Guest Editors’ Introduction

Web 2.0 embodies the next generation of the Web that supports collective intelligence, community-based collaboration, social networking, content publishing (text, audio, and video), and content integration over the Internet. RSS provides a standard way of representing fresh content to enable on-demand information sharing and aggregation for the Web community. Blogs let users generate online journals. Wikis let users add and edit content collectively.

With the introduction of Asynchronous JavaScript and XML (AJAX) technology, applications, such as mobile communications (like 3G), knowledge sharing, desktop applications, services mashups, podcasts, and the 3D virtual world, have used Web 2.0 technologies. From a solution architecture perspective, a SOA is the foundation of Web 2.0 and beyond: Web X.0 \((X \geq 2)\).

From this perspective, IT Professional presents its Web 2.0—Technology, Services, and Applications issue. The articles included focus more on the current best practices, principles, and research innovation than on how to leverage the latest information technologies, such as SOA, Web services, and software engineering to help build Web 2.0 and related Web-based solutions.

In “S3: A Service-Oriented Reference Architecture,” Arsanjani et al. tackle the first step in building architectural foundations for Web 2.0: normalizing the Service-Oriented Solution Stack that provides an architectural framework based on a range of industry best practices. S3’s overarching goal is to streamline modeling and documenting architectural layers, building blocks, options, product mappings, and all the architectural and design decisions that are part of creating an SOA.

In “Service-Oriented Computing: Bringing Business Systems to the Web,” Le Bleve et al. provide an SOA-based reference architecture for building composite Web applications from companies’ internal business systems. Another example of a domain-specific application is introduced in “Integrating AJAX and Web Services for Cooperative Image Editing,” by Lei and Duan.

In “SOAW2 for Managing the Web 2.0 Framework,” Omar, Abbas, and Taleb-Bendiab propose a service-oriented process management model for Web 2.0. This article attempts to answer how SOA and Web 2.0 work together.

In the industry, different views exist on this issue. From an end user perspective, Web 2.0 is a set of SOA technologies for consumers; traditional SOA is the answer for addressing integration challenges for enterprise Web users. The Web content aggregation capability of Web 2.0 can be integrated into an SOA solution. In “Web 2.0 and SOA: Converging Concepts Enabling the Internet of Services,” Schroth and Janner share their views on the relationship between SOA and Web 2.0.

Our article selection in this issue is designed to guide IT professionals to adopt the latest information technologies such as Web 2.0 and SOA and apply them to their daily work and professional experiences. By defining and following a set of architecture building blocks, architectural design decisions, and normative guidance, you can build flexible, extensible, and reusable solutions for leveraging the best features of the emerging Web X.0 technology set to achieve the best ROI. We hope you enjoy this special issue of IT Professional.

Liang-Jie (LJ) Zhang is a research staff member at the IBM TJ Watson Research Center and worldwide lead of the IEEE Services Computing community. Contact him at zhanglj@ieee.org.

Sally Ericksen is the CIO for IEEE. Contact her at s.ericksen@ieee.org.

Jaideep Roy is an Associate Director at Bear Stearns. Contact him at jroy@computer.org.