Chapter 15

Web Engineering and Business Intelligence:
Agile Web Engineering Development and Practice

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ABSTRACT

The objectives of this chapter are to highlight the main issues related to Web engineering practices and how they support business intelligence projects, the need for Web engineering, and the development methods used in web engineering. "Web Engineering is the application of systematic, disciplined and quantifiable approaches to development, operation, and maintenance of Web-based applications". It is a response to the early, chaotic development of Web sites and applications as well as recognition of a divide between Web developers and conventional software developers. Viewed broadly, Web engineering is both a conscious and pro-active approach and a growing collection of theoretical and empirical research.

Web engineering is the process used to create high-quality Web-based systems and applications that deliver a complex array of content and functionality to a broad population of end-users. Web engineering is concerned with the establishment and use of sound scientific, engineering and management principles and disciplined and systematic approaches to the successful development, deployment and maintenance of high quality Web-based systems and applications.

In this chapter, a short description of some agile software development methods is reviewed and a detailed description of XP is provided.

XP will be introduced and reviewed by using a defined structure where process, roles and responsibilities, practices, adoption and experiences, and scope of use regarding to XP is identified. Process refers to the description of phases in the product life-cycle through which the software is being produced. Roles and responsibilities refer to the allocation of specific roles through which the software production in a development team is carried out.

Agile BI is as much about how BI applications are used and what they enable businesses to do, as it is about how the applications themselves are built.

INTRODUCTION

There has been much research and many efforts made in recent years in the area of web development using a variety of different technologies. With the emergence and mass availability of communication channels, this is no surprise. Many authors have written books and articles identifying good practices in the realm of web design. Some have sought out metrics and measures to quantify web application design to give some level of evaluation of the quality of web application. This book seeks to add value to the understanding of web applications design by investigating the current agile development methods and web engineering best practices.

If there is no disciplined approach to Web-based Applications development, we will find sooner or later that Web-based applications are not delivering desired performance and quality, and the development process becomes increasingly complex and difficult to manage and refine and also expensive and grossly behind schedule. Web Engineering, an emerging new discipline, advocates a process and a systematic approach to development of high quality Internet- and Web-based systems.

The history of web development is relatively short. Initially, many web applications were small and simple with little thought given to planning or design before constructing the application, and few have been tested properly. Today, many web applications are large-scale and involve sophisticated interaction with visitors and databases;

such applications are often regarded as mission critical. In parallel with this evolution, a need for web engineering has become apparent. Yet, within education, the plethora of web courses primarily addresses the implementation of web applications with very little about the analysis and design of web applications. An early consideration of a web engineering process suited for inexperienced users is important.

The objectives of this chapter are to highlight the main issues related to agile web engineering practices, the need for web engineering, and the agile development methodologies used in web engineering. The chapter also covers important topics of Web Engineering, including requirements analysis, design, architectures, technologies, test, operation and maintenance; this is complemented by in-depth knowledge about Web project management and process issues as well as important quality aspects of Web applications like usability, performance and security.

History

The World Wide Web (WWW) originated at the European Particle Physics Laboratory known as 'CERN' in 1990. Mr. Tim Berners-Lee with a background in text processing and real-time communications, wanted to create an information system in which researchers could exchange information during the course of a project. He came up with a method of linking documents together using hypertext technology. Since then

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