

Chapter 2

Sustainability Evaluation of IT/IS Projects

Gilbert Silvius

LOI University of Applied Sciences, The Netherlands & University of Johannesburg, South Africa

ABSTRACT

Sustainability is without doubt one of the most important challenges of our time. How can one develop prosperity without compromising the life of future generations? Companies are integrating concepts of sustainability in their marketing, corporate communications, annual reports and in their actions. Information technology (IT) and information systems (IS) provide organizations with the ability to change and improve business processes to better support sustainable practices. IT/IS evaluation methods should therefore reflect this ability and include criteria for the assessment of sustainability aspects of IT/IS projects. However, IT/IS evaluation methods are today still dominated by the economical perspective that resulted from the infamous IT productivity paradox. This paper aims to broaden the perspective on IT/IS evaluation, by exploring the integration of indicators that reflect the concepts of sustainability into IT/IS evaluation methods. Based on an identification IT/IS evaluation methods and an overview of frameworks for sustainability indicators, an analysis is made of the inclusion of the indicators and principles of sustainability assessment in IT/IS evaluation methods. The analysis will conclude that integrating sustainability considerations in IT/IS evaluation requires far more than a set of additional criteria to be considered.

INTRODUCTION

Sustainability is recognized by the United Nations as one of the most important challenges of our time (Glenn and Gordon, 1998). How can we develop prosperity without compromising the life of future generations? The pressure on companies to broaden its reporting and accountability from economic performance for shareholders, to sustainability performance for all stakeholders has increased substantially (Visser, 2002). Proactively or reactively, companies are looking for ways to integrate ideas of sustainability in their marketing, corporate communications, annual reports and in their actions (Hedstrom et al., 1998; Holliday, 2001).

DOI: 10.4018/978-1-5225-3817-2.ch002

The growing concern about sustainability and the preservation of our planet is increasingly being recognized by the information technology (IT) and information systems (IS) disciplines. CIOs identify 'Green IT' as an important strategic technology (Thibodeau 2007), but the 'green' aspects of IT go beyond the technology. Given IT's functional ability to improve, change and reinvent business processes, it can also be an important contributor to more sustainable business practices (Kazlauskas and Hasan, 2009). However, this 'Greening by IT' perspective, is not reflected in IT/IS evaluation methods, as these methods tend to focus predominantly on an economic perspective. Probably fuelled by the much quoted 'IT productivity paradox' (Brynjolfsson, 1993), researchers and practitioners have been challenged to proof that IT/IS brings economic value to the organization. And although many evaluation models have been developed that also include other variables than Return on Investment (Renkema and Berghout, 1996), the debate on the contribution of IS seems to be dominated by the economic perspective (Silvius, 2010).

This paper explores the integration of indicators that reflect the concepts of sustainability into IT/IS evaluation methods. The paper will present a brief overview of IT/IS evaluation methods and an exploration of frameworks for sustainability reporting and evaluation. The paper will then analyze how these two concepts, IT/IS evaluation and sustainability, fit, and make a number of observations on the similarities and differences of the concepts.

IT/IS EVALUATION

Through research and in practice, a substantial number of evaluation methods to assess the contribution of IS/IT to business performance was developed. After considering over 50 evaluation methods Renkema and Berghout (1996) grouped these methods into four categories: Financial methods, Multi-criteria methods, Ratio methods and Portfolio methods.

Financial Methods

The financial methods consider the valuation of an IT/IS investments as an economic issue for which it is irrelevant whether the investment is in IT or in any other resource. As long as the effects of the investment are understood, calculating the value of it is merely a financial technicality (Silvius, 2010). However, in reality capturing value is not quite that straightforward. Financial valuation methods all have assumptions and limitations. Table 1 provides an overview of these valuation methods.

The limitations of these financial methods to capture the more qualitative aspects of IT/IS value and impact led to the development of other methods.

Multi-Criteria Methods

Multi-criteria methods are a reaction to the problems of capturing the full value of IT/IS investments in just financial metrics. These methods aim to identify different relevant aspects of value and risk in order to enable a thorough discussion and an informed discussion (Frisk, 2007). The most influential method using multiple criteria is Information Economics (Parker et al., 1988). This method is suited for evaluating a single project as well as a portfolio of projects.

13 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/sustainability-evaluation-of-it-is-projects/189887

Related Content

The Support From Industry 4.0 to the Management of Change (MoC)

Micaela Demichela and Gianfranco Camuncoli (2020). *Applications and Challenges of Maintenance and Safety Engineering in Industry 4.0* (pp. 166-187).

www.irma-international.org/chapter/the-support-from-industry-40-to-the-management-of-change-moc/255365

The Role of Civil Society in Implementing the SDGs Locally: The Case of Curitiba, Its Challenges, and Practices

Julijana Nicha Andrade (2021). *Handbook of Research on Novel Practices and Current Successes in Achieving the Sustainable Development Goals* (pp. 369-388).

www.irma-international.org/chapter/the-role-of-civil-society-in-implementing-the-sdgs-locally/282951

Sustainability Factors Affecting the Implementation of Design for Dis-Assembly and Re-Manufacturing Principles in the Automobile Sector Using ISM

Azeem Hafiz, Mohammed Fahad, Rashid Ahamed, Shaik Dawood A. K. and Mohammed Sadique Khan (2022). *International Journal of Social Ecology and Sustainable Development* (pp. 1-10).

www.irma-international.org/article/sustainability-factors-affecting-implementation-design/293254

Engaging Stakeholders for a Sustainable Future: Catalysts of Green Economy and Renewable Energy Transitions

Surjit Singha (2024). *Green Economy and Renewable Energy Transitions for Sustainable Development* (pp. 208-223).

www.irma-international.org/chapter/engaging-stakeholders-for-a-sustainable-future/337033

Sustainability Through Total Factor Productivity Growth in Agriculture Incorporating Institutional Factors: A Post-Globalized Indian Scenario

Ramesh Chandra Das (2023). *International Journal of Social Ecology and Sustainable Development* (pp. 1-16).

www.irma-international.org/article/sustainability-through-total-factor-productivity-growth-in-agriculture-incorporating-institutional-factors/319717