

## Chapter 4.4

# Application of a Composite Process Framework for Managing Green ICT Applications Development

**Mohammed Maharmeh**

*University of Western Sydney, Australia*

**Zahra Saeed**

*University of Technology Sydney, Australia*

### **ABSTRACT**

This chapter presents the use of Composite Process Framework for Green ICT Applications Development. This framework for software development, as its name suggests, integrates different elements of software development processes such as waterfall, iterative-incremental and agile approaches to software development. The chapter explains and provides details on what comprises a Composite Processes Framework and how it can be applied to develop a Green ICT application.

DOI: 10.4018/978-1-60960-472-1.ch404

### **INTRODUCTION**

This chapter presents a Composite Process Framework that comprises elements of each of the process life-cycles concurrently from software processes such as Waterfall, Iterative-Incremental or Agile, to enable project managers adopt the best processes for managing development of Green ICT systems. A composite Process Framework, as envisaged here, retains the flexible aspects of the agile approach and, at the same time, facilitates exchange of information about Green ICT Strategies, and Green ICT Business Requirements between project stakeholders (such as senior

business managers and ICT managers) during the project life-cycles.

The aim of this chapter is to provide an insight on the background of implementing a business process and the potential use of a composite process framework for the development of Green ICT systems. The chapter is organized as follows. The next section provides a background about Green ICT Systems; it is followed by another section that highlights the definition of a composite process framework. Next it provides details of using the composite process framework for Green ICT solution and finally the conclusion and future direction.

## COMPOSITE PROCESS FRAMEWORK

### Overview

The Composite Process Framework is a standard procedure for adopting a combination of software development approaches. The composite process framework model illustrate how to adopt elements of various software development processes in a single project within an organization, in such

a way that help resolve some of the issues and problems associated with the implementation of these processes in developing solutions such as Green ICT system.

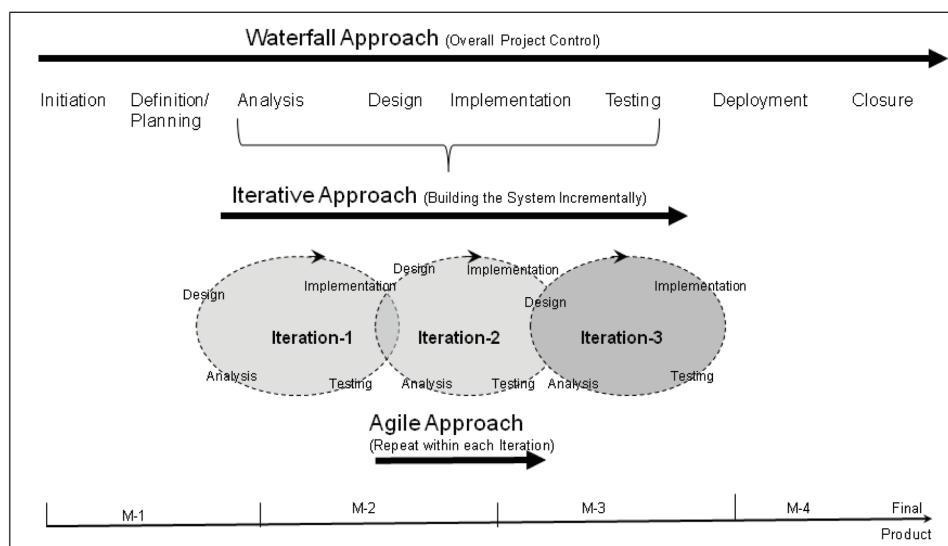
### Composite Process Framework Model

The composite process framework model as shown in Figure 1, consists from three distinct layers making the three System Development Life Cycles that are categorized as Waterfall (Royce, 1970), Iterative-incremental, and rapid (Martin, 1991) life cycles. The rapid life cycles can be said to encompass an “Agile” approach.

While the composite process framework consists from three layers, it does not require having all the three layers in place to operate. The composite process framework could use a composition of two or more processes that are “Waterfall and iterative approach” or “Waterfall, iterative and agile approach” (Maharmeh & Unhelkar, 2009b).

The process framework utilizes the high-ceremony aspects of the Waterfall approach at the top layer for taking care of planning and project management tasks. In the next layer, it uses the

*Figure 1. Composite Process Framework Model (Maharmeh & Unhelkar, 2008, 2009a)*



8 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/application-composite-process-framework-managing/51723](http://www.igi-global.com/chapter/application-composite-process-framework-managing/51723)

## Related Content

---

### Digital Green ICT: Enabling Eco-Efficiency and Eco-Innovation

Krunal Kamani, Dhaval Kathiriya, Paresh Virpariaand Pankaj Parsania (2011). *Handbook of Research on Green ICT: Technology, Business and Social Perspectives* (pp. 282-289).

[www.irma-international.org/chapter/digital-green-ict/48434](http://www.irma-international.org/chapter/digital-green-ict/48434)

### An Exploration of COVID-19 and Its Consideration as a Black Swan for the Construction Industry in Switzerland

Adrian August Wildenauerand Josef Basl (2021). *International Journal of Digital Innovation in the Built Environment* (pp. 62-82).

[www.irma-international.org/article/an-exploration-of-covid-19-and-its-consideration-as-a-black-swan-for-the-construction-industry-in-switzerland/277122](http://www.irma-international.org/article/an-exploration-of-covid-19-and-its-consideration-as-a-black-swan-for-the-construction-industry-in-switzerland/277122)

### Role of Biotechnology in Bioremediation

Tapan Kumar Mohanta, Yugal Kishore Mohantaand Nibedita Mohanta (2015). *Handbook of Research on Uncovering New Methods for Ecosystem Management through Bioremediation* (pp. 399-432).

[www.irma-international.org/chapter/role-of-biotechnology-in-bioremediation/135104](http://www.irma-international.org/chapter/role-of-biotechnology-in-bioremediation/135104)

### Rural Tourism and the Development of Characteristic Towns in China and Its Influence on Rural Areas

Zouchong Li (2025). *International Journal of Agricultural and Environmental Information Systems* (pp. 1-23).

[www.irma-international.org/article/rural-tourism-and-the-development-of-characteristic-towns-in-china-and-its-influence-on-rural-areas/370560](http://www.irma-international.org/article/rural-tourism-and-the-development-of-characteristic-towns-in-china-and-its-influence-on-rural-areas/370560)

### Traffic and Climate Change Impacts on Water Quality

Parvez Mahbub, Godwin Ayoko, Prasanna Egodawatta, Tan Yigitcanlarand Ashantha Goonetilleke (2011). *Green Technologies: Concepts, Methodologies, Tools and Applications* (pp. 1804-1823).

[www.irma-international.org/chapter/traffic-climate-change-impacts-water/51791](http://www.irma-international.org/chapter/traffic-climate-change-impacts-water/51791)