

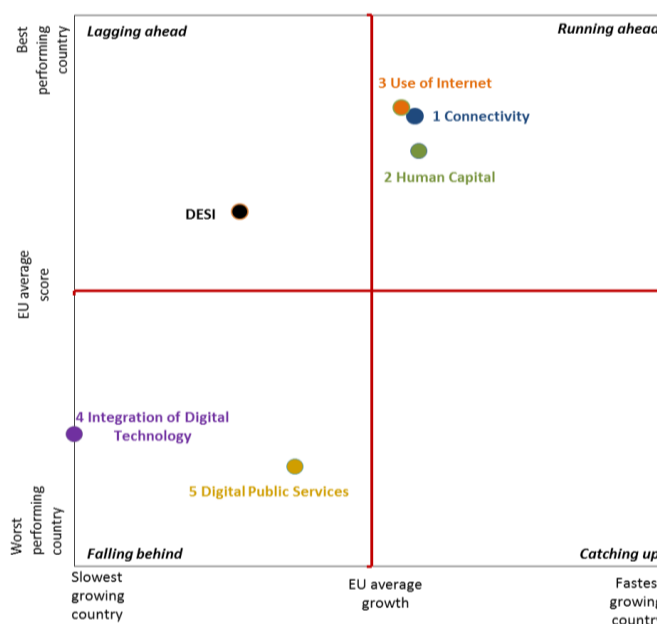
# Europe's Digital Progress Report (EDPR) 2016

A report complementing the Digital Economy and Society Index (DESI)<sup>1</sup> country profile

## LUXEMBOURG

Luxembourg ranks 10<sup>th</sup> out of the 28 EU Member States in the European Commission Digital Economy and Society Index (DESI) 2016<sup>2</sup>. Luxembourg's scores places it among **lagging ahead**<sup>3</sup> countries, who score above the EU average but whose score grew slower than that of the EU as a whole, in comparison with the DESI 2015.

Connectivity, the Use of the Internet by citizens and Human Capital are the dimensions in which Luxembourg performs relatively above average. However, the country fares quite badly in integration of digital technologies and in online public services.



Luxembourg's performance in the five DESI dimensions relative to other EU countries

### 1 – Connectivity

In Connectivity, Luxembourg is performing very well; moreover, it's making good progress. Having already achieved complete broadband coverage, both fixed and mobile broadband uptakes have grown further in Luxembourg. Nevertheless, NGA coverage has remained stable at a high level. The ambition to become the first country with complete FTTH coverage should provide further drive for network development. On the other hand, the relative amount of spectrum assigned for wireless broadband has further decreased in Luxembourg (53% of harmonised spectrum being assigned), in spite of the very rapid increase in mobile broadband take-up last year (It jumped by 15 percentage points from 58 to 73 subscriptions per 100 people, although still slightly below the EU average). The harmonised spectrum has however been made available and it can be assigned to operators once they express a need.

As the country with the largest number of households subscribing to fixed broadband (94%), there still remains room for development both in mobile and high-speed fixed broadband. The Digital Lëtzebuerg initiative should be leveraged to support projects that will further boost penetration in rural areas where operators lack investment incentives, including in mobile delivery settings. In this regard, it might be appropriate to consider how spectrum planning can stimulate and support possible future increased demand for spectrum.

<sup>1</sup> The Digital Economy and Society Index (DESI) is a composite index developed by the European Commission (DG CNECT) to assess the development of EU countries towards a digital economy and society. It aggregates a set of relevant indicators structured around 5 dimensions: Connectivity, Human Capital, Use of Internet, Integration of Digital Technology and Digital Public Services. It clusters countries in four groups: Running ahead, Lagging ahead, Catching up and Falling behind. For more information about the DESI please refer to <https://ec.europa.eu/digital-single-market/en/desi>

<sup>2</sup> DESI Country Profile for Luxembourg: <https://ec.europa.eu/digital-single-market/en/scoreboard/luxembourg>

<sup>3</sup> Other lagging ahead countries are Belgium, Denmark, Finland, Ireland, Lithuania, Luxembourg, Sweden and the United Kingdom

In 2010, the Luxembourgish government set up the "National strategy for very high-speed networks - Very high-speed broadband for all", in which it aimed to have 1 Gbps downstream and 500 Mbps upstream by 2020 for everybody. This plan surpasses the goals of the DAE. The government intends to achieve its goals by market-driven broadband roll-out based on competition among the operators. Furthermore, it should be noted that the government does not plan to spend public money on this project, but it will offer generous tax incentives. Luxembourg still has to transpose the Cost Reduction Directive<sup>4</sup> which could help to speed up broadband roll-out.

## **2 – Human Capital**

In Human capital, Luxembourg is performing relatively well; moreover, it is making good progress. The country ranks 1<sup>st</sup> in Europe for Internet users (96.8% of individuals are regular internet users in 2015) and it also ranks 1<sup>st</sup> in Europe for digital skills (86.2% of individuals have basic or above basic digital skills in 2015). While the proportion of ICT specialists in total employment, at 5.1%, is relatively high, Luxembourg lacks skilled ICT professionals. In 2015, 59.1% of enterprises which recruited or tried to recruit staff for jobs requiring ICT specialist skills reported problems filling these positions, up from 58.5% in 2014. This is the second-worst figure in the EU, almost on an equal footing with the Czech Republic (59.2% in 2015). Demand for skilled ICT professionals within the economy is rising rapidly, while the supply is not keeping pace. This problem is also related to the low number of STEM (Science, Technology, Engineering and Mathematics) graduates, where Luxembourg is the worst performer out of the 28 EU Member States, with a mere 3.6 per 1000 individuals aged 20 to 29 (versus 18 per 1000 at EU28 level). This performance is mainly due to the fact that a very large majority of students are doing their studies abroad, and are therefore not being taken into account for the purpose of these statistics (which only take into account residents, i.e. diplomas from the University of Luxembourg, and not from universities abroad).

The transmission of technology into new ideas and products hinges on the availability of a vast pool of aptly skilled workers. In this perspective, the Luxembourgish government presented the Digital (4) Education<sup>5</sup> strategy on 20<sup>th</sup> May 2015. This strategy has set two key objectives: "Digital Education" (training young people in digital media) and "Digital for Education" (learning through digital media). This strategy is structured around 5 axes: Digital citizen, Digital peer, Digital learner, Digital worker and Digital entrepreneur.

If Luxembourg has recently launched the "Digital (4) Education" strategy, however it has not yet set up its National Coalition for Growth and Jobs under the Grand Coalition for Digital Jobs. This coalition would ensure that all the key stakeholders (government, businesses, and education) are involved in the implementation of strategies addressing the human capital problems faced by Luxembourg (e.g. shortage of ICT specialists).

## **3 – Use of Internet**

In the Use of internet services, Luxembourg is performing very well, according to the EU DESI 2016 scoreboard. Moreover, it's making good progress and the use of internet continued to grow in most of the monitored categories with the exception of banking, which has stagnated.

Internet users in Luxembourg are skilled and do not hesitate to engage in a broad range of online activities. They read news online (85%), listen to music, watch films and play games online (59%), use the Internet to communicate via video calls (47%) or through social networks (70%), and obtain video

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<sup>4</sup> Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks (OJ L155, 23 May 2014, p. 1)

<sup>5</sup> <http://portal.education.lu/digital4education/>

content using their broadband connections (28% of households with a TV use Video on Demand). For most of these activities, engagement among users in Luxembourg is in line with or higher than the EU average.

#### **4 – Integration of Digital Technology**

In the Integration of digital technologies by business, Luxembourg's performance is below the EU average; moreover, its progress is below the EU average too.

Regarding the integration of eCommerce by SMEs, both the percentage of SMEs selling online and the share of eCommerce in SME's turnover are low. Moreover, the share of SMEs selling online cross border dropped dramatically last year. The "one-off" change in VAT rules (from country of origin to country of destination) for telecoms, broadcasting and electronic services as of 1<sup>st</sup> January 2015, as an implementation of the European legislation, may be the origin of this problem. To promote the integration of eCommerce by SMEs, the government launched the initiative « Atelier Digital »: a training programme to support SMEs in seizing the benefits of new technologies and engaging in e-commerce.

The "Digital Lëtzebuerg" initiative aims to accompany the transition to a digital economy and society. Luxembourg is stepping up its efforts to diversify its economy, most notably by supporting startups and innovative projects and by stimulating the development of its thriving FinTech sector. The programme "Fit4Start" has been launched to support innovative ICT startups in their initial phase by offering them financing and coaching adapted to the needs of early-stage enterprises. In addition, the "Digital Tech Fund" was created in April 2016 aimed at providing funding for projects in various fields<sup>6</sup>.

#### **5 – Digital Public Services**

In Public services, Luxembourg's performance is well below the EU average; moreover, its progress is below EU average. EGovernment is the dimension in which Luxembourg ranks lowest: 22<sup>nd</sup> out of 28 in DESI 2015 and DESI 2016 (although this is only its second worst score: 0.41 in DESI 2015 and DESI 2016). Luxembourg has posted below average scores in many aspects of eGovernment. According to the eGovernment factsheet<sup>7</sup>, Luxembourg has been a laggard in terms of user centricity (with a score of 69 for Luxembourg versus 73 for EU in 2014), of transparency (47 versus 51) and of cross-border mobility (51 versus 58). On the contrary, Luxembourg stands above average (with a score of 55 for LU versus 50 for EU in 2014) as regards key enablers (electronic Identification, electronic documents, authentic sources, electronic safe and Single-Sign-On). Concerning open data policy, Luxembourg fares poorly (according to the PSI Scoreboard, one of the components of the eGovernment dimension of the DESI composite index, Luxembourg scored 135 in 2015, taking the 27<sup>th</sup> and last-but-one rank in the EU). Although Luxembourg implemented the Public Sector Information (PSI) directive (2003/98/EC) in its original version (Law on the re-use of public sector information enacted on 4<sup>th</sup> December 2007), it adopted the national measures implementing the PSI revised directive (2013/37/EU) in April 2016.

In response to these weaknesses, the Luxembourgish government has carried out several actions. The most important initiative "Digital Lëtzebuerg" covers eGovernment services. The Council of government of 24 July 2015 approved a series of principles for the implementation of an efficient digital administration: "Digital by Default" i.e. any new law must take into account and integrate its

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<sup>6</sup> These fields include cybersecurity, FinTech, Big Data, Digital Health, digital education, new generation networks, telecoms or IoT.

<sup>7</sup> Source: European Commission, eGovernment factsheets, eGovernment in Luxembourg, February 2016

electronic implementation, "once only" i.e. the obligation for each administration to reuse the information already held, transparency, improved usability, the widespread use of "guichet.lu:" a single address for all the administrative paperwork. This initiative will enable Luxembourg to improve its situation with reference to digital administration and several new features have already been developed to improve this situation, notably with regard to transparency and user-centricity. Another important measure taken is the development of an online Open Data Portal<sup>8</sup>.

Previously, the Luxembourgish eGovernment strategy was launched by the eGovernment Master Plan (2005-2010) and by the subsequent Master Plan for the Implementation of Information Technology within the State (2010-2014). The State Information Technology Centre (CTIE) was established in 2009 as the main body responsible for the implementation of the master plan.

**"Digital Lëtzebuerg" was announced in October 2014. This overarching initiative has been put in place to support Luxembourg's transition towards a digital society and a digital economy.**

For many years, Luxembourg's digital economy has experienced outstanding growth. Successive governments focused first on the infrastructure necessary to provide the best environment for the development of ICT sector companies. However digital transformation must include all aspects of public and private life. Thus the Luxembourgish government wanted to provide a unifying framework for all the countless public and private initiatives that comprise the economy and digital society.

**[www.digital-luxembourg.public.lu](http://www.digital-luxembourg.public.lu)**

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<sup>8</sup> <https://data.public.lu/en/>