

This report is based upon contributions from a number of Committee members, suggestions from BoG members, and guidance from an online survey of Society Members.

1 Recent activities summary

Since ISIT 2007 in Nice, France, the Online Committee has done the following:

- Recruited new members to include students and better balance the Committee among “hackers” and “non-hackers”.
- Surveyed Society members on current websites and desired features.
- Evaluated content management systems (CMS) as the basis of Society websites in the future.
- Prioritized and developed specifications for desired features.
- Engaged potential developers to obtain cost and time estimates, and developed an implementation plan.
- Formulated this report, proposal, and plans for the Committee to continue facilitating website developments.

2 Recommendations

The Committee feels the time is right for the IT Society to move from a static HTML website to a dynamic website based upon a general purpose Content Management System (CMS).

The Committee recommends that the BoG allocate \$50-75k and task the Committee to proceed with the two-phase plan outlined in Section 4, i.e., manage the migration of the main Society website to a CMS and oversee the development of a look and feel and custom features for the new site, putting an emphasis on usability.

3 CMS motivation and issues

The current Society website consists mainly of static HTML pages, but the site could be greatly enhanced if it were moved to a CMS. Among other things, migration from the current site to a CMS would allow:

- more frequent updates of the online resources, thanks to an interface allowing non-hacker volunteers to easily make site updates without affecting look-and-feel, and without requiring much time from the webmaster
- archiving of past reports, BoG minutes, etc.
- management of multimedia content, such as videos of plenary lectures, etc.
- integrated search capabilities, allowing many pages to be automatically updated as content is added, as well as allowing users to find content based upon their own search terms
- implementation of more advanced features, taking advantage of the latest advances in web technologies

We note that the Online Committee has for some time been evaluating the feasibility of some of these features with experimental Plone CMS (<http://dev.itsoc.org>) and static multimedia (<http://media.itsoc.org>) websites.

There are several commercial and open-source CMS softwares available, and the main challenges appear to be finding the right infrastructure and forming a solid partnership with a developer that will support what the Society needs now and in the future. The next few paragraphs describe issues that would arise in moving to a CMS, more or less in the order they would need to be addressed.

3.1 Choice of CMS

The most prevalent open-source content management systems are Joomla (<http://joomla.org>), Drupal (<http://drupal.org>) and Plone (<http://plone.org>). From a user perspective these three solutions are basically equivalent as the content management interface can be made equally simple. However there are significant differences on the developer's side (scripting languages, database engines, modules available, and so forth), and the choice will impact the long-term future evolution of the website. Although it is not clear at this point which CMS will best suit the IT Society needs, as this will depend on the features to be implemented, it appears that either Drupal (<http://drupal.org/>) or Plone (<http://plone.org/>) are the best options for a general purpose CMS. This conclusion is based upon the Committee's collective experience, several readings, and reactions from volunteers in other organizations, e.g., the folks at ACM SIGGRAPH. In either case, any customization for the Society's specific needs, including usability, likely would require contracting with a developer partner.

3.2 Choice of Developer

Although a general purpose CMS provides a great deal of functionality out of the box, it is often the case that certain custom functionality needs to be developed and integrated for specific applications. For such circumstances, it is necessary to have the development performed by a professional or company. A side benefit to partnering with a developer is that they can help ensure that the Society employs best practices for hosting, managing, and updating the CMS after it is deployed.

3.3 Content migration

Because much of the Society's current content is static HTML, moving to a CMS will require translating it into into the supported formats and content types, e.g., constrained HTML, XML, StructuredText, etc. This is not a bad idea per se, because the current content is probably in need of restructuring for archival purposes, and certain parts of the content (e.g., news items, events, dissertation abstracts) could take advantage of the content types and automation provided by the CMS.

3.4 Look and feel

Any CMS comes with a default look and feel, and it often takes a lot of work to customize it. This is best done by a professional team that knows the ins and outs of the system. In most cases, a user not logged into the website should not know or care whether their is a CMS generating it. A side benefit to developing a custom look and feel is that all the graphics would be archived and reusable for conferences, etc.

3.5 New features

A good general purpose CMS allows for customization and streamlining operations for a group of people. The Committee has prioritized six features that will allow Society volunteers to do their jobs more effectively and Society members to gain more value from the Society websites. These features include:

- Repository management
- Meeting management
- Conference management
- Volunteering page
- Job opportunities page
- Dissertations, surveys, and tutorials

3.6 Security

The CMS should support secure access rights to certain parts of the website. In particular, the following kinds of web spaces must be enabled:

- Private sections - access limited to a few selected people. Example: awards committee discussion pages, treasurer page, etc.

- Public sections with restricted editing - accessible by everyone, but editing restricted to selected people. Example: BoG meeting minutes, videos of plenary lectures, etc.
- Public sections with open editing - accessible by everyone, editing allowed for registered users. Example: volunteering page, paper discussion area.

The need for secure access to certain content will require usernames and passwords, and mechanisms for password recovery when forgotten. It would be beneficial to have as few usernames and passwords per user as possible, preferably one each; there may be a way to leverage the IEEE web accounts, but this would have to be explored. In any case, policies will have to be developed to determine who can access what content and how.

3.7 Content access based upon IT Society membership

Moving to a CMS means that the IT Society can provide a much richer variety of content than is possible with the current website. With the addition of tutorials and plenary talks, access to the resources provided by the Society becomes more valuable. It is not clear whether access to all or part of the features listed above should be restricted to IT Society members. Membership-related logging in should not be a hurdle that discourages contributions. However, by requiring Society membership to access certain resources, we may be able to provide a positive incentive for people to join the IT Society, which could help boost revenues. A related technical question is whether the membership database could be integrated with the CMS.

3.8 Licensing and content generation

One of the powerful features of moving to a CMS is that it makes it easy for volunteer users to contribute content. For example, IT Society members could contribute tutorials on various topics or other documents that could be shared, as well as comments on existing content.

However, since the IT Society would be hosting this content on a website, we must develop licensing and copyright rules for contributed content. Both Wikipedia and the Connexions project use licenses, and choosing a licensing scheme is an important decision. However, the particulars of this licensing can be decided at a later date.

4 Implementation plan

This section describes a draft plan for migrating the main Society website to a CMS and overseeing the development of a custom look and feel and several new features for the site.

Based upon three proposals from developers working with the IEEE Signal Processing Society, as well as initial feedback from potential developers, the Committee expects that migrating the entire IT Society website to a new CMS would take between 3-4 months. It is important that the developers have time to get a good sense of how the Society wishes to use the site in order to design an appropriate interface that will make the site easy to use both internally (for the BoG, committees, and volunteers) and externally (for the IT Society members and other users).

The short-term plan is broken into two “phases”. The steps for both phases are summarized below, along with some timeline and cost estimates based upon initial feedback from potential developers.

- Phase I
 - Deliverables (Total Cost: \$29.5-58k)
 - * CMS site (Install and setup: \$1.5-5k)
 - * Custom look and feel (HTML/CSS/Skin: \$5-10k)
 - * Content migration (\$5-25k)
 - * User management (\$2.5k)
 - * Repository management feature (\$1.5k)
 - * Meeting management feature (\$10k)
 - * Dissertations, tutorials, and surveys feature (\$2.5k)
 - * Unit testing (\$1.5k)
 - Timeline
 - * **Week 0** – select CMS and developer
 - * **Week 1** – finalize specifications on the different customized features to be implemented
 - * **Weeks 2-3** – static design and other visual design

- * **Weeks 4-10** – custom content development
- * **Weeks 10-12** – configuration
- * **Weeks 13-14** – testing
- * **Week 15** – training
- * **Weeks 16-17** – existing content migration

- Phase II

- Deliverables (Total Cost: \$13.5k)

- * Conference management feature (\$8k)
- * Volunteering page feature (\$3k)
- * Job opportunities page feature (\$1k)
- * Unit testing (\$1.5k)

In Phase I, the Committee will team with a developer to implement a CMS, migrate the Society content from the current static HTML website, design a custom look and feel for the site, and implement 1-2 short-term features. For example, the Committee could emphasize one administrative feature, such as Meeting Management, and one feature oriented at member value, such as Dissertation Abstracts. These features should be simple enough to implement in a short time frame at reasonable cost.

In Phase II, the Committee will continue overseeing the development of the remaining short-term features. The goal will be to have them all in at least testing phase in time to report on progress at the Spring BoG meeting. Breaking the plan into two phases will allow the Committee to reroute after Phase I if it is unhappy with the developer.

The Committee will report to the Officers, and any other interested BoG members, at each milestone to summarize status, test usability, and update the timeline and cost estimates.

5 Future activities

In addition to overseeing design and development of the new website, the Committee will work to encourage participation by Society volunteers and support the website once it is in place. The following will be some of the activities of the Committee going forward.

Associate Online Editors. The aforementioned features cannot be easily handled by a single Online Editor. Even the implementation of the simplest ones requires the definition of a new organizational structure to manage the resources. As a relevant example, the ACM SIGGRAPH group has 12 volunteers actively contributing to their website.

The Committee will work to distribute responsibility for maintaining content to relevant parties. For example, committees could be made responsible for their own committee updating and archiving needs. For instance, the BoG minutes should fall under the responsibility of the IT Society Secretary. At the appropriate time, the Committee will also seek to nominate a group of Associate Online Editors who would help editing all the content and ensure that the IT Society fully exploits the potential of a CMS. Such distributed management would greatly increase the amount of resources available online and would ensure reasonably frequent updates.

Contributed content. In an effort to increase the existing content and engage more users with the new website, the Committee will actively encourage contributions of a variety of content, e.g., dissertation abstracts, tutorials, and survey articles, and will work to ensure that appropriate licenses and copyright are put in place. Although it is important to ensure a certain quality of the contributed content, it probably does not need to go through the same scrutinizing process as regular publications. Moreover, the IT Society does not need to endorse all content on the site, as long as it is clear which content is and is not endorsed. A CMS like Plone already provides a tagging functionality that distinguishes the types of content. One could also imagine having the soundness of the contributions briefly checked by the Online Editors before making the contributions available publicly. The ability to comment on existing content also provides a means for content to evolve in a distributed manner without requiring much input from editors.

New features. The Committee will continue to describe and prioritize features for the Society websites, and will take proposals from all Society members into consideration. The features being pursued in the short-term are a set of “core” features, that the Committee believes are the most likely to be useful and arouse interest. Suggestions of new features or content from the general membership are definitely welcome. Ideally, the evolution of the CMS could incorporate any new ideas for content type, workflows, etc. submitted by members or Officers.

All of the above activities will be regularly highlighted in the IT Society Newsletter, beginning with the next issue.