



## > Semantic Web Use Cases and Case Studies

### Case Study: The swoRDFish Metadata Initiative: Better, Faster, Smarter Web Content

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#### General Description

Sun Microsystems, Inc. uses Semantic Web technology to drive dynamic assembly of product, industry, and solutions web content on several of its external sites (including `sun.com`). The swoRDFish Metadata Initiative, led by the Global Web Publishing team within the .Sun Worldwide Marketing organization, provides a programmatic approach to the adoption and integration of metadata.

#### The Problem

The management of web content for large, constantly-updated corporate product sites presents enormous resourcing and quality challenges. Customers expect to find product information quickly, with minimal navigation and with consistency of organization and nomenclature. For industry and solutions information, customers expect clear, relevant lists of products and services that comprise those solutions, including customer success stories and case studies that provide real-world referential examples. The corporate product site owners need technology and tools that enable them to respond to these needs quickly and continuously, while maximizing the potential for cross-selling and up-selling products and services to the customer.

#### The Solution

The swoRDFish Metadata Initiative provides a framework to address these web content challenges. swoRDFish ontologists use a custom-built data management tool to create, classify, and manage resources and their relationships within centrally managed vocabularies and taxonomies. Sun's content management system (CMS) imports swoRDFish resource IDs, which web publishers assign as metadata to their content. The content can then be built dynamically as live web pages, and can be auto-assembled to include lists of related information about products, technologies, services, and solutions.

#### How it Works

Once web content is tagged with swoRDFish IDs, the swoRDFish data associated with those IDs can be updated without requiring direct and manual updates to the web content. This process improves information quality and consistency, while reducing resources required for content creation and maintenance.

Because swoRDFish is based on Resource Description Framework (RDF; hence the program name swoRDFish), it can provide relationships within its resources (product terms and categories). Once defined, these relationships provide a very powerful collection of information to drive dynamic content aggregation. The swoRDFish Metadata Initiative currently enables:

- Dynamic assembly of a list of services (training, certification, etc.) associated with a specific product
- Dynamic assembly of a group of software components that have been bundled with a specific product release
- Dynamic assembly of relevant collections of industry and solutions information
- Dynamic assembly of Sun product review index pages

## Key Benefits of Using Semantic Web Technology

Semantic Web technology, as now used by Sun Microsystems' *sworDFish* Metadata Initiative:

- Improves web content quality and consistency
- Provides intelligence for auto-assembly of web content (dynamic content generation)
- Enables auto-assembly of related web content based on predefined relationships within *sworDFish*'s metadata
- Enables creation and management of multiple taxonomies, which allows groups the capability to organize content in different ways depending on their target customers
- Provides storage of multiple product names (aliases), which allows consumers of web content to search using variations on a product's name, spellings of that name, code names, or acronyms
- Provides one unique identifier (*sworDFish* ID) for each product that can be used to integrate relevant product data across Sun (for example, to publish web content, for internal data-to-data applications, or to embed in firmware to enable identification of customer systems for reporting, audits, and notification)
- Provides Return on Investment (ROI) factors such as resourcing benefits (through automation of web content publishing, significantly reduces human touch points from the downstream work), improved content time-to-market and quality; reduction of redundant work in other projects

Future applications of Semantic Web Technology through the Sun *sworDFish* Metadata Initiative could include:

- Defining and implementing more automated data maintenance procedures for *sworDFish*, reducing data administration costs
- Managing relationships between products and product parts (what works with what)
- Extending the capability to auto-assemble related web content
- Expanding the use of *sworDFish* IDs to help unify service offerings with more relevant reporting and notifications
- Further exploiting *sworDFish* as a data gateway for various types of data across Sun
- Decentralizing ontology management for added flexibility and improved data quality
- Internationalized application and localized data
- Tighter integration with product and technology usage (as products are more integrated with the web, this can provide a global key, integrating with community tagging folksonomies to extend the reach of *sworDFish* metadata)

## Key Learnings of Using Semantic Web Technology

For Semantic Web technology to become a valuable asset within an organization, the *sworDFish* Metadata Initiative recommends the following key learnings:

- Start with, and maintain, an investment in data integrity and process automation
- Provide flexible and extensible administration tools
- Ensure appropriate stakeholder involvement and ownership
- Consider program name selection - choose a name that is simple to remember and spell, is not similar to other program or project names within that organization, and does not require explanation
- Produce an accurate definition and wide communication of the technology's success metrics