



“VCAN Make IT Accessible”

*In Support of Government of India's "Accessible India Campaign" with ICT
as a Focus –*

Preliminary Report

prepared in collaboration with

The Bengal Chamber of Commerce and Industry (BCC&I)

Submitted at the Panel Discussion

on

28th November 2015

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AIC (Accessible India Campaign) about the project

Accessible India Campaign is the nationwide flagship campaign for Persons with Disabilities. Universal accessibility is critical for enabling all to gain access for equal opportunity and live independently and participate fully in all aspects of life in an inclusive society. The opportunities and access is required for the growth and development to lead productive, safe and dignified lives.

The internet/web is an increasingly important resource in many aspects of life: education, employment, government, commerce, health care, recreation, and more. It is essential that the internet/ web be accessible in order to provide equal access and equal opportunity to people with disabilities. An accessible Web can also help people with disabilities more actively participate in society.

More specifically, Web accessibility means that people with disabilities can perceive, understand, navigate, and interact with the Web, and that they can contribute to the Web. Web accessibility also benefits others, including older people with changing abilities due to aging. Web accessibility encompasses all disabilities that affect access to the Web, including visual, auditory, and physical, speech, cognitive, and neurological disabilities.

The Government departments and authorities are attempting for complete transition from manual to electronic delivery of services. In the implementation of all the e-governance goals of the Indian Government, website inaccessibility is one of the biggest barriers. In India, there are many demographic groups those are usually marginalized in the mainstream of websites like the illiterates or the rural population who may be only fluent in vernacular or the disabled persons. Digital interface design by the government becomes crucial in the actuation of its services and a marker for the efficacy of its governance.

ICT (Information and Communication Technologies) part of Accessibility India

Today, the linkage between disability and development is getting increasingly recognized in light of the growing discourse on the post-2014 development agenda. However, not many are talking about the role of technology and ICT in this whole discourse. Accessibility is a huge concern for the disability rights movement, especially so in the countries of the developed world.

The “Accessible India” campaign can be a magic wand, which may eliminate obstacles and barriers to indoor and outdoor facilities including schools, medical facilities and work places. These would include buildings, footpaths, curb cuts and obstacles that block the flow of pedestrian traffic. Transportation systems and information and communication, TV programs

would also have sign language and captions making it accessible to all. The new initiative will enable the youth with disability to have equal opportunities to contribute and grow.

Objectives

The main motive of the campaign is to provide equal opportunities and independence to persons with disabilities and provide them best platform which is full in all aspects of life in an inclusive society. ***Over a billion of the world's population has some form of disability. They are the world's largest minority.*** This figure is on a constant rise due to increase in the population as well as the medical advances that have decreased mortality due to old age. Studies show that the world's population is increasingly becoming older and at least one billion people belong to the older aged category. It is expected that older people may acquire certain disabilities due to age related conditions. Making resources and information accessible to persons with disabilities is of great importance in this scenario as more and more people will start requiring accessibility.

As per the World Bank estimates included in the 2011 "World Report on Disability", 20 % of the poorest people in the world are disabled and occupy the most marginalized and disadvantaged sectors of society. Furthermore, due to discrimination or incapacity to perform certain work, people living with disabilities have a difficult time finding employment, with unemployment rates reaching 80% for disabled people in the working age group.

Persons with disabilities are experiencing a lack of access to technologies due to visual, hearing, mental, and/or other impairments that make it difficult to operate various devices. Other groups facing accessibility issues are illiterate and elderly populations. According to the United Nations Educational, Scientific and Cultural Organization (UNESCO) study in 2010, there are 796 million adults in the world that are illiterate, most of whom reside in the developing world. This population faces barriers to text based communication. Elderly persons are also marginalized from access to technologies much the same way as persons with disabilities due to problems of physical access and marginalization.

It is these groups that would most benefit from technological innovations and solutions that can empower and enhance societal inclusion and participation through providing access to knowledge and information, a medium to make one's voice heard, as well as access to business and administrative processes within the state.

The campaign targets three separate verticals for achieving universal accessibility

- The built up environment,
- Transportation eco-system
- Information & communication eco-system.

The campaign has ambitious targets with defined timelines and will use IT and social media for spreading awareness about the campaign and seeking commitment / engagement of various stakeholders.

Our objective is to find out ways for navigating the essential civic services websites by all sections of the society, identifying the gaps, providing solutions to deal with the gaps, and easy way for Implementation of the solutions.

Demographic changes -growth trajectory of physically challenged and senior citizens

Population ageing — the phenomenon by which older people become a proportionally larger share of the total population — is inevitable when people live longer and choose to have fewer children. Not surprisingly, therefore, patterns of declining fertility and mortality over the past two decades have led to significant shifts in the age structure of the world’s population.

The UN estimates that the global population of people aged 65 years and older will grow from 7.6% in 2010 to 11.7% in 2020 to 16.2% in 2050 with the population over 80 years also increasing - from just 1.5% in 2010 to 4.3% in 2050. Europe today has the oldest population in the world, and is expected to continue to experience growth in its older population.

Older people are the world’s fastest-growing age group. In 2014, the annual growth rate for the population aged 60 years or older was almost triple the growth rate for the population as a whole. In absolute terms, the number of people aged 60 years or older has almost doubled between 1994 and 2014, and people in this age group now outnumber children under the age of 5. From 1994 to 2014, Asia added the largest number of older people (225 million), accounting for almost two thirds (64 per cent) of global growth.

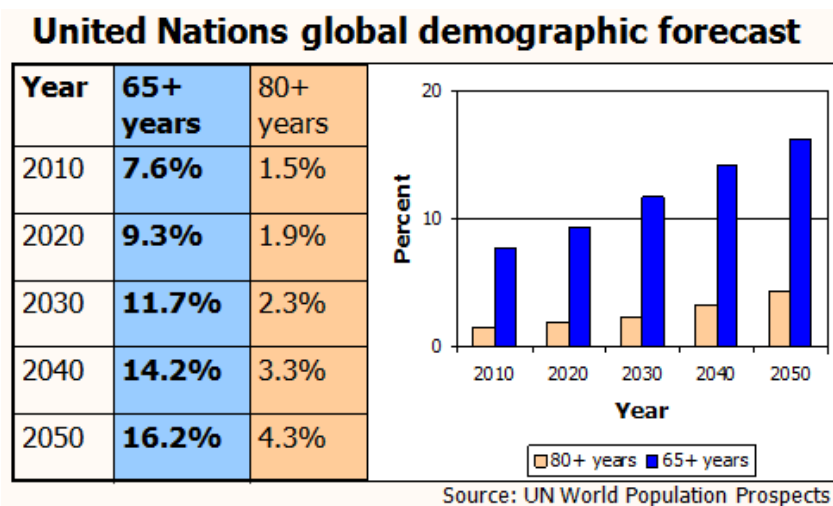


Figure 1: UN global demographic forecast

On the other hand on an average, currently around 10 per cent of the total world's population, or roughly 650 million people, live with a disability and this number is likely to increase in the near future due to various factors, according to the World Health Organization (WHO). Disability rates are significantly higher among groups with lower educational attainment in the countries of the Organization for Economic Cooperation and Development (OECD), according to the OECD Secretariat. On average, 19 percent of less-educated people have disabilities, compared to 11 percent among the better-educated. Disability affects hundreds of millions of families in developing countries.

The story for India is also not very different. Though India shall be the hub for younger generation for next decades the number of aged citizens is also growing in India.

The country's disabled population has increased by 22.4% between 2001 and 2011. The number of disabled, which was 2.19 crore in 2001, rose in 2011 to 2.68 crore—1.5 crore males and 1.18 crore females.

Rural areas have more disabled people than urban areas. In Maharashtra, Andhra Pradesh, Odisha, Jammu and Kashmir and Sikkim, the disabled account for 2.5% of the total population, while Tamil Nadu and Assam are among those where the disabled population is less than 1.75% of the total population, says the 2011 Census on the disabled.

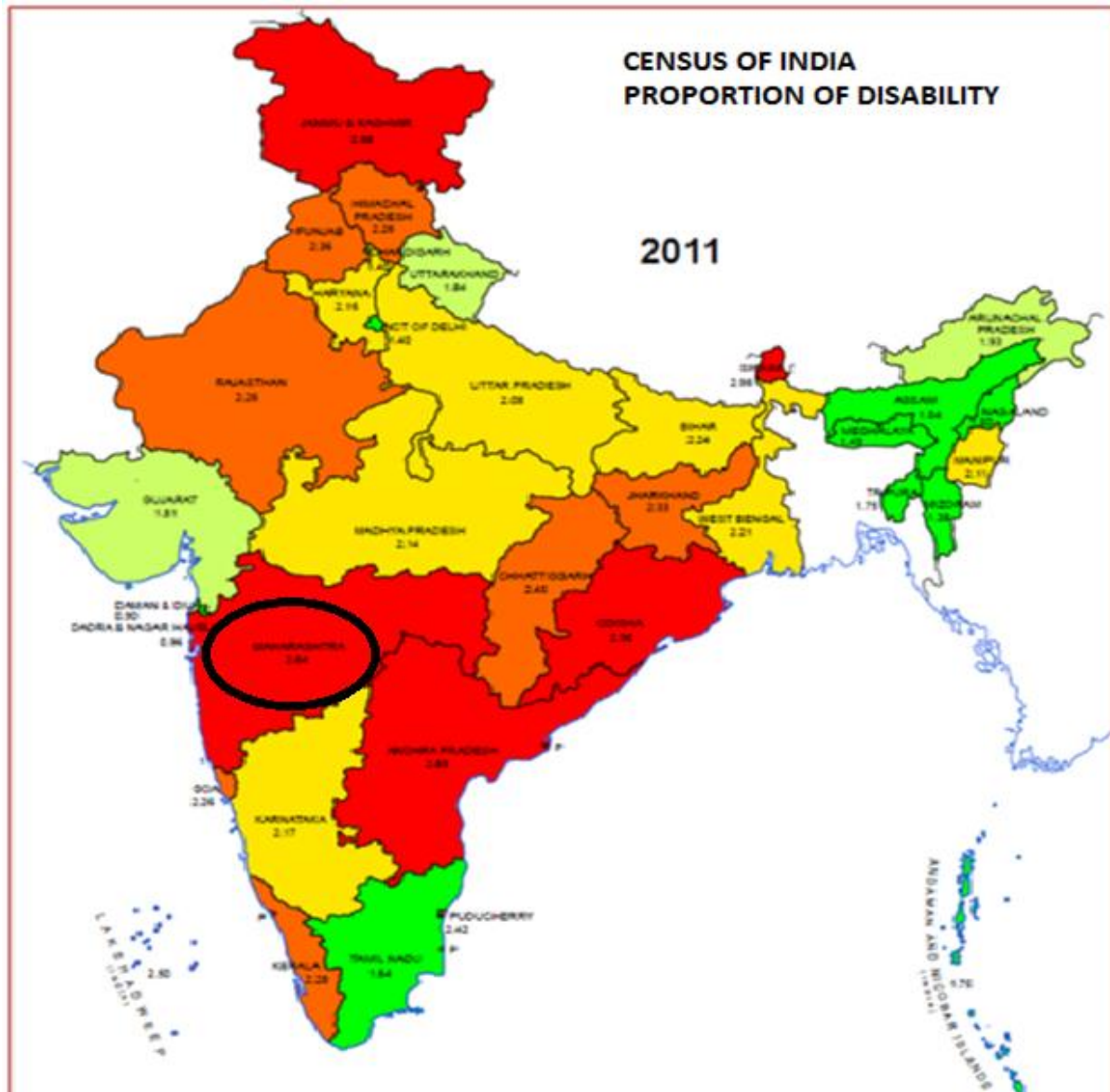
The growth rate of disabled population is more in urban areas and among urban females. The decadal growth in urban areas is 48.2% and 55% among urban females. Among scheduled castes it is 2.45%.

Most of the disabled are those with movement disability. According to the census, 20.3% of the disabled are movement disabled followed by hearing impaired (18.9%) and visually impaired (18.8%). Nearly 5.6% of the disabled population is mentally challenged, a classification introduced in the 2011 census.

Disabled Population by Sex and Residence India : 2011			
Percentage of Disabled to total population India, 2011			
Residence	Persons	Males	Females
Total	2.21	2.41	2.01
Rural	2.24	2.43	2.03
Urban	2.17	2.34	1.98
Percentage of Disabled to total population India, 2001			
Residence	Persons	Males	Females
Total	2.13	2.37	1.87
Rural	2.21	2.47	1.93
Urban	1.93	2.12	1.71

Source: C-Series, Table C-20, Census of India 2001 and 2011

Figure 2: Disable Population by Sex and total population of India in 2011



Percentage of Disabled Population to Total Population

- 1.75 and above
- 1.76 - 2.00
- 2.01 - 2.25
- 2.26 - 2.50
- 2.51 and above

Figure 3: Proportion of Disabled Population by as per census 2011

Use of the Web/ Mobile and other form of ICT

In modern society ICT is ever-present, with over three billion people having access to the internet. With approximately 8 out of 10 Internet users owning a Smartphone, information and data are increasing by leaps and bounds. This rapid growth, especially in developing countries, has led ICT to become a keystone of everyday life, in which life without some fact of technology renders most of clerical, work and routine tasks dysfunctional. The most recent authoritative data, released in 2014, shows "that Internet use continues to grow steadily, at 6.6% globally in 2014 (3.3% in developed countries, 8.7% in the developing world); the number of Internet users in developing countries has doubled in five years (2009-2014), with two thirds of all people online now living in the developing world."

ICT has yet to penetrate the remote areas of some countries, with many developing countries dearth of any type of Internet. This also includes the availability of telephone lines, particularly the availability of cellular coverage, and other forms of electronic transmission of data.

Favorably, the gap between the access to the Internet and mobile coverage has decreased substantially in the last fifteen years, in which 2015 is the deadline for achievements of the UN Millennium Development Goals (MDGs), which global leaders agreed upon in the year 2000, and the new data show ICT progress and highlight remaining gaps.

Change in abilities with age

Following is a brief list of some challenges faced by the aged people as they grow older

1. Difficulty in walking / climbing stairs
2. Require assistance of others with everyday work
3. Vision difficulty (partial or total)
4. Hearing difficulty
5. Using a wheelchair
6. Alzheimer's senility or dementia

Understanding differently able/older people's needs in ICT

Older adults value the role of ICTs in keeping them in touch with family and friends, using the internet for information searching, for hobbies and interests (such as researching family history), and to make the mechanics of daily life easier (such as online banking, shopping online, writing letters, and financial budgeting). For older people ICT can help them carry out daily activities as well as monitor their health, create social networks and increase participation in society and augment safety.

Persons with disabilities are now able to communicate with others online, taking e-learning courses and interacting with the instructor and other students through online discussion forums. Since, learners often find it hard to manage synchronous communication, they may experience problems working on the many elements active simultaneously during an online course. The moderator or facilitator of the course will therefore ensure that all learners understand and act on the information presented. The moderator will also monitor the relationship between what is happening on screen, what the presenter may be saying, and what is appearing in print.

ICT offers the old and young alike an opportunity to overcome social barriers for interaction and communication that can be caused by the lack of provision for impairments or lifelong limiting illness. ICT has also been identified as playing a significant role in offering severely disabled people an increased degree of independence in their everyday lives.

Solution guidelines/assistive technologies

The approach used by ICT and AT for developing students with disabilities is to adopt feasible techniques to attain maximum benefit from the use of ICT for students. To do so, it makes use of all forms of provision within special education settings as a result of national or regional policy.

Some of the approaches are:

- Direct training in disability cases, through specialists, developers, special education teachers and volunteers.
- Indirect training through communication with households and disabled parents.
- Exchange of expertise with the other interested agencies, universities, researchers and specialists.
- Implementation of special e-learning networks for disabled teachers and students to exchange lessons, courses and information among themselves.

There is now a general consensus that for students with disabilities to share in the benefits of new technology, the use of technology for students in the field of education has tremendous potential in alleviating particular problems associated with specific disabilities as well as making employment opportunities available for persons with an intellectual or physical disability, or visual or hearing impairment. This is achieved through specialized computer programs and models that enhance the capacity of the disabled, by sharing the teaching and learning skills, successes and challenges of fellow educators working with students with disabilities.

Alternatives for authorities while planning web and mobile interface

Standard websites do not provide the features and functions required to have a successful navigation and reading experience for everyone.

Needs for People with Disabilities



Extra consideration should be taken when preparing a website or mobile app for a person with a disability. This section will discuss four main disability types and their manifestations. Also discussed are the features and functionalities a person with each type of disability will need to successfully enjoy the benefits of Website or Mobile App.

▪ **Deaf and Hearing Impairments**

Definition and Manifestations

The term *deaf* refers to those who are unable to hear well enough to rely on their hearing and use it as a means of processing information.

Hearing Impairments and *Hard of Hearing* refer to those who have some hearing, are able to use it for communication purposes, and who feel reasonably comfortable doing so.

A person who is deaf or has a hearing impairment may experience low or no comprehension of auditory-based modes of communication.

Needs

A person who is *deaf* or has a *hearing impairment* would need a visual representation for all audio-based information. Features that assist with navigation, selection, error messages, and other informational alerts would need to be made available visually. For instance, a beep to signify low battery power, or to confirm cancellation of a book purchase would need to be complimented with an on-screen message.

▪ **Cognitive Disabilities**

Definition and Manifestations

Cognitive disability is a broad term used to encompass many different types of brain related disabilities including learning disabilities, autism spectrum disorders, psychological disabilities, and traumatic brain injuries. The manifestation of these disabilities can vary widely, but may include any of the following:

- A lack of close attention to detail resulting in mistakes or error
- Inability to follow instructions when completing a task
- Avoidance or dislike of activities that require a large amount of mental effort
- A lack of ability to build ideas and images from memory
- Difficulty comparing what is being read to what is already known

- Impaired memory, retrieval of information or comprehension
- Difficulty concentrating, organizing thoughts, solving problems, making decisions, or processing new information
- Fear of failure
- Indecisiveness

Needs

A person with a cognitive disability will benefit the most from a simple and straight forward user interface on their essential website. Menu choices should be clear and concise, using the language with which a user is most familiar. The ability to undo an error is key since many users disabilities may make a wrong selection will need to go back without concern, or may even fear breaking their device.

The use of recognition over recall when making a selection, such as book title, page location, font size, etc will improve a user's chance of success. The image of a book along with its title, will give users several cues when selecting a book to read.

Placement of the necessary complains form under the download menu is an example of poor labeling and placement of a menu item.

▪ Mobility Impairments

Definition and Manifestations

Mobility impairment refers to the inability of a person to use one or more of his/her extremities, or a lack of strength to walk, grasp, or lift objects. Mobility impairment may be caused by a number of factors, such as disease, an accident, or a congenital disorder and may be the result from neuro-muscular and orthopedic impairments.

Impaired strength, speed, endurance, coordination, manual dexterity; may result in need for alternative methods for access to academic tasks such as reading, writing, note taking, test taking and computing. Impaired range of motion and control of limbs; may result in need for alternative methods for access to academic tasks.

Needs

- Large, easy to press buttons for navigation and page turning would be preferable over swiping motions
- The ability to add an external keyboard or pointing device
- The ability to use a custom stylus for interacting with the touch screen or for pressing buttons
- Ability for the reader to act on voice commands

▪ **Vision Impairments**

Definition and Manifestations

Blindness is defined as the loss of useful sight. A person is blind if his or her vision, with the use of a correcting lens, is 20/200 or less in the better eye. A person who has tunnel vision of 20 degrees or less in the better eye is also considered blind.

Those with blindness will have difficulty accessing instructional materials, difficulty navigating in new environments (both physical and electronic), as well as difficulty identifying items and distinguishing between similar items.

Low vision is a term that denotes a level of vision that is 20/70 or worse and cannot be fully corrected with conventional glasses. Low vision differs from blindness in that a person with low vision has some useful sight as opposed to no sight.

Those with low vision will have difficulty recognizing objects from a distance or up close; this includes an inability or low level of ability in differentiating between colors or labels. They may experience trouble seeing screens and slower navigation of newer environments.

Needs

A user with blindness or low vision will benefit from many of the following features:

- Ability to adjust font size and typeface
- Ability to adjust screen brightness
- Ability to adjust color contrast
- Text-to-Speech when reading a book
- Talking menus for navigation of the device/website in case of online form fill up. Focus will need to be announced and updated as the user navigates through the device.
- Physical buttons will have to be marked or mapped appropriately, so that users who cannot see them will understand what buttons they are pressing.
- Audible feedback when pressing a button will greatly help when using a device.
- Undo features will allow mistakes to be undone without penalty, for instance when purchasing a book.
- Audio based cues for important information, such as low battery power, existence or loss of Wi-Fi service, error messages, and so on.

Some gaps that need investigation/Further Research

- Impact of hearing loss on multimedia use
 - Cognitive decline and page comprehension
 - Use of social networking sites and applications
 - Use of assistive technologies by older people
-
- Hearing loss and multimedia - only a little research on hearing loss and use of multimedia on the Web has been done so far. While the use of multimedia is rapidly increasing on the Web. What is the implication for older people with hearing loss combined with other age-related impairments?
 - Cognitive decline - the impact of mild cognitive impairment (MCI), including short-term memory loss and distractibility as well as "change blindness" (noticing small changes within a dynamic web page), are areas that require significantly more research in order to better understand the requirements and identify potential solutions both in terms of site navigation and page comprehension.
 - Social networking - these highly dynamic websites and applications require both technical as well as usability solutions in order for them to be usable by older people. More research in this area will inform design requirements for these as well as for many more applications and user groups.

Assistive technologies and adaptive strategies - there is little documentation about the use of adaptive strategies and assistive technologies by older people, despite their potential benefit to this significant market group. More research is needed on how these solutions can be made more affordable, available, and intuitive for adoption by older people.

Analysis of various websites and relevant case studies

We have done some quick review of the following important websites and tried to find out how accessible they are

Sr. No.	Organisation Name	Website	Is the information in the websites easy for people to understand	Rating
1	Municipal Corporation of Greater Mumbai	http://mcgm.gov.in	1. The scrolling information is difficult to read, 2. Website is quite clumsy, 3. for each click, language needs to be set 4. links are not opening	60.49%
2	Mumbai Police	https://mumbaipolice.maharashtra.gov.in	1. The running information is quite difficult to read 2. words are small to read 3. Articles should be in visible place	73.95%
3	Mumbai Police - Traffic Division	https://trafficpolice.mumbai.maharashtra.gov.in/	Site under maintenance	42.20%
4	Maharashtra Transport Commission	www.mahatranscom.in	1. Search option is not available, 2. Words are small to read 3. Attachments are in Marathi language 4. Options are in Marathi some places	81.53%
5	Maharashtra Fire Services (Fire Brigade)	www.mahafireservice.gov.in	1. Blue words on Blue back ground may create difficulty	73.94%
6	Election Commission of India - Citizen Services	http://eci-citizenservices.nic.in	The scrolling information is difficult to read	37.65%
7	Chief Electoral Officer - Maharashtra	https://ceo.maharashtra.gov.in	1. page is not utilized properly, 2. icons (home, PDF electorsal roll, contact us, etc..) are difficult to see for colour contrast 3. The "note" template is changing language so fast, that one couldn't read it	48.86%

Sr. No.	Organisation Name	Website	Is the information in the websites easy for people to understand	Rating
8	Maharashtra State Election Commission	https://mahasec.maharashtra.gov.in/	1. Language change option is not visible easily, 2. words are small to read	67.81%
9	MCGM Pothole Tracking Website	http://www.voiceofcitizen.com	1. The running information is difficult to read, 2. Icons need to be highlighted differently 3. Hyperlink tabs are looking scattered	NA
10	Mumbai City Citizens Portal	http://mumbaicitysetu.org/	1. words are small to read	68.07%
11	Mumbai City District Collector	http://mumbaicity.gov.in/	1. search option is not available, 2. icons need to be large & highlighted 3. website is not looking well decorated	NA

Analysis done through Similarweb.com

Case Studies

For developing clarity on where the scope of improvements are, we have cited two benchmarking cases which entails two of the most interacted websites of Mumbai and are also considered to be the life line of the citizens of Mumbai in the civic services arena; namely Municipal Corporation of Greater Mumbai (MCGM) viz-a-viz New York City Authority (NYC) and Mumbai police vs City Police of London.

Case study 1: Municipal Corporation of Greater Mumbai (MCGM) & New York City Authority (NYC)

Mumbai and New York are both thriving business districts, both are having cosmopolitan characteristics and active city administration. For comparison our main focus was accessibility and user experience. Normally, developed countries follow the global standard created by W3C (World Wide Web Consortium) for accessibility named as Web Content Accessibility Guidelines (WCAG) 1.0 and later version of 2.0 which has twelve reference points for more details please visit <http://www.w3.org/WAI/intro/wcag>.

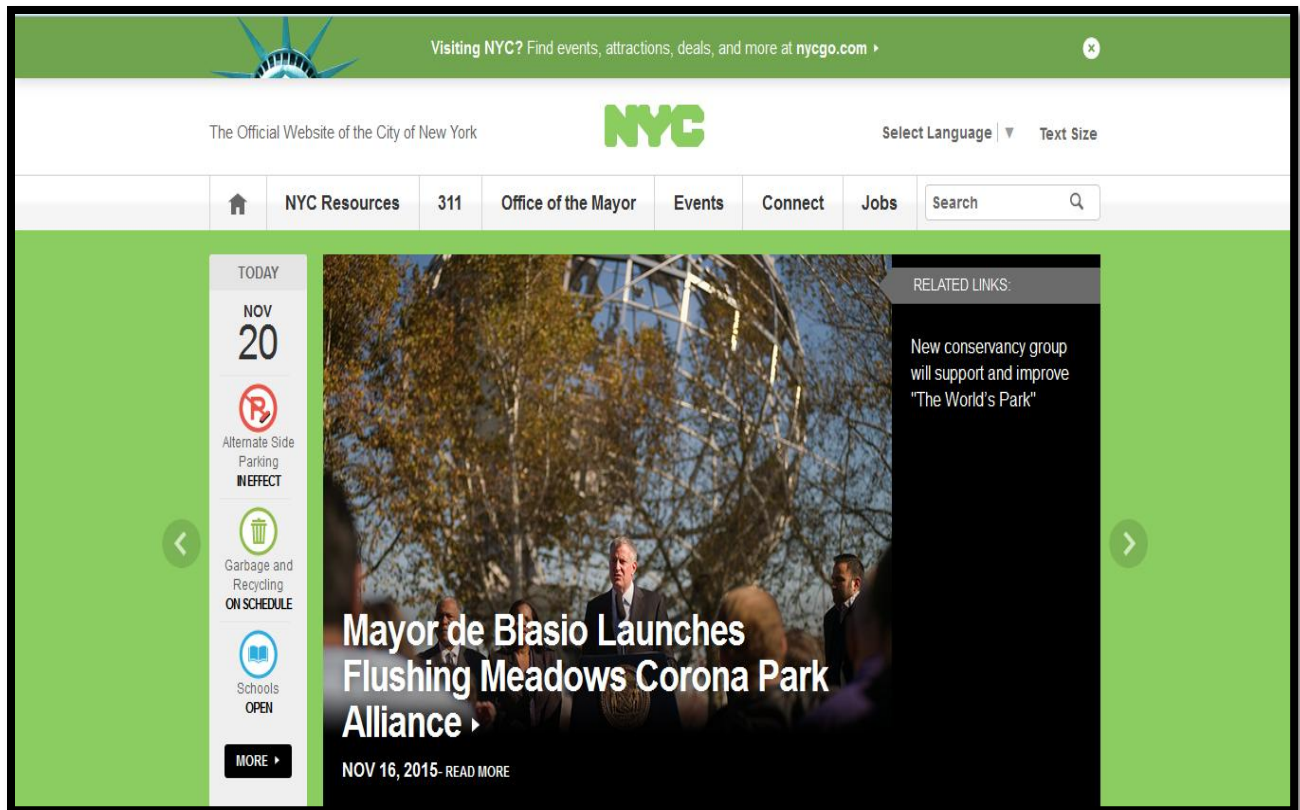
Municipal Corporation of Greater Mumbai website Vs New York City Official Website as an example of betterment...

Home page of Municipal Corporation of Greater Mumbai Website

The screenshot shows the homepage of the Municipal Corporation of Greater Mumbai. The header includes the logo and the name in Marathi (बृहन्मुंबई महानगरपालिका) and English (Municipal Corporation of Greater Mumbai). A navigation bar contains links for various services. The main content area features a central news section with a red box highlighting a message about a system upgrade: "Capital Vantage System will not be available on Sunday, 22nd November, 2015. We are currently upgrading our system. Please use Internet Explorer only for better experience." Below this, there are four columns of content: a sidebar with links, a central news section with a red box highlighting a message about a system upgrade, and a footer with 'myGov' and 'My Gov-Feedback of Parking Policy'.

- Scrolling information are difficult to see
- Too much words, fewer graphics
- Words are pretty small for viewing and fonts are not standardized

Home page of New York City Official website



- Simple, clear, prominent website.
- Colorful and attractive
- Fonts are standardized

We are comparing Accessibility (How accessible the website is to mobile and disabled users & User Experience (How Satisfying the website is likely to be for users) from two sites:



The following tests contribute to this score:

- 0.0 Headings
- 0.0 Code quality
- 3.0 Mobile
- 9.0 Internal links
- 10 Page titles
- 10 URL format

ACCESSAIBILITY

The following tests contribute to this score:

- 5.0 Code quality
- 5.2 URL format
- 5.3 Internal links
- 5.4 Headings
- 10 Mobile
- 10 Page titles

The following tests contribute to this score:

- 0.0 Facebook page
- 0.0 Google+ page
- 0.0 Twitter
- 0.0 Printability
- 0.0 Popularity
- 3.0 Mobile
- 4.6 Server behaviour
- 7.4 Amount of content
- 9.0 Internal links
- 9.6 Images
- 10 URL format
- 10 Freshness

USER EXPERIENCE

The following tests contribute to this score:

- 0.0 Google+ page
- 0.0 Popularity
- 5.2 URL format
- 5.3 Internal links
- 8.4 Amount of content
- 9.7 Server behaviour
- 10 Facebook page
- 10 Twitter
- 10 Mobile
- 10 Images
- 10 Printability
- 10 Freshness

0.0

Headings



No pages were found to be using defined headings. This means that users and search engines may find it harder to determine the content of this website's page. Correctly defined headings aid accessibility and are particularly important for search engine optimisation.

action **address** announce announces back **blasio**
borough bratton build century check **city** commissioner
common **complaint** complete development
dropdown elected **enter** events existing faqs find
fire getalarmednyc grow hall health home **housing** indictment
industrial **info** initiatives jobs launch local manufacturing **mayor**
number **official** officials opportunity payment plan
program programs public **requestrequests**
robot safety scoop search **selectservice**
services specific **status** stay today touch traffickers unveil
vance verify **website** york **your**

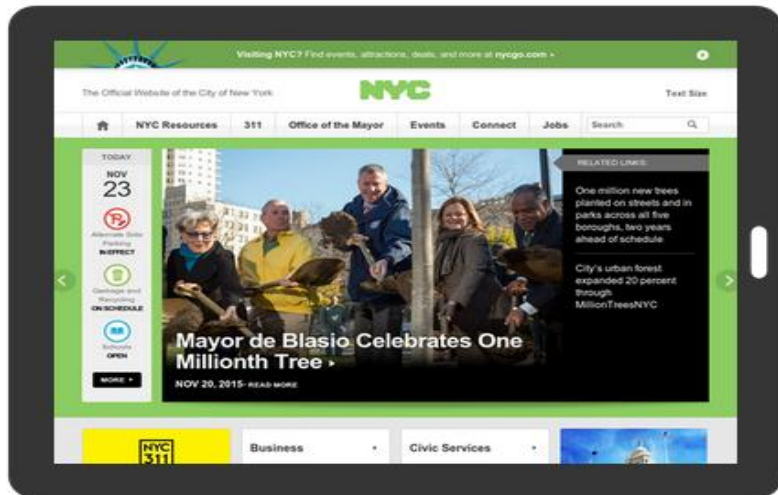
✓ All pages were found to use defined headings. This is excellent as it allows visitors and search engines to summarise the content of webpages quickly. Correctly defined headings aid accessibility and are particularly important for search engine optimisation.

3.0 Mobile



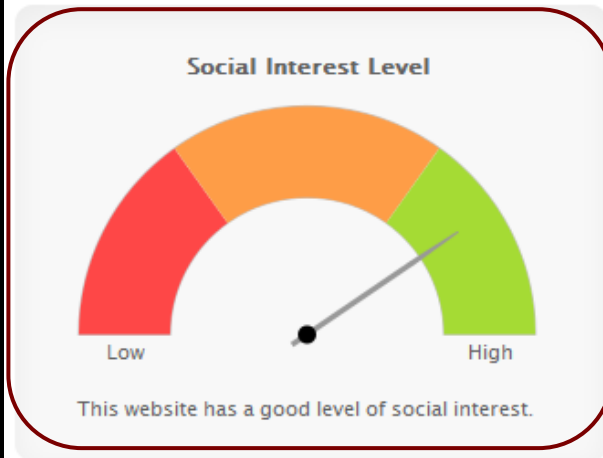
✘ None of this website appears to be fully optimised for viewing on a mobile or tablet (using CSS media queries). It is important to make sure your content can be viewed easily across a wide range of devices as a growing percentage of web browsing is now done on phones and tablets.

10.0 Mobile




✔ All of this website appears to be optimised for viewing on a mobile phone or a tablet.


8.1 Social interest



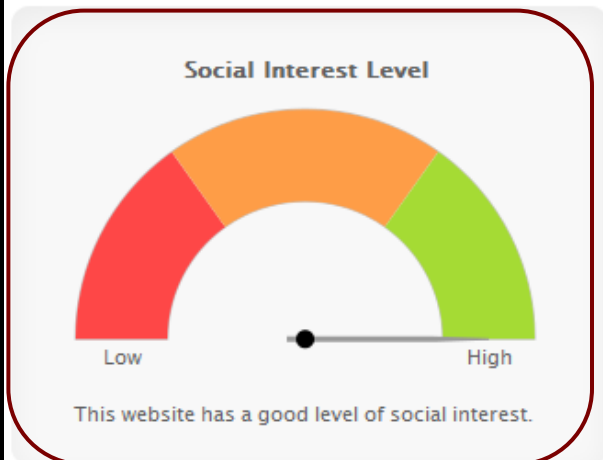
 186 tweets

 1,043 likes


 22 +1s


 We found 186 Tweets, 1,043 Facebook likes and 22 Google +1s for the 5 pages we tested.


10.0 Social interest



 23,635 tweets

 15,840 likes

 92,416 +1s

 We found 23,635 Tweets, 15,840 Facebook likes and 92,416 Google +1s for the 5 pages we tested.

10.0 Incoming links



9,996
pages link to this website



1,282
domains link to this
website



There are 9,996 pages on 1,282 domains linking to this website. The volume and quality of incoming links is known to influence a website's search engine ranking.

10.0 Incoming links



5,494,519
pages link to this website



8,715
domains link to this
website



There are 5,494,519 pages on 8,715 domains linking to this website. The volume and quality of incoming links is known to influence a website's search engine ranking.

Key takeaways from the above analysis

- a) During the process of developing the MCGM website, the accessibility scope of physically challenged or senior citizens were given minimum consideration, may be due to lack of awareness and lack of established standards in India.
- b) Use of images and sign as other mode of communication is not very prominent.
- c) Visual appeal was not considered during the development of the website.
- d) Rendering of the website is not appropriate for different electronic media like mobile or tab. This is a very important parameter keeping in mind the progress of mobile devices as touch point.
- e) In spite of enough interest in social media on issues related to MCGM. Social connectivity is absent as no facebook or twitter handle can be found in the web.
- d) Hence, there is a gap between expectation from society and the delivery in the digital sphere.

Case study 2: Mumbai Police website & London Police Website

We have used standard web tool nibbler to compare the first five pages of both the sites for benchmarking and the found some interesting insights. Our main consideration was accessibility and user experience. Here in this case study we found a declaration by London city police that they follow the guidelines of W3C accessibility guidelines 1.0. whereas any such intension is not mentioned in Mumbai Police website.

Home page of Mumbai Police website

Maps | Important Links | FAQs | Emergency Numbers

MUMBAI POLICE

CUSTODIANS OF YOUR TRUST

About Us | Press Release | Help Us | Special Units | Safety Tips | Initiatives | Licensing Unit | Downloads | Contact Us

Emergency Details: **Help** Mumbai Police, Serve you be

WELCOME...

Our Mission

Mumbai Police shall ensure the Rule of Law, enforce the law of the land impartially and firmly without fear or favour, and strive to create a fear free environment that is conducive to growth and development.

Mumbai Police will remain committed to maintaining public order, preventing and detecting crime, maintaining and promoting communal harmony, ensuring a smooth flow of traffic, and taking strong action against terrorism, organized crime, anti-social / illicit activities / elements. [See more...](#)

SELECT YOUR POLICE STATIONS --Select Your Location--

Passport Status | Stolen Vehicles | Missing Persons

Photo Gallery/Videos | DCP Visits | Verification Unit

ARTICLES

ADLINES

Security Guidelines for Establishment.

Best Detection and Conviction for the Year 2015.

CYBER SAFETY

MARTYRS

- Emergency Numbers are scrolling..
- Reporting Crime may be difficult for some section
- Too much information; compromising the visual pleasure

Home Page of London Police Website

Dial 999 in an emergency | Dial 101 in a non-emergency | Report a crime

f t y

CITY OF LONDON POLICE

News and appeals | Advice and support | Community policing | Careers | About us | Contact us

URBAN MYTHS
#UrbanFraudMyths

Urban Fraud Myths
Do you know your fraud fact from fraud fiction?

Police seek cyclist
Collision on King William Street

Paris statement
Statement following the tragic events in Paris

Man and woman arrested
suspicion of mass distribution of copyrighted musical software

Smash and grab
Gang plead guilty to raids

Hide page

The City of London Police website uses cookies. For details on how we use cookies please read our cookies policy. [Hide this banner \(this requires a cookie\).](#)

- Simple, clear website..
- Easy to Search Emergency Numbers for reporting of crimes to make citizens aware
- Scrolling information's are easy to read..

We are comparing Accessibility (How accessible the website is to mobile and disabled users & User Experience (How Satisfying the website is likely to be for users) from two sites:



The following tests contribute to this score:

- 0.0 Headings
- 0.0 Code quality
- 2.6 Mobile
- 4.4 URL format
- 7.6 Internal links
- 10 Page titles

ACCESSIBILITY

The following tests contribute to this score:

- 3.0 Mobile
- 4.0 URL format
- 5.0 Code quality
- 9.4 Internal links
- 10 Page titles
- 10 Headings

The following tests contribute to this score:

- 0.0 Facebook page
- 0.0 Google+ page
- 0.0 Twitter
- 0.0 Printability
- 0.0 Popularity
- 1.3 Freshness
- 2.4 Images
- 2.6 Mobile
- 4.4 URL format
- 7.0 Amount of content
- 7.6 Internal links
- 10 Server behavior

USER EXPERIANCE

The following tests contribute to this score:

- 0.0 Google+ page
- 0.0 Popularity
- 2.0 Images
- 3.0 Mobile
- 4.0 URL format
- 8.0 Server behavior
- 8.9 Amount of content
- 9.0 Facebook page
- 9.4 Internal links
- 10 Twitter
- 10 Printability
- 10 Freshness

WEBSITES FURTHER ANALYSIS

0.0

Headings



mission police select stations welcome your



A large number (80.0%) of pages do not use defined headings. This means that users and search engines may find it harder to determine the content of this website's pages. Correctly defined headings aid accessibility and are particularly important for search engine optimisation.



Some pages did not define headings correctly. The H1 tag should be used for the most top-level heading, with H2 being used for sub-headings and H3 for further sub-headings and so-on. Not conforming to this convention may confuse visitors.



✓ All pages were found to use defined headings. This is excellent as it allows visitors and search engines to summarize the content of webpages quickly. Correctly defined headings aid accessibility and are particularly important for search engine optimization.

0.0


Code quality




 HTML5


 W3C Compliant

 A total of 464 errors and 80 warnings were found on the 5 pages tested.

 No pages are W3C compliant. Because there are errors in the code, some web browsers may not be able to read this website correctly and it may not always display correctly.

 Some pages of this website appear to have different doctypes.

 5 of the pages of this website were found to use presentational HTML elements and/or attributes. It is widely regarded that use of presentational HTML like `` and `<p bgcolor="#FF0000">` should be avoided.

 All of the tested pages of this site appear to use tables for layout. This is very bad, as using tables for layout is not necessary and they should only contain tabular data.

5.0


Code quality



XHTML 1.0 Transitional

 W3C Compliant

 All of the tested pages appear to use semantic HTML. This is excellent.

 None of the tested pages of this site use tables for layout. This is excellent, as using tables for layout is not necessary and they should only contain tabular data. A well built website should use div elements and CSS to create the desired layout.

0.0

Facebook page



This website does not appear to be associated with a Facebook page.

This website was found to contain some links to Facebook, but none appear to be public Facebook pages associated with this website.

Source: [Facebook](#)

0.0

Google+ page

This website does not appear to be associated with a Google+ page.

This website was found to contain some links to Google+, but none appear to be public Google+ pages associated with this website.

Source: [Google+](#)

0.0

Twitter



This website does not appear to be associated with a Twitter account.

This website did not contain a link to Twitter.

9.0 Facebook page



4,784
likes



70
people talking about this



This website was found to link to the Facebook page City of London Police with 4,784 likes.

Source: Facebook

10.0 Twitter



This website is linked with the
Twitter account @citypolice

This website's Twitter account has
53,845
followers



This website was found to link the Twitter account City Police (@citypolice).



This website's Twitter account has made 6,063 tweets to 53,845 followers.

Source: Twitter

10.0 Twitter



This website is linked with the Twitter account [@citypolice](#)

This website's Twitter account has **53,845** followers

✓ This website was found to link the Twitter account City Police (@citypolice).

i This website's Twitter account has made 6,063 tweets to 53,845 followers.

Source: [Twitter](#)

6.2 Social interest



This website has a moderate level of social interest.

17 tweets

119 likes

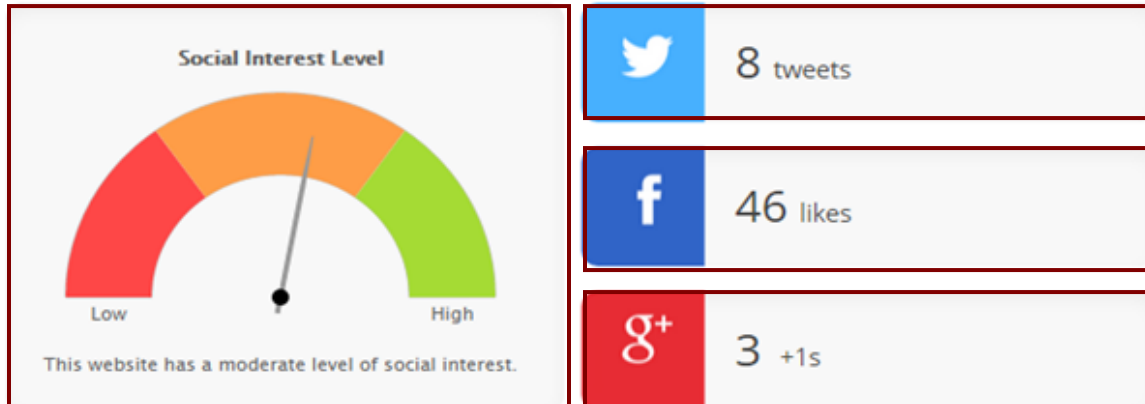
2 +1s


We found 17 Tweets, 119 Facebook likes and 2 Google +1s for the 5 pages we tested.

Social activity

Sources: [Google+](#) , [Twitter](#) , [Facebook](#)

5.6 Social interest



 We found 8 Tweets, 46 Facebook likes and 3 Google +1s for the 5 pages we tested.

Social activity ▾

Sources: [Google+](#), [Twitter](#), [Facebook](#)

7.0 Amount of content



This website has an average of 600 words per page. The amount of content on a website has been shown to correlate with its search engine ranking.

One page of this website has very little content (20 words or less).

10.0 Incoming links



1,378
pages link to this website

161
domains link to this
website

There are 1,378 pages on 161 domains linking to this website. The volume and quality of incoming links is known to influence a website's search engine ranking.


Source: [Ahrefs](#)

10.0 Incoming links



 2,008,455
pages link to this website

 1,866
domains link to this
website

 There are 2,008,455 pages on 1,866 domains linking to this website. The volume and quality of incoming links is known to influence a website's search engine ranking.

Source: [Ahrefs](#)

Key takeaways from the above analysis

- a) While developing the Mumbai police website the consideration for accessibility scope of physically challenged or senior citizens were minimum.
- b) Proper format and structure are absent for enhancing the user experience
- c) Social connectivity is absent as no facebook or twitter handle.

However....

There is much more social interest in digital arena about Mumbai Police than London Police in social media in spite of all these limitations.

- d) So there is a gap between expectation from society and the delivery in digital sphere.

Creating a standard for India

Some Ideas for implementation

1. Improvement of designing aspect of websites / mobile apps
2. Slow keys and onscreen keyboards
3. Acceptance of Voice command
4. Captioning of audio and description of video
5. Keyboard equivalents for mouse-driven commands
6. Appropriate markup of tables, alternative text, abbreviations, and acronyms; synchronization of visual, speech, and refreshable display
7. Magnification; stopping scrolling text; avoiding pop-up windows
8. Clear and simple language; consistent design; consistent navigation options; multiple search options
9. Sufficient color contrast, and redundant information for color
10. Speech recognition and an alternative keyboard

Roadmap/ further steps to be taken

- Promoting a better understanding of Web accessibility at various levels through different channel and medium.
- Promoting an understanding of the needs of all users in Governments as well as in Corporates.
- Starting ongoing dialogue with different stake holders to understand the needs
- Initiating ongoing dialogue with user organizations about their feedback.
- Encouraging the participation of all users in standardization process and USE CASE analysis.
- A comprehensive study of various international standards presently in practice. These may include the W3C's WCAG 1.0 and 2.0, Section 508, the Stanca Act (Italian Accessibility Law), BITV (web accessibility test of the German BIK project), RGAA (French Accessibility Law) or a combination of them. Some tools also have their own accessibility guidelines.
- Identification and analysis of the accessibility need in ICT part in the Indian context based on above steps.

References

http://innovationclustersarchive.nic.in/content/accessible_india.php

<http://timesofindia.indiatimes.com/india/Govt-plans-app-for-the-disabled/articleshow/47116331.cms>

<http://pib.nic.in/newsite/mbErel.aspx?relid=126123>

<http://www.moneylife.in/article/sugamya-bharat-abhiyan-accessible-india-for-economic-growth/43478.html>

<http://www.w3.org/standards/webdesign/accessibility>

www.hobo-web.co.uk/design-website-for-blind

www.languageinindia.com/jan2014/disabilityinindia2011data.pdf

<http://timesofindia.indiatimes.com/india/Disabled-population-up-by-22-4-in-2001-11/articleshow/28072371.cms>

sus-it.lboro.ac.uk/SusIT_Briefing_Paper_5.pdf

<https://books.google.co.in/books?isbn=074876835>

<http://punarbhava.in/index.php/disability-register/census-2011-disability-data.html?date=2015-12-01>