

### 3 Digital divide and development

#### An analysis of asymmetries in Internet use

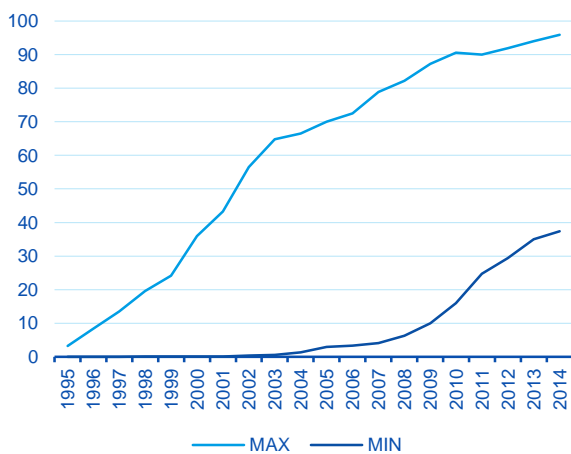
Information and Communication Technology (ICT) is a major engine of growth in the world economy. Interaction among economic agents is increasingly based on ICT, specifically on the Internet. This analysis provides an approximation to use over the past twenty years. It shows that Internet adoption around the world has come about unevenly and at differing speeds from one country to another. International institutions and national public organisations have an important role to play in promoting the use of ICT and encouraging innovation that can improve productivity and contribute to sustainable development.

#### Macroeconomic situation

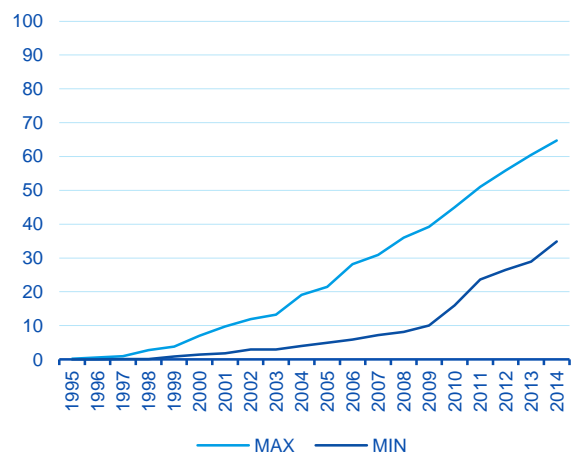
According to data published by the International Telecommunication Union (ITU) (2015), 43% of the world's population is now *online*. However, the online population is not distributed evenly among countries. In order to analyse the gap between them, we took information on Internet use in 160 countries, from 1995 to 2015. From the outset countries such as Norway and Finland have had significantly higher levels of Internet use than the rest of the world, while other countries such as Sierra Leone, Tanzania and Guinea have systematically registered values close to zero.

Figure 1.1 (left) shows a sample of 90 countries, after eliminating those considered as outliers (see Note 1). For these countries, the gap in Internet use started to close from 2006 onwards, as a combined result of gradual saturation in the most advanced societies and a wide margin of available improvement in the countries furthest behind. However, if we look at countries placed between the 30th and 70th percentiles (Figure 1.1, right), we see a different situation, in which the gap widened up until 2009 and has remained constant since then. This result suggests the existence of a global dual phenomenon in Internet use.

Figure 3.1  
Changes in the gap in Internet use (%)



Note 1: Outliers calculated using the plus or minus two times standard deviation method. Any country considered an outlier for more than one year is removed from the sample  
Source: BBVA Research and World Bank



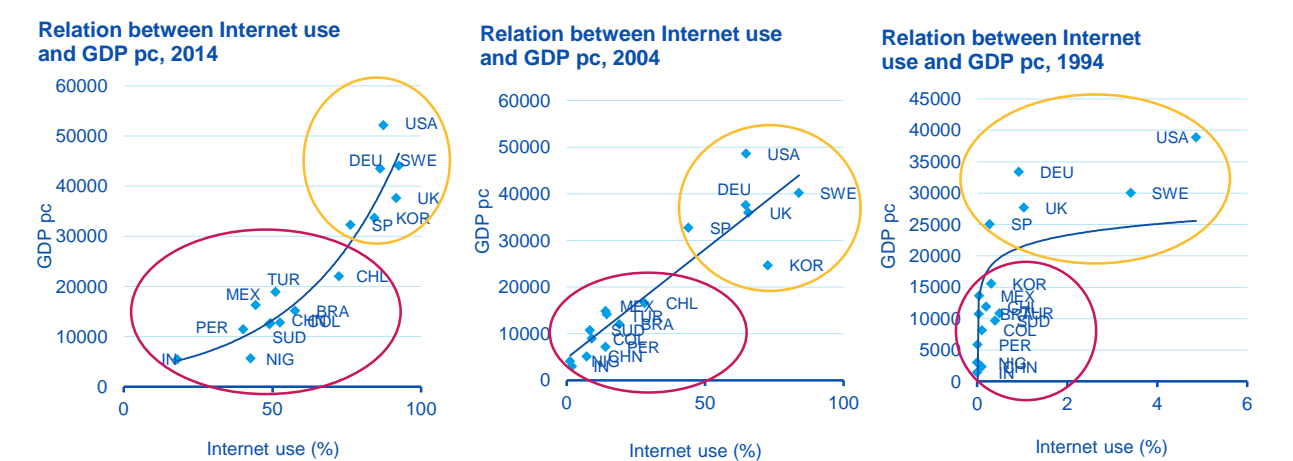
Note 2: Countries with levels of Internet use below the 30th or above the 70th percentile are considered outliers. Any country considered an outlier for more than one year is removed from the sample  
Source: BBVA Research and World Bank

Growth of Internet use as an aspect of development

There are notable differences in Internet use, which are closely linked to countries' levels of development. In order to make the comparison more illustrative, we limited the study to two groups of countries based on the level of digital development shown in 2014: the digital leaders (Sweden, USA, UK, South Korea, Germany and Spain) and emerging countries (Chile, Colombia, Peru, Brazil, Mexico, India, China, Turkey, South Africa and Nigeria).

In Figure 2.1, which relates Internet use to GDP per capita, we see a phenomenon of transformation, with the shape going from concave in 1994 to convex in 2014. This result reflects the transition from Internet use as a sufficient condition for economic development, to its being a necessary but not a sufficient condition. In 2004 we see the polarisation of the two groups above-mentioned more clearly. In 2014 we see a process of concentration in the leading digital countries (close to saturation point) and increased dispersion in the group of emerging countries, with the disparities among these countries becoming more evident. This last aspect is a result of the catching-up process in some of these emerging countries, which leads to a narrowing of the gap between emerging and developed countries.

Figure 3.2  
 Relationship between Internet use (%) and GDP per capita (€) (1994, 2004 and 2014)



Source: BBVA Research and World Bank

Despite advances in the analysis of data relating to ICT, it seems that it has still not been possible to adequately estimate the economic consequences of this phenomenon. Improvements in the political, regulatory and business environment, as well as in countries' readiness in terms of infrastructure, digital content, prices and public education are crucial for advancing in the process that is opening the gates to the Digital Age.

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