

Chapter 23

A Study of the Parameters Impacting Sustainability in Information Technology Organizations

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ABSTRACT

This paper proposes the critical themes associated with the evaluation of software business sustainability. The whole dimension of software business sustainability has been theorized into twelve elements that unfold covering the whole spectrum of software business sustainability. The twelve elements of software business sustainability include aspects such as product, process, practices, policies, people, peripherals, partners, place and profit model. The paper justifies the use of these twelve elements in ensuring sustainability in software businesses, by incorporating the case of multinational software businesses as example. This study needs to be looked as an exploratory investigation into the elements of software business sustainability lending viability towards modelling the software businesses using these twelve elements.

INTRODUCTION

The sustainability of businesses has been observed to be an under-researched phenomena in the past research literature. The use of typology to model businesses in differing domains has been a documented phenomenon in the business information systems literature (Dyllick & Muff, 2013). Yet, there is an observable vacuum in the research literature in terms of the use of typologies for assessing and modelling software business sustainability. On the other hand, it is essential to increase the awareness of software business sustainability. Software businesses need to ensure measures for enabling sustainability of their strategic road map as well as the day to day business operations. This entails a need for having a

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structured approach for measuring and incorporating sustainability elements into the business activities - which will lead towards long term sustainability of the businesses at large. However, the absence of an integrated framework for sustainability is a major bottleneck for software business managers and policy makers in terms of ensuring the overall sustainability of their business. In addition to this, business sustainability of software companies could have a number of individual and firm level benefits. For example, the employees of a sustainable software business would enjoy job security, health and safety work life, increased efficiency, productive work colleagues, great work environments and collaborative work culture. On the other hand, the software businesses which are sustainable would be able to increase revenue, add value to the products, increase customer satisfaction, increased public recognition, extend the longevity of software products and enhance production effectiveness. Hence, this paper aims at discussing about a number of critical elements for measuring sustainability of software businesses which could be tested through a number of proceeding experiments conducted in the business environments at both strategic as well as operational levels.

RELATED WORK

There is a limited amount of past research documented in investigating the sustainability dimensions of software businesses. The four main observable categories of literature in this space has been product sustainability, process sustainability, service sustainability and green IT. There are only very limited number of researches documented in terms of product, process and service sustainability. However, quite a few numbers of studies are directed on investigating the green dimension of IT which is a part of the triple bottom lines of sustainability. Arguably, the environmental bottom line is more clearly documented than the other dimensions in business sustainability literature. For example, green product innovation has been discussed as a method for achieving sustainability in software businesses (Dangelico & Pujari, 2010). The result of interaction between innovation and sustainability has been depicted as the waves which cause green product innovation. In fact, the degree of greening has a potential influence over the product innovation. On the other hand, (Tukker & Tischner, 2006) discusses about a product- service system that are used by companies as a specific type of value proposition that a business offers to its clients. Product-service systems could be possible avenues towards value creation - which is an integral part of sustainability. On the other hand, (Fermeglia et al., 2008) investigated on a software module for the evaluation of process sustainability in chemical engineering process. However, it is a question as to how this could be tailored to the process sustainability involved in the software development business. On the other hand, a number of researches explores about Green IT - which is a well-documented aspect in the software business sustainability domain. The next paragraph will summarise the four main available frameworks in the literature which looks at ICT business sustainability.

Firstly the capability Maturity Framework for Sustainable ICT is one major contribution of this kind. The IT Capability maturity framework is a high level process framework to measure and assess the environmental impact of the IT functions of an organization. The framework aims at addressing four key actions of a Sustainable ICT (SICT) practice in an organization such as defining the scope and goal of SICT, understanding the current SICT capability maturity level, systematically developing and managing the SICT capability building blocks along with assessing and managing SICT progress over time. These key actions are discussed in detail to derive IT capability maturity building block grid. The grid

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