

## **CLOUD APPLICATION DEVELOPMENT – INVENTORY MANAGEMENT**

### **LITERATURE SURVEY**

**[1] Hind Benfenatki, Catarina Ferreira da Silva, Aïcha-Nabila Benharkat, “Cloud Application Development Methodology” IEEE/WIC/ACM International Conference on Web Intelligence (WI 2014)**

This paper describes MADONA methodology, and focuses on the requirements expression phase, by describing RIVAL -a Requirement Vocabulary- based on Linked USDL principles. MADONA allows business stake holders to perform the automatic development of business applications; and combines cloud services discovery and composition with service development using cloud platforms, when the discovery process does not return a service meeting the business stakeholder’s requirements. The description of developed services is stored, and the latter are used in the future workflows. MADONA is implemented as “Services Orchestration as a Service.” It uses the “Juju” [11] cloud orchestration tool to deploy cloud services in several IaaS. A cloud orchestration tool is available without the underlying physical resources needed for the deployment of services. It allows us to deploy and compose supplied services abstracting from the technical details, i.e. (i) the management of the dependencies between services, (ii) the deployment of selected services, (iii) the scalability of the deployed services.

RIVAL describes functional and non-functional requirements for business application development. Functional requirements describe service features. Non-functional requirements describe user preferences and QoS parameters. The rest of this paper is organized as follows. Section 2 illustrates how the marketplace’s services are described. Section 3 presents the proposed MADONA methodology. Section 4 introduces MADONA’s architecture. We describe the implementation and evaluate our work in section 5. Section 6 describes the work related to existing cloud software development approaches. Section 7 draws final conclusions and describes our future work.

**[2] Imelda Irakoze, “Cloud-based Mobile Application”, 16th May 2013**

The goal of this project was to use cloud computing to improve the computing ability of mobile devices. Processing power, storage capacity, battery lifetime, and display size present a concern for developers when creating applications for mobile devices. In addition to this, with all the diverse types of smartphone operating systems on the market today, a need arises for a way to create cross-platform applications and cloud computing offers a solution to that. Cloud computing is emerging as a dominant computing platform for providing

scalable services to a global client base. Therefore, a cloud computing platform was used to develop a mobile application that supports cloud-based services. Eclipse was used as a development environment for the Android application, and as Eclipse offers a Google plugin, it was also used to deploy the application to Google App Engine. Once the development environment was fully configured, it allowed the creation and deployment of a mobile application: My Notes to the Google App Engine cloud. The results showed that cloud computing could be used as a backend to take some workload off the mobile device. However, My Notes app only characterizes certain tasks such as storing, retrieving, and deleting taken notes. In the future, it would be useful to test and investigate how a task that requires large computations from the mobile devices or tasks that are not even possible to be performed on mobile devices, would use the cloud services to benefit mobile phone users.

### **[3] Stanley Ewenike, Elhadj Benkhelifa and Claude Chi Belushi, “Cloud Based Collaborative Software Development”**

Cloud computing is a technology trend that is changing the IT landscape and changing collaboration [3]. One of its most notable advantage lies in its adaptability to varying contexts of use, its extensibility, as well as, the numerous possibilities and opportunities it presents for all stakeholders to collaborate [37]. However, not unlike most emerging paradigms, mixed feelings trail adoption of the Cloud [4], [5], [38]. For collaborative software development, the benefits include, but are not limited to, cost savings, scalability, agility for business and development peak period needs, motivation for innovation and increased R&D [29]. On the other hand, there are fears about: security issues; vendor lock-in and interoperability issues, portability issues; automation, performance issues; availability issues; handling uncertainty about: heterogeneity and content type, location of client, bandwidth unpredictability, dynamic workload variations, workflow schedules, architecture and resource optimization; availability and integrity of relevant information within participating teams and systems; context awareness and reproducibility within contexts; amongst others [27], [37], [39]. Some of these challenges and issues listed here are partly inherited since Cloud Computing itself, is a paradigm that leverages a couple of other technologies [40]