Data Centric Web Services Integrator

WebSi

Scope

The WebSi project has used XML and Web Service technologies to offer a broad spectrum of enterprises the capability to exploit the data and information that is normally stored in distributed and heterogeneous information systems. The project introduces a combination of innovative abstractions, technical solutions, interfaces, components, and high-level design tools to support the business sector in the building of applications as composed Web Services. It offers a low entry-cost technology, capable of collecting information and composing services from different sources, to complement data that is available in structured databases.

Innovation and Functionality

The WebSi project has developed the:

1. WebML Suite: a high-level design and development toolkit that provides a graphical interface and supports the visual specification of web sites in WebML, with a code generator that transforms visual specifications of hypertexts, Web Services and workflow primitives into application code;
2. Active Documents Suite: a run-time environment supporting event-driven composition of complex documents from the assembling of data pieces derived from other documents' fragments, service invocations, and queries; and
3. Data Integration Suite: an XML-based data integration service that allows for the gathering of integrated and enriched information from a distributed and secured environment, supporting both warehousing and mediation, and a unified API for the use of XQuery.

Positioning

The products of the WebSi project are designed for the high-level specification, design and development of Web Services based applications, and the extraction and integration of useful data, including those that are not available from structured databases. Typically, this non relational data constitutes some 80% of the information that is spread throughout organisations. In turn this will enable companies to obtain value-added and competitive advantages in the market. By providing a 3-layer abstraction stack on heterogenous data sources, WebSi suites can draw maximum benefits in terms of flexibility, performance and dynamic adaptability from the use of Web Services as a communication and interoperability standard framework for Grid services.

Target Users and User Benefits

The WebSi project targets industry, including the service industry, in both the private and public sectors. Special focus has been on SMEs with a need for EAI, e-Business and Knowledge Management. To this end, the project has

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Cost-shared Research and Technological Development Action

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Project WebSite
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Maximum Community contribution to project
EUR 1 799 987

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1 May 2002

Duration
29 months

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developed three applications in order to focus the design of its deliverables on real problems, and to demonstrate the WebSi technology and ensure market feedback. These applications are:

- An extension to the existing ACER's Business Portal with a set of new features that are able to provide, through the enhancement of its sales section, better interaction between actors, improved data exchange, and standardised reporting;
- A new application for Diputacion Provincial de Huelva, to automate the current handmade reporting work and to allow for the provision of this service all over the province; and
- An extension to the existing Tiscover's Tourism Portal with new features to generate and deliver reports customised in content, layout and format.

Maturity and Availability of Tools

The WebML Suite is an existing commercial product that has been extended within the project to include new features for Web Services composition and workflows. On the other hand, the Active Documents Suite is in the prototyping stage, while the Data Integration Suite combines a mature warehousing component based on an existing product (Xyleme's XML Zone Server) extended in the project with support for XQuery, XML Schema and other features, with prototype-level mediation components to be licensed as open source.

Compliance with Standards

WebSi offers Unified Data Access to heterogeneous information sources through XQuery and the XML/DBC API, and dynamic Web Services invocation using the WSDL specifications.

Interoperability

The WebSi methodology and deliverables are platform independent, operate at a high level, and can be applied to any technological solution. In addition, they offer platform interoperability, allowing integration with existing IS infrastructures based on XQuery, Web Services and XML-based events, opening WebSi to existing external systems.

Value-Added Services and Next Generation Development

WebSi products offer a revolutionary approach to development, "turning programmers into analysts". They offer an increase in productivity, shortening dramatically the phases of programming, publication, and maintenance of solutions. Ease of reuse is made possible through easy disassembly and reuse of portions of the application of arbitrary complexity. Quality of the deployed application is increased by the use of a high-level and structured approach during analysis and design, which in turn induces a regular and well-organised application. WebSi methodologies and products offer reduced total cost of ownership as a result of the creation of solutions at a much higher level than with competing systems.

WebSi products are based around XML business documents, facilitating the use of standards within organisations as well as markets. They provide an immediate link between standardised XML and business logic through active documents. This in turn leads to better decision making through Content Integration, transforming legacy contents that are usually locked in various formats, such as MS Word, PDF or plain text files, into XML. This enables the querying of vast amounts of non-exploited information in order to make more accurate decisions, which today are based on the 20% of information that sits in relational databases.

Project Partners

Organisation name and country

ACER ITALY S.R.L.	IT
EXCELENTISIMA DIPUTACION PROVINCIAL DE HUELVA	ES
IBERMATICA S.A.	ES
POLITECNICO DI MILANO	IT
TISCOVER AG TRAVEL INFORMATION SYSTEMS	AT
XYLEME S.A.	FR