

## Chapter 2

# Technologies for Digital Inclusion: Good Practices Dealing with Diversity

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### ABSTRACT

*Digital inclusion proposals are oriented towards specific groups of people. These groups are excluded due to their qualities or lack of them, their attitude, socio-political factors, economic factors, or just by the geographic zone where they live. Since 1999 several strategies have been proposed, either related to educational or technological aspects. The lessons learned are collected with the aim of proposing an adapted model that allows defining a set of good practices. In order to know what technology is the most suited to promote the digital inclusion of each group, multiple variables are analysed. A higher number of variables allow better groups description regarding their context and the relevance of each variable for each group. In this work the authors discuss the dimensions of the group profiles, the factors affecting them, and the infrastructure and software solutions that can change the situation. Finally a simple graphic is proposed to show the dimensions of causes and user groups in order to improve their comparison.*

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## **INTRODUCTION**

As information technologies are more ubiquitous in everyday activities, there are more and more groups of people excluded of these technologies. Each new technology could widen the gap with those who do not have skills, access, and awareness of its existence or motivation to use it. Technologies can also be a solution to these inequalities in our society when good practices are included in the design of new technologies and tools. E-inclusion deals with participation of individuals and communities within the information society through their access to ICTs (Information Technologies and Communications). The term e-inclusion was coined in 1999 as one of the e-Europe objectives for the inclusion of every European citizen in the online context as fast as possible. Since then, several strategies, initiatives, and policies have been implemented in the European Union in order to promote this e-inclusion. Almuwil, Weerakody & El-Haddadeh (2011) summarizes all of them in their study about factors influencing e-inclusion.

In the “Millennium development goals and beyond 2015” (2013) report, authored by the United Nations, the eighth goal is aimed to encourage the private sector to make available new technologies to developing countries. The fact is that in these countries only 31% of population uses the Internet, compared with 77% in the developed world (United Nations, 2013). Universal access to ICTs in developing countries can only be achieved by a two stages approach (Figueiredo, Prado & Kramer, 2012): firstly, reducing digital literacy with small communication devices (e.g. smartphones and tablets); and lately, with professional capacity-building. Therefore, technologies in these areas should be focused on their reality and oriented to meet user’s needs.

By analyzing technology solutions for digital inclusion, there have been take into account three aspects: degree of inclusion, time, and multidimensional nature. In the first one it is analyzed the degree of inclusion, avoiding a binary approach between inclusion and exclusion. The second aspect is the time, in the sense that current technological problems may not be in the future, and vice versa, this can be seen with new connectivity solutions and their decreasing cost. The third aspect is the multidimensional nature of digital inclusion, where there is no single factor that explains the digital inclusion, and there are minorities that may not be classified under a single criterion. Factors and criteria for classification in turn have a gradual nature. The limits between young and old individuals are fuzzy. In fact, there are intermediate grades in every aspect considered. Therefore, there is not a unique technology to solve an e-exclusion problem.

## **BACKGROUND**

In 2003, the International Telecommunication Union (ITU), United Nations, national governments and civil society organizations, celebrated the World Summit Information Society (WSIS) in order to prepare the action plans and policies that would help to reduce the inequality in the ICTs access. In fact, countries, and public and private organizations have promoted different initiatives and projects to minimize the e-exclusion. Since 2005, there have been five editions of the WSIS report, presenting initiatives, tools and policies that have been developed by several countries (ITU, 2013). The main projects to avoid e-exclusion are related to each one of the action lines presented in Table 1.

Several strategies for social inclusion have been started around the world, like those promoted by the Colombian government (González & Sanchez, 2013) for ethnic minorities, people with disabilities and low-income people. In Australia, Belgium, Hong Kong, Japan, Korea, the USA and Norway there are

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