

## Chapter 15

# Development of Enterprise Content Management Systems: A Procurement-Centric Approach

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### ABSTRACT

*Enterprise systems development approaches can be classified into development-centric and procurement-centric approaches. Based on the component-based system development methodology (CBSD), this chapter proposes a procurement-centric framework to develop enterprise content management (ECM) system. Adopting CBSD to develop ECM system avoids the drawbacks of the development-centric approaches, and remedies the ECM field lacks where there is no system development method that helps in selecting and implementing the ECM system. To validate the proposed framework, the author applies it to a case study from a large research institution with more than 30,000 students.*

### INTRODUCTION

Enterprise systems are one of the major IT investments in many organizations (Fan et al., 2000), and the development of these systems is considered important not only by researchers but also by practitioners. The development approaches of the enterprise systems can be classified into development-centric (i.e. waterfall, spiral models) and procurement-centric approaches (Tran and Liu, 1997). Component-based software develop-

ment (CBSD) (Fan et al., 2000; Brereton and Budgen, 2000; Sugumaran and Storey, 2003) is one of the procurement-centric approaches that is widely used to develop enterprise systems. Many researchers believe that CBSD is capable of reducing several challenges that are faced by the traditional development approaches (Sprott, 2000; Sugumaran and Storey, 2003; Brereton and Bugden, 2000). Other researchers believe that CBSD will lead the shift from having large and difficult to modify systems into having smaller

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and flexible systems (Due, 2000; Fan et al., 2000; Fichman and Kemerer, 2002).

As one current example of enterprise systems, enterprise content management (ECM) systems are implemented by many organizations to deal with the increasing information overload and with the structured and unstructured data complexity. Smith and McKeen (2003) defined ECM as “the strategies, tools, processes and skills an organization needs to manage all its information assets regardless of type over their lifecycle.” According to Gartner, ECM includes the following core components: document management, web content management, records management, document imaging, document centric collaboration, and workflow (Woolley and Fletcher, 2007).

From financial point of view, the market of ECM is appealing for many vendors. Dunwoodie (2004) mentioned that the ECM market is estimated to be \$1.54 billion; Meta Group estimated the ECM market to be \$2.3 billion in software and \$7 billion in services (Content Manager, 2004). Gartner estimates the ECM software revenue to exceed \$5.1 billion by 2013 (EMC Corporation, 2009). Although there is a difference in the estimated market figures, the numbers indicate that the ECM market is growing. The numbers also explain the reason of the great interest that newer competitors to the market (i.e. Oracle, IBM, Microsoft) have. The senior director of Oracle noted, “Content management is entering a period of significant change and potentially explosive growth” (Buchheim, 2006). The market of ECM can be categorized as commercial (i.e. IBM, EMC, Interwoven, Vignette, Microsoft and Open Text), open-source (i.e. Plone and Mambo), and hosted systems (i.e. SpringCM and Document Commander) (Kemp, 2007). Commercial ECMs are more popular than the other two categories; Gartner has ranked EMC Documentum as the leader of ECM 2009 (EMC Corporation, 2009).

Although ECM can be viewed as an evolutionary phase of information management and its importance is escalating (Tyrväinen et al.,

2006; Boiko, 2002), ECM field lacks a system development method that helps in selecting and implementing the system, and avoid the drawbacks of traditional development approaches. By adopting Sharp and Ryan’s (2010) CBSD framework, the purpose of this paper is to remedy that lack by proposing a development framework for ECM systems based on CBSD approach and ECM literature. To validate the proposed framework, we will apply it to a case study from a large research institution with more than 30,000 students.

We believe this research idea has dual contribution: academic as well as practical. The main theoretical contribution is extending the CBSD approach to ECM literature. To the best of our knowledge, this extension is a new idea that has not been discussed before. Also, the suggested framework provides the practitioners with a roadmap that facilitates developing ECM systems by applying the proposed CBSD framework.

The rest of the paper is arranged as follows. The related literature review of ECM and literature review of systems development approaches are discussed in sections 2 and 3 respectively. The proposed framework is presented in section 4. Then the proposed framework is applied to a case study in section 5. Finally, we conclude in section 6.

## **RELATED ECM LITERATURE REVIEW**

ECM Association (AIIM) defines ECM as “the strategies, methods and tools used to capture, manage, store, preserve, and deliver content and documents related to organizational processes. ECM tools and strategies allow the management of an organization’s unstructured information, wherever that information exists”. ([www.aiim.org](http://www.aiim.org)). According to Meta Group, ECM is defined as “...the technology that provides the means to create/capture, manage/secure, store/retain/destroy, publish/distribute, search, personalize and

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