Chapter 23 Socio-Technical Systems on the Move: Some Insights for Policy Activity

Sylvie Occelli

Istituto di Ricerche Economico Sociali del Piemonte (IRES), Italy

ABSTRACT

Because of the advancements in Information Communication Technologies (ICTs), and notably the increased spreading of Web 2.0 Internet-based services and mobile computing, an increasingly information-rich environment is made available, where new types of Socio-Technical Systems (STS) can be established. Due to the pervasiveness of ICT, designing and developing Socio-Technical Systems is raising an increasing interest also from a policy point of view. They play a crucial role in the improvement of the so-called soft-infrastructures, a main asset for delivering social innovation. Raising the performance of such an infrastructure, in fact, turns out to be a major challenge to be addressed in order to meet EU requirements for smart growth. In this chapter, a concept of STS is suggested, and its ICT-enabled implications for policy activity are highlighted. As an example, the concept is used for designing a collaborative platform for health knowledge exchange at a regional level.

INTRODUCTION¹

In everyday life, Information and Communication Technologies (ICT) and Internet access are progressively transforming the ways people gather information about their surrounding environment and interact with it (Atkinson & McKay, 2007; Castells, 2009; Horrigan & Rainie, 2002; Kwan, 2001; Dodge & Kitchin, 2004; Wellmann & Haythornthwaite, 2002; Townsend, 2001; Warf, 2001; Wilson & Corey eds., 2000).

These technologies alter the distance limits prescribed by social practices, thus allowing for a higher degree of accessibility. They are also time-adjusting as the time used in an activity can be freed for alternative ones. Furthermore, they affect the ways people perceive their surrounding environment and mediate human communication (Fuch, 2005). Finally, these features have an impact on activities which can be more easily segmented in tasks and spread out across space and time (Couclelis, 2009), although their ultimate effects cannot be easily explained.

DOI: 10.4018/978-1-5225-1674-3.ch023

Lately, in spite of or because of the persistent, critical situations for most national and regional economies, the new generation of ICT, and notably mobile communications and web 2.0 Internet based services, are again stimulating an upsurge of interest, as new facets of ICT potential are gaining momentum, i.e. ubiquity, knowledge sharing, co-creation.

The recent emphasis on digital connectivity shows that Internet is not operating at the expenses of the real face-to-face relationships. Rather, it is an additional means of communication that is being integrated in everyday life (Wellman, Quan-Haase, Boase, & Chen, 2003), and likely to deliver new types of relationships and relation opportunities (Fuchs, 2005; Quitney Anderson & Rainie, 2010).

As the penetration of ICT creates an increasingly rich information environment, questions about the influences of the interaction of technical and social networks also arise: how does it encroach on existing organizations, by giving access to a globalized and information leaden society. Moreover, how does it enable the establishment of novel, more socially affordable types of systemic entities, herein called Socio Technical Systems (STS)?

Although the notion is already well established in the literature (Berra & Occelli, 2009; Morris, 2009; Sayer & Jarradi, 2013), the current features of STS, and namely those connected with the knowledge flux associated with the networks of interacting ICT enabled agents, raise a renewed interest to sharpen its underpinnings and investigate its functioning.

This chapter is a contribution to such an endeavour. First, in the next section, a conceptual framework is suggested which highlights the components and organizing mechanisms of STS.

Then, having this framework as a background, reference is made to the findings of some studies undertaken in the Piedmont region, where since 2005 the Piedmont ICT Observatory (PICTO) has been monitoring the spreading of ICT among citizens, firms and local governments. Arguments are provided that STS are not just intellectual constructs, useful for a better understanding of current organizational changes, but have also an impact in supporting their developmental process in a more inclusive and informed way. This turns out to be particularly relevant for delivering public services and in this direction, attention is turned to health care, a domain which besides accounting for the largest share of the regional public spending is undergoing a number of organizational reforms. An application of the STS notion is then outlined to help conceiving a collaborative platform for health knowledge exchange and support a regional soft infrastructure for health care delivery.

In the final section, some remarks are offered about the design potential of STS. We argue that, in the near future, applications of the concept of STS in policy practices will multiply and STS representations will be progressively refined. In this context, some most promising research topics are mentioned.

SOCIO-TECHNICAL SYSTEM: AN OLD CONCEPT FOR A NEW KIND OF SYSTEMS

Background

The concept of Socio Technical System (STS) is a longstanding one, loosely applied to describe any kind of organization that is composed of people and technology.

Originally introduced in the fifties, as computing and human requirements evolved, it has been progressively refined (Eason, 2008; Trist, 1981; Withworth, 2009). Notwithstanding, the term has been used with varied nuances in the literature (see among many others Ackerman, 2001; Berra, 2007; Castells, 22 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/socio-technical-systems-on-the-move/165826

Related Content

Framing of Opinion Leaders' COVID-19 Stance(s) on society: The Case of Oppah Muchinguri-Kashiri's Comments in Studio 7 and Zim Eye

Witness Roya (2024). Public Health Communication Challenges to Minority and Indigenous Communities (pp. 205-227).

www.irma-international.org/chapter/framing-of-opinion-leaders-covid-19-stances-on-society/345956

New Aspects and an Artificial Intelligence Approach for the Detection of Cervical Abnormalities: The COVID-19 Pandemic Era

Abraham Pouliakis, George Valasoulis, Georgios Michail, Evangelos Salamalekis, Niki Margari, Christine Kottaridi, Aris Spathis, Effrosyni Karakitsou, Alina-Roxani Gouloumi, Danai Leventakou, George Chrelias, Maria Nasioutziki, Maria Kyrgiou, Alexandros I. Daponteand Ioannis G. Panayiotides (2022). *Quality of Healthcare in the Aftermath of the COVID-19 Pandemic (pp. 192-214).*

www.irma-international.org/chapter/new-aspects-and-an-artificial-intelligence-approach-for-the-detection-of-cervicalabnormalities/292428

Machine Learning Applications in Nanomedicine and Nanotoxicology: An Overview

Gerardo M. Casañola-Martinand Hai Pham-The (2019). International Journal of Applied Nanotechnology Research (pp. 1-7).

www.irma-international.org/article/machine-learning-applications-in-nanomedicine-and-nanotoxicology/241273

Social Challenges Faced by Health Service Providers in Managing COVID-19

S. S. M. Sadrul Huda, Segufta Dilshad, Hamida Mosharrafand Md. Ishtiak Uddin (2022). *International Journal of Applied Research on Public Health Management (pp. 1-6).* www.irma-international.org/article/social-challenges-faced-by-health-service-providers-in-managing-covid-19/313439

Identifying the Relationship Between Health Expenditures and Life Expectancy at Birth: A Cointegration Analysis for MENA Countries

Halim Baand Muhammed Erkam Kocakaya (2020). *Multidimensional Perspectives and Global Analysis of Universal Health Coverage (pp. 285-308).*

www.irma-international.org/chapter/identifying-the-relationship-between-health-expenditures-and-life-expectancy-atbirth/247169