ABSTRACT

Organizations in all sectors of business and government are pursuing service-oriented architecture (SOA) initiatives in response to their need for increased business agility. This is particularly true for mobile telecommunications companies. That is why mobile telecom operators need to research new and innovative sources of revenue. Innovation is not an easy task. It requires embracing a new way of doing business, where new technologies are fundamental. SOA architecture and Web services technology are proposed by IT industry as the best solution to create a network of partnership and new services, but despite software producer claims, interoperability issues arise with service composition. Such a problem can be significantly reduced by adopting a semantic approach in service description and service discovery. Our research is focused on new methods and tools for building high personalized, virtual e-business services. A new service provisioning architecture based on Web services has been conceived, taking into account issues related to end-user mobility. The following pages deal with a proposal for creating real localized, personalized virtual environments using Web services and domain ontologies. In particular, to overcome interoperability issues that could arise from a lack of uniformity in service descriptions, we propose a way for controlling and enforcing annotation policies based on a Service Registration Authority. It allows services to be advertised according to guidelines and domain rules. Furthermore, this solution enables enhanced service/component discovery and validation, helping software engineers to build services by composing building blocks and provision/deliver a set of personalized services.
CURRENT SITUATION

Today’s telecom operators live in a rapidly changing environment. The revenues per minutes from voice traffic have steadily decreased in the last 10 years (see Figure 1). The Value Added Service (VAS) revenues are following the reverse path: the growth ratio is almost 35% per year.

This is the main reason that drives telecommunications industries to invest in new value added services. Actually, Value Added Services revenues come mostly from content provisioning. Typical services are based on the download of contents like: logos, ring tones, games. The value chain for VAS is shown in Figure 2.

Mobile operators are in the middle of the value chain and control provisioning and billing processes. It means that, if goods vendors want to sell a product using the mobile network payment system, they are completely dependant on the operator.

A Telecommunication business model is mostly based on an operator-centric approach.

Legal barriers have strengthened the position of the mobile operators in the value chain limiting, as a consequence, the growth of the mobile

Figure 1. Average Revenue Per User (ARPU) for Voice is slowly decreasing while VAS is constantly increasing their importance (Italian case. Source: Assinform)

Figure 2. Today’s value chain. Operators are in full-control of the delivery process