Personal Reader Agent: Personalized Access to Configurable Web Services

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Abstract

The Personal Reader Framework enables the design, realization and maintenance of personalized Web Content Reader. In this architecture personalized access to web content is realized by various Web Services - we call them *Personalization Services*. With our new approach of Configurable Web Services we allow users to configure these Personalization Services. Such configurations can be stored and reused at a later time. The interface between Users and Configurable Web Services is realized in a Personal Reader Agent. This Agent allows selection, configuration and calling of the Web Services and further provides personalization functionalities like reuse of stored configurations which suit the users interests.

1 Introduction

Within the Personal Reader project we already developed Web Content Reader like the *Personal Publication Reader* [Baumgartner *et al.*, 2005] which allows browsing publications in an embedded context. We also utilized and extended the SWAD-E Semantic Portal software [Reynolds *et al.*, 2005] to provide a Personal Semantic Portal [Henze and Abel, 2005]. Whereas these approaches are fixed in terms of the type of data that is provided, we now introduce a more generic approach: *Configurable Web Services* and the *Personal Reader Agent*. The Personal Reader Agent is a Web Application which enables users to select, configure and call Configurable Web Services. These Semantic Web Services need a detailed description of how they can be configured and how they are accessible. According to this description the Personal Reader Agent generates an interface that allows to adjust the Web Services. Personalization functionalities, like reuse of stored configurations of Web Services which suit the users interest, lead to an adaptive, personal Agent.

2 Personal Reader Agent

The Personal Reader Agent is on the one hand a kind of wizard that allows to select, configure and call Configurable Web Services and on the other hand it enables users to manage and reuse their saved configurations (*personalized access support*).

2.1 Configurable Web Services

Each Configurable Web Service has a detailed RDF description which defines parameters that can be used to adjust the Web Service (*Configurable description*). An example is the *My Ear Music Web Service*: This service allows users to configure parameters like *music category* or *maximum duration of songs*. It results in a *podcasting feed* containing items that are aggregated from arbitrary feeds but fulfill the adjusted parameters. A formal definition of the Web Service's configurable parameters, thus a *Configurable Web Service*, has the advantage that the process of configuring the Web Service can be abstracted and different configurations can be stored and reused. These two aspects are covered by the Personal Reader Agent.

2.2 Demonstration

Within a normal workflow the Personal Reader Agent offers the following steps:

1. **Discovery and Selection:** In this step the Agent requests human readable descriptions of the Configurable Web Services that are registered at our UDDI. Afterwards these descriptions are prepared for a selection by the user.
2. **Configuration:** After the first step the Agent reads in the Configurable descriptions of the selected Web Services and generates HTML forms so that the user can perform the configuration (see figure 1).
3. **Web Service Call:** After all selected Web Services are configured without violating the restrictions defined in the corresponding Configurable descriptions (e.g. *maxNumberOfInputs*, *type*, ...), the Agent is ready to call the Web Services. In this step the user further has the opportunity to save the configuration (see figure 2).
4. **Presenting the results:** This step is not part of the Agent application but rather a task that can be done by a common RDF browser or an application that provides a special view for certain RDF data, e.g. *MyEar View* visualizes podcasting feeds (see figure 3).

Stored configurations and a corresponding user model build the fundament to enable users to:

- **reuse their own configurations:** In order to allow users a faster access to the Configurable Web Services they can call these services also with a saved configuration as illustrated in figure 4.
- **reuse recommended configurations of other users:** The Agent allows the listing of configurations that might be relevant for a user. To determine relevant configurations the Agent utilizes relations between users that are defined by an ontology that models persons and their involvements in working groups. If two

persons (*User A* and *User B*) are involved in the same working group then the Agent suggests that configurations made by *User A* are also interesting for *User B*.

3 Conclusion

In this demonstration paper we describe how the Personal Reader Framework has been extended by a Personal Reader Agent for configuring Web Services according to a user's needs. The Personal Reader Agent provides a user interface and corresponding functionality to discover, select, configure, call and access Web Services.
At present the Personal Reader Agent is deployed as a prototype accessible via http://www.personal-reader.de/agent/. More informations can be found at http://www.personal-reader.de/agent/documentation.pdf.

References

[Baumgartner *et al.*, 2005] R. Baumgartner, N. Henze and M. Herzog The Personal Publication Reader: Illustrating Web Data Extraction, Personalization and Reasoning for the Semantic Web. *European Semantic Web Conference ESWC 2005*, Heraklion, Greece, 2005.

[Henze and Abel, 2005] N. Henze and F. Abel. User Awareness and Personalization in Semantic Portals. *4th International Semantic Web Conference*, Galway, Ireland, 2005.

[Reynolds *et al.*, 2005] D. Reynolds, P. Shabajee, S. Cayzer and D. Steer. *Semantic Portals Demonstrator - Lessons Learnt*. SWAD-Europe deliverable 12.1.7, 2005.

A Figures

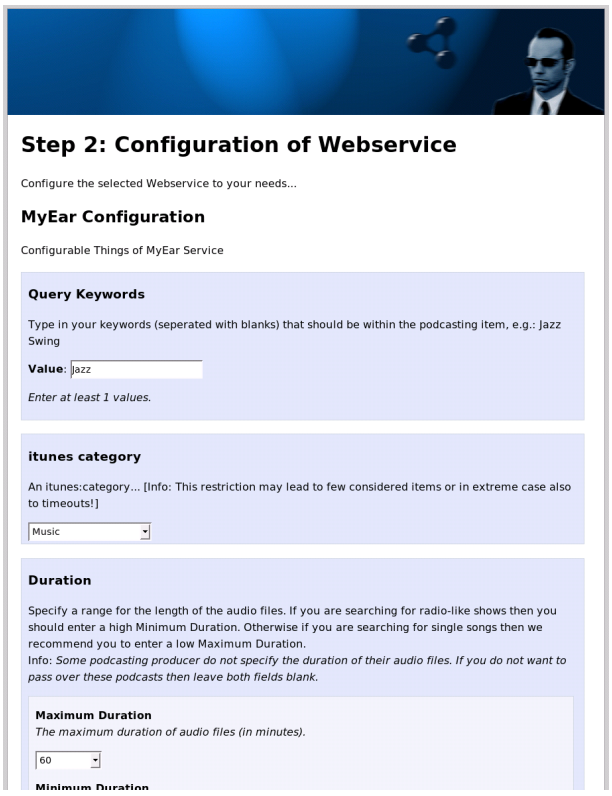

Figure 1: Configuration of Web Services

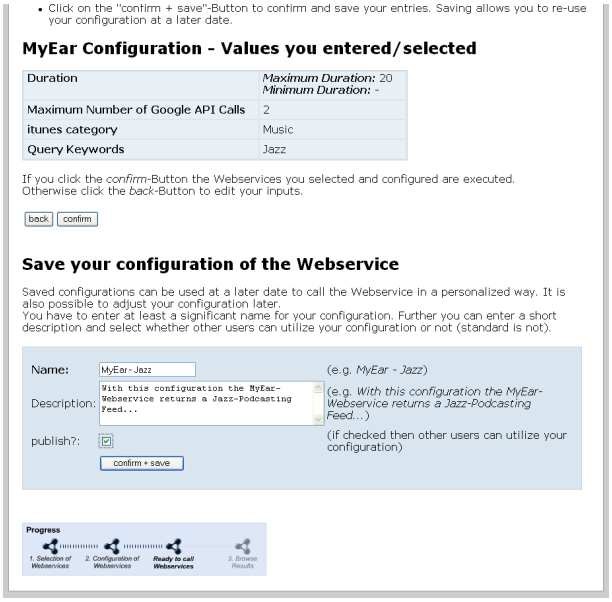

Figure 2: Saving Configurations - Entry of meta description about a configured Web Service

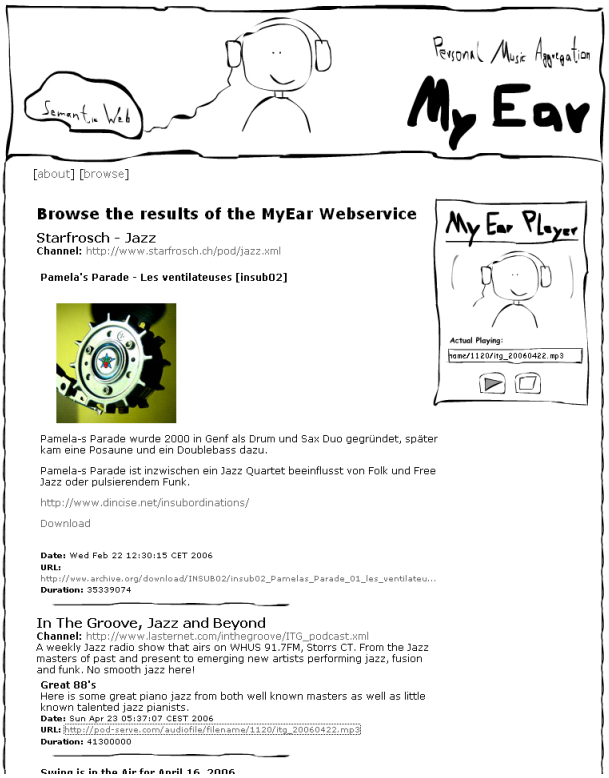

Figure 3: MyEar View

Figure 4: List of configured Web Services