the challenges

- Boosting smart innovation based on:
 - S3 Strategy
 - Regional study on business infrastructures
 - Regional study on venture capital
- Boosting ICT cluster by implementing the approx. €11m project ICT Regional Competitiveness Pole through an integrated package of projects consisting of:
 - ICT Cluster's Development Strategy for 2012 - 2020
 - 2 Infrastructure Investment Projects
 - 5 RDI Projects
 - 1 project for developing support services for new ICT start-ups
 - 1 Project for integrated management of the 9 projects

3 Our assesement

From the material that we were able to gather, and the discussion and interviews we had *in loco*, it seems to us that the current situation can be summarised as confused but with good bases for development.

3.1 High level assesement

It seems that the regional agency has done some analysis of the current situation and has an ambition to define a strategy. At present, it seems the regional strategy is vaguely defined as “promoting the three smart specialisation areas identified”. We were unable to find a concrete action plan (beyond the boosting of an ICT pole and distribution of funding to few research & development projects), the definition of goals, nor identification of responsible entities. This may depend in part on us not being able to find that information, or to language barriers.

The situation is made trickier by a “multilevel governance challenge”. Romanian regions are currently little more than statistical geographic areas, rather than administrative units, so there is no regional government or administration that can take the political and financial initiative for a digital agenda. Still, the regional agency is responsible for the allocation of European funds, but in fact, during the meeting the regional agency often referred to the national Digital Agenda when asked about objectives.

At national level, there is a Digital Agenda, described in a relatively well-detailed document, which seems however to be available only in Romanian. From our analysis (with the help of computer-aided translation and the loose proximity of Romanian to Italian, one of the experts’ native tongue), it seems that the Agenda identifies all the right priorities and even sets some goals.

Coming back to the situations of West Romania, the national Digital Agenda rightly points out the following steps in the design of a RIS3 for regions:

1. Analysis of the regional context and the potential for innovation
2. Governance system and ensuring ownership
3. Develop an overall vision for the future of the region in question
4. Identify priorities
5. Defining a coherent policy mix and an action plan
6. Integration of monitoring and evaluation mechanisms

From our observation, we can say that West Romania currently has completed points 1 and 4 and has tackled point 3 at some level. Points 3, 5

and 6 seem to still be untouched.

3.2 Assessment against specific criteria by the Commission

The Commission wished us to assess the regional policy framework in respect to a number of areas (analytical work, stakeholder involvement, priorities, road map, policy mix, synergies, governance and monitoring, etc.). In this section we attempt such an assessment, aware of the limitations in terms of information gathered and time available.

It seems that an analysis of the region's existing situation was made and that scientific/technological and economic specialisations in information and communication technologies (ICT) were identified and that competitive ICT assets of the region were identified, together with the competitive position of the region and the potential areas of specialisation with regard to other countries/regions in the EU.

It is unclear, however whether a proper process of direct stakeholder involvement (ICT companies, research institutes, universities, relevant citizen and consumer groups or business associations, and the national regulatory agencies for telecommunications) was followed. The competitiveness pole has participation from several companies, but it is unclear how they are involved.

Due to the administrative situation described above, there does not seem to be one identified leader for the design and implementation of strategy.

The regional strategy identifies some general competitive advantages for the region:

- 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)
- Quality of Life (good cost of living; tourism; unique natural elements; rich natural resources)
- Advanced Services (Costumers services; hheadquarters for multinational company)

It also includes a SWOT analysis and identifies three general sectors of competitive advantage (activities that are already well-developed and have attained a level of competitiveness that allows the local firms to export on the global market):

- Automotive

- Textiles
- ICT

although we cannot judge whether a sufficient efforts are being made in the analysis to avoid imitation, duplication and fragmentation in identifying regional specialisations. When it comes to priorities in innovation and knowledge-based development priorities in ICT, we were not able to ascertain much concrete, apart from the mentioning of rationalisation of data centres. As mentioned above, the regional strategy refers to the national Digital Agenda, which contains a Next Generation Networks (NGN) plan, but these priorities does not seem sufficiently specific in identifying existing/potential niches for smart specialisation.

Nor did we learn of ICT as enabler of traditional industries. This could depend on the lack of depth of documents and shortage of time to get into details during the meeting.

At regional level, there seems to be no roadmap, or action plan to achieve the DAE objectives. No objective seem to be in place at regional level when it comes to:

- 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 (Next Generation Networks).
- Improvement of demand-side conditions and, in particular, public procurement as a driver for innovation;

There was no mention of the mix of financial instruments (grants, loans and venture capital) in the information we were able to gather, nor a plan to produce synergies between and alignment of different policies and funding sources, including, private sector, regional, national and EU-level.

3.3 Our recommendation

We strongly recommend that the region develop a Regional Digital Agenda, and get the Agenda backed politically. This should be a realistic target, even given the lack of a proper regional government (the multilevel governance challenge highlighted in section 3.1).

3.3.1 Overcoming the multilevel governance challenge

The multilevel governance challenge stems from the fact that there is no regional body with concrete administrative and political power, making it difficult to develop and enforce a regional digital agenda. Yet, despite the fact that a national broadband agenda of some sort exists, it is necessary that a regional agenda be defined, for two reasons: the first and more immediately identifiable is that the European structural funds are distributed at regional level, through the regional development agency. The second and more fundamental issue is that the digital growth strategy needs to take into account needs, preconditions and stakeholder needs specific of the regional territory.

One option that has been suggested by the Commission is that some coordination with the central government be sought, in order to influence the definition of the national agenda and get support for local needs. However, we are of the opinion that a locally defined and adapted solution is highly preferable. This solution could rely on the existing political/administrative structure in place today, i.e. the county governments.

While Romania finds itself in a transition period, in which the newly formed regions are thought to take over prerogatives from the counties, these are – in our understanding – the entities that today have mandate to back strategic documents. In our opinion, it should be possible to bring together the four counties that make the region of West Romania should be possible. This would provide the necessary political backing to any regional digital agenda being defined.

In such a context, the regional development agency would have the crucial role of initiative taker, coordinator, and interface with the different stakeholders. The agency could leverage its competence and experience in probing the territory and the socio-economic context, selecting and financing projects, distributing funds and defining strategy goals when it comes to ICT and development. The agency will, in other words, continue the good work currently being done, but with a renewed ambition and in constant 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 agenda is relevant and efficiently defined).

This would result in a clear role definition in which political representatives feel engaged and in control, the agency puts its competence at good use, and the stakeholders participate and make their needs heard. This is indeed often the model followed by other regions, the main difference being that four counties need to be engaged, as opposed to one regional government. Formally, different solutions can be followed. One could be that one document (the regional agenda) is produced and that the four counties produce county strategic decisions in which they commit to the regional agenda.

To summarise in bullet points, we suggest overcoming the multilevel governance challenge in the following way:

- A formal collaboration should be established between the four county governments (which currently hold local administrative power) within the current legislative framework.
- The regional development agency should take the initiative to produce the Agenda, as detailed below in section 3.3.2.
- The regional development agency take the coordinator and intermediary role, setting up meetings with the relevant authorities from the four counties (as well as the major stakeholders, as argued below in section 3.3.2), to make sure that the new Agenda is aligned with the broader county and regional policy, and that it has political mandate.
- The four county governments should then gather and commit to the new Regional Digital Agenda in a formal way (document signing, county council decision, etc.).

3.3.2 Writing the Regional Digital Agenda

The “*Development strategy for ICT competitiveness Pole*” can serve as a starting point to produce a Regional Digital Agenda. The agenda should be a document or set of documents in which all the relevant aspects are clearly defined. These should include also local, county and regional public administration services and activities. For instance schools, hospitals, administrative buildings should be connected to high speed broadband, and their digital growth activities should be coordinated and encouraged. One way to go about is to establish thematic areas (such as broadband networks, open data, smart grids and internet of things, access to services for enterprises and citizens, digital schools and general digital competence development). The different thematic areas may be treated in specific documents and developed further by competent and driven people within and without the agency, but the overall strategy must be defined in a coherent way. The best way to do that is to have a high-level document defining the general lines possibly referring to specific documents for each theme.

The digital agenda should include considerations on the benefits that the agenda will bring to the PA, the market, the citizens and society at large. It must also fit in the overall national, regional and local development strategy, and ensure that all the relevant stakeholders are involved.

Equally importantly, the risk of the agenda becoming a beautiful piece of paper must be countered by assigning a relevant budget, with identification and commitment of funds from different sources (public and private) at political level. Moreover, efficient monitoring mechanisms must be put in place. The current situations must be mapped, clear goals must be identified,

and responsible persons assigned for each goal. These goals should be defined starting from the national and European goals (i.e. the Digital Agenda for Europe).

When it comes to stakeholders, the agenda should create the right conditions and incentives for all the relevant stakeholders to support the goals in the agenda and participate in the projects set in place to implement it. Their active participation will also allow leveraging on the resources, competence and assets present in the region and ultimately will produce higher chances of success. Important stakeholders can be found in the private sector (such as companies owning infrastructure, telecom operators and service providers interested, large enterprises and SMEs), public administration (hospitals, schools, elderly and social housing companies, utilities, public administration authorities and offices), civil society (local citizen cooperatives, consumer associations, public and private housing companies and property owners, pensioner associations, different cooperatives and NGOs), as well as neighbouring counties and regions, which are precious sources of collaboration and inspiration.

We recommend that best practices in other European regions be followed at least as a template, especially to have an overview of what needs to be thought about and how different regions have tackled the different aspects.

To summarise in bullet points, we suggest the following:

- The Agenda should be one high-level document that can be easily referred to, both internally and externally; the document may then refer to specific documents for the detailing of specific issues.
- The Agenda should clearly state objectives, and define monitoring and assessment processes to follow the development.
- All major stakeholders (with representatives from businesses, citizens, non-government associations, ICT providers, and local governments such as municipalities) should be involved in the process, in order to align its goals with the socio-economic situation and the needs and potentialities of all stakeholders, and not least to make us of the invaluable competences and resources available in the region.
- A budget should be set either in the Agenda or in an execution plan.
- One person/entity should be responsible for the implementation of the agenda and for promoting the goals.

The regional digital agenda may refer to national and European plans, but must identify how this is to be made in practice in the region.