

International Digital Economy and Society Index (I-DESI)

EXECUTIVE SUMMARY - English

A study prepared for the European Commission
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 **Capgemini Consulting**

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Executive Summary

Reviewing digital performance of Europe at global level

The Digital Single Market Strategy aims to enhance the transformation and the growth potential of the European Digital Economy, and is currently one of the top-priorities of the Juncker Commission. To achieve a truly Digital Union, reforms are needed at the EU level, as well as at national and regional levels. The European Commission has introduced The Digital Economy and Society Index (DESI) to yearly evaluate the evolution of five key dimensions of the Digital Economy in EU member states in order to understand what these reforms should address. Each dimension reflects a relevant policy area: Connectivity, Human Capital, Use of Internet (citizens), Integration of Digital Technology (businesses), and Digital Public Services. Each dimension consists of both supply and demand indicators.

Obviously, the Digital Economy is not something typically European, but a global phenomenon. In order to leverage the potential of the digital economy in Europe and identify room for improvement, it is also important to review the digital performance of the EU on a global level. This report introduces the International DESI (I-DESI), which evaluates the performance of both the individual EU countries and the EU as a whole in comparison to 15 other countries: Australia, Brazil, Canada, China, Iceland, Israel, Japan, Korea (Rep.), Mexico, New Zealand, Norway, Russia, Switzerland, Turkey and the United States.

The International DESI is structured like the DESI, but not strictly comparable

The I-DESI follows the same structure as the existing DESI, but it differs significantly from the DESI with respect to the indicators used. Ideally, the I-DESI would have been prepared with indicators identical to those used in the DESI. However, experience shows that there are many differences in data collection and definitions when moving outside of Europe. This is not necessarily a bad thing (even though one would wish for global consistency in statistical data collection), nor does it result in a less valuable analysis, just a *different* analysis.

Indicators included in the I-DESI seek to portray the same phenomena as those included in the DESI. However, the specific definitions of many indicators in the I-DESI differ from those in the DESI. The I-DESI uses data from various internationally recognised sources, such as the OECD, the United Nations, commercial data providers (e.g. ITU and Google/TNS Infratest) and also national statistical offices. This results in the fact that the I-DESI and the DESI are not directly comparable. The I-DESI scores and rankings for EU-countries on individual indicators, sub-dimensions, dimensions and in the overall index may differ from the scores and rankings in the DESI. In order for a country to learn in which areas improvements are necessary and to fully comprehend the I-DESI, how it is composed, what definitions are used and how calculations were performed, it is highly advisable to carefully read the methodological note and the indicator descriptions in the annex of this report. This is especially helpful in understanding differences between I-DESI and DESI. The Commission and project team are open for questions or feedback.

In addition, due to different availability of indicators for different countries outside the EU, the I-DESI 2015 was developed using a tiered approach. Tier-1 comprises the countries for which a richer set of indicators could be gathered. It was calculated using 28 indicators, for the EU28 countries, Australia, Canada, Iceland, Japan, Korea (Rep.), Norway, Switzerland, and the United States. Tier-2 was calculated in order to include a broader set of countries for which there are less indicators available than for the Tier-1

countries. Tier 2 is based on a smaller set of 18 indicators and comprises all the Tier-1 countries plus Brazil, China, Israel, Mexico, New Zealand, Russia and Turkey. The two tiers are in fact separate indices and should not be directly compared to each other as they consist of different indicators (and different weighting schemes).

Overall results: top European performers also lead globally, but Europe as a whole has room for improvement

The main ranking of countries in the I-DESI 2015 (Tier-1) shows that the top European performers are also leading countries at the global stage. The top-three performing EU countries (Sweden, Denmark, and Finland) are closely followed by Korea (Rep.), Iceland and the United States. The other non-EU countries (Norway, Japan, Switzerland, Canada, and Australia) are also performing above the EU average.

Regarding *Connectivity*, Korea (Rep.) and Japan are ahead of Europe. Korea (Rep.) is among the top performers on all sub-indicators of this dimension, and excels especially in the speed of their internet connections. Japan is leading in mobile broadband (both take-up and coverage). The top-three performing EU countries are on par or just behind Japan. Switzerland also reaches a high level of connectivity.

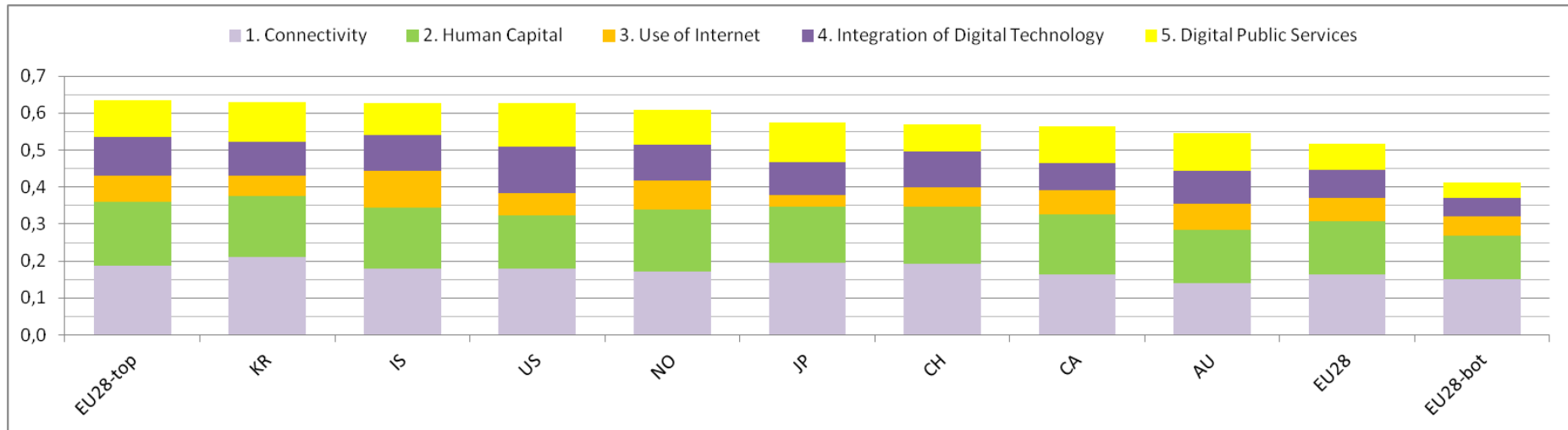
The *Human Capital* dimension focuses on digital knowledge and skills. The results show that EU countries are in the lead. The top-three of EU countries is also leading at a global stage, followed by Norway on par with the first non-European country: Korea (Rep.). Canada performs well above the EU average. Japan, the United States and Australia are still above but closer to the EU average. Zooming in to the individual indicators, Iceland leads in frequency of internet use, and Finland and Sweden have the highest percentage of people with ICT specialist skills as well as the highest share of graduates with STEM education.

Use of the Internet focuses on the performance of a wide mix of online activities by citizens. On average, the EU is far ahead of Japan, Korea (Rep.) and the United States. Iceland is the best performer in this dimension, and it even leads in two of the three sub-dimensions (Content and Communication). Top EU countries complement Iceland in the top-three. Japan and Korea (Rep.) score far below the EU average in this dimension. In particular, usage of social networks is very low in Korea (Rep.), whereas online shopping and banking is very low in Japan. Australia, which has low usage of social networks, scores particularly well in online banking and shopping. The United States rank below, but close to, the EU average.

Results in *Integration of Digital Technology*, which focuses on the digitisation of businesses, show the United States as the clear world leader. The top three best performing EU countries (Finland, Denmark and Sweden) are following the United States, but at some distance. In the United States, businesses exploit the advantages of technologies such as RFID and cloud services. In particular, a high share of companies has an online presence. Ireland and the Czech Republic are Europe's top performers in e-commerce. The EU's three worst performers (Greece, Bulgaria and Romania) are well behind, explaining the relatively low EU average.

The *Digital Public Services* dimension focuses on the demand for and supply of online public services as well as the countries' commitment to open data. Results show that the United States is leading this dimension, closely followed by the average of the best performing EU countries (being France, the United Kingdom and the Netherlands). They are followed by Korea, Japan, Australia and Canada, all being way ahead of the EU average. Quick wins for the EU could be realized by improving the state of online public services in countries lagging behind.

Figure I. I-DESI 2015 main ranking (Tier-1¹)



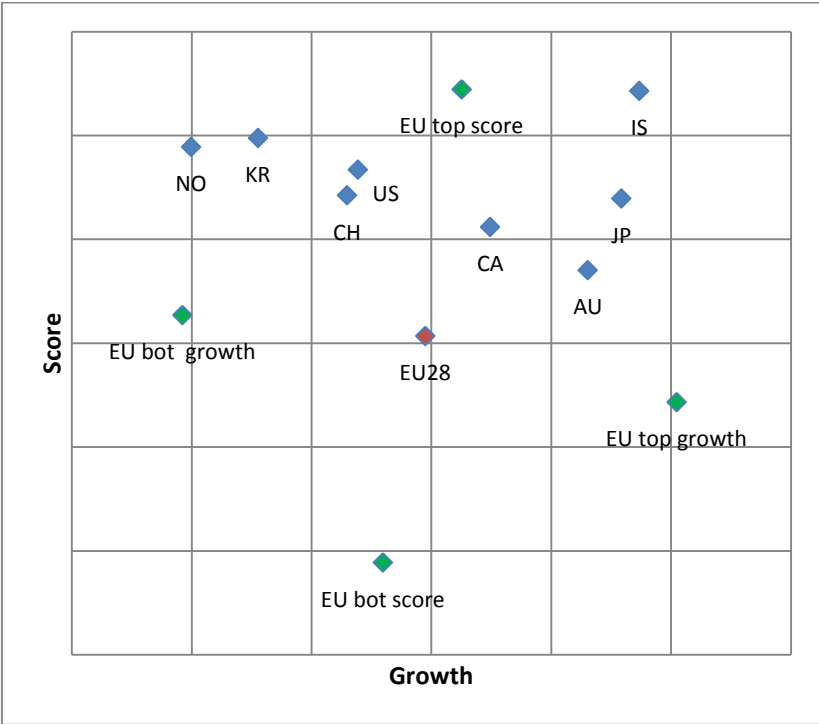
¹ Consult Annex 1 for the list of country acronyms. EU28-top indicates the average of the three best performing EU countries. EU28-bot provides that insight for the worst performers.

Closing the gap within Europe to realise the potential of a Digital Single Market

The results of this report show that European countries can compare with the best worldwide, and some are even ahead. It also shows that the European countries combined - the ultimate goal of a Digital Single Market - are not on par with global top performers. **Is Europe closing the gap?**

The analysis also allows to compare countries over time (I-DESI 2014 vs. I-DESI 2015). In figure II, countries are displayed based on their absolute performance in 2014 (vertical axis) and their growth in performance (horizontal axis). It reveals that, although the European Union as a whole (EU28) is behind major economies in terms of absolute performance, it is advancing faster than for instance Korea and the United States. It also shows that European countries outperform their global counterparts on one or the other axis: the three top-performers of the EU reach highest absolute scores, while demonstrating a faster growth than countries such as Norway, Korea, Switzerland and the United States. The potential of a European Digital Single Market arises from this analysis; the challenge – and unmistakable need to remain competitive in the Digital era – is to unite and close the gaps within the Union itself. That would deliver on the promise of a European advantage.

Figure II. Country performance and progress over years (Tier-1, I-DESI 2014 vs. I-DESI 2015)²



Results for countries only included in Tier-2 (Brazil, China, Israel, Mexico, New Zealand, Russia and Turkey) show them typically performing below the EU average across all dimensions, except for a few exceptions. China is, for instance, a top-performer in the Human Capital dimension, and Russia also scores above the EU average on this dimension. Another notable positive exception is New Zealand, which consistently performs above the EU average, and is even leading in two dimensions (Use of the Internet and Integration of Digital Technology).

² EU28-top indicates the average of the three best performing EU countries. EU28-bot provides that insight for the worst performers.

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