A Reference Application Architecture for the CRM Domain: The Portuguese Citizen Space Case Study

André Cruz, Department of Computer Engineering, Instituto Superior Técnico, Lisbon, Portugal
André Vasconcelos, Department of Computer Science and Engineering, Instituto Superior Técnico, Lisbon, Portugal & Instituto de Engenharia de Sistemas e Computadores, Investigação e Desenvolvimento, Lisbon, Portugal

ABSTRACT

This paper presents the definition of a Reference Application Architecture for the Customer Relationship Management (CRM) domain. The definition of the Reference Application Architecture is done by extracting best practices from five CRM commercial solutions: SugarCRM, Microsoft Dynamics CRM, Sage CRM, Oracle Siebel CRM and Salesforce CRM. The CRM Reference Architecture was developed considering the shared functionalities and information entities among these commercial solutions. In the Reference Architecture the authors identify six modules in the CRM system and five systems, which interact with the CRM system. The six CRM modules are: Account module, Sales module, Marketing module, Service module, Scheduler Module and Administration module. The five interacting systems are: Portal, Contact Center, Document and Knowledge Base Management system, Workflow system and Reporting and Analytics system. Then the authors apply the defined architecture in a case study from the Portuguese Public Administration, the Citizen Spaces provided by the Agency for the Administrative Modernization. The authors compare the current state of the Citizen Spaces with a possible architecture reached through the Reference Architecture, and assess the benefits and pitfalls of the purposed architecture.

Keywords: Architecture, Best, Citizen, CRUD, Customer Relationship Management (CRM), Entities, Functionalities, Information, Practices, Reference, Spaces

INTRODUCTION

In recent years, Customer Relationship Management (CRM) systems have gained significant interest, both in the industry as well as in the academic area. (Pan, 2005) Nowadays, more and more companies adhere to CRM solutions, in order to gain more loyal customers, but to implement a true Customer Relationship Management system, proper architecture is required. (Fardoie et al., 2008)

DOI: 10.4018/IJEIS.2015040102
With this adherence to CRM solutions, a Reference Architecture for this domain is expected to provide a way to approach usual occurring problems by documenting good architectural design practices. (Cloutier et al., 2010) In this paper we present a Reference Application Architecture for the CRM domain, which is applied in a case of the Portuguese Public Administration provided by the Agency for Administrative Modernization (AMA). In order to reach the Reference Architecture it is necessary to gather the industries best practices. We extracted the best practices from five CRM known solutions in the market: SugarCRM, Microsoft Dynamics CRM, Sage CRM, Oracle Siebel CRM and Salesforce CRM.

This paper is structured in the following way: it starts with Enterprise Architecture theme, highlighting Reference Enterprise Architecture, and the Enterprise Architecture Framework used in this work. Then in the following sections of the chapter we present methodologies and concepts relevant for the definition of the solution and for the case study evaluation. Next we give a brief explanation on what is a CRM system, followed by the explanation of the extraction of best practices done by us in the CRM domain. In the following section, we present how we define our Reference Architecture solution and the architecture proposed. After the solution proposed we do the evaluation of a case study. We present the methodology followed for the evaluation and then we present the case study used as well as the evaluation results. In the final chapter we take the conclusions of the work done.

ENTERPRISE ARCHITECTURE

The Enterprise Architecture (EA) can be interpreted as an instrument to define the future direction of the enterprise, and also the mechanism that coordinates the actual transformation of the enterprise. EA handles the requirements that business performance needs, which are an integrated design of the enterprise and all that is related with it, e.g.: people and their competencies, organizational structures, business processes, IT, finances, products and services and it’s environment. (Greefhorst et al., 2011) So EA can be considered as a connector of the business strategy and the IT strategy, and also the essence of enterprise information planning. (Minli et al., 2010) We now present some EA definitions to help get a clearer view of this theme.

Mark Lankhorst defines EA objective by stating “Enterprise architecture tries to describe and control an organization’s structure, processes, applications, systems and techniques in an integrated way.” (Lankhorst, 2005)

The Gartner Group Defined EA Concept as “Enterprise architecture (EA) is the process of translating business vision and strategy into effective enterprise change by creating, communicating, and improving the key principles and models that describe the enterprise’s future state and enable its evolution.” (Lapkin, 2008)

REFERENCE ENTERPRISE ARCHITECTURE

A Reference Enterprise Architecture is a way to approach usual occurring problems by documenting good architectural design practices. (Cloutier et al., 2010) The Reference Enterprise Architecture primary objective is to direct and constrain the instantiations of solution architectures. To get a more clear view of the Reference Enterprise Architecture theme we have to answer two questions:

- Why do we need Reference Architectures?

We need Reference Architectures because they improve effectiveness through: managing synergy, providing guidance (best practices, architectural principles), providing an architectural baseline and blueprint and by capturing and sharing architectural patterns. (Cloutier et al., 2010)

- How do you create a Reference Architecture?
Enterprise Architecture Modeling with the Unified Modeling Language
Pedro Sousa, Artur Caetano, André Vasconcelos, Carla Pereira and José Tribolet
www.igi-global.com/chapter/enterprise-architecture-modeling-unified-modeling/18403?camid=4v1a