

## **National Policies on the Use of Web Services by the Differently Abled Community in Sri Lanka: An analysis of Problems and Issues.**

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### **Abstract**

Objective of this research is to find out on problems and issues in national policies on the use of web services need to be considered for differently able community in Sri Lanka. This research covers three areas such as; What are the national policies on differently able community in Sri Lanka?, How they are addressed by other countries in the world? , What are the problems and issues in National policies on accessibility of Web services by differently able citizens in Sri Lanka?.

Survey was conducted based on analysis of research papers, National Policies and Act for disabled community in developed countries and Sri Lanka and W3C(The World Wide Web Consortium (W3C) rules and regulations. Findings were further analyzed and guidelines are proposed for National policy makers in Sri Lanka.

Findings indicated that, use of different web services for day today life by disable and non disabled community are not significantly different. Issues faced by the differently able community are addressed by the W3C. Most of the developed countries around the world introduced legislation which either directly addresses the need for websites and other forms of communication to be accessible to disabilities. This study also proposed some guidelines for Sri Lankan policy makers to their consideration on changes required for differently able community.

**Key Words:** Web services, Differently abled community Sri Lanka, National policies for differently abled citizen, differently abled citizens,W3C Standard for differently abled people

### **1.0 Introduction**

Objective of this research is to find out on problems and issues in national policies on the use of web services need to be considering for disabled community in Sri Lanka.

Scope of this study is limited to a literature survey on analysis of existing web services globally and comparison of Sri Lankan policies with other countries to identify the problems and issues.

Main research question focus in this research is to find out the problems and issues in National policies on the use of web services by the differently able community in Sri Lanka. Sub Questions focus in this research are to identify the national policies on differently able community in Sri Lanka, How they are addressed by other countries in the world and main problems and issues in National policies on accessibility of Web services by differently able citizens in Sri Lanka.

According to the survey it was identified the Problems and issues in national policies for use of web services for disabled community are not much considered by the Sri Lankan government disability

policy and well as many countries in the world. Therefore recommendations are propose for initiations to change the policies and improve the quality of life of differently able Sri Lankan community.

## **2.0 Objectives of the research**

### **Objectives:**

Objective of this research is to find out on problems and issues in national policies on the use of web services need to be considering for differently able community in Sri Lanka.

### **Main research Question**

What are the problems and issues in National policies on the use of web services by the differently able in Sri Lanka?

### **Sub Questions**

What are the national policies on disabled community in Sri Lanka?

How they are addressed by other countries in the world?

What are the problems and issues in National policies on accessibility of Web services by differently able citizens in Sri Lanka?

## **3.0 Research methodology**

This research has been done using literature survey and author has collected data through analyzing ten different National policies in relation to Information Technology concentration made by different countries.

### **Research strategy**

This research is primarily qualitative in nature, not quantitative, where the Survey conducted based on analysis of research papers, National Policies and Act for differently able community in developed countries and Sri Lanka and W3C rules and regulations.

### **Data collection**

Data collection methods used for this research were literature survey and based on the three research questions data samples were collected from government and private sector sources. In order to find out of data to the first research question such as; What are the national policies on differently able community in Sri Lanka? Author collected data from the 'National policy on disability for Sri Lanka' which has published in 2003 by Ministry of social welfare. Data collection were done for the second research question based on collecting different policies globally. The Global Disability Rights Library (GDRL) was helped researcher to collect more information for this research question. In addition to that Issues faced by the Sri Lanken differently able community were addressed by collecting W3C(World wide consortium).This data were highly considered to propose for initiations to change the policies and improve the quality of life of differently abled Sri Lankan community.

### **Framework for Data Analysis**

To help focus the literature review in terms of reflecting the main objectives of this research and ease the analysis of the qualitative data, the literature review structured according to themes. These themes reflect the overall aim and objectives in this research.

In terms of analysis, Author were used two-pronged approach: First, national policies on differently able community in Sri Lanka were analyzed: second, Global policies on differently able community were analyzed, not only comparing Sri lanken national policies against each other, but also Identify the problems and issues in National policies on the use of web services by the differently able people in Sri Lanka. Finally Formulate set of guidelines for Sri Lankan policy makers to their consideration on changers required for differently able community.

## **4.0 Literature review**

### **Definition for differently able**

According to the definition given by world health organization disability or differently abled is not easily conceptualized. Due to the influenced by differing cultures, social institutions, and physical environments it is difficult to define. An individual with limited mobility could be at a great disadvantage in an agricultural subsistence farming society yet if that same person lived in a society with advanced services, supports and technology, he/she might encounter only few challenges.

Disability is caused by a wide range of interacting aspects like communicable diseases, genetic factors, injuries, aging and many more. Each disability has its own range of possible causes; the list of disabilities itself is very lengthy, including physical disabilities, cognitive disabilities, vision and hearing difficulties, and mental health disorders, such as depression.

### **World Disability statistics**

Disability affects hundreds of millions of families in developing countries. Currently around 10 per cent of the total world's population, or roughly 650 million people, live with a disability. According to the findings In most of the females have higher rates of disability than males.(DWC,2011). In many developed countries, the rates are quite high. The prevalence rates in The United States and Canada are 19.4% and 18.5%, respectively. Conversely, developing countries often report very low rates. In countries such as Kenya and Bangladesh the reported rates of disability are under 1%.

However disabilities range from severe to moderate to mild. It is therefore much more useful to present information on the range of disabilities instead of reporting a single prevalence rate. For example, the overall disability rate in Ecuador was measured at about 12%, but the rate of severe disabilities was about 4%.Statistics interrelation to disability situation in Sri-Lanka

Provision of statistics about disabled persons in Sri Lanka is very important when considering the recent history of the country. For the 30 years prior to May 2009, the country has been severely affected by the civil war between Government Forces and the Terrorist groups. Thousands of armed forces were killed by the terrorists during this period and due to the

barbarian terrorist attacks in adjoining areas where the war took place as well as in other areas of the country killing thousands of innocent civilians and making them permanent or temporary disabled civilians. In addition, government needs to find ways for those who were disabled due to other reasons such as persons born with disabilities, persons who become disabled due to various types of accidents etc. (Unescap,2011)

### **World Internet usage**

According to the Miniwatts Marketing Group. Statistics publish in 2012 they reported Top 20 internet users of the world. According to that the highest internet users are coming from China secondly USA and then the India .The reason for this high percentage based on the country population also. World total population for total internet users are 6,967,126,795.

### **Sri Lankan internet Usage**

According to the studies 1,776,200 no of internet users as of June, 2010.It is 8.3 % of the population is using internet for their day to day office and personnel usage. After the ending of three decade of civil war had in the country telecommunication industry has gone for infrastructure development to compete the market.

### **How people with disability use the WEB**

There are wide range of diversity of people and abilities, and highlights some of the types of web accessibility barriers that people commonly encounter from poorly designed websites and web tools. According to the W3C(2012) there are five main categories of difficulties faced by the differently able person such as;

#### **Diversity of abilities**

There are many reasons why people may be experiencing varying degrees of auditory, cognitive, neurological, physical, speech, and visual disabilities. For instance, some may have disabilities from birth, an illness, disease, or accident, or they may develop impairments with age. Some may not consider themselves to have disabilities even if they do experience such functional limitations.

#### **Auditory**

Auditory disabilities range from mild or moderate hearing impairments in one or both ears (“hard of hearing”), to substantial and uncorrectable impairment of hearing in both ears (“deafness”). Some people with auditory disabilities can hear sounds but sometimes not sufficiently to understand all speech, especially when there is background noise. This includes people using hearing aids or other approaches to improve the sound.

#### **Cognitive and Neurological**

Cognitive and neurological disabilities involve disorders of any part of the nervous system, including the brain and the peripheral nervous system. This can impact how well people hear, move, see,

speak, and understand information. Cognitive and neurological disabilities do not necessarily affect the intelligence of a person.

### **Physical**

Physical disabilities (sometimes called “motor disabilities”) include weakness, limitations of muscular control (such as involuntary movements including tremors, lack of coordination, or paralysis), limitations of sensation, joint problems (such as arthritis), pain that impedes movement, or missing limbs.

### **Speech**

Speech disabilities include difficulty producing speech that is recognizable by others or by voice recognition software. For instance, the loudness or clarity of someone’s voice might be difficult to understand.

### **Visual**

Visual disabilities range from mild or moderate vision impairments in one or both eyes (“low vision” or “partial sight”), to substantial and uncorrectable loss of vision in both eyes (“blindness”). Some people have reduced or lack of sensitivity to certain colors (“color blindness”), or increased sensitivity towards excessive brightness in colors. These variations in perception of colors and brightness can be independent of the visual acuity.

## **5.0 Discussions of Findings**

This section discusses the Sri Lanka National policies on differently abled community and the other countries national policies on differently able community and W3C web standards.

### **5.1 National policies on disabled community in Sri Lanka**

Comparing with other developed countries in the world Sri Lanka as a developing country there are many challenges faced by the government for allocate budgets to improve the quality of life of differently able citizens in Sri Lanka. But Sri Lankan government has taken initiation to document National policy on differently able community in Sri Lanka.

#### **National policy on Disability for Sri Lanka (NPDS)**

National policy for differently abled community in Sri Lankan government are named as National policy on disability for Sri Lanka(NPDS).According to the NPDS(2007) The National Policy is presented in two parts. Part One provides the rationale underlying policy formulation, containing its scope, underlying socio-economic considerations, barriers that exclude people who have disability from the socio-economic mainstream, and the resources available for policy implementation.

Part Two first lists the guiding principles which provide the policy framework, and it relates them to the Constitution of Sri Lanka and to the Charter of the United Nations and other United Nations Instruments. It then describes 26 policy areas which have been identified through the process of

consultation. For each policy area, policy statements are made and strategies for their achievement are listed. The Policy also emphasizes the need for and suggests mechanisms for its implementation, monitoring and evaluation, and lists those Ministries that may take responsibility for these various aspects of policy (NPDS, 2003)

## **5.2 National policies and Web Standards on differently able community in different countries in the world**

### **Web standards**

The World Wide Web Consortium or W3C, have put together a standard to how to code a site to make it accessible to disability individuals. There a number of individuals that are diagnosed with a disability that uses the internet. 26% of disabled people use the internet. This shows that 1 out of 4 people visiting webs sites could be disabled. Disability individuals might have small desktop resolutions (800 x 600), keyboard navigation or screen readers. These tools will to help their usability with the content and navigation on the site. If they have screen readers, alt tags and descriptions will help them a lot.

According to the W3C standards developers need to validate websites before publish for public access. But they are not aware that good coding style will make more accessible to disabled individuals. It doesn't take any more work to the developers it is only a organized and cleans websites code. (WHDP, 2011)

### **Analysis of National Policy Documents on Disabilities and concentration of web Standards**

According to the below Table 01 analysis of several national policy documents in different countries, author has identified the level of concern has been taken for consideration on web standards to be consider by the website developers for differently able community in the world. Level of concerns has been taken classify in to five point likert scale such an Very high (VH), High (H), Average (AV), Low (L) and Very Low (VL).

<b>Country/Organization</b>	<b>Policy document</b>	<b>Level of concern about IT and web standards</b>	<b>Remarks</b>

Afghanistan	The comprehensive National disability policy in Afghanistan	VL	<ul style="list-style-type: none"> <li>• No National Umbrella organization for disabled</li> <li>• Policy No 7 discussed on information but not Internet or Web Standards</li> <li>• Recommendation on improvement</li> </ul>
China	Law of the People's Republic of China on the Protection of Disabled Persons, April 24th 2008	L	<p>Article 43 and article 54 concern on information communication</p> <p>Detail description not include</p>
Fiji	National Policy on Disability [Draft] 2006 - 2016	VH	Objective no 8 in detail discussed on Actions on .But No and special consideration in relation to Web side Development
India	National Policy for Persons with Disabilities 10 February 2006	AV	Not Much concern
New Zealand	<ul style="list-style-type: none"> <li>• The New Zealand Disability Strategy, Office for Disability Issues</li> <li>• The New Zealand Health Strategy</li> </ul>	VL	Objective No 8 Concerns about Quality of life of people but Not Internet and web standards
South Africa	<ul style="list-style-type: none"> <li>• Integrated National Disability Strategy November 1997</li> </ul>	L	Very descriptive about Internet Technology and No concern about Web

Sri Lanka	<ul style="list-style-type: none"> <li>National Policy on Disability for Sri Lanka 2003</li> </ul>	AV	Article no 14 has mention on IT but not Web Concern Policies
Sweden	<ul style="list-style-type: none"> <li>Disability Policy in Sweden 2007</li> </ul>	VH	Special emphasis is therefore being placed on digital inclusion in Sweden's national IT strategy
United Kingdom of Great Britain and Northern Ireland	<ul style="list-style-type: none"> <li>The Disability Discrimination Act 2005</li> </ul>	AV	Not mention about Web services in relation with Differently able community

Table 01: Analysis of National policies in the world

According to the above analysis Sweden has taken high concentration of differently able community to improve the quality of life. But In National level policy has not mention anything about web Standards to be concern by the web developers and policy makers .

### 5.3 Problems and issues in National policies on accessibility of web services by differently abled citizens in Sri Lanka

By Analyzing NPDS(2003) policy main issue is lack of explanation given under the Policy No 14 regarding the Internet access of differently abled community. Nine years after the policy established in Sri Lanka it is a time to consider about policy changers. Due to a rapid change of information technology industry many more users used internet to their day to day life activities. In this policy Under the Policy no 14 discussed Assistive devices and information technology include different tools and equipments. Under the Internet Web services it states as below,

“Rapid advances in information technology have increased possibilities for

improving the quality of living for many people who have disability. The benefits of these advances will be more beneficial to them by making information technology more accessible and affordable.

These include

- The use of internet for accessing news and for communication
- Easier and more effective means of communication such as personal computers with speech synthesizers for people who cannot see and adaptive telephones for those with hearing loss.

The field of Information Technology also opens a vast range of employment



Opportunities and this will be exploited to increase opportunities for people who have disability in open employment. For those whose disability makes it more convenient for them to work at home, contract work and other means will be facilitated to create work opportunity. “

**Main problem identify by the author is not concern on problems faced by the differently able users when accessing website. As an example a person with visual impairment, A persons with hearing problems or any other similar difficulties are not take into account when making policy on differently able people in Sri Lanka.**

## 6.0 Conclusions and Recommendations

According to the analysis of findings it has identified the problems and issues in national policies on use of web services for disabled community are need to change and improve the quality of life of differently abled community. Not only Sri Lanka national polices but also many other countries in the world also can be consider to change the policies in relation to standards to be maintain in Web site Development in order to give equal level opportunity to access abled and differently abled communities. Below figure 1 given recommendations to identified main problems and issues through this research.

Problem/Issue	Recommendation
Not concern about difficulties faced by the differently able community when using WEB services in the National policy on disability for Sri Lanka	<ul style="list-style-type: none"> <li>• Consider w3c Standards on accessibilities about differently abled community when developing and publishing any website within the Sri Lanka.</li> <li>• National survey to check the <b>readiness</b> of the Sri Lankan based websites to fully access by differently able citizens in SL.</li> </ul>
All Sri Lankan hosted websites are not up to the W3C Standards.	<ul style="list-style-type: none"> <li>• Conduct Awareness progamme to web developers on w3c web standards</li> </ul>

Figure 1 : Recommendations to changers in NDPS

### **Proposed changes could be consider in National policy on disability for Sri Lanka**

Based on the in depth analysis on Web accessibility initiative has taken by W3C and National policy on disability for Sri Lanka there is gap. In order to fill the gap Author propose some initiations can be consider to make amendments in the National Policy on Disability. Some changers can be considering according to the W3C are as follows;

(i) **Evaluating websites for Accessibility**

According to the authors finding with W3C Standards there are many actions can be take into consideration evaluate the websites for accessibility for differently abled community in Sri Lanka. Therefore recommended to follow W3C standards before publish any website within the Country.

(ii) **Preliminary review of website for accessibility**

A preliminary review can quickly identify some accessibility problems on a Web site. A preliminary review does not check every accessibility issue and will not catch all of the problems on a site. Thus the method described in this page is not sufficient to determine if a Web site conforms to Web accessibility guidelines.

(iii) **A conformance evaluation of website for accessibility**

Base on the W3C web content accessibility guidelines conformance evaluation method that combines automatic, semi-automatic, and manual testing of Web site accessibility. It can be used when developing a new site, or to evaluate an existing site.

(iv) **Evaluation during the development process**

Evaluation during the development process is essential. It can sometimes be difficult to implement with in the country because both in-house and subcontracted Web developers sometimes prefer to establish the site design and demonstrate their progress before getting feedback. However, accessibility issues identified early are easier to correct and avoid. Effective evaluation during the design period can include:

- Establishing clear requirements for the expected accessibility conformance level.
- Involvement in initial planning meetings for the site.
- Agreeing on a review schedule during the development process.
- Providing information on evaluation approaches so that the developers can at least do preliminary reviews on their own.

(v) **Involving differently abled users in web accessibility Evaluation**

Provides guidance on including people with disabilities (“users”) in accessibility evaluation throughout Web development.

The above propose guidelines can be taken into consideration in national level policy makers. This will be a opportunity to differently abled community to access website without any difficulties .Therefore other similar countries can also take this into an account when they formulate national level policy.

#### 4 Further Research

This research is limited to a literature survey. Therefore researchers can conduct a National level survey to identify the problems and issues faced by the differently able community in Sri Lanka when they access web services and propose some new ideas to take into a consideration for National level Disability policies.

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