

ICTE in Regional Development, December 2013, Valmiera, Latvia

Unified theory of acceptance and use of technology (UTAUT) for market analysis of FP7 CHOReOS products

Maira Lescevica^{a*}, Egils Ginters^a, Riccardo Mazza^b

^a Sociotechnical Systems Engineering Institute, Vidzeme University of Applied Sciences, Cesu Str. 4, Valmiera, LV-4200, Latvia

^b Wind Telecomunicazioni SpA, Viadotto XXV Aprile 9, Ivrea (TO) 10015, Italy

Abstract

The European 7th Framework FP7-ICT-2009-5 project CHOReOS No. 257178 (2010-2013) “Large Scale Choreographies for the Future Internet (IP)” is aimed to elaborate on new methods and tools related to Future Internet ultra-large-scale (ULS) solution development based on the use of choreographies. The purpose of this research is to identify exploitable CHOReOS products and approaches and business market trends that may exploit them. The aim is to collect and assess early market inputs, thereby ensuring that market needs are addressed properly by the CHOReOS project. The market acceptance assessment is done using the Unified Theory of Acceptance and Use of Technology (UTAUT), but the credibility of results is assessed using Cronbach’s Alpha, Split-Half Reliability and Spearman–Brown testing methods.

© 2013 The Authors. Published by Elsevier B.V. Open access under [CC BY-NC-ND license](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Selection and peer-review under responsibility of the Sociotechnical Systems Engineering Institute of Vidzeme University of Applied Sciences

Keywords: CHOReOS; Dynamic development process model; Distributed service bus; IDRE; DynaRoute; IASAM; UTAUT

1. Introduction

The CHOReOS project positions itself in the context of the ULS Future Internet of software services. To address the challenges inherent of ULS as well as other key requirements of the Future Internet, such a fusion of user/developer/system roles, adaptability and QoS-awareness, to name a few, CHOReOS revisits the concept of

* Corresponding author.

E-mail address: maira.lescevica@va.lv, riccardo.mazza@mail.wind.it

choreography-based service composition in service-oriented systems. CHOReOS introduces a dynamic development process, and associated methods, tools and middleware sustaining the ever-adaptable composition of services by domain experts – being the users of business choreographies – in the Future Internet. CHOReOS concepts then encompass formally grounded abstractions and models, dynamic choreography-centric development process, governance and service-oriented middleware, thus providing an Integrated Development and Runtime Environment (IDRE) aimed at overcoming the ULS impact on software system development. Formally grounded abstractions and models enable reasoning about the properties, both functional and non-functional, of ULS choreographies. A dynamic choreography-centric development process enables the fusion of user/developer/system roles, while managing the ULS service base, and supports the synthesis of scalable and adaptable choreographies. Governance includes service integration policies and rules, as well as tools for dynamic verification and validation of choreographies. Finally, service oriented middleware enables adaptable choreographies over XSB-based middleware, Grids, Clouds, and technologies for the Internet of Things, thus overcoming scalability and heterogeneity issues of the Future Internet. Last but not least, CHOReOS assesses the industrial exploitation of this choreography-centric vision by experimenting on three demanding use cases in different domains (passenger-friendly airport, Adaptive Customer Relationship Booster (ACRB), vehicular network *DynaRoute*¹).

The purpose of current research is to identify the exploitable CHOReOS products and approaches and the market trends in the businesses that may exploit them. The aim is to collect and assess early market inputs. The market acceptance assessment is done using Unified Theory of Acceptance and Use of Technology (UTAUT), which is the first step in multi-level Integrated Acceptance and Sustainability Assessment Model (IASAM) elaborated under the framework of CHOReOS project.

2. About CHOReOS products

CHOReOS potential products could be divided between tangible (software) and intangible products (method, algorithm, methodology, model etc.), which is initial information for the market analysis.

The CHOReOS *Dynamic Development Process Model* is an abstract and simplified description of what will be the concrete development process adopted by CHOReOS. The model describes the “strategy” that CHOReOS uses for specifying, analysing, enacting, and monitoring ULS choreographies during the whole life cycle (from static to runtime to evolution). The model is made up of activities, common to (almost) every development process, but structured in a particular way (i.e., the “CHOReOS way”), hence distinguishing the CHOReOS development process from others¹.

The CHOReOS service oriented middleware consists of following major modules: eXecutable Service Composition (XSC), eXtensible Service Bus (XSB), eXtensible Service Discovery (XSD), eXtensible Service Access (XSA), and Cloud and Grid Infrastructure. These modules can be either used in isolation or as an integrated single middleware infrastructure for the enactment of large-scale choreographies.

The CHOReOS eXtensible Service Bus aims to provide a Service Oriented Architecture (SOA) backbone infrastructure for service choreography interaction and governance in the Future Internet (FI). The CHOReOS XSB comprises two main components¹:

- The EasyESB enterprise service bus is a lightweight Enterprise Service Bus (ESB) that benefits from advanced SOA paradigms, it is built on top of a Model Driven Architecture (MDA) middleware. EasyESB enables the access to heterogeneous business services. Moreover, it allows the enactment of several services within a single choreography, thanks to the Component Coordination Delegates (CCD) ;
- The XSB abstract service bus is a set of architectural connectors and mappings among them, which aims at prescribing the high-level semantics of a novel service bus protocol. The XSB abstract service bus can be implemented on top of different service deployment and transport substrates. XSB is implemented on top of the EasyESB. XSB addresses in particular communication interoperability among services that run on top of different interaction paradigms, such as client/server and publish/subscribe, which is poorly addressed by typical ESB solutions.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات