Chapter 2
The Digital Divide, Framing and Mapping the Phenomenon

Andrea Calderaro
European University Institute, Italy

ABSTRACT

This chapter explores the global dimension of the digital divide. It frames the concept and maps the status and the causes of the phenomenon today. The first part investigates how the digital divide can be measured, framing the question and some of the trends foreseen by scholars on the phenomenon. The second part provides the current status of the digital divide, mapping the distribution of the usage of the Internet worldwide with some national indicators and measuring how economic factors cause some of the digital inequalities. The chapter then maps the worldwide unequal distribution of some of the infrastructure of the Internet. By comparing the different measures of the digital divide, the chapter finally provides some conclusions on the expectations regarding the trend of the phenomenon.

INTRODUCTION

Since the declaration of the digital revolution, many hypotheses on its impact have been proposed. Today, new technologies affect our daily life, influencing most of our activities as part of a worldwide political and economic equilibrium. However, despite their pervasiveness, new technologies do not influence regions equally across the world and do not include all of society in their processes in the same way. This existing difference in the use of information technology takes the name of *Digital Divide*.

Though the phenomenon is as old as the digital advent, a generally accepted definition of the Digital Divide does not yet exist. Official reports published on the subject by international organizations - Millennium Report, 2000; Okinawa Charter, 2000; DOTForce, 2001; Plain of Action, 2003 - do not clarify what the Digital Divide is. Each of them emphasizes a different aspect of the issue. The general literature is also ambiguous in this regard. Some authors stress the economic aspects of the so-called "digital revolution" (Castells, 1996; Chinn

DOI: 10.4018/978-1-60566-699-0.ch002

& Fairlie, 2006; Parayil, 2006), focusing on economic causes of the Digital Divide and on the role that new technologies could have in overcoming economic inequalities. Sociologists explore the relation between digital access and social factors (Bimber, 2000; Bucy, 2000; Hargittai, Robinson & Di Maggio, 2003; Wilson, Wallin & Reiser, 2003). Others, meanwhile, focus on the role of digital technology in governance in facilitating the development of democratic dynamics (Chadwick, 2006; Norris, 2001; Stowers, 1999).

This chapter frames the Global dimension of the Digital Divide, mapping its current status and exploring some of the possible causes of it.

First I begin with a historical overview of the evolution of the Internet, focusing on how it developed from a North American instrument into a worldwide communication system. This highlights some of the historical factors that contribute to the current worldwide digital inequality.

In the second part of this chapter, I explore the analysis and the instrument provided by scholars for exploring the phenomenon. Once explored how the Internet became a global instrument connecting worldwide countries, and how this is happening unequally worldwide, some questions arise: what are the current dimensions of the global Digital Divide? How can it be measured? How can we explain its current status?

In order to address these questions, in the third part of this chapter I map the current status of worldwide digital inequality, exploring different national indicators in the distribution of internet users and the infrastructure of the Internet. In order to explore the causes of this inequality, I focus on its relation to economic characteristics in each country.

THE SPREAD OF THE INTERNET: FROM A NATIONAL TO A WORLDWIDE PHENOMENON

At its advent, the Internet was not global in nature. The main infrastructure and expertise of the Internet were originally developed on a national scale. It became a global phenomenon only gradually, after a 30 year long process. I consider it an important preliminary step for this research to explore the history of the Internet and how it became global. I argue that this is useful for understanding the Internet's network structure, and how the very nature of its structure has served to extend its impact worldwide.

It is a commonly held notion that the Internet, as a project financed by the American Department of Defence, was an instrument of communication designed to survive a nuclear attack. However, the earliest idea of the Internet was formulated by computer scientists who had nothing to do with military research (Hanson, 2008). Rather, the Internet was created by people who believed in the power of computers for creating social cooperation in order to amplify human thinking and communication capacity (Rheingold, 2000).

The intellectual origin of the Internet may be found in the memos written by J.C.R. Licklider, a computer scientist based at MIT. Licklider had also a social psychology background. This influenced his focus on how computers could increase the power of the human intellect, improving the performance of scientific thinking (Margolis & Resnick, 2000). He claimed that this would have been possible through what he defined in his notes series as a "Intergalactic Computer Network". This involved a worldwide set of computers linked as a network, through which data and programs would be accessible from everywhere (Leiner, 2000). In these words, Licklider describes the origin of the Internet and in 1958, he became the first director of the Advanced Projects Research Agency (ARPA).