

Towards a New ICTP Website

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Enrique Canessa

(Consultant for ICTP eJDS Project with an SSA);

Carlo Fonda

(Consultant for ICTP eJDS Project with an SSA, giving also free-lance services for ICTP ARPL on lump-sum basis);

Overview

The goal is to have a new ICTP website that satisfies ICTP needs of presenting a modern and appealing image to the world. The site must be up and running in summer 2004 well in time for the celebration of the 40th anniversary of the Centre.

For this purpose a committee was created, composed by ICTP staff, that worked for a few months in 2003 and drafted a report. Towards the end of Dec 2003, some commercial companies were also invited for a one-day demonstration of their proposals. After this, we were contacted by the ICTP Directorate to seek for an alternative model based on our experience on Web technologies, and therefore to check the feasibility of designing the ICTP website in-house and in a short period of time, keeping in mind the ICTP scientific structure and organization.

Proposed Model

The suggested approach is simple, open, flexible, reliable and ready for fast deployment, because all of its components have these characteristics. It also presents a decentralized architecture that offers space and freedom for creativity following the scientific philosophy. We plan to develop the new ICTP website using open source state-of-the-art technologies and web standards certified by the WWW Consortium (W3C). This possibility has been demonstrated by some preliminary tests available at <http://www.ejds.org/ictpweb>.

The proposed new website has the following structure:

A core part, called "*header*", providing the top level structure of the whole ICTP public website, with general information about the Centre and its activities, research groups and services. This header will be based on static pages written in XHTML (transitional 1.1) for the content (markup) and will rely on CSS1 (with some function of CSS2) for the graphical appearance (look-and-feel). Its strict separation of structure (pages and menus tree), content (textual information) and appearance (graphical layout) will facilitate the conformity to accessibility rules, providing an attractive appearance and a uniform "ICTP look-and-feel" to visitors with modern browsers but at the same time giving full access to the information by using any browser, even at low bandwidth, including the special browsers for impaired people and some web-capable mobile devices. This will be obtained in strict accordance with the W3C standards, without duplication of the structure (i.e., no "double versions" or "text-only version" of the pages) and avoiding complex scripting and any use of proprietary/closed technologies. This header will be fully searchable by external search engines and will provide also an internal search facility that will extend, up to a certain level, inside the sub-sites too. The structure (pages and menus tree) of the header will include the recommendations and suggestions of the report prepared by the ICTP web committee.

A few "*satellite*" sub-sites, providing in-depth information about the different research groups and their activities and news, as well as access to administrative services and facilities. One of them will provide access to all intranet services for the ICTP staff, researchers and visitors, with differentiated access privileges. The sub-sites will be based on pages dynamically generated (HTML and XHTML-*Extensible HyperText Markup Language*, CSS-*Cascading Style Sheets*) by web applications like open source content managements systems (CMSs) and web portal engines (based on MySQL, php or other languages), customized to have a look-and-feel similar to the one of the header. Such sub-sites may not have the same accessibility features of the header, sometimes requiring modern browsers for the full access to the information (this is due to limitations of the actual technology of CMS and portals, and may be reduced or eliminated in the future). All these sub-sites will provide search facilities that will be integrated in the meta-search of the header. The choice of Web Portals or CMS (like PostNuke, Typo3, WordPress BLog, OpenCMS, Plone/Zope, Mambo, etc), will meet the need of the different ICTP groups and administrative Offices.

Use of available *External Web Services* based on database technologies already implemented at the ICTP (like the Library, the agenda of SMR activities, the SIS, etc.), which will be linked to the header but not modified or adapted at this stage. Their appearance may be eventually slightly modified by their managers (Library, SCS, ACS, etc.), to look more similar to the new website.

Therefore the model is essentially based on a two-layer structure to consider the different needs of ICTP groups/offices/services and the user-friendliness, especially at the administrator(s) levels. The header consists of rather static information that *do not change* over a relatively long period of time (e.g., head of groups, personnel, programs, and so on) but which can certainly be modified as needs arises. On the other hand, the second level aims to include the dynamical part of the information and services which constantly varies (e.g. seminar announcements, news, forums, etc). The top level will be such that *contents* and *appearance* are separated in order to facilitate any further developments/improvements with little efforts. Global changes in the appearance of the header can be incorporated by simply adapting a few files without touching the contents. Eventually this header could be incorporated into a CMS, perhaps in a future project if time and ICTP resources allow it.

Technologies like RSS (Rich Site Summary) to handle decentralized news feeds into the main pages will be also included. Another added value of this approach is the possibility to create specific communities within the different sub-sites Web Portals with participation of scientists beyond the boundaries of the ICTP. A new feature that we believe should start to flourish.

Both layers as described will use available technologies that do not require special programming but only to be adapted to meet ICTP needs. Such adaptations will be carried out in-house and pre-prepared toolkits will be presented to the ICTP groups and offices for establishing their sub-sites. So no special technical skills will be required to administrate them. Regarding computer security issues, the model follows closely the rules currently adopted at ICTP.

The proposed approach has been motivated by the reference book "*Designing with Web Standards*" by J. Zeldman, considered a guide for future trends in Web designing.

This model was openly presented and discussed during three seminars at the ICTP, with participants from different groups and responsibilities. The aim was also to facilitate the participation and interaction among those interested.

About Layers Structure

For the header part, we visualize different levels (or layers). What goes into each of these levels will depend on the type of information to be provided. For instance, the so-called "Contacts Menu" may consist of *one* or (at most) two levels comprising the related information to contact the ICTP people, offices, etc. Instead, when clicking on the so-called "Activities Menu", one will get into Research and a list of Group sections. Then, if selecting on High Energy (HE), one will get the basic information about HE and lists of items such as permanent HE scientific and administrative staff, information which is rather static. By selecting on any of the permanent HE scientists one will get basic information about him giving links to their private web pages (when available). Up to this level, everything will follow the standard header layout. This makes the Activities Menu layer structure made of *four* different levels.

Then, all of the more dynamical information, such as HE conferences schools and HE workshops, HE post-docs, HE (short and long term) visitors, etc. will be included into (and administrated from) the tailored HE Web Portal. By selecting on this class of non-permanent HE scientists, one will get the relevant listings from a database.

Another example of a different layer structure is the part concerning the Director's office (as an item on the front page).

About Possible Web Portals

Experiences with Web portals at ICTP started more than a year ago and since then these have been running smoothly. These include the eJDS Web Portal (www.ejds.org) and the ARPL-Wireless Web Portal (wireless.ictp.trieste.it), both running on an Apache dedicated server located at GGH. Among the many available open source Web Portals, PostNuke was selected on the basis of security, support and documentation, easy to administer and the possibility of creating on-line communities (forums, news, etc).

The alternative Mambo Web Portal and WordPress BLog were also installed for testing purposes and offer another alternative possibility (though with less features) to further simplify the tasks of managing the information. For the ICTP groups, we believe that either PotNuke or Mambo Web portals can be adopted. Whereas for the New from ICTP feeding on the home page, Blog can be a good candidate. Besides, some PHP-based free applications will be also considered to integrate a proper Phonebook and Associates database –still lacking at ICTP.

The specific Web portal for the ICTP Scientific Computer Section, offering computer services and manuals, etc, may be developed directly by the SCS. Such an experience will certainly help to gain time and may be extended to other sections too (as for example the ACS) –keeping in mind the possibility of moving towards a uniform content management system later.

People

The work will be carried out outside office hours on a volunteer basis by persons who are already skilled in the chosen technologies and who offered to work aside of their official activities at ICTP. Two extra volunteers willing to collaborate under our responsibility are:

Guido Comar (Consultant for ICTP Print Shop with an SSA);

Marco Zennaro (giving free-lance services for ICTP ARPL on lump-sum basis).

The consultancy of an external graphical designer may be eventually required at a later stage, to refine the graphical layout of the website. This is still an open issue to be decided.

We do not forecast the need of distributing the tasks in a fixed way among the team people. All volunteers will fully collaborate on the many activities required by the project, according to needs and expertises. The collaboration will be open to all ICTP people (researchers, administrative staff and external collaborators) that want to give a contribution, but we think that the core team of these four people should be in control of all the project tasks to proceed efficiently, avoiding waste of time and resources.

All administrative and scientific offices having already on-line information will be contacted with the collaboration of Prof. Faheem Hussein and Ms. Dilys Grilli.

About Contents Collection and Coordination

We propose to start collecting the information which is already available and distributed as official booklets, publicity, documents, etc regarding the principal features, statistics, characteristics, mandate, etc of the Centre. In some cases there will not be the need for rewriting, as for example in the case of the general groups highlights, simple statistics or history of the Centre.

However, we foresee some new writing specially for what concerns the scientists administrative and staff duties and main studies and achievements. For this, the direct collaboration of the people themselves will be required at an official level with adequate deadlines.

The final collection, editing optimisation, etc of all such material should be done by Prof. Hussein and Ms Grilli by early April. The incorporation on the header of the Website should not take longer than a month if not less.

Working Plan

The foreseen timelines are as follows:

End January: ICTP Director to take a decision about this proposal.

End of February: If this model is chosen we plan to have the general *contents framework* for the header (e.g., links to be added, info to include, distribution of responsibilities within ICTP, identify content providers).

End of March: To have the general *technical framework* ready at least 50% and to start including Newsfeeds, Search, etc on the core header. Decide on definitive graphical layout. Perform needed tests with browsers, portals, benchmarking, etc.

End of April: Deploy 90% of the static header (which could be already published at this stage).

End of May: To have two sub-levels ICTP Group Portals Running and completed.

End of June: To have the Intranet Portal and some ad-hoc services running or at least mostly completed. Final tests and refinement of the whole new ICTP website for publication.

The work will then continue according to the goals achieved and feedback received and unforeseen issues .

Progress Report

The progress of the activities will be reported directly to the ICTP Director and to a steering committee designed that he chairs.

On the committee we suggest Mr. Johannessen, Dr. Nobile, besides Prof. Hussain and Ms. Grilli (plus one or two other people depending on the topics covered). The committee will not question the scheme of doing things, but may offer interesting suggestions and comments. We are willing to take such comments of the committee into account and also to make everyone aware of what's been achieved and/or is planned. This will lead to share the responsibility and to follow the deadline.

Being the project on a volunteer basis, its workflow could not be linear. The website will be always available for testing internally to ICTP. Any comments and suggestions will be greatly appreciated by the working team at any stage, and a tool for submitting feedbacks by email or web form will be available and advertised since the beginning.

Remarks

The current ICTP website is going to be 10 years old on March 2004 using, say, rather obsolete technologies, which certainly need to be updated. But the fact it has been running for such a long period of time with little intervention shows that *simplicity* is the key factor for being alive. We are proud of having collaborated in the old and new phases of the on-line ICTP history that needs to develop towards a future with renewed support.

The experiences with the proposed simple approach, which to our best knowledge has not similar in the scientific community, could be published in an international Journal after completion.