

ISN Content Management System

Client Needs



The International Relations and Security Network (ISN) at the Center for Security Studies at the Swiss Federal Institute of Technology (ETH Zurich) is a free public

service whose goal is to encourage and facilitate the exchange of information among professionals specializing in security and international relations. ISN provides a wide range and a vast number of comprehensive information items (online publications, interactive educational content, annotated links, and event information) to its international audience through topic-specific websites. Currently, eleven ISN web sites host over 100 web pages, which display 250 channels of information about more than 10,000 information items.

In its mission to provide up-to-date, relevant, and structured information, ISN faces several difficulties: the information ISN collects is heterogeneous, changes often, and comes from various sources (in various ways, over which ISN has no control). In addition, ISN publishes the information in various forms on various web sites targeting various audiences.

The challenge is to unify, classify, retrieve, store, and package dynamical information items that are ready to be rendered on several web sites. An off-the-shelf content management system (Macromedia's Spectra CMS) turned out to be inadequate for ISN: the CMS engine was too slow and the configuration of 4,000 classification criteria was too difficult.

Product Overview and Benefits

Our product -- a specialized content management system (CMS) -- will enable ISN to unify, classify, retrieve, store, and package dynamical information items, which are ready to be rendered as encapsulated units in web pages on ISN web sites. People who work with the information items are assigned roles within the CMS, according to a workflow established by ISN.

Data Designers describe the information item types (such as publications, links, and events), their structure, and the relations among them in a formal way. Content Providers provide content to the predefined types of information items.

Content Classifiers categorize each document along various "axes." Finally, Site Designers design ISN web sites -- they decide how to organize the available dynamical items and how to present them.

For example, a data designer determines that a publication must have an author, short title, full title, date, and a publisher. A content provider enters information about some new publication, which a content classifier determines to be related to terrorism in Europe. Finally, a site designer decides that a

web page on European security cooperation should display a list of publications about terrorism in Europe, displayed as an annotated bibliography in the sidebar of the web page.

As a feature of our product, the annotated bibliography from the example above is rendered dynamically on the page; that is, its content is updated automatically whenever a new publication about European terrorism appears in the system. Since the system allows the content and its presentation to be packaged as a reusable item, the designer can later decide to include the same bibliography in another web site, which is devoted to the historical roots of terrorism, for example.

Using our product, ISN can be very quick and efficient to deliver relevant information that is precisely targeted and up-to-date, without spending many man-hours to update its numerous web pages on a daily basis. In addition, ISN end-users can quickly find the information they need, enjoying the ease of browsing a comprehensive and well-structured digital library.

Implementation Overview and Technical Details

ISN CMS is a tailor-made, multi-user, multi-server, distributed network application. It comprises a central database, a CMS server, a web service engine, an extended application server, a content editor (working inside a web browser), and a desktop client for overall system management. In order to be easily maintained and extended on multiple platforms, the system has a complex multi-tiered object-oriented architecture and is built on heterogeneous technologies.

Because of the high performance demands and the specific work and data flows, the ISN CMS could not be implemented as a classic three-tier web application; its architecture includes a separate CMS server and web service engine. These server-side components are made to work with various web and application servers (JSP, ASP, CFM), which don't even have to run on the same machine as the CMS server.

The platform-independent desktop client for system management is programmed in Java with JFace, so its GUI has the characteristic "look and feel" of the underlying platform (for example, on MS Windows, it looks and feels like a native Windows GUI, while on Motif, it looks and feels like a Motif GUI).

Technology Summary: MS SQL Server 2000, Java (JFace, SWT), JSP, Servlets, Coldfusion CFM, ASP.

Partners

ISN CMS is a joint project in progress: TetraCom and IPH (Winterthur, Switzerland) implement their respective parts in a long-distance collaboration, based on a system design by TetraCom.