

**DESI**

**Digital Economy and Society Index**

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**Unit F4**

**European Semester and Knowledge Base**

**DG Connect**

# Introduction

- The **Digital Economy and Society Index (DESI)** measures progress of EU countries towards a digital economy and society.
- It brings together a set of relevant indicators on Europe's current digital policy mix.
- **Objectives**
  - As a part of Europe's Digital Scoreboard, it assesses the relative performance of Member States and their readiness to embrace digital.
  - It is the main analytical tool for monitoring Member States' progress in the scope of the European Semester.
  - It provides analytical support for the rollout of the Digital Single Market.
  - It supports communication activities and Going Local.
- The **DESI** has been **calculated for 2014 and 2015**
  - February 25: launch of DESI 2016

# Types of Analyses

- **General performance assessment**
  - Characterisation of the performance of individual Member States by observing their overall index score and the scores of the main index dimensions.
- **Zooming-in**
  - Pinpoint the areas where Member State performance could be improved by analysing the scores of the index's sub-dimensions and individual indicators.
- **Follow-up**
  - Assess progress over time in aggregate dimensions and individual indicators.
- **Comparative analysis**
  - Cluster Member States according to their index scores, which allows comparisons between Member States in similar stages of digital development so as to flag the need for improvement in relevant policy areas.

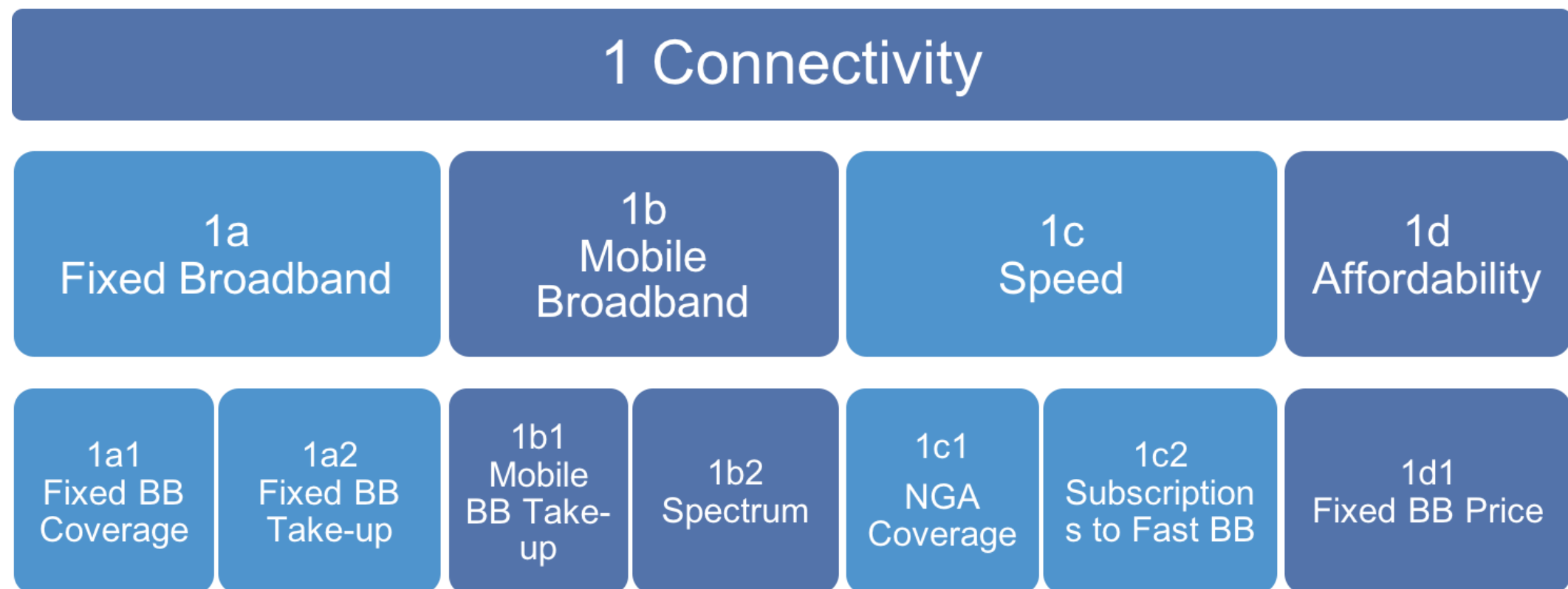
# Structure

- The DESI comprises **5 dimensions** representing main policy areas
  1. Connectivity
  2. Human Capital
  3. Use of Internet
  4. Integration of Digital Technology
  5. Digital Public Services
- Relevant sub-dimensions under each dimension
- Overall gathering 32 indicators



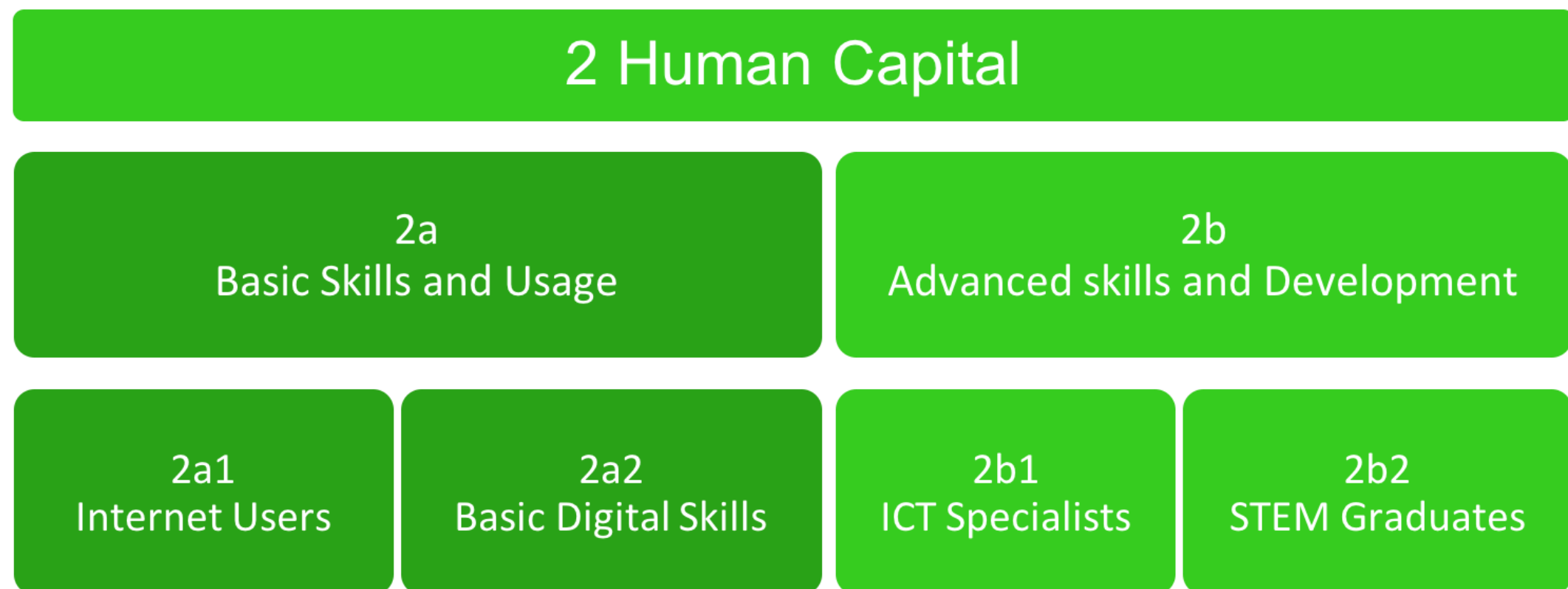
# 1. Connectivity

- Connectivity is a necessary infrastructure for a digital economy and society.
- A digital society can only develop if its members are connected to the Internet.
- A high-speed Internet connection is essential to fully benefit from the developments of today's digital world.



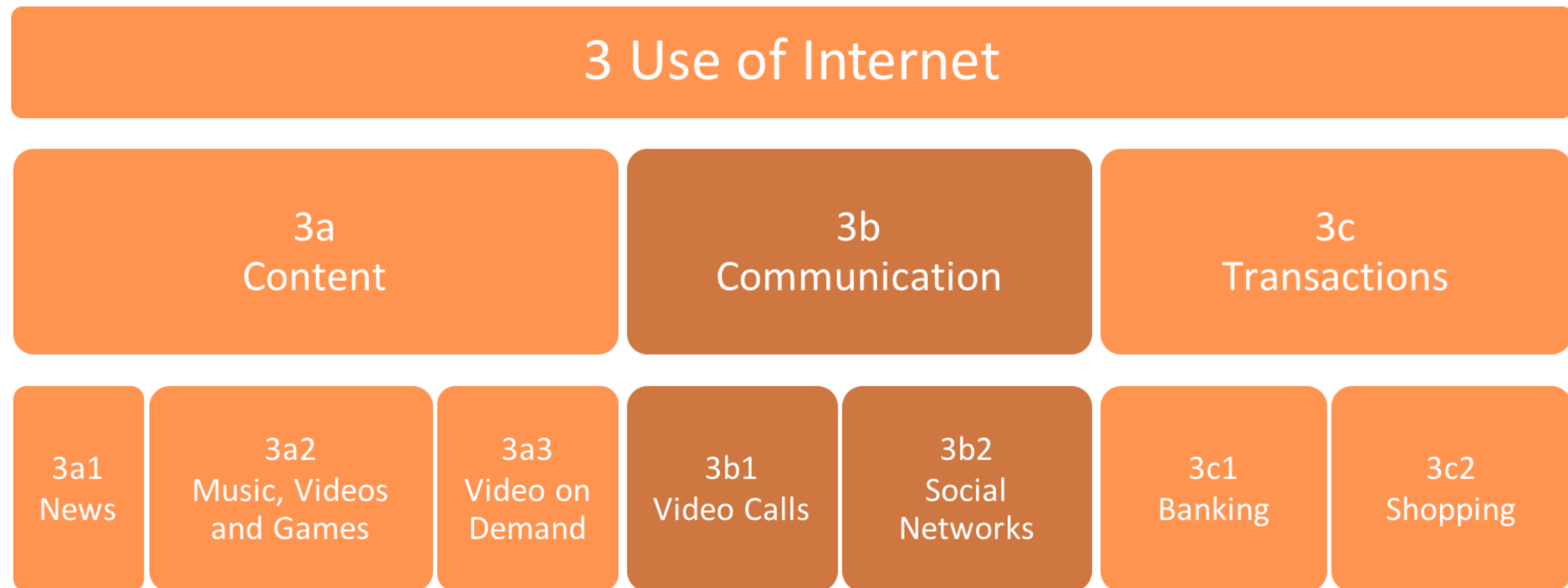
# 2. Human Capital

- Digital skills are a necessary infrastructure for a digital economy and society.
- Citizens must have the appropriate skills to take advantage of the Internet its possibilities.
- Basic usage skills enable individuals to take part in the digital society and consume digital goods and services.
- Advanced skills empower the workforce to develop digital goods and services for enhanced productivity and economic growth.



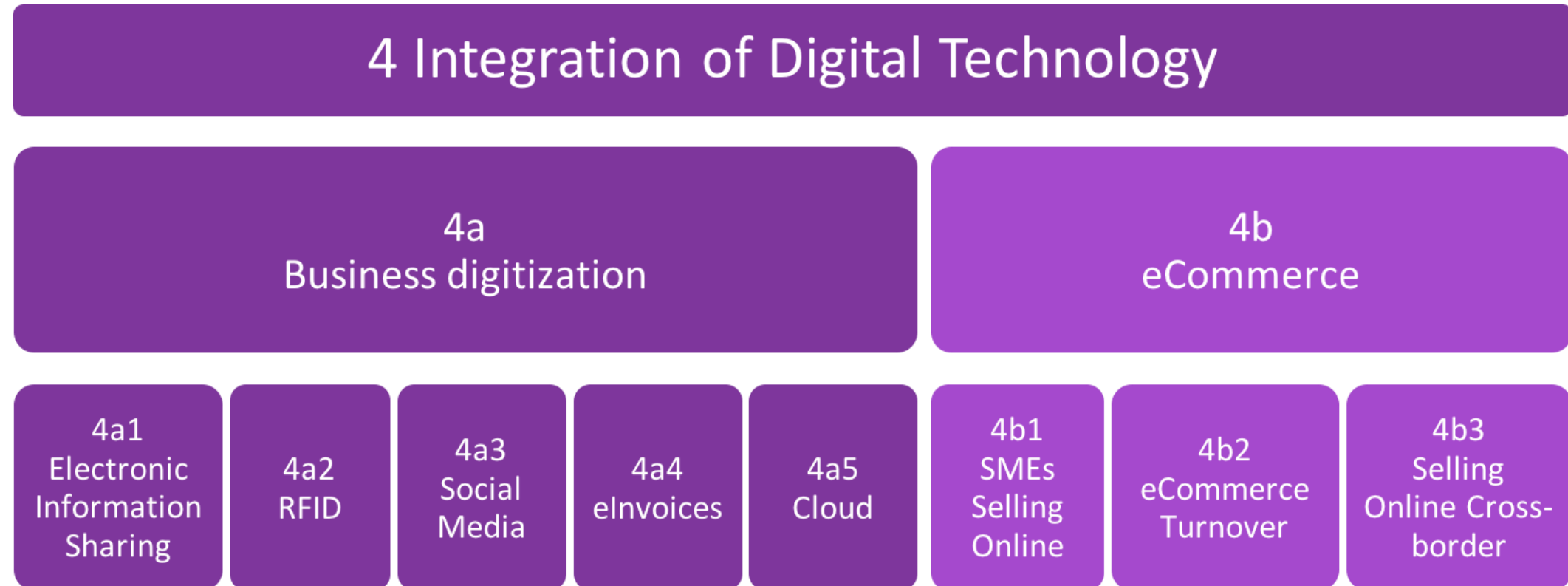
# 3. Use of Internet

- Citizens engage in a wide range of content-rich activities online:
  - They consume content, such as news, music, movies, TV or games.
  - They communicate in different ways (e.g., via online video-calls, or social networks),
  - They engage in transactions, such as banking or shopping online.
- Such activities are drivers for the development of broadband networks. They drive users to subscribe to broadband connections as well as operators to deploy faster networks and better content delivery facilities.



# 4. Integration of Digital Technology

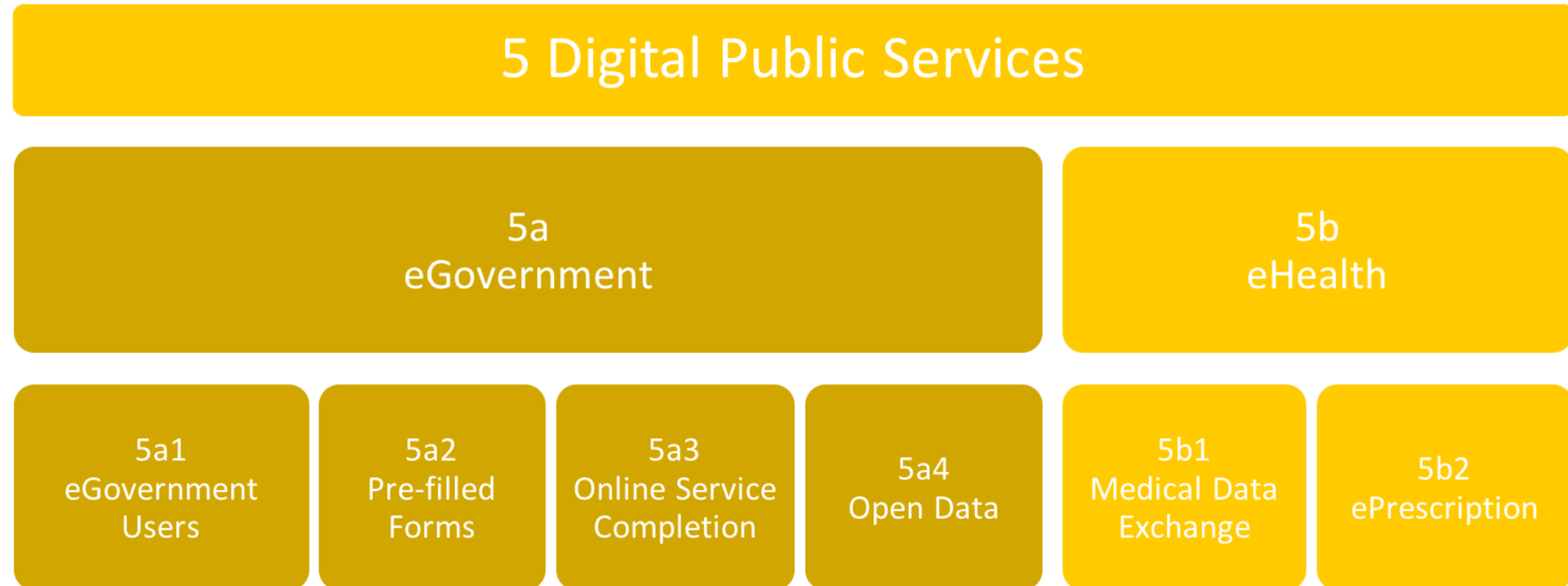
- Business digitisation is one of the main contributors to enhanced economic growth.
- Adoption of digital technology (such as Cloud, Big Data, or the Internet of Things) enhances efficiency, reduces costs and allows for closer engagement with customers, collaborators or business partners.
- The ability to use the Internet as a sales outlet pushes businesses to modernise and allows them to exploit new sources of revenue.





# 5 Digital Public Services

- Digital technologies can improve business and citizen interaction with the Public Sector.
  - Public Administrations can better address business and citizen needs, while reducing costs.
  - Better and more streamlined Public Services make citizens and businesses gain efficiency, both due to better functionality as well as to reductions in time spent.
- Developments in eHealth, such as the exchange of electronic patient data and the use of ePrescriptions, can greatly improve the efficiency of health systems.

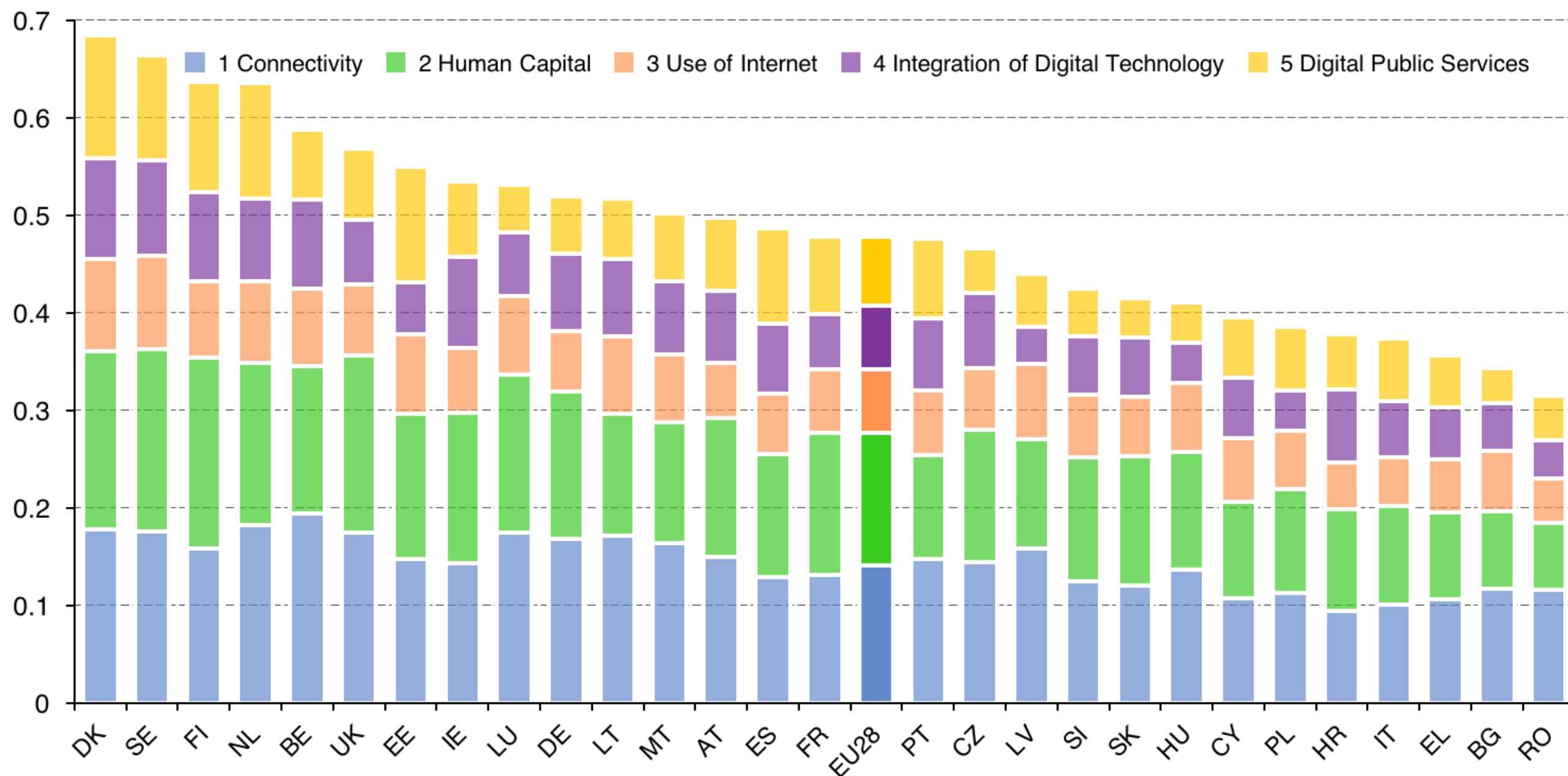


# Methodological notes

- Indicators collected on an **yearly basis** for follow-up purposes
  - Few exceptions for biennial indicators
- Normalisation of indicator scores performed using **bounds that are fixed** over time
  - Allow **comparability** of scores between years to track progress
- **Weighing** of indicators and dimensions

Dimension	Weight
1 Connectivity	25%
2 Human Capital	25%
3 Use of Internet	15%
4 Integration of Digital Technology	20%
5 Digital Public Services	15%
- **Cluster analysis** groups countries in clusters of peers
  - Three clusters: high, medium and low performance

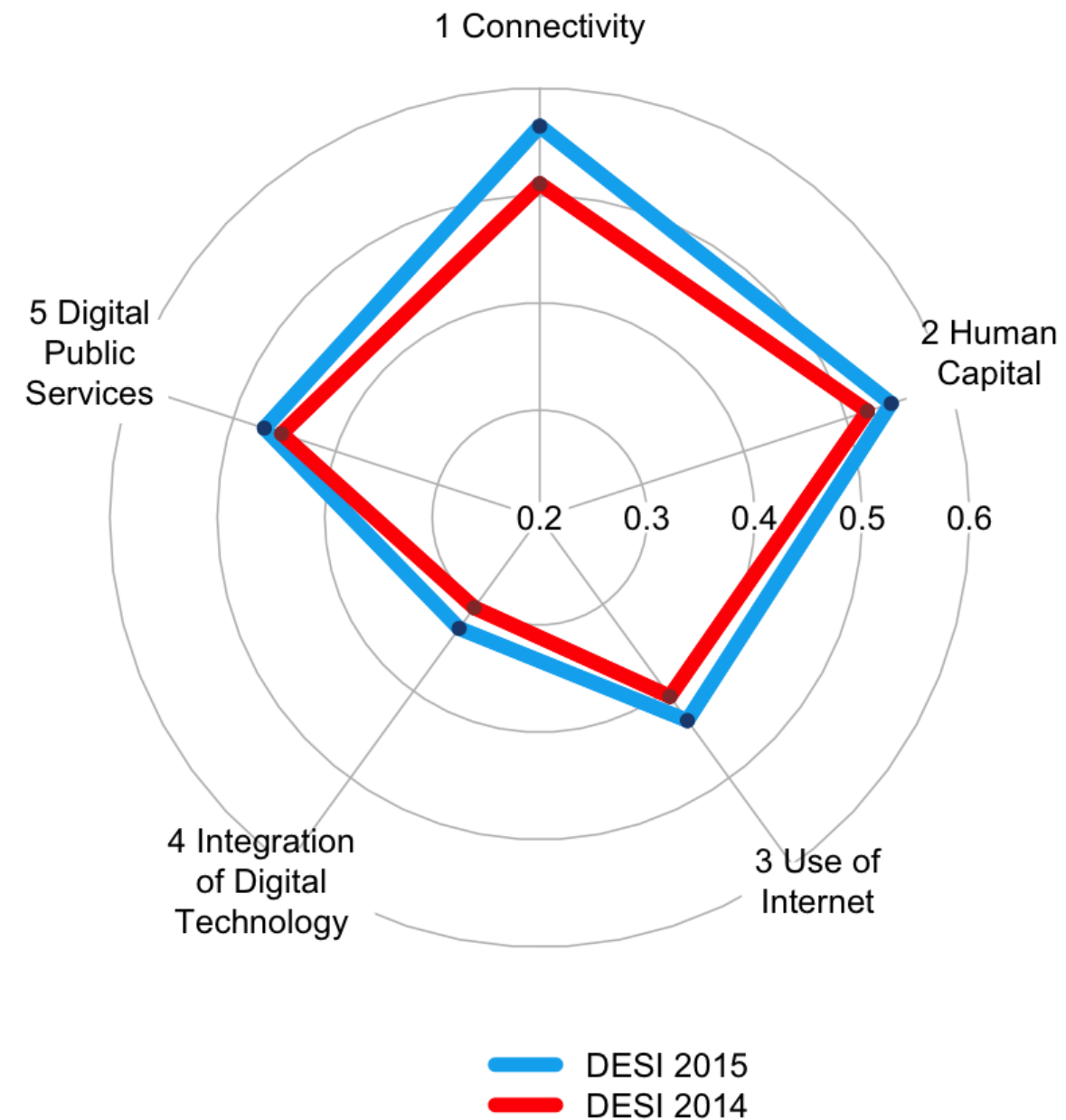
# DESI 2015 - Ranking of EU countries



- DESI 2015 is based mostly on data from 2014
- Country scores range between a minimum of 0 and a maximum of 1

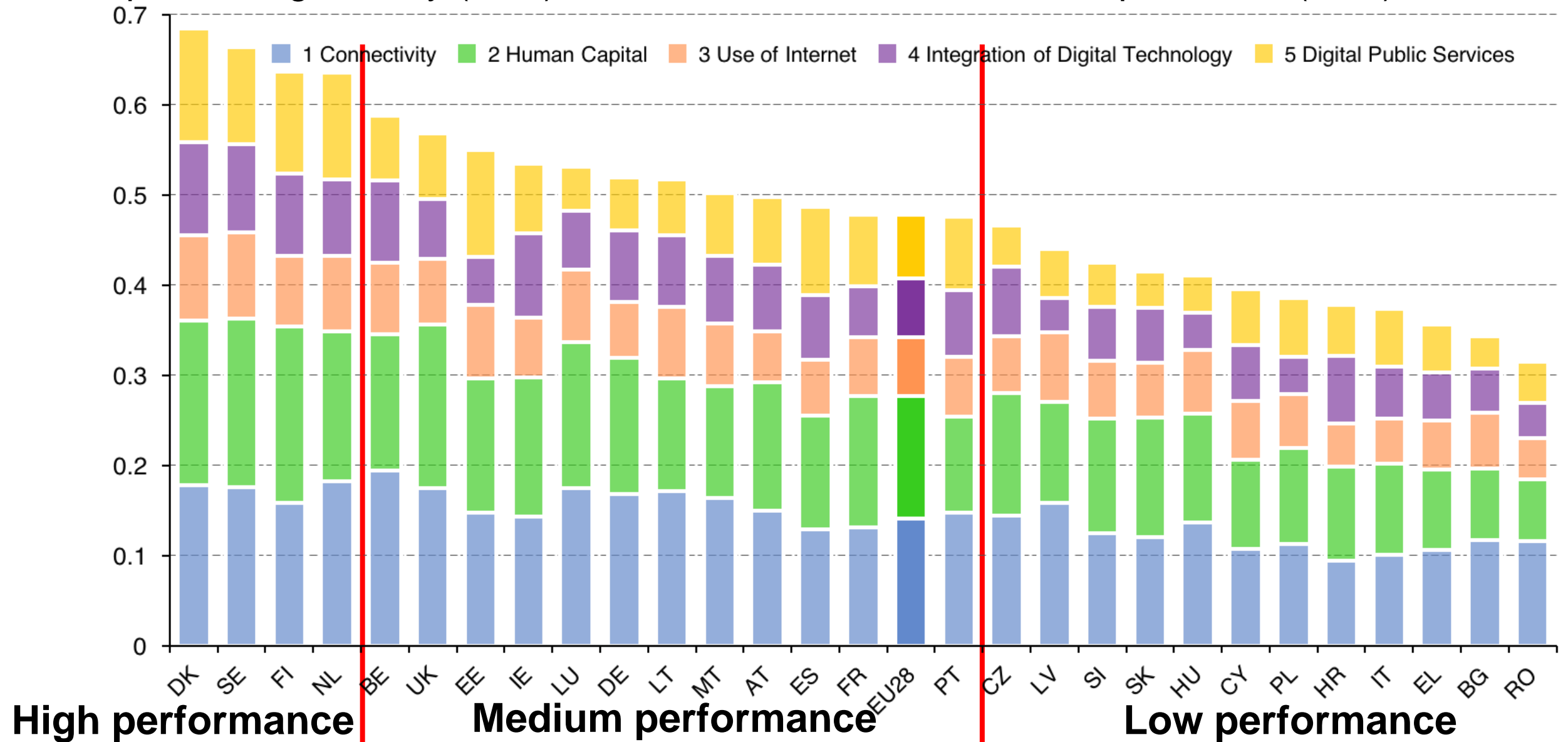
# The European Union is progressing

- EU score is up to 0.47 (0.44 in 2014)
- **Greatest progress in Connectivity** (from 0.51 to 0.55) due to improvements in the take-up of mobile broadband and take-up of fast broadband.
- **Improvements in Human Capital** (0.54) due to improvements in the basic digital skills of its citizens.
- **Faster progress is needed in Integration of Digital Technology** by businesses (0.33) and in the **Use of Internet** by citizens (0.41).



# Digital developments are uneven across the EU

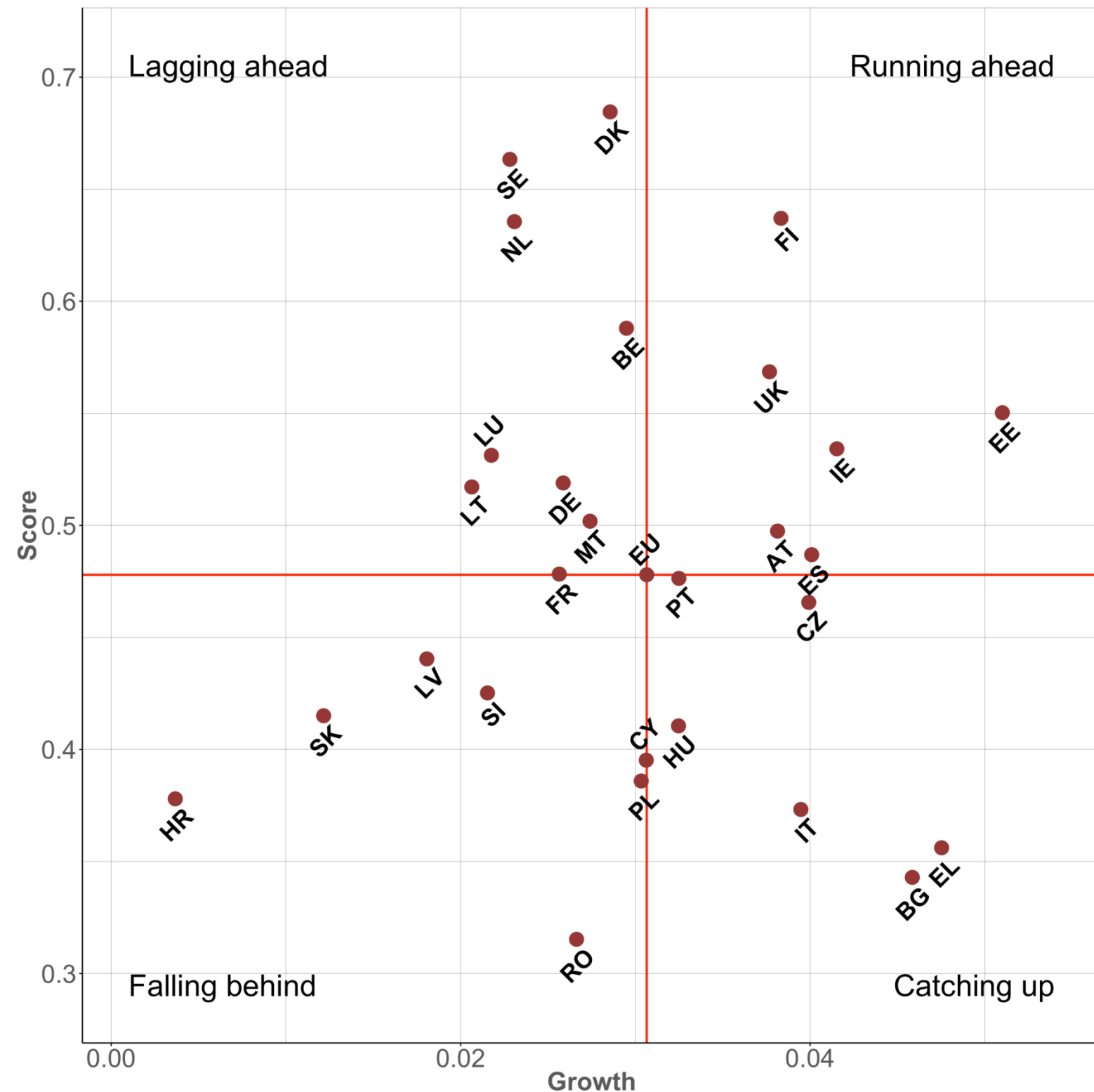
- Worst performing country (0.31) scored less than half of the best performer (0.68)



- Most fragmentation in Digital Public Services (gap of 0.6 between worst and best).
- Least fragmentation in Use of Internet (gap of 0.33 between worst and best).

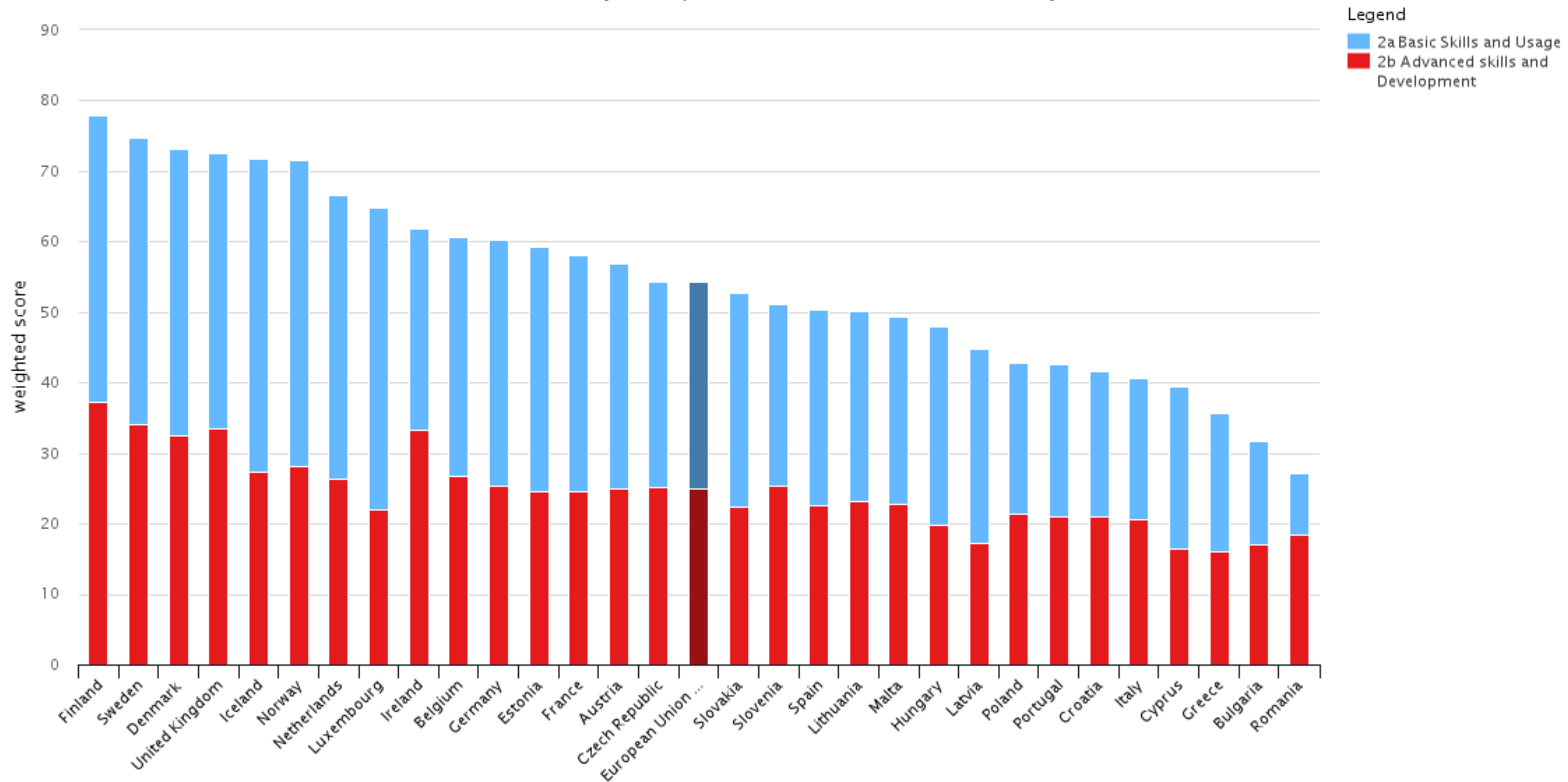
# Performance vs. Progress

- **Running ahead**
  - Above EU and growing faster than the EU
  - AT EE ES FI IE UK
- **Lagging ahead**
  - Above EU, but growing slower than the EU
  - BE DE DK FR LT LU MT NL SE
- **Catching up**
  - Below EU but growing faster than the EU
  - BG CZ EL HU IT PT
- **Falling behind**
  - Below EU and growing slower than the EU
  - CY HR LV PL RO SI SK



# 2 Human Capital

2 Human Capital, by Sub-dimensions of 2 Human Capital



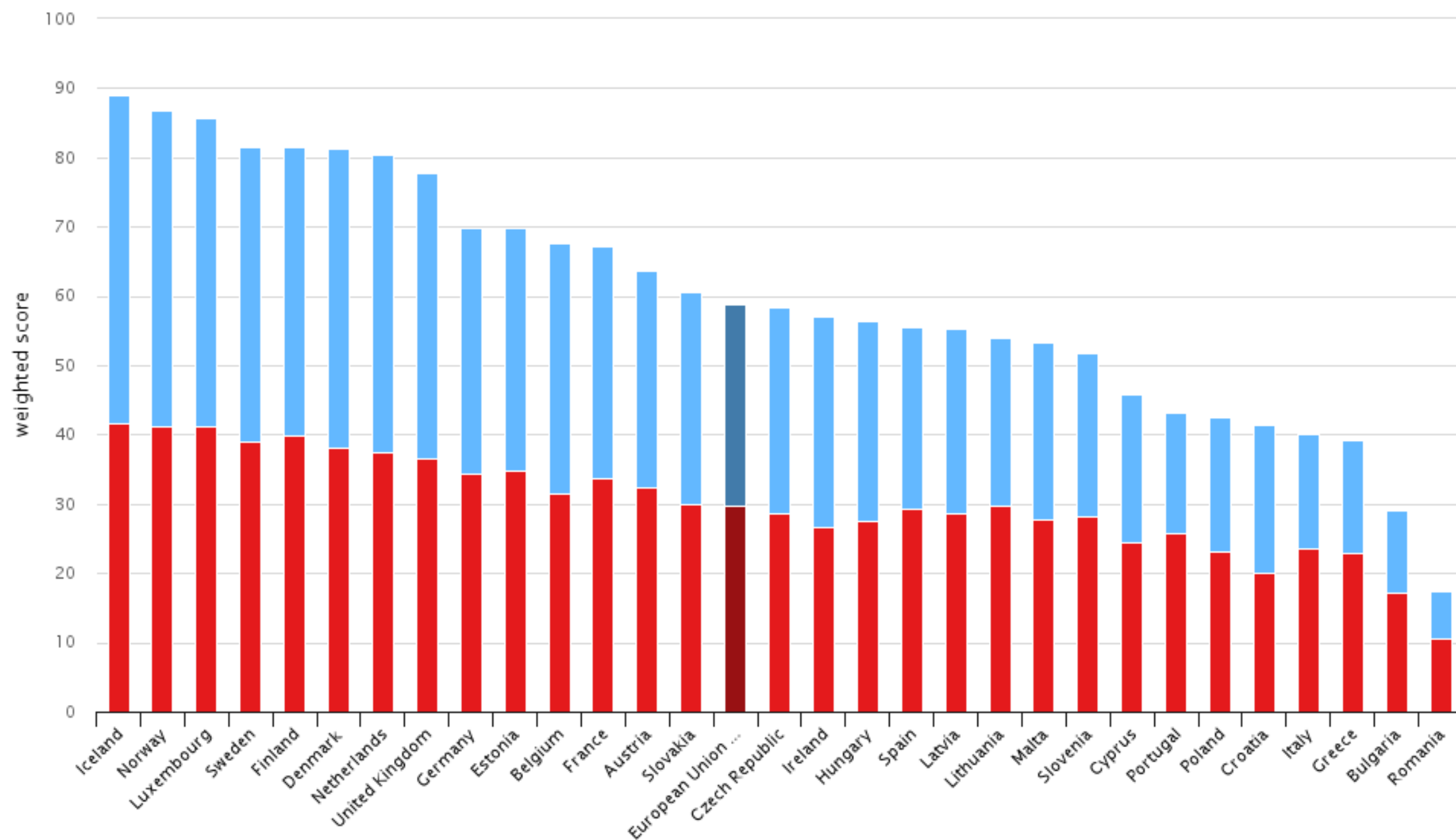
European Commission, Digital Agenda Scoreboard

# 2a Basic Skills and Usage

2a Basic Skills and Usage, by Indicators under 2a Basic Skills and Usage

Legend

- 2a1 Internet Users
- 2a2 Basic Digital Skills



European Commission, Digital Agenda Scoreboard

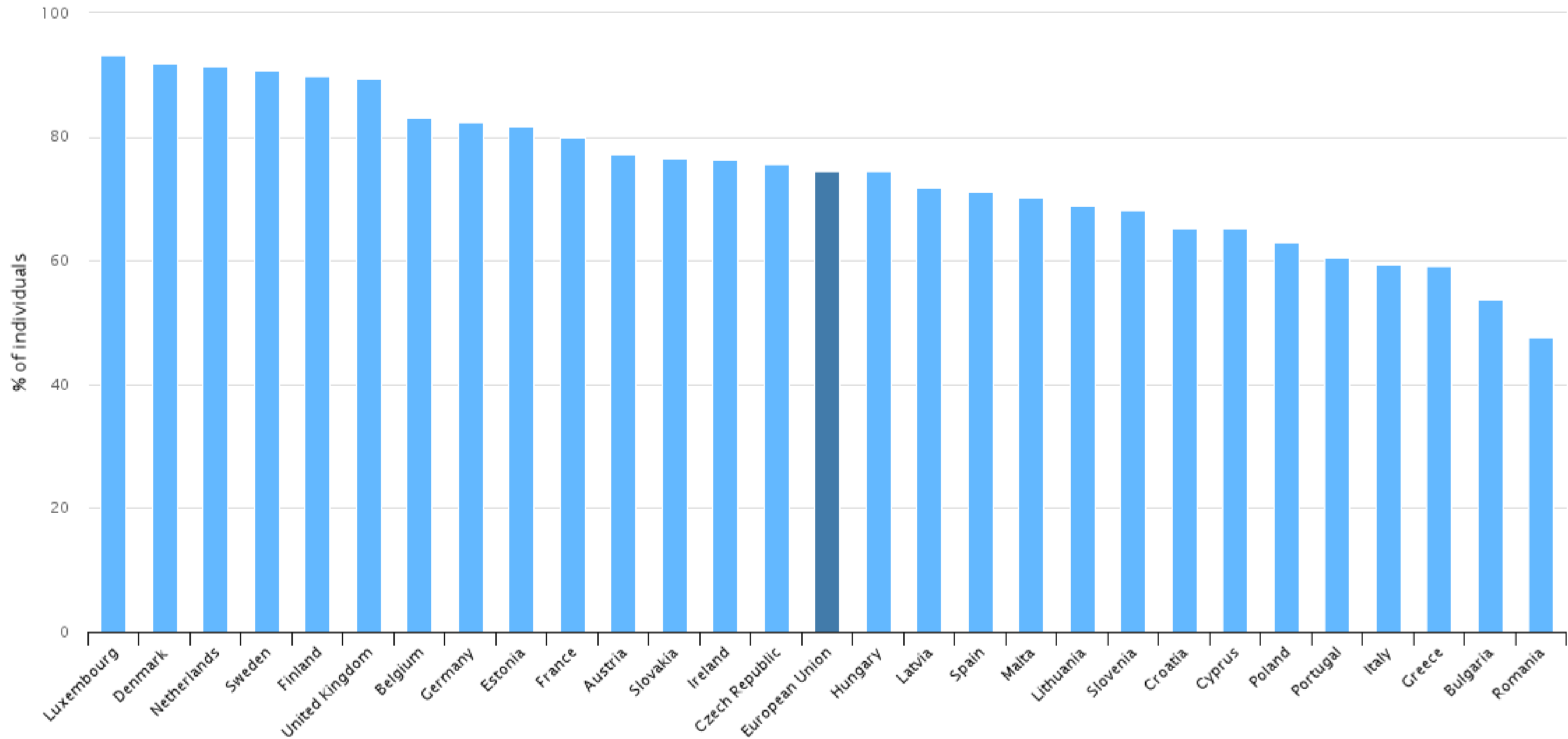


European  
Commission



# 2a1 Regular Internet Users

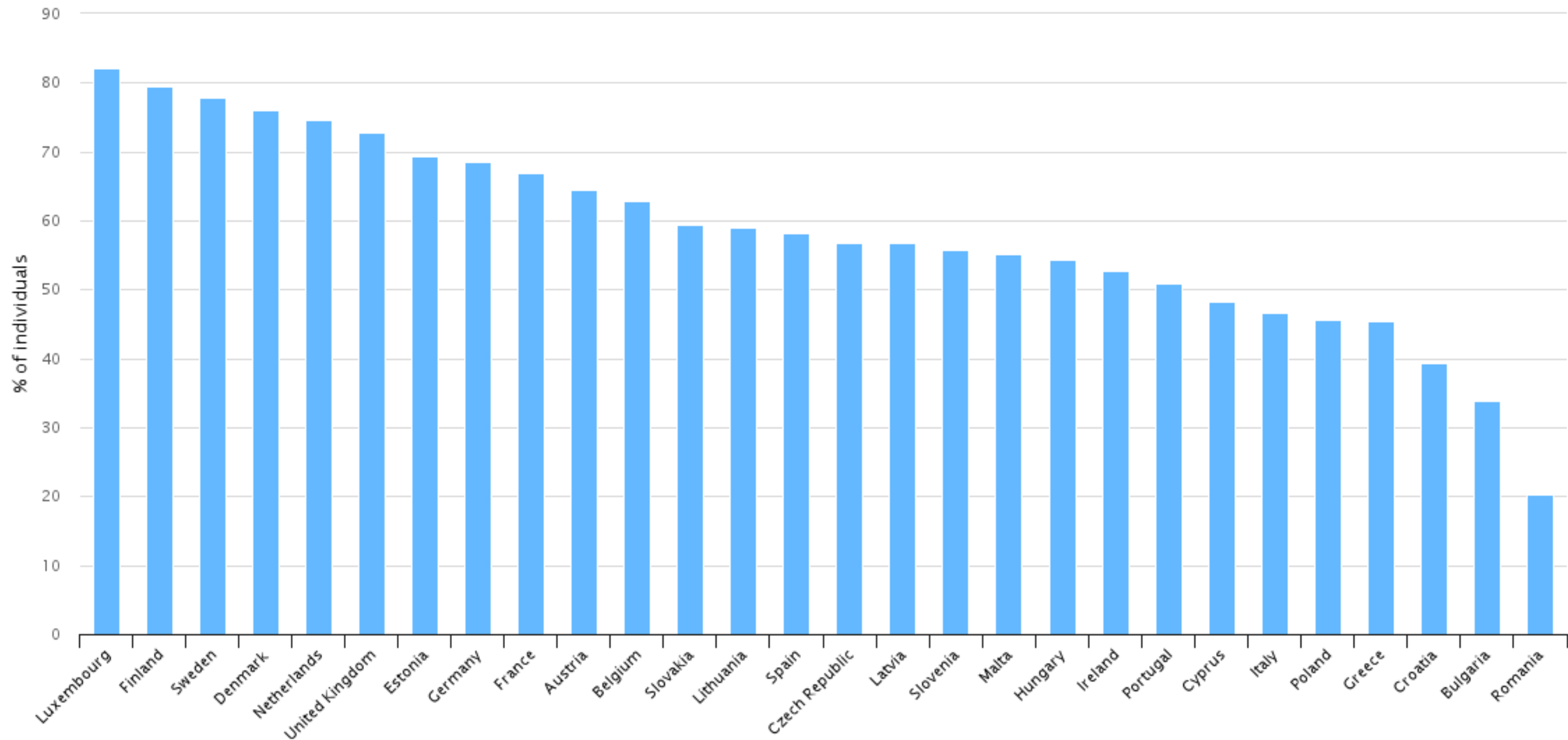
Individuals who are regular internet users (at least once a week)  
Year:2014



European Commission, Digital Agenda Scoreboard

# 2a2 Basic Digital Skills

Individuals with basic or above basic digital skills  
Year: 2014



European Commission, Digital Agenda Scoreboard

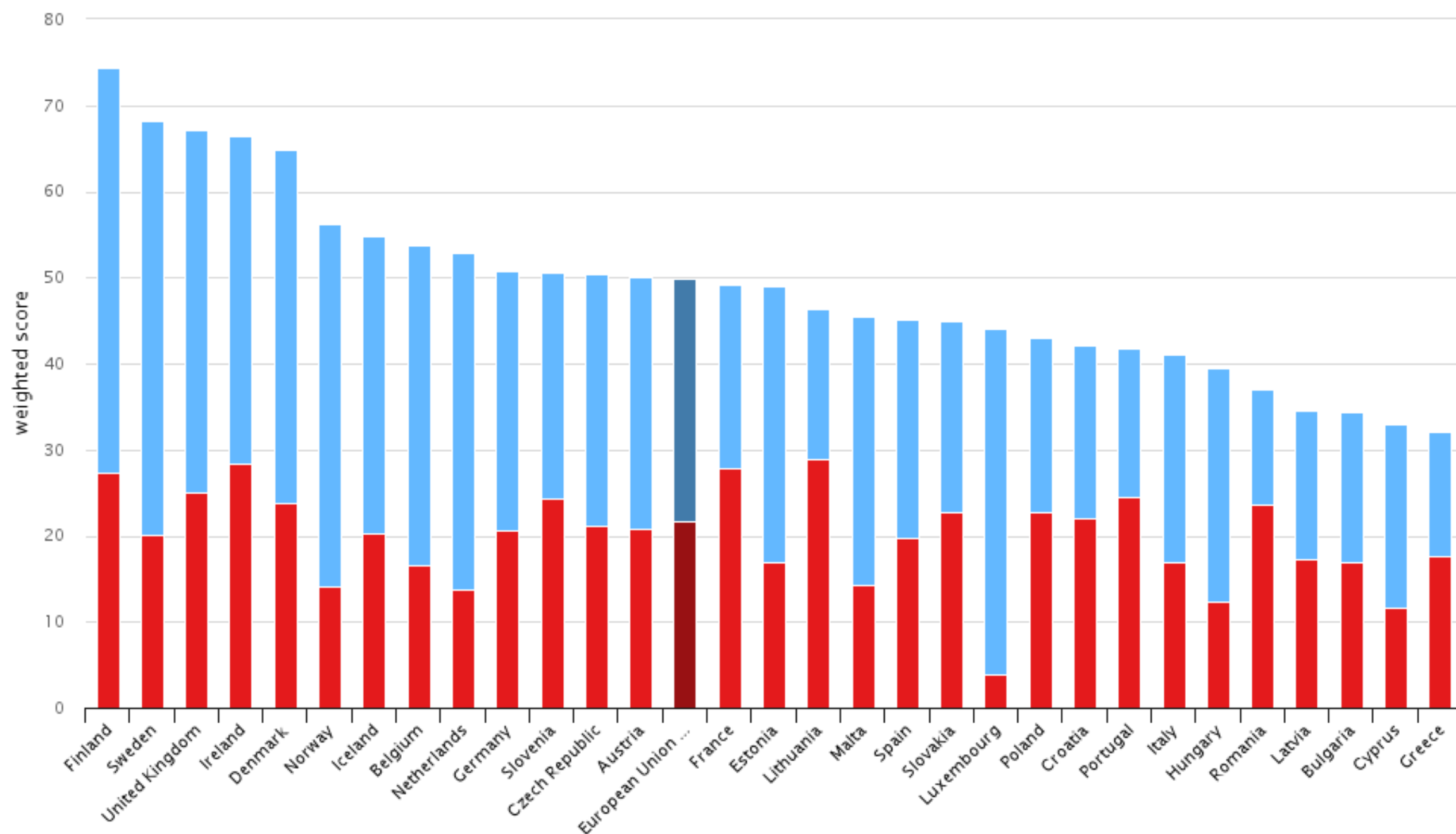


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# 2b Advanced Skills and Development

2b Advanced skills and Development, by Indicators under 2b Advanced skills and Development

Legend  
2b1 ICT Specialists  
2b2 STEM Graduates



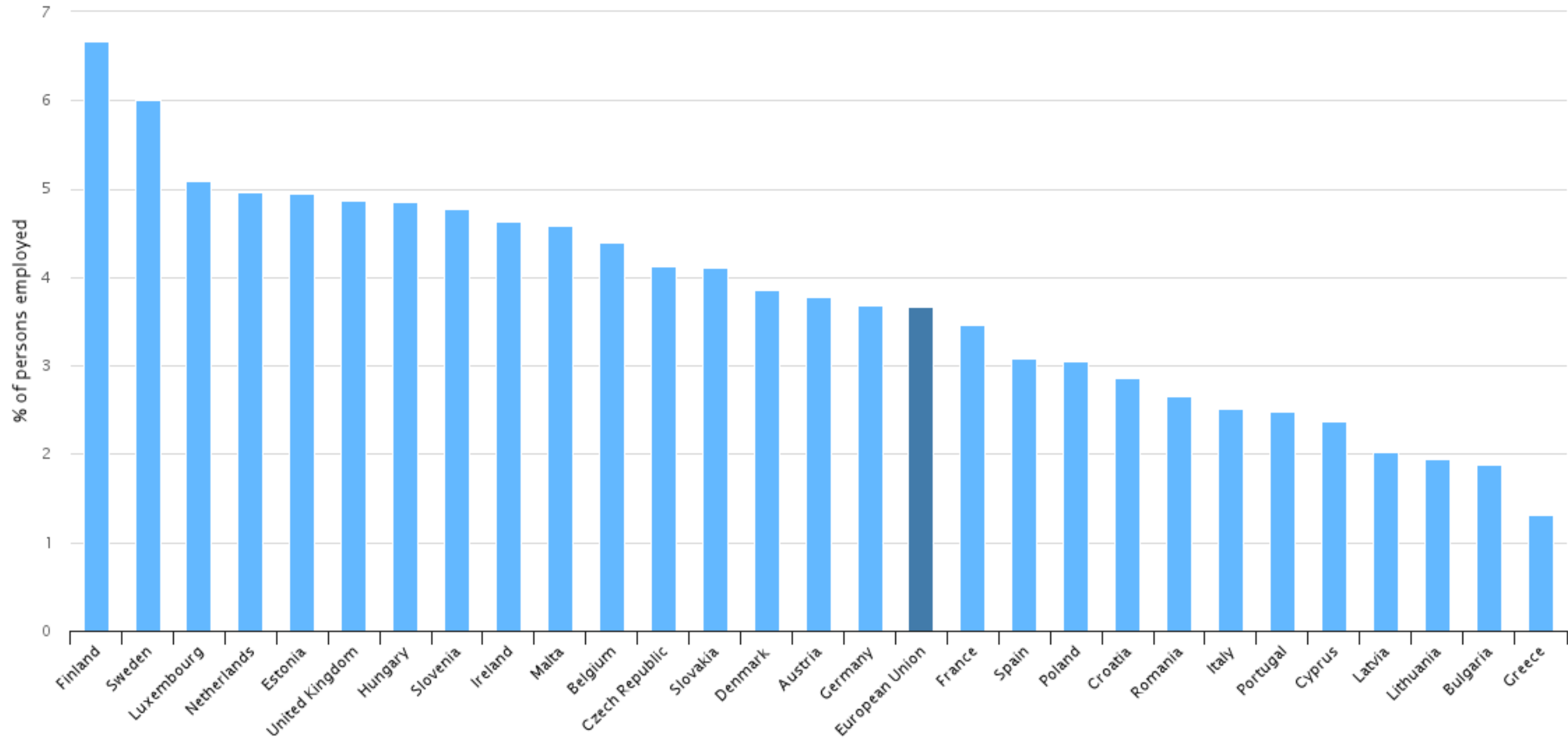
European Commission, Digital Agenda Scoreboard



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# 2b1 ICT Specialists

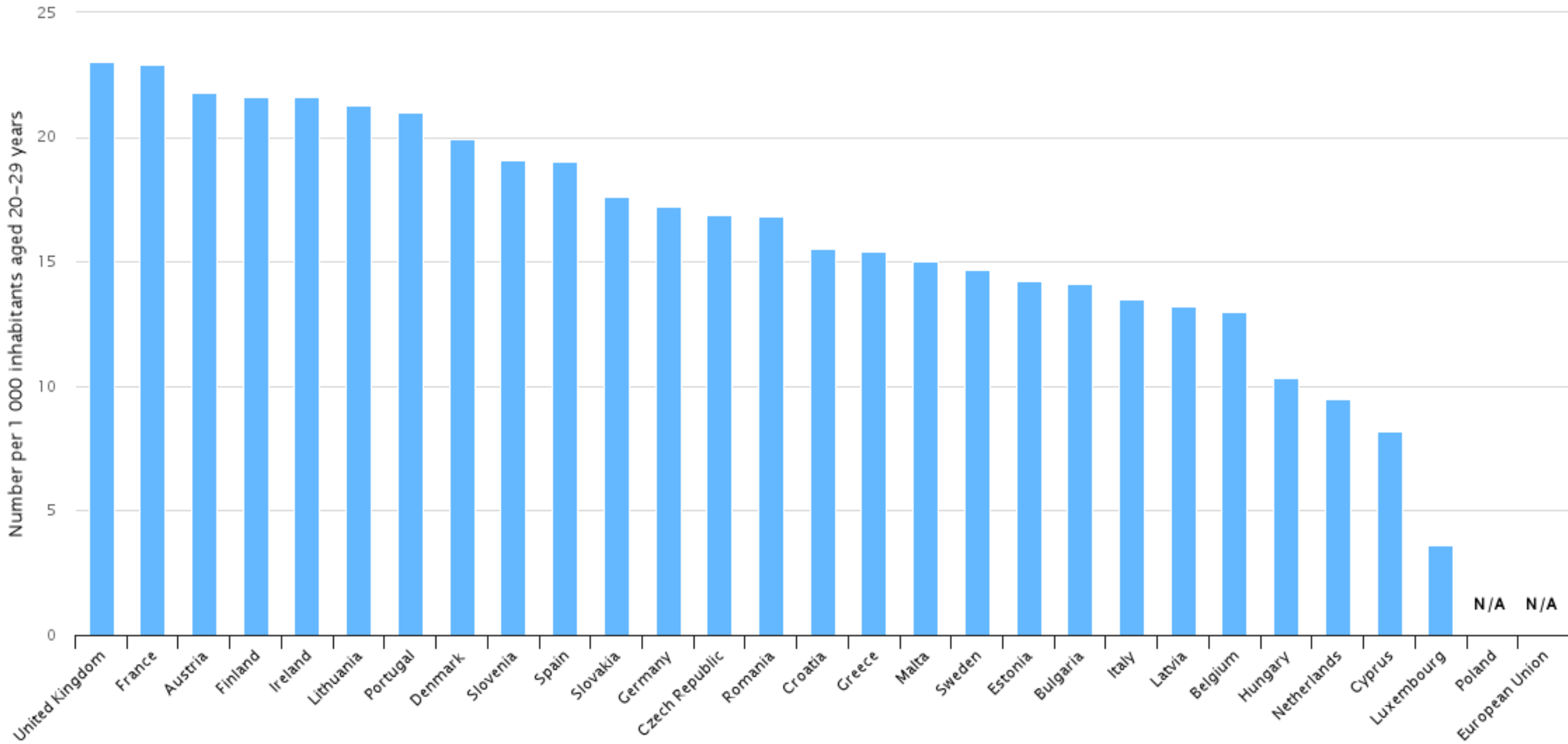
Persons Employed with ICT Specialist Skills (broad measure)  
Year:2014



European Commission, Digital Agenda Scoreboard

# 2b2 STEM Graduates

Science and technology graduates  
Year:2013



# Moving forward

- **DESI 2016:**
  - Presented on February 25 at the Digital4EU stakeholders conference
  - “Delivering the Digital Single Market - from the Digital Economy and Society Index to action”
- **Europe’s Digital Progress Report**
  - In-depth assessment of the progress of the EU in digital
  - Heavily based on the DESI structure
- **International DESI**
  - Establish comparisons in the global arena
  - Coverage: EU countries, USA, Japan, Korea, China, India, Brazil, Australia, Canada, Russia, Mexico, etc.
- **Regional DESIs**
  - Some regions in the EU are seeking to replicate the index for themselves
  - E.g., Emilia Romagna (IT), Baden-Württemberg (DE)