

Technical Notes on Website Development and Maintenance

1. Registration of government domain names

A domain name is like an Internet address of your websites and has labelling effect. Government bureaux and departments (“B/Ds”) are advised to register a bundled pair of English and Chinese domain names under “.gov.hk” and “.政府.香港” categories respectively for setting up website addresses in bilingual to facilitate public access.

2. Portable Document Format file

Use the Portable Document Format (“PDF”) only for very long documents or when the exact formatting must be preserved. We should avoid using PDF file for information that is of wide public interest because PDF file may not be readable on mobile devices or by users without the necessary reader. Whenever PDF file is used, provide a hyperlink to access the required reader software. PDF should be produced by proper PDF creation tools instead of scanning from a document, as scanned image of text is inherently inaccessible.

Image-based documents, such as TIF files produced by scanning, should be converted into a text-based document with Optical Character Recognition (“OCR”) software prior to producing the PDF file. One way to test if a PDF file is accessible is to select a portion of the text with the “text select” function in the Adobe Reader, copy them onto a text document and then check if the text is editable.

If password protection is required for a PDF file, relevant accessibility option permitting access by screen readers should be enabled, such as “Enable text access for screen reader devices for the visually impaired” option in the “Password Security Settings dialog” must be enabled when creating a PDF file. This feature allows screen readers to access the content of the PDF file while preventing users from copying, printing and editing the file.

More techniques on creating accessible PDF are available at <http://www.w3.org/TR/WCAG-TECHS/pdf.html>.

Convert the PDF files to Fast Web View PDF files before uploading to the websites to minimise file size and facilitate page-at-a-time downloading. To facilitate keyword searching, the document summary of the PDF file containing information on the author, document title, keywords, etc. should be properly completed.

3. Using meta data to assist search engines registration

The most common method for users to find websites is through popular search engines. These search engines operate on the principle of keyword search where the user enters a keyword and the search engine returns web pages related to the keyword entered. To ensure that the site is returned as one of the top listings in the search results, a descriptive title and meta tags of “descriptions” and “keywords” containing the keywords that users commonly search should be defined.

To ensure the accuracy of the update date of the web page when indexed by search engines, meta tags of “date” can be added:

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<meta name="date" content="TIME_SYNTAX">
```

where TIME_SYNTAX is <DATE>T<TIME>+<TIMEZONE>
format is CCYY-MM-DDThh:mm:ss+mm:ss

This is especially useful when the web page is dynamically generated by programmes.

4. Regular re-registration in prominent search engines

Registration can be conducted manually by visiting the individual search portal sites. Chinese web pages should be submitted to Chinese-based search engines.

Each web page should have a descriptive and accurate page title to facilitate work of the search engine.

5. Facilitate search engines indexing

Web page hyperlinks generated by JavaScript should be avoided because such hyperlinks normally cannot be indexed by common search engines. As an alternative, webmasters may create a site map with static hyperlinks pointing to all pages in the website, and in the website of the site, add a static hyperlink to this site map. Further information regarding Search Engine Optimisation is available at the GovHK Search Service page (<http://itginfo.ccgo.hksarg/content/ns/gsg-search.asp>) (only for government internal access).

6. Browsers

In theory, Government websites should be tested on different browsers. In practice, testing them on prevailing versions of Internet Explorer, Firefox, Chrome and Safari will suffice. As most users do not upgrade their browsers regularly, it will be useful to try out a page with the more popular and low-end versions. If a PDA version of the websites is provided, it should also be tested on a web browser on a PDA or a mobile Internet device.

As quite a number of Chinese users use Chinese windows environment, it will be useful to produce English pages in the Chinese windows environment to avoid missing apostrophes and quotation marks.

Advise users of the appropriate version of browsers to view the pages. If the page requires a recent version, provide a link to enable them to download the appropriate version.

Although the current common web browsers have high tolerance to syntax errors for web content written using markup languages, such as HTML or XHTML, it is desirable that Government websites should be syntactically correct according to the specifications published by the W3C. This could better assure the compatibility and interoperability for current as well as future versions of Web browsers when accessing such content. There are free online validation tools available such as the W3C Markup Validation Service at <http://validator.w3.org>.

7. Screen resolution

The lowest acceptable screen resolution should be determined at the onset before development stage. The common screen resolutions are of a width of 1024 pixels or above.. Conduct tests for websites viewed under different resolution to avoid an improper page layout under certain screen resolution. As a good practice, state the best resolution for browsing a website in the index page or under “Important Notices”.

8. Bilingual pages

Use separate pages for the Chinese and English versions. This is to avoid upsetting English screen reader software that cannot handle Chinese encoding.

If the entry page is in Chinese, the link to the ‘English version’ should be the first link at the top left-hand corner of the website to facilitate language switching. Limitation in English screen reader software is also the reason for placing the English version as the first link of the website.

Government websites should include simplified Chinese version in addition to the English and traditional Chinese versions to enhance the accessibility of the websites to other Chinese communities. The CIG has a Simplified Chinese translation system (http://itginfo.ccgo.hksarg/content/scig/wh_NewSC.asp) (only for government internal access) which provides conversion into simplified Chinese version in offline mode. Webmasters should verify and review the translated web content before publishing.

For websites that use the on-line translation system to convert traditional Chinese character web pages to simplified Chinese character web pages, a disclaimer should be included in every Government website to remind users that the content in the translated version are conversion from the traditional Chinese character version using a translation software, and users should verify the translated version by making reference to the published traditional Chinese character version. The ‘simplified Chinese’ button on Government web pages should be programmed to trigger the display of Disclaimer Statement.

The ISO/IEC 10646 coding standard should be adopted for newly established Chinese version websites or websites undergoing major revamp. The adoption of the ISO/IEC 10646 standard and the HKSCS provides a unified coding standard that ensures compatibility.

To foster the adoption of international standards, only ISO 10646 code points will be assigned for newly included HKSCS characters and Big 5 code point has ceased to be assigned since 31 March 2008. Existing “Big5” or “Big5-HKSCS” encoded web pages should also be migrated to the ISO/IEC 10646 standard.

The "charset" code should be included in all web pages to facilitate web browsers to choose the character type. The “charset” code should be put before the <title> tag to avoid any potential display problem if the title has Chinese characters. The “charset” code should be added between <head> and </head>, or before <body> tags in the following way:

For traditional and simplified Chinese (ISO/IEC 10646):

```
<META HTTP-EQUIV="Content-Type" CONTENT="text/html;charset=utf-8">
```

For English/Western-European Language –

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<META HTTP-EQUIV="Content-Type" CONTENT="text/html;charset=utf-8">
```

or

```
<META HTTP-EQUIV="Content-Type" CONTENT="text/html;charset=iso-8859-1">
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9. User’s preference

For better relations with website users and their best viewing experience, Government websites should recognise a user’s previous preference by storing his/her language, font size and/or colour preference etc., such as in cookie(s) based on the last access. When a user accesses a government website, we should check the cookie(s) about the stored user preference and automatically redirect to the welcome message page of the corresponding language preference with appropriate font size and/or colour preference. However, if the user’s browser does not have that cookie, it should go to the first language selection page of the website as usual.

It is important to note that, if cookies are used in a Government website, the website must have a notice under Important Notices for providing relevant information on the purpose, the kind of data to be stored, and the expiry date, etc. It should also state that website users are allowed to disable cookies.

For cookies related to collection of personal data of users, please refer to the “Statement for collecting personal data online” in the Guidelines.

10. Use of embedded video links on websites

The use of embedded video links on websites is now very popular. B/Ds may consider embedding video links to other video websites according to their particular requirements.

11. Visitor records

Many websites record the number of visitors. This is not really necessary for Government websites because a separate set of figures, kept by the OGCIO, is available on-line from the central Visitors Statistics System. Designers considering the inclusion of a visitor counter should bear in mind that this would add considerably to the loading time of the page in question.

12. Web Accessibility Conformance Logos and Statements

Government webpages conforming to W3C WCAG 2.0 Level AA standard should display the corresponding W3C conformance logo to claim the relevant conformance and to help raise awareness of web accessibility design. By default, the scope of the claim by a W3C WCAG 2.0 Level AA conformance logo refers to a single webpage. If the claim is meant to apply to include more than one webpage, the conformance icon may be accompanied by explicit scope information explaining which webpages are covered by the claim. Details on using the W3C WCAG 2.0 conformance logos can be found at <http://www.w3.org/WAI/WCAG2-Conformance>.

For non-conforming webpages, exceptions must be justified and a “web accessibility conformance” statement / explanation with the following logo should be provided:



This “Web Accessibility Conformance” logo can be downloaded in <http://itginfo.ccg.gov.hk/content/accessibility/statements.htm>. When users click on this icon, it should link to a webpage with a “web accessibility conformance” statement / explanation.

B/Ds should set out their own “web accessibility conformance” statement / explanation according to their circumstances.

Useful links

- (a) Web Accessibility Campaign
<http://www.webforall.gov.hk>
- (b) Common Chinese Language Interface
http://www.ogcio.gov.hk/en/business/tech_promotion/ccli/index.htm
- (c) Electronic Transactions Ordinance
<http://www.ogcio.gov.hk/en/regulation/eto/>
- (d) HKSAR Government Websites Visitor Statistics System
<http://webstat.cis.gov.hk>
- (e) HKSARG Interoperability Framework
http://www.ogcio.gov.hk/en/infrastructure/e_government/if/interoperability_framework.htm
- (f) ISO 10646 & Hong Kong Supplementary Character Set (HKSCS)
<http://www.ccli.gov.hk/cindex.html>
<http://itginfo.ccg.gov.hk/content/hkscs/index.htm> (only for government internal access).

- (g) IT Security
<http://www.infosec.gov.hk/english/main.html>

- (h) Hong Kong Internet Registration Corporation Limited (HKIRC)
<http://www.hkirc.hk>

- (i) Domain Name Registration Policies, Procedures and Guidelines
for .hk and .香港 domain names
<http://www.hkirc.hk/content.jsp?id=33>

- (j) Hong Kong Domain Name Registration Company Limited (HKDNR)
<http://www.hkdnr.hk>

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