



## ICAC and the Internet

**Written by John Mulligan in April, 1998  
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The Secretariat ordered its first Internet server in July 1995 hoping to ease access to publications and reduce publication and distribution costs associated with printing, mailing and faxing documents. There were few guidelines or benchmarks useful for determining demand for cotton statistics and technical information on the Internet, but the Internet represented an emerging technology with a potential for media dominance.

The ICAC web site was hosted in-house on own equipment rather than on an outside web-hosting service, allowing experimentation with frequent changes and additions to format and information. Evaluation of off-the-shelf web and email server software led to a decision to build an Internet package on a Macintosh platform. Macintosh was the least expensive and easiest platform on which to develop and offered reliable built-in security. Initially, a single dedicated Macintosh WorkGroup Server 8150/120 was used as both web and email server. With little guidance as to how active a cotton web site might be, the original ICAC connection to the Internet backbone was built with a relatively slow 56 Kbps connection. With an intended clientele around the world, an Internet service provider (ISP) with points of presence across the US, Europe, Asia and Australia was chosen; few ISPs covered Africa at the time.

After successfully connecting the Secretariat network to the Internet, the unanticipated benefit of global email access became apparent. Secretariat staff is now able to send and receive messages around the world without worry regarding time differences and phone connections charges. Further, the Secretariat now has on-line access to statistical data and research provided by national and international agencies on Internet sites of their own. The result has been a quickening of the pace of international information exchange.

Initial files offered on the ICAC web site were available as basic HTML documents; simple text files with formatting limited to bold and underlined text. The appearance of documents bore little resemblance to the original print versions. Fortunately, a software company, Adobe, developed a file format now known as Acrobat Portable Document Format (PDF), which allows documents to be served from the Internet while retaining their original look with the capability of keyword or phrase text searches. PDF file capability has changed the way ICAC documents are served from the web site. Documents are printed in hard copy and published on the Internet virtually simultaneously, saving time and providing information to users days, sometimes weeks, before the print version is mailed and delivered. Additionally, older publications can be scanned directly into PDF files and made available on the Internet. This allows researchers access, in keyword-searchable format, to a complete history of discussions in the ICAC as far back as 1946.

However, end users need special software to view PDF files. Acrobat Reader software was eventually made freely available to the public by Adobe, and copies of the software are available on the ICAC web site, along with detailed instructions on installation and use. Another disadvantage of the PDF format is that files are larger than their HTML counterparts; in the first release of the PDF format, a single page text-only document averaged 18 Kb in size, compared to a plain HTML file of about 5 Kb. With revisions to the PDF file format, sizes have since been reduced.

After publication via the Internet became routine, the Secretariat began working to add searchable production practice database access. The original Internet database access solutions were slow and unreliable, and a user's search frequently ended in a time-out error whereby the web browser would cease waiting for the database to serve the file. This problem was fixed for ICAC databases in late 1997.

By the end of 1995, after just five months of ICAC Internet experience, combined use by subscribers, coordinating agencies, delegates and the Secretariat overwhelmed the 56 Kbps connection to the Internet backbone, and the single web/email/database server had difficulty coping with the demand. The 56 Kbps line was replaced with a high speed T-1 (1.54 Mbps) data line, and a second Macintosh WorkGroup server was added. This second server took over the role of database server and the new role of email list server. The email list server was introduced to host an orderly exchange of email messages on topics of interest to the Secretariat. Mailing lists, a popular method of collaborating and discussing ideas over the Internet, facilitate the distribution of publications without requiring recipients to remember to visit a web site.

The look of the ICAC web pages changed several times over the first few months of operation before settling into the current format. The web server usage log helped determine the development of the web site. Text only pages were, at first, thought to be important. These pages typically load into a web browser faster than pages with graphics, and as the majority of our anticipated audience was overseas, it was assumed that these users would prefer files with faster download times.

Examining the usage log, however, revealed that few were using the text-only pages - most were going to the graphical version of the pages. As a result, less effort was spent in expanding text-only pages on the ICAC site. Despite this willingness to view a graphical page over a basic text web page, it is unlikely that the ICAC web site will employ rotating banners, animated graphics, Java or JavaScript enhanced effects in the near future.

The ability to order ICAC publications via the Internet was added in mid-1996. Publication descriptions and pricing information were made available and an on-line form can be completed and sent to the Secretariat without having to call or fax the office.

We soon hope to offer instant access to our subscription areas. Currently, a user must complete our on-line subscription page. This information is sent as an email message to our publication manager who processes the credit card information. Subscribers are then sent an access ID and password allowing them to retrieve the publication.

In the future, we plan to allow credit card verification to take place "live" while the subscriber waits for approval. This, we hope, will encourage spur-of-the-moment sales. The software behind this type of live transaction is either too costly for our potential sales or too unreliable at this time.

The Internet has become a useful tool during ICAC annual Plenary meetings. The Secretariat can now post daily updates and provisional minutes of Plenary sessions to the ICAC web site during the course of a meeting. Documents can be scanned into text and sent via email to Washington where they can be translated, if necessary, and prepared for inclusion in the final Proceedings of the meeting.

In addition, email service has also been made available to delegates at the meeting site helping them maintain contact with their governments and offices for the duration of Plenary meetings.

This year the Secretariat will be allowing registration for the 57<sup>th</sup> Plenary meeting in Bolivia to be completed through an on-line form in a manner similar to that of our publications subscription web page. We hope that this will streamline the registration procedure for the registering delegate and the Secretariat staff.

Another area of the Internet we are examining is IP faxing, the process of sending fax messages through the Internet rather than across telephone lines. The software is currently in the testing stage and looks promising. There are two main advantages over traditional faxing; price and speed. For example, the cost of sending a fax via the Internet from Washington to the UK is 13 cents/page and to India 80 cents/page - a significant discount over our current long distance carrier. In addition, we are only charged for actual pages sent, failures are not billable.

When the Secretariat sends a broadcast fax, such as the *Monthly Update of the World Cotton Situation* or the minutes of a Standing Committee meeting, around the world we have to stagger delivery to coincide with the discount-rate time of our long distance carrier. This can mean that some countries receive the document up to a day before others. Also, our out-going fax lines are tied up for hours at a time as each fax is sent individually to each recipient. IP faxing, on the other hand, has no discount-rate restriction; we send one fax to the fax server via the Internet at any time and that fax will be delivered to multiple fax numbers simultaneously. What took an entire weekend to accomplish is now achieved in minutes.

Furthermore, IP faxing is available away from the office at the same pricing. If our test program is successful we intend to use this service at our next Plenary meeting in Bolivia.

Maintaining the ICAC web site takes some effort. Adding publications and keeping the site up to date is essential if visitors are to return. Updating and maintaining software, hardware and ensuring reliable, fast access to subscribers takes a significant amount of work and time. On the other hand, the Internet has also helped to reduce our printing, postage and fax expenses.

The Internet has provided a completely new medium from which to deliver our message, one where a ginner in Pakistan is as close as a broker in New York. The Internet allows the Secretariat and the world cotton industry to exchange information quickly and cheaply without regard to location.