Service Web 3.0

At a Glance

Project title
Service Web 3.0

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Scope
Computing is entering a new era that brings revolutionary changes at many levels, including infrastructure, hardware, middleware, and end-user software. Rapidly advancing ICT trends such as service orientation, smart mobile devices, cloud computing, sensor networks, user-generated content and the Semantic Web transform the Internet into a global platform of knowledge and services. A major challenge in this context is to set up an initiative that coordinates and supports ongoing research and development efforts in the area of Software and Services, specifically those that utilize semantic technologies, towards the realization of this vision of the future Internet of Services.

Service Web 3.0 addressed this challenge through a comprehensive, sustainable program encompassing research coordination and alignment, dissemination and awareness raising, community building and networking activities. In particular, Service Web 3.0 played a pertinent role in the collaborative effort initiated by the European Commission to design and develop the scientific and technological building blocks for the next generation of the Internet, known as the Future Internet. The visionary leadership role of the Service Web 3.0 project formalized through prestigious positions held by senior members of the consortium – such as Future Internet caretaker, conference chair and organizer, standardization technical group and working group chair, as well as steering chair for several other initiatives – which in concert with three roadmapping workshops led to the publication of several roadmaps and collections of roadmaps focusing on future development and adoption of networked services and semantic technologies.

The successful establishment of the Future Internet Symposium and the organization of several academic and industrial conferences (e.g. the Extended Semantic Web Conference and the European Semantic Technology Conference) stand as highlights in reviewing Service Web 3.0’s provision of professional forums and channels of dissemination.

Finally, the project’s sustainable community networking infrastructure and support efforts were most visible in the established Future Internet Interest Group, the Semantic Technology Forum’s Facebook group, the semantic technology YouTube channel broadcasting Service Web 3.0’s Future Internet video, and the establishment of the STI Symposium, to be hosted yearly as an international community forum for showcasing achievements and establishing beneficial relationships with fellow researchers and developers in the field of semantic technologies.
Advances and achievements
The Service Web 3.0 results include:
(1) Development of a roadmap with key research challenges for Semantics and the Internet of Services;
(2) Authoring and editing of reference publications, most notably books on the Future Internet, Semantic Web Services and semantic technologies;
(3) Organization and support for 14 conferences, 14 workshops, 3 tutorials, 5 summer and winter schools, 10 keynote and invited talks, and 3 forums and special sessions on Future Internet related topics;
(4) Development of promotion and information material comprising 6 scientific publications, and of “The Future Internet Video” (now with 130K views), in order to raise awareness, to encourage technology adoption, and to support community building;
(5) Driving and maintaining the Future Internet Interest Group.

Contribution to standardization and interoperability issues
The key standardisation activities led by Service Web 3.0 have been mostly within the field of semantic technologies, particularly semantic web services. These activities can be summarized as follows:
- The project’s identification of and participation in standardisation bodies, including W3C (e.g. a potential contribution towards SA-REST Member Submission and a potential working group to be led by Service Web 3.0 consortium members), OASIS, and the Conceptual Models of Services Working Group (CMS-WG) of STI International;
- The project’s identification of emerging standards and suggestions for how these standards can be improved and exploited, e.g. MicroWSMO, WSMO-Lite, the Semantic Execution Environment, and the Business Process Modelling Ontology;
- The project’s identification of and participation in evaluation programmes, which are important both to research and to the eventual mainstream adoption of semantic technologies, e.g. the Semantic Web Services Challenge and the Semantic Evaluation At Large Scale (SEALS) project.

Overall Benefits for business and society
Service Web 3.0 targets various audiences, both academia and industry. The community around the Future Internet Assembly, in particular the organizations interested in the Internet of Services, has taken up the results of the project, including the research roadmaps on semantic and services technologies, the promotional Future Internet video, the conferences, workshops and symposia established and organized by Service Web 3.0, and the books authored or edited by project partners. Other communities (e.g., semantic technologies) have leveraged Service Web 3.0 to reach out to potential application areas, such as service-oriented computing.

The success of the Service Web 3.0 video, particularly the generally informative nature of the 6 minute mix of animation and expert interviews, helped broaden the targeted audience of the project’s dissemination activities. The video was shown at several conferences and events throughout 2009 and later. Academic and media organizations alike used the video for various educational and promotional purposes.

To support the diverse community of viewers, measures to ensure beneficial impact included:
- the creation of the Future Internet Interest Group, which keeps its members abreast of upcoming events and activities that are of relevance to the work of the Services Architecture working group of the Future Internet initiative;
- the Service Web 3.0: Services in Industry & Semantics in Services survey;
- the widespread distribution of the Service Web 3.0 public roadmap.