



Chapter XI

E-Organization and the Sustainable Information Society

Uwe Schneidewind, University of Oldenburg, Germany

Abstract

Information and Communication Technologies (ICT) have direct and indirect effects on sustainability. The direct effects are linked to the material and energy flows caused by the application of ICT. Indirect effects are caused by organizational and institutional changes driven by the new technologies. These latter changes can be summarized using the term “e-organization”. E-organization describes organizational and institutional patterns enabled by ICT. Important examples are new forms of network coordination between firms (also between NGOs), virtual factories or virtual communities. This chapter proposes a normative framework for judging the sustainability effects of these organizational designs and makes suggestions on how to create e-organizations capable of offering a sustainability contribution.

Introduction: Two Perspectives on ICT and Sustainability

Information and Communication Technologies (ICT) mentioned in this chapter refer specifically to Internet-based technologies and communication services. A glance at ICT and sustainability reveals two relevant levels of sustainability effects:

1. Information and communication devices produce direct ecological (sustainability) effects during their product life cycle (production, use, disposal); that is, energy use, resource consumption, pollutants and electronic smog, and electronic waste.
2. Information and communication devices cause indirect effects due to organizational changes caused by ICT. These changes affect use and consumption patterns (first order structural effects) as well as organizational and institutional designs in business and society (second order structural effects).

The strong interaction between information infrastructure on the one hand and cultural phenomena on the other is already on the discussion agenda regarding a sustainable information society. Allenby (2001) makes clear that (concerning the organizational effects of ICT), “our ability to understand the environmental and social dimension of information systems begins to diminish rapidly, in part because of the increasing importance of the cultural dimension” (Allenby, 2001, p. 32).

It seems worthwhile to focus on these “cultural” indirect effects to determine the sustainability effects of new organizational designs. The empirical evidence of previous years supports the hypothesis that these indirect effects are of much larger importance than the direct effects of ICT. Three questions comprise the following chapter’s arguments:

1. What are the new forms of organization caused by ICT? How can these types of e-organization be classified?
2. What must we understand about sustainable development in order to determine a normative framework helping us to judge different organizational and institutional designs from a sustainability perspective?
3. What guidelines exist for designing sustainable forms of e-organizations?

16 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/organization-sustainable-information-society/23454

Related Content

Africa, 2030 Agenda and Agenda 2063: The Imperative of Transnational Governance

Oluwaseun James Oguntuase (2021). *Handbook of Research on Institution Development for Sustainable and Inclusive Economic Growth in Africa* (pp. 1-14). www.irma-international.org/chapter/africa-2030-agenda-and-agenda-2063/266972

African Women and Economic Development: A Tale of Contradictions?

Lanoi Maloiy (2018). *Handbook of Research on Sustainable Development and Governance Strategies for Economic Growth in Africa* (pp. 443-454). www.irma-international.org/chapter/african-women-and-economic-development/197606

Methodology for Monitoring the Energy Consumption of Computer Services in Health Centers Based on IoT Technology Applied to Decision Making

Wilver Auccahuasi, Lucas Herrera, Karin Rojas, Christian Ovalle, Esteban Medina Rafaile, Luis W. Robles Trejo, Marco Antonio Jamanca Ramirez, Moises Tongo, Edward Flores, Fernando Sernaque, Percy Castro Mejiaand Jose Luis Herrera Salazar (2022). *International Journal of Social Ecology and Sustainable Development* (pp. 1-9). www.irma-international.org/article/methodology-for-monitoring-the-energy-consumption-of-computer-services-in-health-centers-based-on-iot-technology-applied-to-decision-making/315321

R&D Innovation Strategy for International Cooperation of Science and Technology in Asia

Donghun Yoon (2019). *Dynamic Perspectives on Globalization and Sustainable Business in Asia* (pp. 1-10). www.irma-international.org/chapter/rd-innovation-strategy-for-international-cooperation-of-science-and-technology-in-asia/215102

An I4.0 Review on Lean Green and Six Sigma Based on Energy Parameter

Neha Verma and Vinay Sharma (2021). *International Journal of Social Ecology and Sustainable Development* (pp. 30-46).

www.irma-international.org/article/an-i40-review-on-lean-green-and-six-sigma-based-on-energy-parameter/279090