

Chapter LIV

Understanding Telemedicine with Innovative Systems

Irene Berikou

Athens University of Economics and Business, Greece

Athina A. Lazakidou

University of Piraeus, Greece

ABSTRACT

A system of innovation (SI) is a new approach for the study of innovations as an endogenous part of the economy. An SI can be defined as encompassing all the important factors that influence the development, diffusion, and use of innovations as well as the relations between these factors. For example, the SI approach is also used as a framework for designing innovation policy at the national level in some EU (European Union) member countries such as Finland and Ireland. It is simply at the center of modern thinking about innovation and its relation to economic growth, competitiveness, and employment. In this chapter, the adaptation of this framework for telemedicine applications is simply presented.

INTRODUCTION

The healthcare sector is in need for innovation during the process of delivering services, and ICT has the potential to change the organization and delivery of health and social services in Europe. The slow rate of telemedicine adoption in a country's healthcare system is not only caused by technology factors related to the speed, security, and capacity of the national infrastructure or by inferior technological arti-

facts. The successful implementation of telemedicine services requires its underlying technologies to be configured in a way that meets the particular needs of the healthcare and social care providers, the individuals receiving care, and all other stakeholders. Technical success alone will not result in the widespread diffusion of telecare technologies (Barlow, Bayer, & Curry, 2003).

Academic researchers have clarified little in understanding the phenomenon of

telemedicine in its wider economic and social performance. The complexity of ICT in healthcare has also confused the definition of telemedicine. Many terms have been used by academics, researchers, healthcare professionals, informaticians, the ICT industry, and governmental and nongovernmental organizations to describe the phenomenon.

This chapter is an attempt to use a rather new economic framework in order to define the value and the placement of ICT within the healthcare sector: the way that it transforms previous healthcare delivery into a coproduced activity. Therefore, this effort might prove to be helpful to facilitate implementation issues and to diffuse telemedicine in each healthcare system, no matter if we see it from either a micro or macro perspective.

DEFINITION OF TELEMEDICINE

Telemedicine is an information technology-driven application that provides the means of delivering healthcare services at a distance. The term telemedicine is constituted by two words, *tele* and *medicine*. The first component is the Greek word *τηλε* that means from far away or at a distance, and the second component is of Latin origin from the word *mederi*, which means healing. It involves not only medical activities for ill patients, but also public-health activities involving well people. In other words, telehealth is a process and not a technology, including many different healthcare activities carried out at a distance (Riva, 2000).

Origins of Systems-of-Innovation Approach in Economist Cycles

Joseph Schumpeter, a classical economist who wrote his famous theory for entrepreneurship, in 1939 was the first to conceive innovation in

a much broader way than technical orientation. He specifically mentions new forms of organization and new combinations.

Innovation is the new creation of economic significance of either a material or intangible kind (Edquist, 2001). Innovations may be brand new, but often they are new combinations of existing elements. A useful taxonomy is to divide innovations into new products and new processes. Product innovations may be goods or services. It is a matter of what is being produced. Process innovations may be technological or organizational. They concern how goods and services are produced.

Today, it is widely recognized that technological change is the primary engine for economic development. Innovation, at the heart of technological change, is essentially the innovation process that depends upon the accumulation and development of relevant knowledge of a wide variety. Certainly, individual firms play a crucial role in the development of specific innovations, but the process that nurtures and disseminates technological change involves a complex web of interactions among a range of other firms, organizations, and institutions (Fisher, 2001).

A system of innovation (SI) is a new approach for the study of innovations as an endogenous part of the economy. The SI has emerged only during the last decade or so. An SI can be defined as encompassing all the important factors that influence the development, diffusion, and use of innovations as well as the relations between these factors. These factors can be studied in a national, regional, or sectoral context; therefore, national, regional, and sectoral systems of innovation coexist and complement each other. The SI has diffused surprisingly fast in the academic world as well as in the realms of public innovation making and firm innovation strategy formulation. That is, SI provides a framework, not a theory, of analysis

4 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/understanding-telemedicine-innovative-systems/20609

Related Content

Monitoring of Patients with Neurological Diseases: Development of a Motion Tracking Application Using Image Processing Techniques

Tiago Rafael dos Santos Martins Pereira Rodrigues, Vítor Carvalho and Filomena Soares (2013). *International Journal of Biomedical and Clinical Engineering* (pp. 37-55).

www.irma-international.org/article/monitoring-of-patients-with-neurological-diseases/101928

Study of Fetal Anatomy using Ultrasound Images: A Systematic Conceptual Review

Sandeep Kumar E. and N. Sriraam (2014). *International Journal of Biomedical and Clinical Engineering* (pp. 1-13).

www.irma-international.org/article/study-of-fetal-anatomy-using-ultrasound-images/127395

Evaluating a Bio-Inspired Approach for the Design of a Grid Information System: The SO-Grid Portal

Agostino Forestiero, Carlo Mastroianni, Fausto Pupo and Giandomenico Spezzano (2009). *Handbook of Research on Computational Grid Technologies for Life Sciences, Biomedicine, and Healthcare* (pp. 712-730).

www.irma-international.org/chapter/evaluating-bio-inspired-approach-design/35718

Healthcare Knowledge Management

Kostas Metaxiotis (2009). *Medical Informatics: Concepts, Methodologies, Tools, and Applications* (pp. 198-207).

www.irma-international.org/chapter/healthcare-knowledge-management/26217

Healthcare Organizations and the Internet's Virtual Space: Changes in Action

Stefano Baraldi (2009). *Medical Informatics: Concepts, Methodologies, Tools, and Applications* (pp. 2323-2350).

www.irma-international.org/chapter/healthcare-organizations-internet-virtual-space/26376