
Case Study: Building Trust and Value into the ISACA Web Site Redesign

With 95,000 constituents in 160 countries, ISACA is a leading global provider of knowledge, certifications, community, advocacy and education on information systems (IS) assurance and security, enterprise governance and management of IT, and IT-related risk and compliance.

Founded in 1969, the nonprofit, independent ISACA hosts international conferences, publishes the *ISACA Journal*, and develops international IS auditing and control standards, which help its constituents ensure trust in, and value from, information systems. It also advances and attests IT skills and knowledge through the globally respected Certified Information Systems Auditor (CISA), Certified Information Security Manager (CISM), Certified in the Governance of Enterprise IT (CGEIT) and Certified in Risk and Information Systems Control (CRISC) designations.

ISACA continually updates COBIT, which helps IT professionals and enterprise leaders fulfill their IT governance and management responsibilities—particularly in the areas of assurance, security, risk and control—and deliver value to the business.

Just as ISACA's members help ensure trust in, and value from, the information systems used within their enterprises or by their clients, so too do they expect to trust and gain value from the information systems provided by their professional association. This case study describes the recent redesign of the ISACA web site to demonstrate how ISACA addressed member expectations for trust and value.

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Situation

ISACA's first web site—designed as a channel for delivering membership information, training materials and knowledge assets—came online in 2002. Since then, the site has driven revenue growth and has become a primary communications and benefit delivery vehicle between ISACA and its members.

The site was built on Cold Fusion software. It was hosted on a single web server running IIS and used Microsoft SQL for some reporting components, logs and other database activities.

Site usage increased steadily over time. During 2008-2009 unique visitor peak numbers almost doubled, from 10,000 to more than 18,000 per day. Page hits grew to a high of 117,000 unique views in February 2009.

The first web site helped ISACA successfully deliver content and other services, but there were issues with the underlying technology. The software firm was sold twice during a short period of time. During this period of transition, the software was rewritten from the ground up. Upgrading the ISACA installation to align with the new version of the software would have necessitated a significant investment in the site.

Over time, many organizations started to adopt .NET or other competing technologies that offered better capabilities, lower cost, scalability and enhanced performance. In general, .NET brings the power of an enterprise application into the range of a small and medium-sized business by reducing the lines of code required. This reduction in code results in a decrease in development time, development staffing expense, maintenance effort and the overall cost of the solution, while delivering superior web site performance.

As ISACA's existing web site software transitioned through various owners and updates, ISACA began to experience a scarcity of professionals with expertise in working with it. The association dealt with this human resource challenge by trying to retain the few available consultants and training staff internally. However, even with resources available internally, the process for implementing even relatively simple functionality became cumbersome, risky and time-consuming.

ISACA management soon realized that its commitment to providing trust and value through its information systems was in jeopardy and a completely new site would have to be developed.

Solution

To remain up to date and to continue to provide value to its membership, ISACA sought to provide a highly personalized user experience by creating a collaborative environment in which members could interact with each other and with ISACA staff. ISACA knew that the new solution had to meet member needs and preferences, as well as internal organizational goals. To realize full value from the IT investment, the solution had to be secure, stable and reliable (trusted), upgradeable, and easier to manage using internal and external support.

Goals and Features Required for the Web Site

The first step was to identify the web site functions that members would value. Based on numerous meetings among staff (the “business owners” of the various sections of the site) and users (members, volunteer leaders and other constituents), the following items were identified. The new web site had to:

- Enhance members’ ability to locate information through a more robust search function and improved site navigation.
- Engage members more compellingly through collaboration, information sharing and personalization.
- Categorize content in order to push relevant information to members based on specific interests and needs.
- Improve customer service and reduce staff overhead by providing enhanced customer self-service capabilities.
- Intensify constituents’ site experience by enabling networking and collaborative opportunities—wikis, blogs, knowledge communities or special interest groups/portal communities.
- Enhance customer service and staff productivity, and improve the quality and integrity of ISACA’s data, by providing direct integration between the web site and the association management software.

These goals were presented to the ISACA Board of Directors during its March 2007 meeting. The board supported the project wholeheartedly, agreed to fund the project, and created a task force comprised of board members to provide governance, guidance and support to the staff project team.

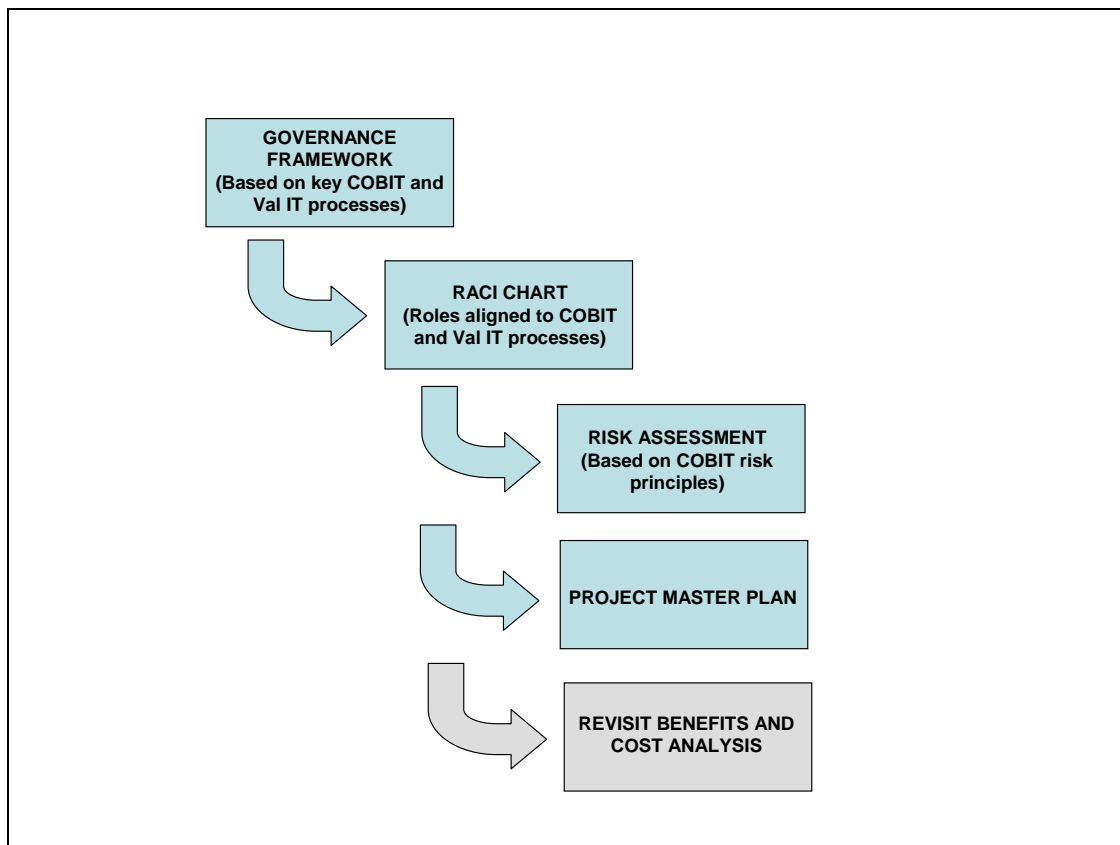
After evaluating a variety of content management solutions, ISACA chose Microsoft Office SharePoint Server 2007 as the infrastructure for its redesigned web site. ISACA determined that

SharePoint’s integrated content management capabilities would enable streamlined site administration since staff in departments other than the IT department would be able to publish web content via easy-to-use authoring tools and built-in approval processes. Features such as discussion areas, wikis and blogs were built into the system from the beginning. Because SharePoint is built on an open, scalable architecture, supporting web services and interoperability standards such as XML and Simple Object Access Protocol (SOAP), ISACA could easily integrate other IT investments such as its iMIS-based e-commerce engine and its Internet-based collaboration environment.

Governance for the Project

At the outset of the project, ISACA developed a governance process using the model illustrated in figure 1.

Figure 1—Governance Approach

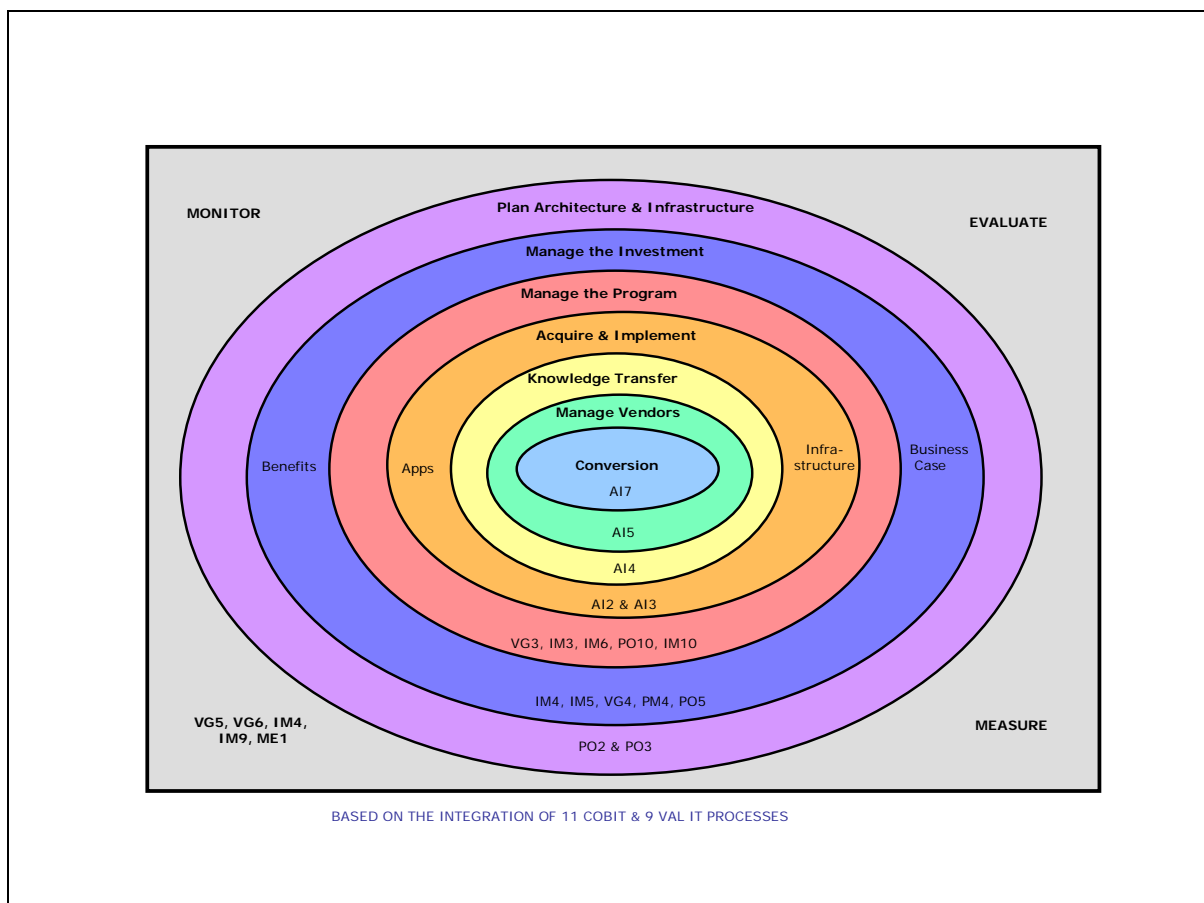


ISACA identified 11 COBIT¹ processes, 45 key control objectives and eight key Val IT² management practices that directly related to the program. These deal with the specifics of this program and were selected using the COBIT control objective risk priority of “effectiveness,” which defines the impact the control objective would have on the business requirements.

ISACA also linked the Val IT processes to COBIT so that there was a single unified framework for the project (see **figure 2**). These processes and the activities they contain were implemented via the master program plan and individual project plans.

Finally, a RACI chart for the project was developed, based on the key COBIT and Val IT processes and matched to the key roles associated with this program.

Figure 2—Project Framework



¹ ISACA, COBIT 4.1, www.isaca.org/cobit

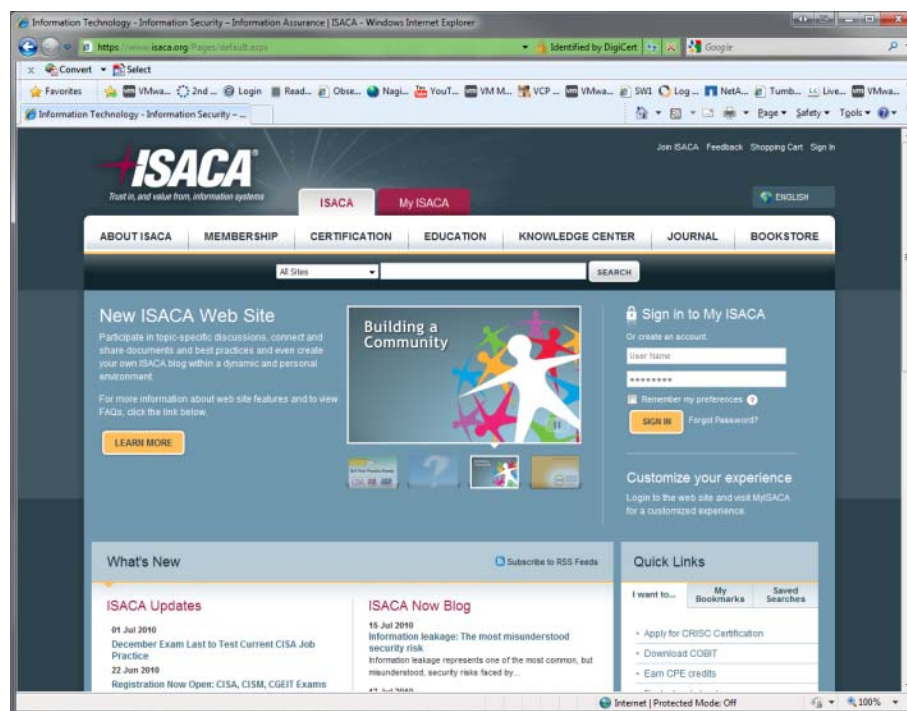
² ISACA, Val IT Framework 2.0, www.isaca.org/valit

Redesigning the ISACA Web Site

As noted above, early in the process ISACA extensively surveyed staff and the user community to identify opportunities to enhance web site functionality, future needs and overall capabilities. After the requisite requirements gathering, request for proposal process and vendor selection, ISACA began the design phase of the project.

ISACA worked with a web design firm to update the web site user interface (UI) and information architecture (IA) to enhance the brand and to improve user experience (see **figure 3**). Various UI elements were not only reviewed, modified or redesigned based on internal subjective measures, they were also subjected to focus group evaluation and usability studies by both members and “people off the street.” ISACA considered it vitally important to its “trust and value” goals to gain independent validation of areas of navigation, design and modifications.

Figure 3—Redesigned ISACA Home Page



Once the UI and IA were created, ISACA partnered with another consulting firm to code and deploy the site using Microsoft Office SharePoint Server (MOSS) 2007. The vendor also helped ISACA’s IT team to:

- Formulate a strategy for creating and deploying content.

- Architect an overall design of the infrastructure.
- Simplify integration, with extensibility through documented application programming interfaces (APIs).
- Implement the final web site solution.

During the analysis process, ISACA identified risk areas for SharePoint and created mitigation plans to address those areas of concern.

To assure the highest level of security for the final web site solution, in pursuit of its goal to provide a trusted environment, ISACA chose a software combination that ultimately exceeded the system requirements previously identified. To mitigate concerns that fewer vulnerabilities may simply be due to the lack of exposure in the field and to address the possibility of zero-day attacks,³ ISACA chose to deploy multiple layers of similar technology from different vendors, thus providing an overlapping “blanket” of coverage for the environment.

ISACA’s IT team designed a solution that not only has standard components such as firewalls and intrusion detection, but added a layer of intelligence. Each component of the solution has some level of autonomous response, and is SharePoint- and web-site-specific. The final security design was submitted for independent review and validated, and then served as the benchmark during the implementation phase of the project, to assure adherence to the original plan.

During the development phase, ISACA used the same “trust but assure” process used in the design stage. Code being developed or deployed was reviewed and processed against best practices and was subjected to standard quality and testing procedures.

Early in the process ISACA documented and submitted to its MOSS development/implementation vendor secure development practices specific to SharePoint. Thereafter, as code was submitted to ISACA, the source was passed through an Open Web Application Security Project (OWASP, see **figure 4**) filter to verify that best practices were adhered to in the development exercise.

³ A zero-day attack is one that occurs during the period between when a developer is first made aware of a security hole and when a fix can be implemented.

Figure 4—OWASP

Open Web Application Security Project



As the ISACA team passed development code into the production environment, the implementation was reviewed and approved by a third-party vendor that specializes in SharePoint and web site operations. This enabled ISACA to get an impartial review of the solution being deployed while the vendor gathered valuable knowledge about the overall solution it would support after the site went live.

Infrastructure Design

Before finalizing the hardware architecture, ISACA used capacity planning and modeling tools. To validate the recommended design, the solution was created in a virtual environment and the ISACA IT team simulated various components of the solution, testing selected changes and configurations. ISACA assigned a specialized task to each component. In this way, ISACA was able to optimize overall performance and design scalability and reliability into the solution.

Only after the design was tested and validated in the virtual environment did the ISACA IT team commit resources to purchase physical hardware. Again, the overall design and implementation were reviewed and validated by third parties.

Migrating and Managing Web Content

ISACA used SharePoint's web content management capabilities and vendor-provided custom tools to

migrate more than 12,000 web pages from the old site to the new. Even with the automated tools in place, ISACA underwent an extensive process to validate each page to assure that content had been converted completely, consistently and in line with the needs of the staff “business owners” of the content.

SharePoint Server 2007 enables ISACA to ensure that when content is updated on one page, those changes are propagated across all pages displaying that same content.

Implementing Workflow

ISACA uses the out-of-the-box workflows in Office SharePoint Server 2007 to initiate, track and report common business processes such as content review and approval. With these capabilities, the content owners can impose checks and controls on workflows without IT assistance. For example, the content owners can designate a workflow that enables stakeholders to make changes in draft mode that are subsequently approved by the content owners.

Benefits

ISACA launched the new version of its web site in June 2010. Since then, the site has generated tremendous response and support from ISACA constituents, who appreciate the value it provides and trust the information it makes available.

Using Office SharePoint Server 2007 as the infrastructure for its redesigned web site has enabled ISACA to improve constituents’ experience when visiting the site. In addition, IT staff productivity has increased while workloads have decreased, and functional departments have been empowered to quickly, easily and cost-effectively implement market-driven changes to the site.

Enhance User Experience

ISACA can now focus on an enhanced level of collaboration with its members and think more creatively and expansively about better ways to provide value to its constituents.

Also, ISACA is now able to deliver a more personalized user experience. For example, members can select a professional topic in which they are interested and collaborate on that topic with other colleagues. They can participate in group discussions, share documents and links, develop new knowledge through the use of wikis, and network with their peers from throughout the world.

Boost in IT Productivity

ISACA is now experiencing minimal back-and-forth communications between the content owners and IT. Once dependent on IT intervention, content owners are now empowered to complete tasks such as modifying content and initiating workflows and self-provision applications, while also tying in to data from ISACA's association management system.

IT staff can create custom features using object-oriented technologies that allow for reusable code across the site. Since the foundation for the site is based on widely used frameworks, integration into current social networking sites will be much easier. Integration into future technologies should also prove less cumbersome and require less effort to deploy, should the need arise.

Conclusion

ISACA's web site represents a public and tangible way the association can demonstrate to its constituents and the business environment its commitment to the linked concepts of trust and value. Just as ISACA's members and certification holders help ensure trust and value delivery from the information systems of their enterprises or clients, ISACA uses its web site as a way to provide value, in a trusted manner, to all those who visit the site and use its resources. Built on a strong foundation of guidance and input from constituents at various steps in the development path, and supported by its own globally tested and adopted IT governance and management frameworks such as COBIT, Risk IT and Val IT, ISACA's site is well positioned to handle current needs and to accommodate future opportunities.