Journal of Multidisciplinary Engineering Science and Technology (JMEST)
ISSN: 2458-9403
Vol. 3 Issue 10, October - 2016

Digital Divide

Matthew N. O. Sadiku
Electrical & Computer Engr. Dept.
Prairie View A&M University
Prairie View, TX 77446
United States

Adebowale E. Shadare
Electrical & Computer Engr. Dept.
Prairie View A&M University
Prairie View, TX 77446
United States

Emmanuel Dada
Chemical Engineering Dept.
Prairie View A&M University
Prairie View, TX 77446
United States

Sarhan M. Musa
Engineering Technology Dept.
Prairie View A&M University
Prairie View, TX 77446
United States

***Abstract*—This paper introduces the problem of digital divide. A digital divide refers to an economic inequality regarding access to information and communication technologies (ICT). Access and use of ICT in digital divide are examined at both individual and global levels. Understanding the digital divide is important because it has both economic and social implications.**

Keywords—digital divide, digital gap, digital inequality, data divide, knowledge divide, north-south divide

I. INTRODUCTION

In today's competitive, global economy, having physical access to information and communication technologies (ICT) and the Internet is a significant advantage. ICT and the Internet are apparently reshaping organizations and business enterprises. They contribute to job creation, innovation, and individual access to public services. They enable emailing, chat rooms, blogs, on-line shopping, airline reservation, hotel booking, video games, Skype, e-commerce, e-education, down-loadable music, TV shows, Facebook, YouTube, Googling, and online banking [1]. They have transformed the way of life of individuals and nations. They have become a necessity for getting vital information about education, healthcare, and employment. Some believe that access to ICT would bring the global community together and result in higher living standards. However, the digital divide threatens this expectation.

II. DIGITAL INEQUALITY

Digital divide refers to the inequality of access to the Internet technology. It is about the disparity between the technological haves and have-nots. It has polarized society into two groups—those who have access to ICT and those who do not. The ICT has created digital divide (DD) or digital inequality at both individual and global levels [2].

At the individual level, DD refers to the gap between information rich and poor. Some individuals have trouble catching up in the digital revolution. The digital divide may have economic consequences for disadvantaged minority groups. Resources such as time, material, and knowledge are unequally distributed. For example, Internet access is not evenly distributed between urban and rural areas in the US. Whites are more likely to have Internet access at home than Blacks or Hispanic. Men generally use the Internet for a wide range of purposes than women.

Youths are more likely to use the Internet for downloading music, entertainment, and social networking than adults. Major factors contributing to digital divide are educational level, culture, employment, household income, age, gender, race, skills, and socio-economic status. Some of these factors are related to personal choices, while others are beyond the control of the individual.

At the global level, developing nations are digitally disadvantaged countries. In the international context, DD refers to the divergence of Internet access between industrialized and developing nations. The rate of adopting the Internet varies significantly among nations. The Internet has developed non-uniformly across the world causing some nations to fall behind potentially putting themselves at a disadvantage. Other aspects of the digital divide such as low literacy rates, gender and religious issues pose hurdles in reaching developing nations with the benefits of the Internet [3]. The ICT is a major tool for reducing poverty and reducing corruption. However, it demands infrastructure development, which may be too much for the government of a developing nation. Traditionally, DD has been measured in terms of the usage of digital devices. However, research indicates that DD cannot be eliminated by just providing the necessary devices.

Poverty limits and prevents people from obtaining access to ICT. Higher levels of income and education enhance Internet affordability.

III. BRIDGING THE DIVIDE

Several attempts have been made to combat the digital divide and turn it into digital opportunities. Promoting economic growth and equality in developed and developing nations is an effective means of minimizing DD. Governments in developed countries can help their citizens in eliminating DD. The role of government in reducing and eliminating digital divide is important. It is necessary that the government steps up rural economic development and provision of Internet service to rural communities and pursues digital inclusion initiatives.

Computer-literacy is important for learners to benefit from technology-based learning. For e-learning to succeed in the developing nations, there must exist infrastructure with some degree of connectivity. The provision of a free and open Wi-Fi network has a popular appeal. We must reduce gender divide and encourage women to participate in the workforce.

The United Nations raises awareness of DD by instituting the World Information Society Day every year since May 17, 2006 [4]. Other attempts to narrow the gap include One Laptop Per Child (OLPC), the Gates Library Initiative, and the Carnegie Foundation. OLPC deployed millions of laptops to children in the developing nations for less than $100 per unit. Some cities and nations have initiated programs to bridge their domestic digital divide. Social media, like Facebook, YouTube, and Twitter may be used to close the gap among school children, students, and the elderly.

IV. CONCLUSION

A digital divide refers to gap with regard to access to ICT and the Internet. It implies a division between the haves and the have-nots, the connected and the unconnected. It is a problem affecting individuals and nations as ICT becomes a critical tool for socio-economic development. This problem is solved by fostering economic and social development in disadvantaged, marginalized segments of the population. This includes promoting the use of the Internet and ICT and making the elderly more Internet savvy. As age, gender, race, and income gaps have lessened, it appears that DD is now becoming knowledge divide.

REFERENCES

[1] B. Warf, “Contemporary digital divides in the United States,” *Tijdschrift voor Economisch en Sociale Geografie*, vol. 104, no. 1, 2012, pp. 1-17.

[2] S. Dewan and F. J. Riggins, “The digital divide: current and future research directions,” *Journal of the Association for Information Systems*, vol. 6, no. 12, Dec. 2005, pp. 298-337.

[3] M. K. Sein and B. Furuholt, “Intermediaries: bridges across the digital divide,” *Information Technology for Development*, vol. 18, no. 4, Oct. 2012, pp. 332-344.

[4] Wikipedia, “Digital divide,” https://en.wikipedia.org/wiki/Digital_divide

About the authors

Matthew N.O. Sadiku (sadiku@ieee.org) is a professor at Prairie View A&M University, Texas. He is the author of several books and papers. He is a fellow of IEEE.

Adebowale E. Shadare (shadareadebowale@yahoo.com) is a doctoral student at Prairie View A&M University, Texas. He is the author of several papers.

Emmanuel Dada (eadada@pvamu.edu) is an adjunct professor at the Department of Chemical Engineering at Prairie View A&M University. He is the author of several papers and patents. He is a fellow of AIChE.

Sarhan M. Musa (smmusa@pvamu.edu) is a professor in the Department of Engineering Technology at Prairie View A&M University, Texas. He has been the director of Prairie View Networking Academy, Texas, since 2004. He is an LTD Spring and Boeing Welliver Fellow.