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## **Chapter 16**

# The VLEG Based Production and Maintenance Process 6 **based** Learning Applications

Jörg Schellhase and Udo Winand Universität Gh Kassel, Fachbereich Wirtschaftswissenschaften

(31)

For the realization and maintenance of high quality and complex Web-based applications, there is a need to use sound Web-engineering principles. This chapter presents an application for the realization, management and maintenance of Web-based learning applications. Web-based learning applications are very important for the area of E-Learning, which is a field of increasing importance for E-Commerce.

## **INTRODUCTION**

In many cases there is a lack of systematic approaches to the development of Web-based systems (Murugesan, Deshpande, Hansen & Ginige, 1999). Due to the increasing complexity of Web-based applications, there will be an increasing demand for methods and tools that support the efficient development of Webbased applications. By using adequate methods and tools, the costs and time to develop and maintain a Web-based application can be decreased enormously. Furthermore, the quality of the resulting Web-based applications will be much higher (Chen, Zhao & Fan, 1999).

This chapter introduces an architecture of a special kind of Web-based application, a Web-based learning application, the production process of the Webbased application, the architecture of a tool that plays an important part in the production process and the overall process model. The product model of the

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Web-based learning application is modelled with the well known OOHDM method. The process model can be applied to different kinds of Web-based applications. The importance to differentiate between a product model and a process model is stressed in Ginige (1998) and Lowe and Hall (1999). The tool that plays a very important part in the production process is called the *Virtual Learning Environment Generator* (VLEG). It is a tool for the realization, management and maintenance of Web-based learning applications. Examples of products produced by the VLEG are Web-based learning applications of the project WINFOLine. WINFOLine is a well known german teaching cooperation of the universities of Göttingen, Leipzig, Kassel and Saarbrücken. The following Figure 1 shows the situation at the beginning of the WINFOLine project, after the requirements of the Web-based applications had been defined. Figure 2 shows briefly the development method chosen to produce and maintain the Web-based applications.



# ARCHITECTURE OF THE WEB-BASED LEARNING APPLICATIONS

This section presents the architecture and some typical features of Webbased learning applications that are produced by the VLEG. 7 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: <u>www.igi-</u> <u>global.com/chapter/vleg-based-production-maintenance-</u> process/7874

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