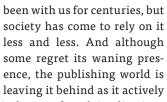# The Times They Are A-Changin'

Jean-Luc Gaudiot, Vice President, IEEE Computer Society Publications Board

The forces of change are swift and require us to be nimble. As the Computer Society looks to the future of publishing, new opportunities are ours for the taking. So let's get to work!

The Internet has changed everything—the way we shop, the way we consume news and information, and the way we interact with those near and far. The communication power and myriad new applications the Internet has brought to our lives were unthinkable even a decade ago. These changes broadly affect society, but they are even more profound for engineering professionals. All the tools, forums, and repositories that allow us to discover our colleagues' progress, share experiences, and disseminate research results would not be possible without the Internet. This phenomenon represents a sea change in the publishing world, and the IEEE Computer Society (CS) Publications Board has been working to explore and exploit the new opportunities these technologies present.

But change is painful. The growing pains have in some cases been so significant as to force everyone to adapt or else. For example, paper is a publishing medium that has been with us for centuries, but society has come to rely on it less and less. And although some regret its waning presence, the publishing world is leaving it behind as it actively explores new models. This has profound implications for a publisher like the CS: it used to be that once an article's camera-ready copy (remember that quaint term?) was ready, we bundled it with other articles into a journal and printed it—once the ink was dry, that was it. Now, the painstaking tasks of printing and shipping have been replaced by electronic distribution through sophisticated websites, digital libraries, and search engines. Not only must we handle the heavy lifting of traditional publishing functions such as soliciting, peer reviewing, editing, and disseminating articles, but now we must also maintain, *ad vitam aeternam*, an ever-growing repository of knowledge with its attendant ever-growing costs.

The computing community has not stood still either. Open access (OA) initiatives are gaining momentum, and numerous global funding agencies now require the researchers they sponsor to make their results publicly available at no cost within a reasonable amount of time.

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In addition, surveys confirm that our colleagues prefer to access technical publications from a variety of devices. The speed of dissemination afforded through new technologies has also led some researchers to rely less on archival journal publication—although most continue to recognize its inherent value. Yet, this flood of content demands the means to efficiently process and organize it.

The CS Publications Board has embraced these pressing demands and, in the past two years, embarked on an ambitious effort to bring you more offerings in more formats with better tools. We have not lost sight of our mission to serve the computing community by delivering information highly useful to researchers and practitioners alike (no "write-only" papers solely for promotion committees here!).

In my role as CS Publications Board vice president, I also closely interact with IEEE leadership on its Publication Services and Products Board on several key initiatives, some of which are currently being rolled out while others are still being designed and tested:

› *MyComputer*—a mobile app that allows keyword searches of CS magazine content so that readers can focus on topics of most interest to them. CS magazines cover everything from cloud computing, to software engineering, to IT, to the history of computers, so we encourage you to explore this wide-ranging and valuable resource. An email-based product called "myConference" provides a similar service for conference proceedings.
› *OA publications*—all CS transactions offer OA options to authors, and we have been experimenting with these models for conference proceedings as well.

› *All-electronic publications*—we have offered digital-only subscriptions of transactions for more than six years. In 2013, CS magazine editors in chief took note of statistics revealing that as individual subscription rates fell readers were migrating in equivalent numbers to the digital library (DL) to download their magazine content. Motivated by actual reader behavior and interest in the CS taking a leadership position in publishing, we decided to take the dramatic step of moving all CS magazines to primarily digital delivery, with a paid print option. That evolutionary leap in publishing occurred this year, and volunteers and staff are working to improve the offering, which brings us to …
› *eBooks*—we will roll out a new digital magazine format. In contrast to the current PDF format, which is basically a picture of a printed page, the new format will be optimized for delivery on mobile devices and thus more easily adapted to readers' needs. Combining this new format with a personal archive page for every subscriber is not only what members want, but moves the CS in a positive, technology-driven direction. The following short video will give you a taste of the new mobile-friendly format: http://bcove.me/pm4ehy5d.

› *ComputingNow*—CN, as it is known, has established itself as the CS's primary online content portal. Since its inception as a magazine-focused site, it has expanded to include articles from transactions and conferences along with educational content, multimedia, and industry-focused resources.

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› *ComputingEdge*—when CS transactions moved to digital delivery, we made sure to avoid the "out of sight/out of mind" problem by introducing OnlinePlus—a periodic printed abstract booklet and CD as sent to subscribers as a reminder of what awaited them in their digital journal. So it made sense, when magazines migrated to a digital model, to do something similar. ComputingEdge is a monthly printed digest sent to all CS members, featuring non–peer-reviewed content from all CS magazines. That means that all CS members (North America only, for the moment) get a taste of content from all our magazines, including those to which they might never have considered reading or subscribing.
› *Sophisticated search schemes*—improving search functionality and the informational quality of metadata will enhance the accessibility and usability of CS content for our readers. An ongoing project seeks to answer

two questions: can we extract more knowledge from the data that we already have, and can we capitalize on this additional knowledge? Starting from a set of keywords defining the topic of interest, we are building an algorithm to present search results in a hierarchical way, suggesting not only which papers to read, but in which order, depending on the user's desired level of detail. The algorithm analyzes data extracted from both the DL and Scopus databases.
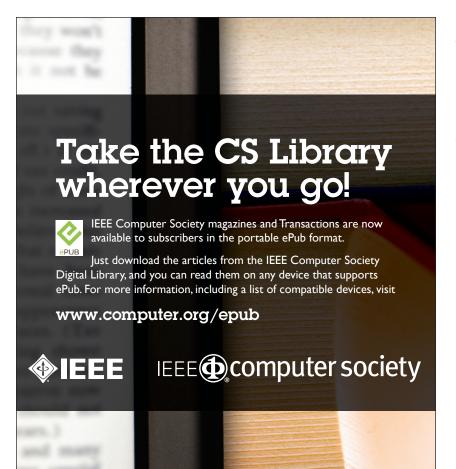
› *Journal–conference confluence*—presenting an accepted journal article at a conference can result in a wider audience and foster a more timely exchange of ideas as well as future research collaboration. After negotiating with various journal and conference

associations, we aim to implement several integrated publication–presentation forums in the coming months.

› *Versioning*—recognizing that current technologies enable continuous reviewing, comment sharing, and multiple versions of articles, we are investigating three possibilities: (a) let continuous comments be visible, similar to the "comments" feature in word processors; (b) allow for successive article versions in which only the original authors can make changes (similar to successive versions of wiki pages, but showing only versions with significant improvements); or (c) utilize a wiki. In each case, an article becomes "common" property that members of the community—defined on a

case-by-case basis—can review and modify according to preset rules determined by the publication/conference editors. We're working on software to manage and report on such contributions, including discussions linked to articles, and anticipate unveiling a prototype next year.

Allow me to conclude with a plea for help: publishing—even in a traditional model—is an enormous endeavor, and if you "peek under the hood," you will see dedicated CS staff members coordinating on a daily basis with many volunteers, including editors in chief, associate editors, reviewers, and authors on everything from peer review to editing, from graphic design to integrity verification (exposing plagiarism, author misconduct, and the like), from queue management to setting up virtual and in-person editorial board meetings. Those volunteers are people like you.

This is your Society, and these are your publications. The times are a-changin', and we must change with them. To grow and thrive, the CS needs everyone's help and input. Consider volunteering your time in any one of these roles, and I will work with you to implement your ideas and make our professional community and our publications as good as they can be. ⧉

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Selected CS articles and columns are also available for free at **http://ComputingNow .computer.org**.