

Web Accessibility

Digital Inclusion Division
Office of the Government Chief Information Officer

29 January 2014



政府資訊科技總監辦公室
Office of the Government Chief Information Officer



Agenda

- 1. What is Web Accessibility?**
- 2. Common Pitfalls**
- 3. Why Web Accessibility?**
- 4. International Standards and Testing Techniques**
- 5. Government Policy**
- 6. Web Accessibility Campaign**



Digital 21 Strategy

One of the key areas of Digital 21 Strategy

- ***ICT as a Tool to Support Underprivileged Groups***
 - Expand their social horizons
 - Integrate with the society
 - Enhance their quality of life

ICT: Information and communications technology



Digital Inclusion (數碼共融)

Social groups mainly affected by “Digital Divide”

- Elderly
- New arrivals
- Female homemakers
- Single parents
- Children of low-income families
- Persons with disabilities
- Ethnic minorities



Digital Inclusion – Priority Groups

Students in low income families

- have Internet access at home and do not lose educational opportunity because of financial difficulties or lack of support



Elderly

- Initiatives to encourage more elderly to use ICT in their daily life for social and generational inclusion



Persons with disabilities

- minimise the barriers on the use of ICT
- drive wider adoption of ICT to improve their quality of life



Digital Inclusion Initiatives



Students in low income families



Elderly



Persons with disabilities

Cash Subsidy on Internet Access Charges

Internet Learning Support Programme

Elderly Portal

Encouraging ICT Adoption among the Elderly

Web Accessibility Campaign

Development of Assistive Technologies

Development of Digital Inclusion Applications

- Public library computer facilities

- GovWiFi

- District Cyber Centres



What is Web Accessibility?

- Making website **Content** available for **ALL**
- **ALL** people of the community
- Including persons with disabilities (361,000 about 5.2% of total population)



Video on Introduction of Web Accessibility

[http://www.ocgto.gov.hk/tc/community/
web_accessibility/recognition_scheme/
video/wars_video2.mp4](http://www.ocgto.gov.hk/tc/community/web_accessibility/recognition_scheme/video/wars_video2.mp4)



Four Major Categories of Disabilities

- **Visual Impairment**
 - blind, low vision, *colour blindness*
- **Physical Impairment**
 - missing limbs, reduced control of limbs, suffer from dexterity problems, epilepsy
- **Hearing Impairment**
 - completely or partially deaf
- **Cognitive Impairment**
 - have difficulties in learning



Visual Impairment

Reading with Screen Reading Software



- Use text-to-speech (TTS) engine to interpret what is displayed on the screen

我的政府一站通 流動／無障礙瀏覽 RSS 我的自訂色彩 A A A English | 简体 | 其他語言 ▾

政府機構 網上服務 表格 關於香港 幫助

GovHK香港政府一站通

本港居民 商務及貿易 非本港居民 青少年 輸入查詢字串

2013年1月16日 星期三 熱門搜尋：招聘、置安心、預辦入境登記

二零一三年施政報告

穩中求變 務實為民

我想...

使用「稅務易」服務

申請政府職位

預約申請旅行證件

找政府網站或人員

預約申領香港身份證

搜尋康樂及體育設施

2013施政報告 疫苗資助計劃 應對 Oracle Java 程式碼安全漏洞 訂閱食物警報及消防安全大使資訊

www.gov.hk



政府資訊科技總監辦公室
Office of the Government Chief Information Officer



Visual Impairment

Reading with Screen Magnification Tools

- Zoom into sections of a screen and change contrast level to assist users with poor or low vision



Physical Impairment

Barrier-free Input Device

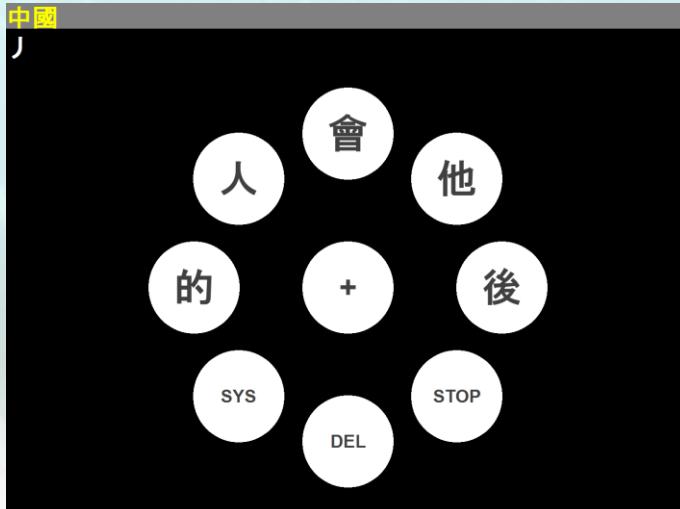
- Special hardware and software for accessing webpages



Physical Impairment

Brain-Computer Interface System

- User concentrates on the characters and strokes displayed which flashed sequentially on the screen
- System monitors brain activity



Hearing Impairment

Provision of content in different mediums

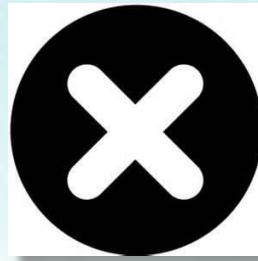
- If information is conveyed in audio, ensure to provide an alternative way to access this information
- Provide a text transcript, subtitles or sign language



Cognitive Impairment

May not require special tools to use websites but some design considerations, e.g.

- Ensure that navigation is consistent throughout a website
- Similar interface elements and similar interactions
- Avoid distractions (e.g. animation, unusual font faces)
- Pair icons or graphics with text to provide contextual cues



Ambiguous meaning



Clear meaning



Agenda

- 1. What is Web Accessibility?**
- 2. Common Pitfalls**
- 3. Why Web Accessibility?**
- 4. International Standards and Testing Techniques**
- 5. Government Policy**
- 6. Web Accessibility Campaign**



Common Pitfalls



1. No alternatives for non-text content

- Persons with visual impairment cannot perceive the image content



Alt = “Image 1”



Alt = “Officiating guests attending the Launch Ceremony of the Web Accessibility Recognition Scheme”

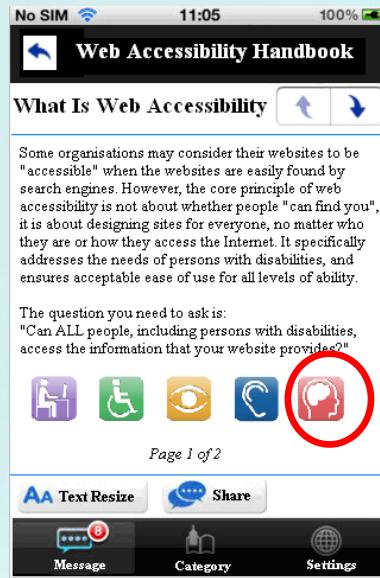
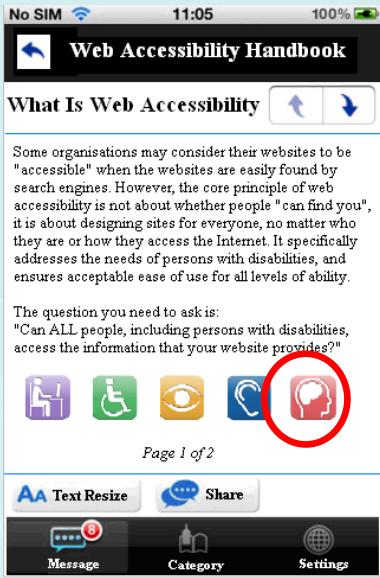
✓ e.g. contain descriptive text alternative for image





Common Pitfalls

1. No alternatives for non-text content



- ✓ e.g. contain descriptive text alternative for images



Common Pitfalls



2. Inaccessible PDF Files

- Screen reader cannot read the content

Affected Group: All Persons with Disabilities

PDF documents should only be used for certain situations. This is generally when you have a piece of content that you would like people to download and read offline. In this way, PDF documents can be helpful for persons with disabilities because they can download and read them with the assistive functions built into PDF reading software.

We have to ensure that PDF documents are accessible to assistive technologies, such as screen readers. We should produce a PDF document from a text-based source document so that it is readable by Braille devices used by persons with visual impairments. Image-based documents, such as TIF files produced by scanning, should be converted into text-based documents with Optical Character Recognition (OCR) software prior to producing the PDF document.

Scanned Image not accessible

Affected Group: All Persons with Disabilities

PDF documents should only be used for certain situations. This is generally when you have a piece of content that you would like people to download and read offline. In this way, PDF documents can be helpful for persons with disabilities because they can download and read them with the assistive functions built into PDF reading software.

We have to ensure that PDF documents are accessible to assistive technologies, such as screen readers. We should produce a PDF document from a text-based source document so that it is readable by Braille devices used by persons with visual impairments. Image-based documents, such as TIF files produced by scanning, should be converted into text-based documents with Optical Character Recognition (OCR) software prior to producing the PDF document.

Text-based accessible PDF

- ✓ e.g. use proper PDF generator to produce a PDF document from a text-based source document;
- ✓ use Optical Character Recognition (OCR) software after scanning

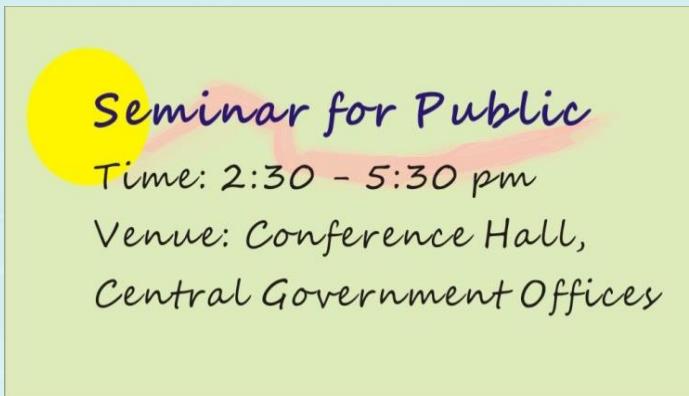


Common Pitfalls



3. Text in Image is not accessible

- Information is not conveyed to all



Text in image



Accessible text on a webpage

- ✓ Avoid to convey information of wide public interest
- ✓ If avoidable, provide descriptive text alternatives



Common Pitfalls



4. Small font sizes

- Persons with low vision cannot read the text

Home | About | Contact | Services | Support | FAQ

Resize text: Understanding Success Criteria 1.4.4

Some organisations may consider their websites to be "accessible" when the websites are easily found by search engines. However, the core principle of web accessibility is not about whether people "can find you", it is about whether all people, irrespective of age, race, education or disability, can access to information in websites.

Cannot resize text

Home | About | Contact | Services | Support | FAQ

AAA

Resize text: Understanding Success Criteria 1.4.4

Some organisations may consider their websites to be "accessible" when the websites are easily found by search engines. However, the core principle of web accessibility is not about whether people "can find you", it is about whether all people, irrespective of age, race, education or disability, can access to information in websites.

Can resize text

- ✓ e.g. provide text resize function





Common Pitfalls

4. Small font sizes

No SIM 11:05 100%

Web Accessibility Handbook

What Is Web Accessibility

Some organisations may consider their websites to be "accessible" when the websites are easily found by search engines. However, the core principle of web accessibility is not about whether people "can find you", it is about designing sites for everyone, no matter who they are or how they access the Internet. It specifically addresses the needs of persons with disabilities, and ensures acceptable ease of use for all levels of ability.

The question you need to ask is:
"Can ALL people, including persons with disabilities, access the information that your website provides?"

Page 1 of 2

Share

Message

Category

Settings

No SIM 11:05 100%

Web Accessibility Handbook

What Is Web Accessibility

Some organisations may consider their websites to be "accessible" when the websites are easily found by search engines. However, the core principle of web accessibility is not about whether people "can

Page 1 of 4

AA Text Resize

Share

Message

Category

Settings

- ✓ e.g. provide text resize function or text can be zoomed without loss of content



Common Pitfalls



5. Insufficient colour contrast

- Persons with low vision have difficulty reading text that does not contrast with its background

To enable all people, including persons with disabilities, to live independently and participate in all aspects of life, we should take every opportunity to make information accessible to all.

This Handbook is designed for senior executives and managers to better understand the importance of web accessibility and show how it can be successfully implemented. Some organisations may consider their websites to be "accessible" when the websites are easily found by search engines. However, the core principle of web accessibility is not about..

Poor background contrast

To enable all people, including persons with disabilities, to live independently and participate in all aspects of life, we should take every opportunity to make information accessible to all.

This Handbook is designed for senior executives and managers to better understand the importance of web accessibility and show how it can be successfully implemented. Some organisations may consider their websites to be "accessible" when the websites are easily found by search engines. However, the core principle of web accessibility is not about..

Easier to read with higher contrast

- ✓ e.g. provide sufficient contrast ratio





Common Pitfalls

5. Insufficient colour contrast



✓ e.g. provide sufficient contrast ratio (at least 4.5 : 1)



Common Pitfalls



6. Complicated infrastructure

- Persons with cognitive impairment have difficulty reading complex website structures

The website has a complex navigation bar at the top with links for Home, About, Contact, Services, Support, FAQ, Contract, Accessible, Field, Comparable, Newspaper, Read, Output, Product, and Location. Below the navigation, there are several content boxes: "What we do", "Assistive Technologies Range" (with links for Screen reader, Magnifier, Voice Control, and More Technologies >>), "Expert Reviews" (with a detailed paragraph about testing), "Test Automation" (with a paragraph about automation), and "About us" (with a paragraph about the company's history and customer base).

Complex structures

This version of the website has a simplified navigation bar at the top with links for Home, About, Contact, Services, Support, and FAQ. It includes sections for "What we do", "About us", "Test Automation", and "Expert Reviews". The content is presented in a more organized and accessible manner compared to the first screenshot.

Simple structure

- ✓ e.g. provide simpler and ordered website structure





Common Pitfalls

6. Complicated infrastructure

No SIM 11:05 100% Web Accessibility Handbook

What Is Web Accessibility

Some organisations may consider their websites to be "accessible" when the websites are easily found by search engines. However, the core principle of web accessibility is not about whether people "can find you", it is about designing sites for everyone, no matter who they are or how they access the Internet. It specifically addresses the needs of persons with disabilities, and ensures acceptable ease of use for all levels of ability.

The question you need to ask is:
"Can ALL people, including persons with disabilities, access the information that your website provides?"

Page 1 of 2

Text Resize Share

Message Category Settings

No SIM 11:05 100% Web Accessibility Handbook

What Is Web Accessibility

Some organisations may consider their websites to be "accessible" when the websites are easily found by search engines. However, the core principle of web accessibility is not about whether people "can find you", it is about designing sites for everyone, no matter who they are or how they access the Internet. It specifically addresses the needs of persons with disabilities, and ensures acceptable ease of use for all levels of ability.

Most people think about visually impaired persons when it comes to accessibility, however there are many different types of disabilities and hence many different techniques that persons with disabilities can use to access websites.

Disabilities fall into four major categories: Visual Impairment, Physical Impairment, Hearing Impairment and Cognitive Impairment.

In addition, there are many others who have temporary disabilities, for example, a wounded arm. Such injuries can make accessing websites just as difficult as it is for persons with permanent disabilities.

Page 1 of 2

Text Resize Share

Message Category Settings

No SIM 11:05 100% Web Accessibility Handbook

What Is Web Accessibility

Some organisations may consider their websites to be "accessible" when the websites are easily found by search engines. However, the core principle of web accessibility is not about whether people "can find you", it is about designing sites for everyone, no matter who they are or how they access the Internet. It specifically addresses the needs of persons with disabilities, and ensures acceptable ease of use for all levels of ability.

Most people think about visually impaired persons when it comes to accessibility, however there are many different types of disabilities and hence many different techniques that persons with disabilities can use to access websites.

Disabilities fall into four major categories: Visual Impairment, Physical Impairment, Hearing Impairment and Cognitive Impairment.

In addition, there are many others who have temporary disabilities, for example, a wounded arm. Such injuries can make accessing websites just as difficult as it is for persons with permanent disabilities.

Page 1 of 2

Text Resize Share

Message Category Settings

No SIM 11:05 100% Web Accessibility Handbook

How Persons with Disabilities Use Websites

Most people think about visually impaired persons when it comes to accessibility, however there are many different types of disabilities and hence many different techniques that persons with disabilities can use to access websites.

Disabilities fall into four major categories: Visual Impairment, Physical Impairment, Hearing Impairment and Cognitive Impairment.

In addition, there are many others who have temporary disabilities, for example, a wounded arm. Such injuries can make accessing websites just as difficult as it is for persons with permanent disabilities.

Page 1 of 2

Text Resize Share

Message Category Settings

- ✓ e.g. provide consistent and simple user interface structure



Common Pitfalls



7. Unable to skip inaccessible Adobe Flash and moving objects



Unable to skip



Skip function added

✓ e.g. add a skip function



Common Pitfalls



8. Background audio



Source : <http://s1.ecard.gov.hk/ecard/main>

- ✓ e.g. add a turn off function





Common Pitfalls

8. Background audio

The image displays two side-by-side screenshots of a mobile application's settings interface. Both screenshots show the same basic layout: a header bar with 'No SIM', signal strength, '11:05', and '100% battery'; a title 'Web Accessibility Handbook'; a 'Settings' section; and a footer with 'Text Resize' and 'Share' buttons, and 'Message', 'Category', and 'Settings' navigation buttons.

In the first screenshot (left), under the 'Settings' section, there are two toggle switches: 'Notifications' (green switch labeled 'ON') and 'Alert Messages' (green switch labeled 'ON').

In the second screenshot (right), the 'Notifications' and 'Alert Messages' settings remain the same. However, a new setting 'Play background music automatically' is introduced, located below them. This setting has a grey switch labeled 'OFF', which is circled in blue to draw attention to it.

✓ e.g. add a turn off function



Common Pitfalls



9. Video without captions and audio description

- Persons with visual or hearing impairments have difficulty to understand the video



✓ e.g. provide captions and audio description





Common Pitfalls

9. Video without captions and audio description



他們是參加了綠色建築導賞團的學生

Source : <http://www.gov.hk/en/about/govdirectory/mobilesites.htm>

- ✓ e.g. provide captions and audio description



Agenda

- 1. What is Web Accessibility?**
- 2. Common Pitfalls**
- 3. Why Web Accessibility?**
- 4. International Standards and Testing Techniques**
- 5. Government Policy**
- 6. Web Accessibility Campaign**



Why Web Accessibility?

- **Equal opportunities**
 - United Nations' Convention on the Rights of Persons with Disabilities
 - Disability Discrimination Ordinance (Cap 487) has created a legal duty for organisations to ensure their services are available to everyone
- **Social responsibility**
 - Build positive corporate image
 - contribute to a more caring and inclusive society



Why Web Accessibility?

- **Search engine friendly**
 - get more prominent ranking in search engine results
- **Widest possible reach-out**
 - reach out to more online customers
- **Lower costs in the long term**
 - easier to maintain and is compatible with different web browsers and devices, which saves time and money in the long term
 - avoid unnecessary lawsuits



Legislation / Guideline

Country	Legislation / Guideline
Australia	<ul style="list-style-type: none">• Disability Discrimination Act (DDA) of 1992• WWW Access: DDA Advisory Notes• The Guide to Minimum Website Standards
Canada	<ul style="list-style-type: none">• Canadian Human Rights Act of 1977• The Government of Canada Internet Guide
China	<ul style="list-style-type: none">• 國務院令第622號 - 《無障礙環境建設條例》
United Kingdom	<ul style="list-style-type: none">• The Equality Act 2010• Formal investigation report on Web Accessibility
United States	<ul style="list-style-type: none">• American with Disability Act (ADA)• Section 508 of the Rehabilitation Act• Assistive Technology Act of 1998• Section 255 of the Telecommunications Act of 1996
European Union	<ul style="list-style-type: none">• Accessibility of Public Websites – Accessibility for PWDs: Council Resolutions, 2002



Legislation in China

《無障礙環境建設條例》

- 縣級以上人民政府發布重要政府信息和與殘疾人相關的信息，應為殘疾人提供語音和文字提示；
- 國家舉辦的考試(如：升學、職業資格等)，應當為視力殘疾人提供盲文試卷、電子試卷等；
- 設區的市級以上人民政府設立的電視台在播出電視節目時配備字幕，每周播放至少一次配播手語的新聞節目；



Legislation in China

- 設區的市級以上人民政府設立的公共圖書館應當開設視力殘疾人閱覽室；
- 殘疾人士組織的網站應當達到無障礙網站設計標準，設區的市級以上人民政府網站、政府公益活動網站，逐步達到無障礙網站設計標準。
- http://www.gov.cn/zwgk/2012-07/10/content_2179864.htm



Overseas Lawsuit Reference Cases

Australia - inaccessibility of Olympic Games 2000 website

A person with visual impairment, lodged a complaint against Sydney Organising Committee for the Olympic Games 2000

- No alternative text for image
- Contained inaccessible image map



Overseas Lawsuit Reference Cases

Australia - inaccessibility of Olympic Games 2000 website

Settlement

- Respondent was ordered to make the website accessible including alternative text on all images and image map links together with other features
- Compensation sum of AU\$20K paid by respondent



Overseas Lawsuit Reference Cases

USA - inaccessibility of Target.com

The National Federation of the Blind filed a class-action suit, with 50,000 names

- No alternative text for image
- Contained inaccessible image maps and other graphical features
- Website required the use of a mouse to complete an online purchase



Overseas Lawsuit Reference Cases

USA - inaccessibility of Target.com

Settlement

- In Sep 2006, the Federal District Court sustained the claims against Target.com
- Set a precedent case that retailers must make their websites accessible under the Americans with Disability Act (ADA)
- Target made the website fully accessible
- Settled the class suitcase by set up a fund US\$6M for claims



Local Complaint Cases

- A NGO issued a press release in June 2012
- Complained about inaccessible PDFs published on Government website

選舉處涉歧視殘障



平等機會委員會 EQUAL OPPORTUNITIES COMMISSION

無法在月底前向選舉處申索的人士，將不能在9月投票。

【本報訊】選舉事務處在核實選民登記冊時涉觸犯《殘疾歧視條例》。香港失明人士協進會會長莊陳有昨去信平機會，指選舉事務處在本月15日公佈的臨時選民登記冊及抽樣調查信件，只提供一般文字版本，視障人士無法查閱，隨時在不知情的情況下喪失選民資格。莊陳有指失明人士看不見選舉事務處發出的抽樣信件，可能連需要核實身份也不知道。「事務處嘅網頁都係只得文字，欠缺無障礙設施，香港話就話無障礙城市，事實仲好落後。」莊陳有已在本月15日去信選舉管理委員會主席馮驛，要求改善，至今仍未獲回覆。

Source: Apple Daily Newspaper



Local Complaint Cases

- Complained about restaurant websites causing issues in online ordering



<http://life.mingpao.com/cfm/basicref3b.cfm?File=20120723/braa02a/gma1.txt>

盲人勝利 麥當勞網頁去障礙 多間連鎖餐廳網頁 視障者難叫外賣

文章日期：2012年7月23日

【明報專訊】本港不少連鎖餐廳均會在網頁提供「網上訂購」服務，但有視障者組織留意到本港大型連鎖餐廳網頁不設「無障礙」文字版，令視障者無法透過屏幕報讀軟件瀏覽網頁，致全港約12萬名視障者在網上叫外賣障礙重重。有失明者早前透過報讀軟件上網，到麥當勞網頁叫外賣，但該網主頁不斷重複播放音樂，干擾報讀軟件，令他苦無辦法讀到外賣電話及餐單落單，遂於今年2月透過香港失明人協進會向平機會投訴。本報與視障者測試另外4間連鎖餐廳，亦發現不設無障礙文字版，令視障者難「叫外賣」。



Local Complaint Cases

多間連鎖餐廳網頁無障礙情況

麥當勞

- 首頁重複播放音樂，干擾盲人屏幕報讀軟件；網頁設計成以滑鼠控制，盲人無法操作。
- 回應：**已改善：關掉音樂，加入純文字檔，包括麥當勞熱線，現已全面提升網站，以進一步達至無障礙。

必勝客

- 主頁圖片並沒載有文字描述或替代文字（ALT Text），網站導航排序並非依序排列，「網上訂購」以圖片展示，要逐一進入才有文字，另盲人無法找到「立即訂購」按鈕。
- 回應：**留意到問題，希望今年推出便利視障者訂購的網頁，現階段先由電話服務員提供協助，讀出外賣項目及細節。

吉野家

- 首頁為Flash動畫配直排的文字圖片，軟件斷續讀出不相干單字，無法繼續進入。
- 回應：**截稿前未獲回覆。

肯德基

- 首頁圖片並沒載有文字描述或替代文字（ALT Text），熱線電話以沒有文字描述的圖片顯示。
- 如直接進入「網上訂購」頁面，讀到首頁「今期推介」贊單，但無法讀到「登入訂購」、「網上訂購」頁面，其他頁面的按鈕只附連結，無文字描述。
- 回應：**截稿前未有回覆。

板長壽司

- 首頁為Flash動畫，整頁以沒載有文字描述的圖片組成，軟件只能重複讀出「板長壽司，和之味集團成員」，無法繼續進入。
- 回應：**暫未設無障礙網頁，將來考慮作改善。

<http://hk.news.yahoo.com>

上網叫外賣薄餅 找半小時食白果



明報 – 2012年7月23日星期一上午5:24

-A +A



電郵



推薦



推文



+1



列印

【明報專訊】失明者鄭灼培（John）和任博輝網上訂購外賣屢試屢敗，兩人早前協助檢視本港主要連鎖快餐店的網頁，令記者體會他們叫外賣之難。

例如兩人登入必勝客網頁，由於頁面沒有文字描述或替代文字（ALT Text），報讀軟件只能讀出網頁圖片的檔案名字，兩人呆聽30分鐘，才聽到「delivery（外賣）」，但點進去又再遇到大量圖案，要逐一打開，才能知悉按鈕代表的是一人套餐、必勝批還是升級優惠，阿輝無奈說：「那些連結有如抽屜，我們永遠不知裏面有什麼，要逐個逐個打開。」兩人最後決定作罷。

圖像動畫充斥 報讀器讀不到

肯德基網頁情況亦類近，兩人登入「網上訂購」頁面，軟件可讀到首頁「今期推介」的文字，其他頁面的按鈕只附連結，無文字描述。如想改打電話叫外賣，網頁的熱線電話亦只以圖片顯示，報讀軟件無法讀出，兩人最終亦無法完成外賣程序。

至於吉野家，首頁是Flash動畫配以直排的文字圖片，軟件斷續讀出不相干的單字，最終兩人找不到方法登入。另一連鎖店板長壽司的網頁，首頁同樣是Flash動畫，一般人可看到頁頂的外賣電話，但由於整頁以沒載有文字描述的圖片組成，軟件只能重複讀出「板長壽司，和之味集團成員；板長壽司，和之味集團成員……」沒完沒了，兩人最終亦決定作罷。



Local Complaint Cases



聯招網兩障礙 視障生難改選

[昔日文章]

文章日期：2012年07月23日



【明報專訊】在剛放榜的中學文憑試，考生只可在「大學聯合招生辦法」網頁修改選科，但該網頁設計為視障生帶來兩大障礙，一是要使用視障生無法操作的滑鼠；二是網頁圖片不設文字描述，令屏幕報讀軟件無法閱讀。平機會檢測後亦指聯招網不太有利視障生，促作改善。

聯招處回覆，將為完全失明學生作特別安排，並繼續檢視需改善地方，但為維持網頁穩定性，今年難以改正所有頁面。

聯招處：將檢視需改善處

香港失明人協進會項目經理高碧姬稱，近月接獲視障學生投訴無法使用聯招網，主要問題是要使用拖拉形式（drag-and-drop）進行學科改選，即要求使用者以滑鼠接着按鈕，拉至另一位置放下，對於只能使用鍵盤操作網頁的視障學生來說並不可行。

<http://life.mingpao.com/htm/hkdse/cfm/news3.cfm?File=20120723/news/gma3.txt>



政府資訊科技總監辦公室
Office of the Government Chief Information Officer



Agenda

- 1. What is Web Accessibility?**
- 2. Common Pitfalls**
- 3. Why Web Accessibility?**
- 4. International Standards and Testing Techniques**
- 5. Government Policy**
- 6. Web Accessibility Campaign**



International Standards

- **World Wide Web Consortium (W3C)** consists of people from industries, disability organisations, governments, and research labs from around the world, develops strategies, guidelines, and resources to help make the web accessible to people with disabilities
- Web Content Accessibility Guidelines (WCAG) have been developed over the years by W3C
- Version 1.0 in 1999; version 2.0 in 2008

<http://www.w3.org/WAI/>



International Standards

- The WCAG consist of four parts —

4 Principles

12 Guidelines

61 Success Criteria

Many Techniques



WCAG - Principles

4 Principles

- Content is **Perceivable**
- User interface components and navigation are **Operable**
- Information and operation are **Understandable**
- Content is **Robust** enough to be interpreted reliably by a wide range of web browsers, assistive technologies, etc.



WCAG - Principles

Guidelines for Principle 1 - Perceivable

- 1.1 **Text Alternatives:** Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language
- 1.2 **Time-based Audio and Video Media:** Provide alternatives for time-based media
- 1.3 **Adaptable:** Create content that can be presented in different ways without losing information or structure
- 1.4 **Distinguishable:** Make it easier for users to see and hear content including separating foreground from background



WCAG - Principles

Principle 1 - Perceivable

- Example - Audio CAPTCHA

Home > Community Initiatives and IT Services > Web Accessibility

Web Accessibility Suggestion Box

Name :

Telephone Number :

(Please provide country/area codes if outside Hong Kong)

E-mail Address :

Suggestion / Comment :

Enter the characters in the image
(CAPTCHA):



Audio Support

Submit



WCAG - Principles

Principle 1 - Perceivable

- Example - Sufficient colour contrast 4.5 : 1



www.gov.hk



WCAG - Principles

Guidelines for Principle 2 - Operable

- 2.1 **Keyboard Accessible:** Make all functionality available from a keyboard
- 2.2 **Enough Time:** Provide users enough time to read and use content
- 2.3 **Seizures:** Do not design content in a way that is known to cause seizures
- 2.4 **Navigable:** Provide ways to help users navigate, find content, and determine where they are



WCAG - Principles

Principle 2 - Operable

- Example - Provide users enough time to read and use content

The screenshot shows the homepage of the Office of the Government Chief Information Officer (OGCIO) in Hong Kong. The page features a blue header with the OGCIO logo, the Hong Kong emblem, and navigation links for 'MY COLOUR', 'SEARCH', 'SITE MAP', and 'RSS'. A weather widget indicates 21°C and 78% humidity. The main content area has a dark background with a grid pattern. It features a large graphic for the 'Web Accessibility Recognition Scheme' (WARS) with icons of a laptop, a checkmark, and a person in a wheelchair. Below this, a purple box highlights the 'HIGHLIGHTS' section, which contains a speech by Mr. Victor Lam from the 'International Conference on IT Management and Engineering Practices (ITMEP) 2013' on 17 Jan 2013. A yellow callout arrow points from the right towards this highlighted section. To the right of the main content, there are sidebar links for 'Smart Elderly Awards', 'Open Tender Notice', and 'Web Accessibility Recognition Scheme'.

Provide Pause
function

www.ogcio.gov.hk



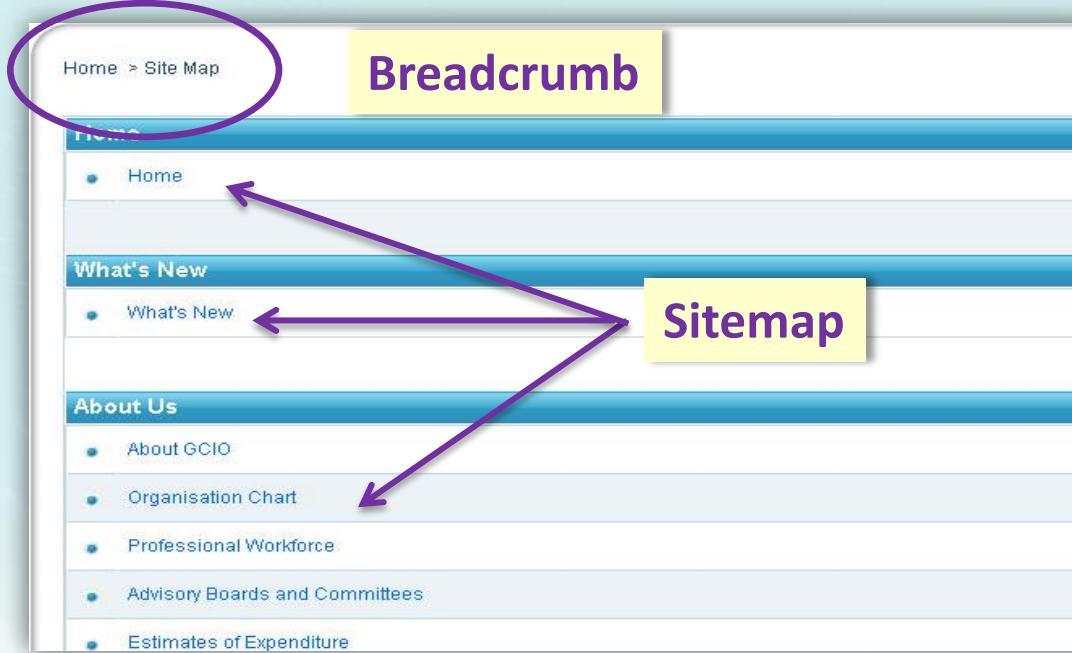
政府資訊科技總監辦公室
Office of the Government Chief Information Officer



WCAG - Principles

Principle 2 - Operable

- Example - More than one way to help users navigate and find content



www.occio.gov.hk



政府資訊科技總監辦公室
Office of the Government Chief Information Officer



WCAG - Principles

Guidelines for Principle 3 and 4

- 3.1 **Readable:** Make text content readable and understandable
- 3.2 **Predictable:** Make Web pages appear and operate in predictable ways
- 3.3 **Input Assistance:** Help users avoid and correct mistakes
- 4.1 **Compatible:** Maximise compatibility with current and future user agents, including assistive technologies



WCAG - Principles

Principle 3 – Understandable

- Example - Clear label with cue and error identification

The screenshot shows a Mac OS X-style window titled "Online Form". At the top, there is a navigation bar with links for Home, About, Contact, Services, Support, and FAQ. Below the navigation bar, the main content area has a heading "Online Form". There are two input fields: "Name:" followed by a text input box containing "Enter first and last name", and "Phone:" followed by a text input box containing "Enter phone area code and number". A blue oval highlights the "Name:" label and its corresponding input box.

Input assistance

The screenshot shows the same "Online Form" window as the previous one. The "Name:" field now contains "John Smith" and the "Phone:" field contains "2345678x". A red message "Please use only numbers in the phone field" is displayed above the "Phone:" label, enclosed in a red oval. The "Submit" button is located at the bottom right of the form area.

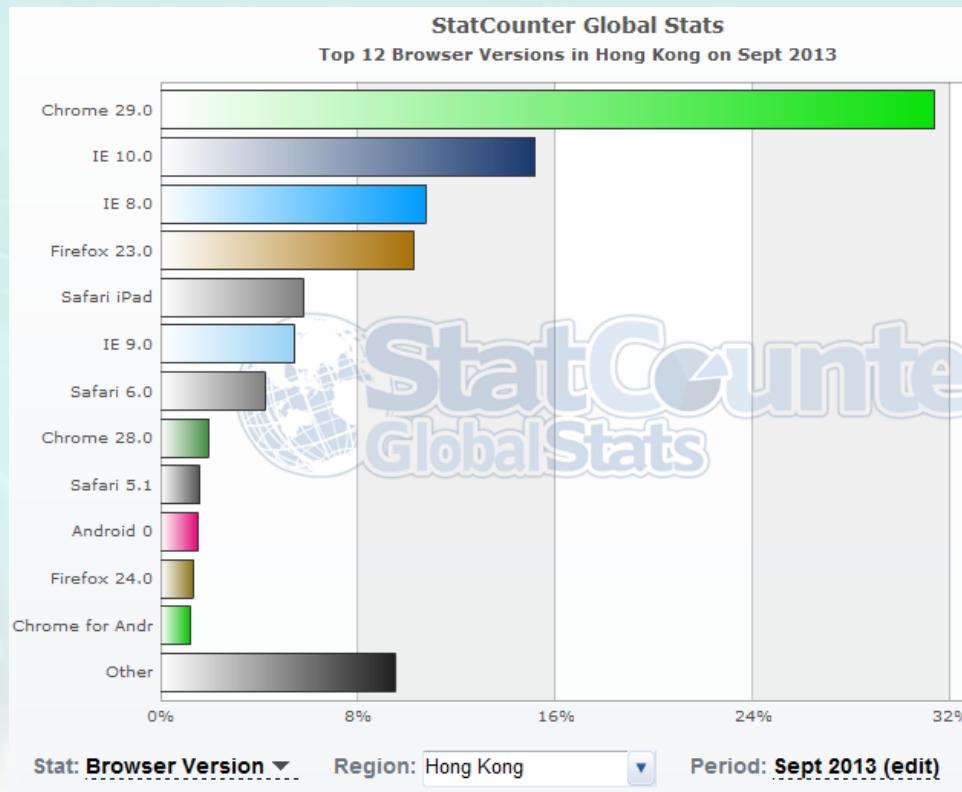
Error identification



WCAG - Principles

Principle 4 – Robust

- Compatibility with browsers



<http://gs.statcounter.com/>



WCAG - Conformance

- Latest version of W3C WCAG 2.0 promulgated in end 2008
- There are three Levels of conformance –

Level A 25 success criteria	Level AA +13 success criteria	Level AAA +23 success criteria
Basic	Recommended	Ideal

Level AA Conformance



WCAG - Conformance

- Example - Audio and Video Requirements

	Level A	Level AA	Level AAA
Pre-recorded Audio only	Text-transcript		Sign language
Pre-recorded Video only	Text-transcript / audio track		Sign language
Pre-recorded Video	Captions + (audio description / text transcript)	Captions + audio description	Extended audio description + Text description + Sign language
Live Video		Captions	
Live Audio only			Live text caption / provide a link to a text transcript of a prepared script



Overseas Government Practices

- Governments websites adopting WCAG

Country	Standard	Timeline to achieve standard
New Zealand	WCAG 2.0 Level AA	June 2010
United Kingdom	WCAG 1.0 Level AA	March 2011
Hong Kong	WCAG 2.0 Level AA	January 2013
Canada	WCAG 2.0 Level AA	July 2013
Singapore	WCAG 1.0 and key aspects of WCAG 2.0	December 2013
Australia	WCAG 2.0 Level A & AA	December 2014



Testing Techniques

1. Code scanning

- Many accessibility issues can be detected automatically using specialist software and tools
- Example tools –
 - AChecker
 - WAVE
 - PDF Accessibility Checker



Code Scanning

- <http://achecker.ca/checker/index.php>

The screenshot shows the ACHECKER Web Accessibility Checker interface. At the top, there are 'Login' and 'Register' links, and the ACHECKER logo. Below the logo is a sub-header 'Web Accessibility Checker'. The main form has a title 'Check Accessibility By:' with three options: 'Web Page URL' (selected), 'HTML File Upload', and 'Paste HTML Markup'. Below this is an 'Address:' input field with a 'Check It' button. To the right of the input field is a large yellow callout box containing the text 'Enter webpage address for testing'. Underneath the input field is a section titled 'Options' with checkboxes for 'Enable HTML Validator', 'Enable CSS Validator', and 'Show Source'. Below this is a section titled 'Guidelines to Check Against' with a list of accessibility standards. The 'WCAG 2.0 (Level AA)' option is selected. To the right of this section is another yellow callout box containing the text 'Select level of accessibility'. At the bottom of the page, there is a welcome message: 'Welcome to ACHECKER. This tool checks single HTML pages for conformance with accessibility standards to ensure the content can be accessed by everyone. See the Handbook link to the upper right for more about the Web Accessibility Checker.' and a copyright notice: 'Web site engine's code is copyright © 2011'.



Code Scanning

- Sample report - no known problem

The screenshot shows the ACHECKER® Web Accessibility Checker interface. At the top, there are links for 'Login' and 'Register'. The main title is 'Web Accessibility Checker'. On the right, there is a logo with a person icon and the text 'Web Accessibility Checker'. Below the title, there is a form titled 'Check Accessibility By:' with three options: 'Web Page URL', 'HTML File Upload', and 'Paste HTML Markup'. The 'Web Page URL' option is selected, and the address field contains 'http://www.gov.hk'. A 'Check It' button is below the address field. To the left of the address field, there is a link 'Options'. At the bottom of the page, there is a section titled 'Accessibility Review' with the sub-section 'Accessibility Review (Guidelines: WCAG 2.0 (Level AA))'. It includes export options for 'PDF' and 'Report to Export: All' with a 'Get File' button. Below this, there are tabs for 'Known Problems(0)', 'Likely Problems (2)', 'Potential Problems (505)', 'HTML Validation', and 'CSS Validation'. A green message box with a checkmark icon says 'Congratulations! No known problems.'.



Code Scanning

- Sample report – known web accessibility problem

Accessibility Review

Accessibility Review (Guidelines: WCAG 2.0 (Level AA))

Known Problems(9) Likely Problems (1) Potential Problems (215)

1.1 Text Alternatives: Provide text alternatives for any non-text content

Success Criteria 1.1.1 Non-text Content (A)

Check 1: img element missing alt attribute.

Repair: Add an alt attribute to your img element.

✖ Line 299, Column 55:

2.4 Navigable: Provide ways to help users navigate, find content, and determine where they are.

Success Criteria 2.4.4 Link Purpose (In Context) (A)

Check 174: Anchor contains no text.

Repair: Add text to the a element or the title attribute of the a element or,

✖ Line 228, Column 39:



Testing Techniques

2. Visual review

- A simple look at a website can reveal many potential web accessibility issues for persons with disabilities
 - Can the content be easily read?
 - Is the text too small?
 - Does it use pale coloured text on a pale background, making the text hard to read?
 - Move around the webpage using just a keyboard. Can we access all the links and functions?
- Example tools –
 - Vischeck
 - Colour Contrast Check



Vischeck

- <http://www.vischeck.com/vischeck/>
- showing you what things look like to someone who is colour blind



www.ogcio.gov.hk

How the webpage looks to a person with a red/green color deficit (deutanopia)



政府資訊科技總監辦公室
Office of the Government Chief Information Officer



Colour Contrast Check

- http://snook.ca/technical/colour_contrast/colour.html
- Text have a contrast ratio of at least 4.5 : 1 between the background and the foreground

Foreground Colour: #007897

Red:

Green:

Blue:

Hue (°):

Saturation (%):

Value (%):

Background Colour: #F1F1F1

Red:

Green:

Blue:

Hue (°):

Saturation (%):

Value (%):

Results

This is example text. **Some of it bolded.** *Some of it italicized.*

Brightness Difference: (>= 125)	153.34!
Colour Difference: (>= 500)	452
Are colours compliant?	sort of..
Contrast Ratio	4.5
WCAG 2 AA Compliant	YES
WCAG 2 AA Compliant (18pt+)	YES
WCAG 2 AAA Compliant	NO
WCAG 2 AAA Compliant (18pt+)	YES



Testing Techniques

3. Manual testing with screen readers

- Navigate website and access the content through the screen readers
- Example tools –
 - Jaws
 - NVDA
 - VoiceOver



Testing Techniques

4. Manual testing with other assistive technologies

- Screen magnification tools and voice control tools
- Example tools –
 - ZoomText
 - Dragon Naturally Speaking



Testing Techniques

5. Human testing

- The most thorough approach to ensure web accessibility is to test a website by persons with disabilities
- Some organisations supporting persons with disabilities offer human testing services



Agenda

- 1. What is Web Accessibility?**
- 2. Common Pitfalls**
- 3. Why Web Accessibility?**
- 4. International Standards and Testing Techniques**
- 5. Government Policy**
- 6. Web Accessibility Campaign**



Policy in Hong Kong

- Government has been implementing web accessibility guidelines since 1999
- Internal guidelines has been updated to follow latest international standard - W3C WCAG 2.0
- Require all government websites to achieve [W3C WCAG 2.0 Level AA](#) conformance



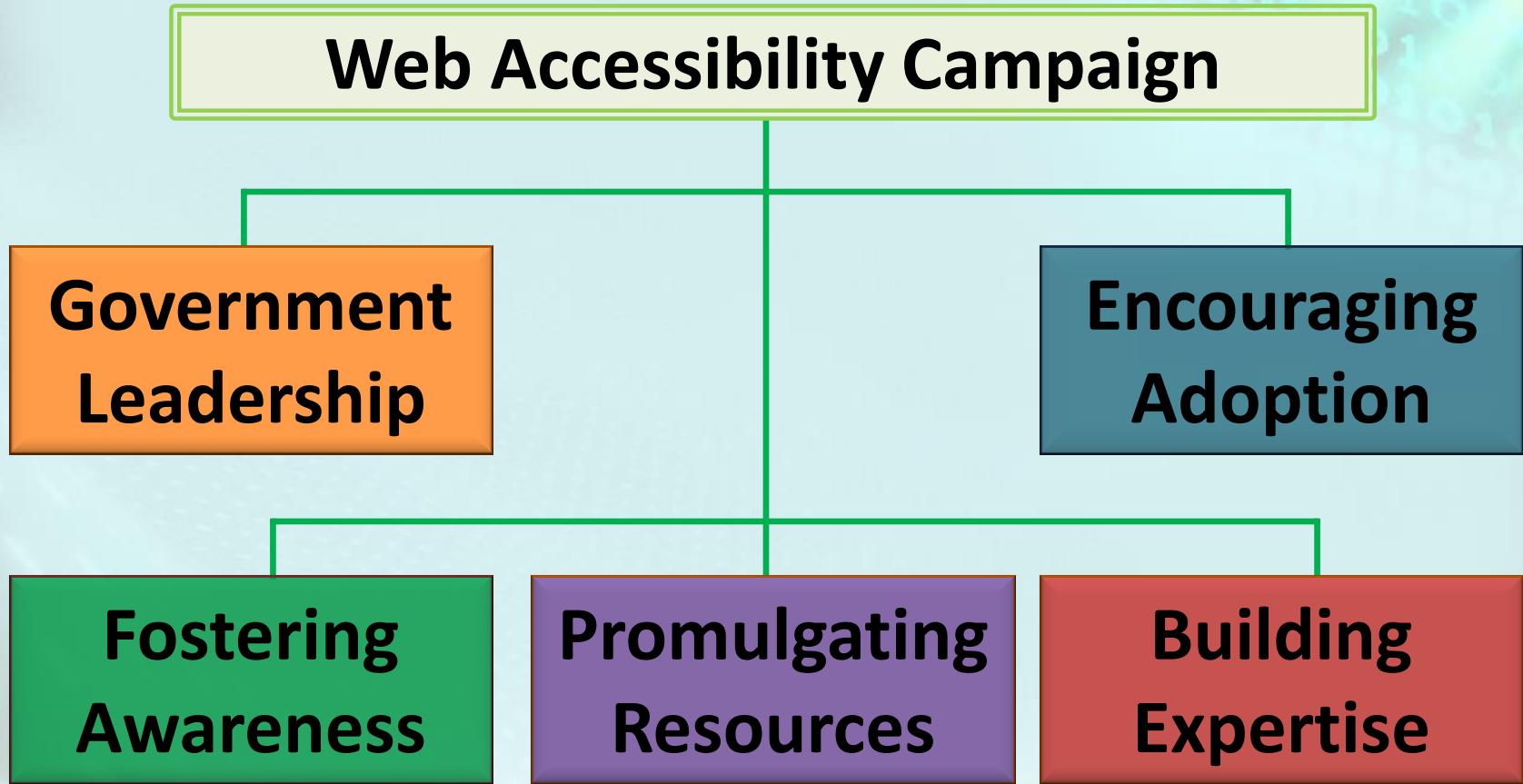
Policy in Hong Kong

Web Accessibility Campaign since October 2011

- To facilitate access to online information and services for all people of the community including persons with disabilities
- To promote wider adoption of web accessibility design in both public and private websites



Multi-pronged Approach



Government Leadership

Government Websites



Public-sector organisations



Fostering Awareness

Seminars & Workshops



Over 5000 participants



政府資訊科技總監辦公室
Office of the Government Chief Information Officer



Promulgating Resources

Webforall Portal



www.webforall.gov.hk

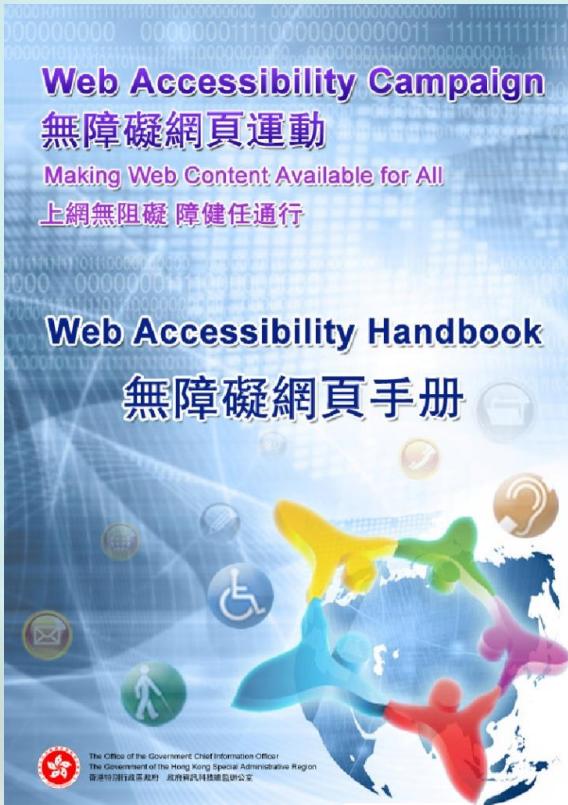
- Live-examples of success criteria (WCAG 2.0 Level AA)
- Presentation slides of seminars / technical workshops
- Government's best practices
- Web Designers' Corner
- Lawsuit reference cases

The screenshot shows the 'Web Accessibility Campaign' section of the website. It features a banner with the text 'Web Accessibility Campaign' and '無障礙網頁運動' (Accessible Web Content Movement). Below the banner, there's a 'WHAT'S NEW' section with a link to download accessible web templates. To the right is a sidebar titled 'Related Links' containing links to various resources like 'Web Accessibility Campaign', 'Guidelines on Dissemination of Information through Government Websites', and 'Web Accessibility Recognition Scheme'. The main content area also includes sections for 'Web Accessibility Campaign', 'Recognition Scheme', 'Web Accessibility Handbook', and 'Web Accessibility Seminars'.



Promulgating Resources

Web Accessibility Handbook



www.webforall.gov.hk/en/wahandbook

- Designed for senior executives and management
- Introduce WCAG 2.0 and success criteria
 - Web Accessibility Concept
 - How Persons with Disabilities use Websites
 - Illustration of Each Criterion
 - Testing Strategy
 - Useful Reference

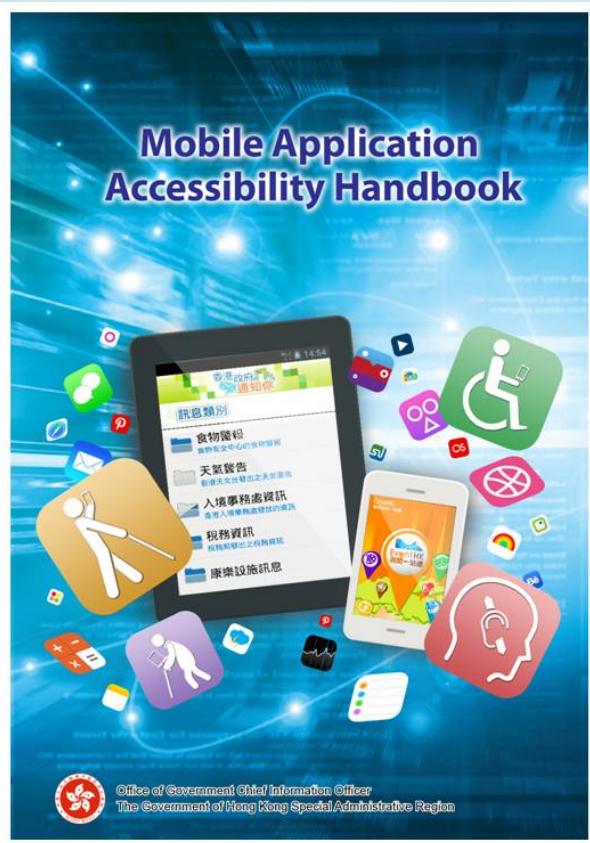


政府資訊科技總監辦公室
Office of the Government Chief Information Officer



Promulgating Resources

Mobile Application Accessibility Handbook



- Designed for mobile application owners and developers
- Based on the WCAG 2.0 and feedbacks collected from local disability groups
 - Basic Concept
 - Best Practices
 - Checklist for Developers
 - Testing Strategy
 - Useful Reference



www.webforall.gov.hk/en/maahandbook



政府資訊科技總監辦公室
Office of the Government Chief Information Officer



Promulgating Resources

Accessible Webpage Templates

- www.webforall.gov.hk/template
- Sample codes incorporated with essential web accessibility features, e.g.

The screenshot shows a webpage for the 'Web Accessibility Campaign'. Several purple arrows point from callout boxes on the left to specific features on the page:

- 1. Provide “Skip To Content”**: Points to the 'Skip to content' link at the top left of the page.
- 2. Provide meaningful alt text for images**: Points to the 'Alt text' for images in the 'Related websites and activities' section.
- 3. Allow to play or pause the auto-scrolling latest news**: Points to the video player for the latest news.
- 4. Provide User-initiated background audio**: Points to the 'Open background audio' link in the top right corner.
- 5. Allow text resize**: Points to the text resize icons ('A A A') in the top right corner.
- 6. Provide keyboard accessible menu**: Points to the keyboard accessibility icon in the top right corner.
- 7. Provide transcript for video**: Points to the 'Download video transcript' link below the video player.
- 8. Provide sufficient colour contrast**: Points to the color contrast checker icon in the bottom right corner.

Building Expertise

Incorporate Web Accessibility into ICT curricula



The University of Hong Kong



Encouraging Adoption

Web Accessibility Recognition Scheme since 2012

Objectives

- Recognise efforts and achievements in adoption of web accessibility design
- Raise awareness in the community and encourage wider adoption



Web Accessibility Recognition Scheme

Structure

- Co-organise with the Equal Opportunities Commission
- Led by an Advisory Committee comprising members from
 - Office of the Government Chief Information Officer (政府資訊科技總監辦公室)
 - Equal Opportunities Commission (平等機會委員會)
 - Labour and Welfare Bureau (勞工及福利局)
 - Non-profit making organisations —
 - Visual Impairment
 - Physical Impairment
 - Hearing Impairment
 - Members from ICT Industry



Web Accessibility Recognition Scheme

Framework

- Website / Mobile Apps^{NEW!} Streams
- Gold / Silver Awards
- My Favourite Website Awards^{NEW!}
- Annual event
- Open to all local enterprises and organisations, including companies, non-government organisations (NGOs), educational institutions and public sector organisations



Web Accessibility Recognition Scheme

Two-tier Accreditation System

- **1st tier (Silver Award)**
 - Websites incorporating basic web accessibility features
- **2nd tier (Gold Award)**
 - Websites incorporating basic and key features
- Accreditation logos will be granted to awardees for display in their accredited websites



Web Accessibility Recognition Scheme

Highlights of Awards Presentation Ceremony of the Web Accessibility Recognition Scheme 2012-13



http://www.ocgio.gov.hk/tc/community/web_accessibility/recognition_scheme/video/wars_video3.mp4



政府資訊科技總監辦公室
Office of the Government Chief Information Officer



What you can help?

- Observe latest guidelines and standards
- Adopt web accessibility designs in institution
- Help business partners or clients aware of the importance and relevant skills
- Encourage and incorporate web accessibility elements in design stage in information and communication systems, products and services
- Uphold the professional ethics



Q & A

Web Accessibility Campaign Programme Office

Email : wac@ogcio.gov.hk

Tel. no. : 2582 6079



Thank you!



政府資訊科技總監辦公室
Office of the Government Chief Information Officer

