Chapter 7.3

Information Technology Projects System Development Life Cycles:
Comparative Study

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ABSTRACT

This chapter will discuss more than 20 system development life cycles (SDLC) found in the Information Technology project management arena, whereby, a comprehensive overview of the SDLCs history as well as the trigger that instigated its development would be laid out. Subsequently, the chapter will discuss the advantages and disadvantages of using SDLC, whereby the chapter will explain where and when to use which SDLC. As such, the chapter will classify the different SDLCs into three non-exclusive categories: Traditional methodologies, agile methodologies, spiral methodologies and other types of methodologies that used in IT project Management.

INTRODUCTION

System development life cycle (SDLC) engulfs the whole system life cycle. Not only spanning over the feasibility study, analysis, specification, design, development; but also encompassing the aspects resonating in the operations, maintenance and enhancement, which would take place only after the system has been accepted by the end user.

Additionally, Project encapsulates the management environment set up, whereby ensuring delivery of specifically tailored business product to cater to a pre-defined business case. As such, Project does not cover all stages of system life cycle and covers mostly the technical deliverables.

Within this context, System development life cycle would be also denoted system process in software engineering as an integral part of IT project management. Highlighting the fact that many system development life cycles are developed to enable project managers to manage their project and overcome many constraints, *inter alia*: Money, Time, effort and Human resources. However, in view that two elements affect the project management apt choice of the SDLC; Familiarity of the project and the size of the project, whereas the authors use familiarity when referring to how familiar the project cadre is with the technology implemented in the project and the culture of the project, while the authors use the size of the project when referring to the time needed for project accomplishment, cost of the project, project people (users and development team), and the area of the project.

Accordingly, this chapter will discuss more than twenty SDLCs found in the IT project management arena, whereby, a comprehensive overview of the SDLCs history as well as the trigger that instigated its development would be laid out. Subsequently, the chapter will discuss the advantages and disadvantages of using SDLC, whereby the chapter will explain where and when to use which SDLC. As such, the chapter will classify the different SDLCs into three non-exclusive categories: Traditional methodologies, agile methodologies and spiral methodologies, of which the chapter will attempt to discuss some models as stipulated in Figure 1. (Figure 2)

Figure 1. System development life cycle taxonomy
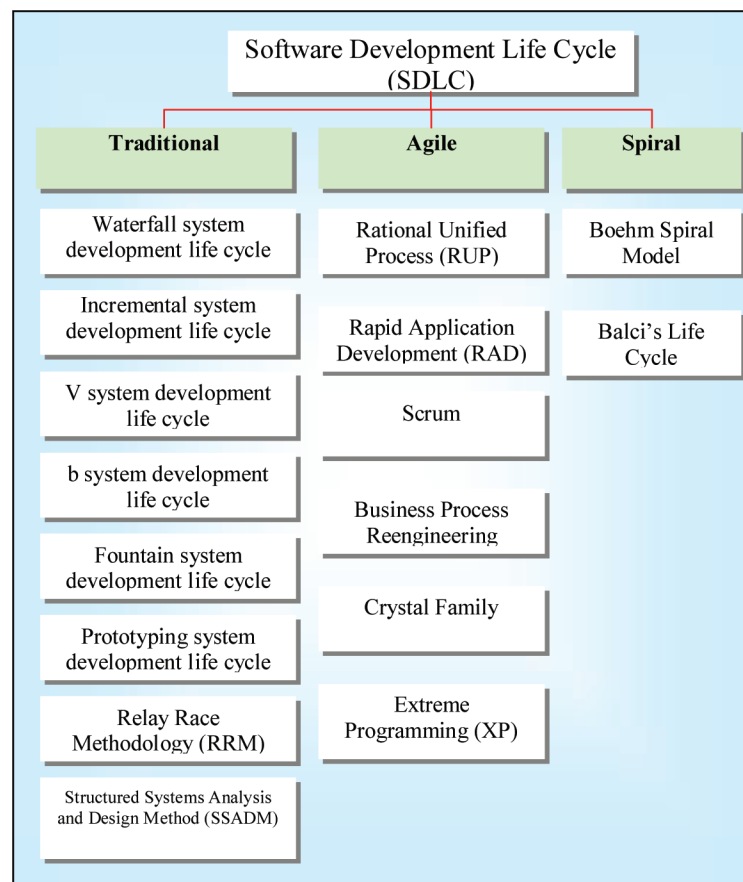
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