



Information Technology
Creative Design + Usability

Ford Roadmap to Accessibility

Eric Schrage
Michael Mistak
Kaushik Dave
Gaurav Anand

Creative Design + Usability
Ford Motor Company

July 2008



Table of Contents

1.0 Executive Summary	3
2.0 Introduction.....	3
2.1 What is Accessibility?.....	3
3.0 Why Accessibility is Important?	4
3.1 Provision of Equal Access and Opportunity:	4
3.2 Compliance with Laws and Mandates:	4
3.3 Adopting Web Accessibility offers tangible benefits.....	6
3.4 Pitfalls of not Adopting Accessibility	6
4.0 Tools and Usage Scenarios	8
4.1 Practical Examples of accessible web based tools and devices.....	8
4.2 Usage Scenarios	8
5.0 The Business Imperative	8
5.1 Cost Considerations	8
5.2 Alignment with Strategic Objectives	9
6.0 Institutionalizing Accessibility in Ford IT: The Roadmap.....	10
6.1 Create Interdepartmental Accessibility Committee.....	10
6.2 Identify and Overcome Initial Challenges.....	11
6.3 Review Global Accessibility Standards	11
6.4 Review Off-the-shelf Assistive Technologies/ Software	11
6.5 Review the Internal Technology Environment and understand feasibility of Adoption	12
6.6 Adapt Global Standards to Define Ford Accessibility Policy	12
6.7 Develop Specification Checklists.....	12
6.8 Roll-out to SDM.....	12
6.9 Communicate/ Provide Training	12
6.10 Monitor Compliance	12
7.0 Conclusion	12
8.0 References.....	13
9.0 Appendix.....	14



Ford Accessibility Roadmap

1.0 Executive Summary

Accessibility refers to making the web content accessible to people with disabilities. It is a methodical effort that involves developing and incorporating strategies, guidelines, and resources to help Web development teams deliver accessible content and functionality. Accessibility also benefits people *without* disabilities by making the web applications to be more flexible to specific use situations and to people with temporary disabilities.

Several well-publicized studies about high number of disabled people worldwide indicate the need for businesses to reach out to them. Worldwide laws and mandates further illuminate the importance of adopting accessibility in organizations large or small. Ford Information Technology is similarly impacted by these realities. If Ford Information Technology has to successfully adopt accessibility in its processes, a concerted effort must be made to institutionalize it.

This whitepaper is intended to serve as a launch pad for adopting web accessibility initiative for Ford IT products and services. Specifically, as part of the initiative efforts, the paper describes following:

- 1.1 **Importance of adopting Web Accessibility**, including the explanation of national and international legal standards that need to be complied. The tangible benefits of adopting accessibility are explained in terms of reduced legal liability, increased market share and audience outreach, demonstration of increased social responsibility, and increased financial gains, among others. Similarly, several real-life instances of the pitfalls of not adopting accessibility are also presented.
- 1.2 **The business imperatives in adopting Accessibility**, including an analysis of how Accessibility complements Ford's strategic objectives laid out in the Ford One Behaviors. In addition, an analysis of accessibility costs (to the company) presents a realistic view in support of the wider business objectives.
- 1.3 **A practical roadmap for adopting Accessibility** is laid out, recommending the steps that need to be followed in integrating accessibility within the software development process at Ford IT. An advice to formulate a higher-level accessibility working committee sets the first step and recurrent integral tone for all accessibility efforts. Through the steps cited in the roadmap, the committee members will identify the initial challenges, review the global accessibility standards, and adapt them to define Ford's unique Accessibility Policy.

Our initial review makes us strongly believe in institutionalizing accessibility efforts at Ford IT. We know that we currently have accessibility efforts at a very rudimentary phase. As proposed in the paper, if Ford IT team across the globe drives all the efforts positively in the direction of meeting the requirements, the accessibility institutionalizing process would be smooth and rewarding.

2.0 Introduction

2.1 What is Accessibility?

Accessibility refers to making the web content accessible to people with disabilities. It is a



methodical effort that involves developing and incorporating strategies, guidelines, and resources to help Web development teams deliver accessible content and functionality.

According to World Wide Consortium (W3C,) "Web Accessibility specifically means that people with disabilities can perceive, understand, navigate, and interact with the Web, and that they can contribute to the Web. Web Accessibility encompasses all disabilities that affect access to the Web, including visual, auditory, physical, speech, cognitive, and neurological disabilities.[8.1]" Accessibility also benefits people *without* disabilities by making the web applications to be more flexible to specific use situations such as slow Internet connections, browsing preferences, lack of accessibility enhancing tools and devices, people with temporary disabilities (e.g. a broken arm), and/ or people with changing disabilities (e.g. due to aging.[8. 1])

3.0 Why Accessibility is Important?

Accessibility offers a way of reaching out to disabled and special needs users. A look at the following numbers gives an idea of how many people across the world face difficulties accessing information on the web [8.2]:

- Worldwide 8.6 million (14% of the population) people are registered disabled as a result of mental, physical or sensory impairments
- Approximately 2 million (4% of the population) people have a sight problem
- 1 in 12 men and 1 in 200 women (9% of the population) suffer from some form of color blindness
- 12 million people (21% of the population) are aged 60 or over
- 2 million people (4% of the population) live with learning difficulties

Given these realities, the past decade has also seen a rapid explosion of information technologies. With new information technologies quickly coming to market, both consumers and businesses continue to be impacted by them. It has become imperative for many countries to ensure that electronic and information technology (E&IT) is accessible by users with disabilities. Specifically, accessibility is important for organizations for following reasons:

3.1 Provision of Equal Access and Opportunity:

The Web offers unprecedented opportunities for information access that enhances human potential in the diverse aspects including, but not limited to, education, employment, business, government operation, health access, entertainment and more. Equal access to information is important for people with or without disabilities, thereby enhancing their equal opportunity for and contribution to societal activities.

3.2 Compliance with Laws and Mandates:

Web Accessibility is required by international laws and policies. A series of events has brought Web Accessibility to the current legal importance it holds.

The UN's Standard Rules on the Equalization of Opportunities for Persons with Disabilities (1993) includes 22 rules and calls upon member states to enact legislation to achieve the objectives of full participation and equality. Rule 5, in particular, defines accessibility as pertaining to both the physical environment and information and communication services. It specifies that states should ensure that new computerized information and service systems offered to the general public are



either made initially accessible or are adapted to be made accessible to persons with disabilities [8.3].

The Standard Rules serve as an instrument for policy making. They are not legally binding, but they provide a common framework upon which the international community can build. A UN Secretary General appointee tasked with monitoring the implementation of the Standard Rules has encouraged governments to consider accessibility of information and communications services within their country's social development policies [8.3]. Following developments are notable across the world:

United States of America

- **Section 508 of the Rehabilitation Act** - In 1998, US Congress amended the Rehabilitation Act to require Federal agencies to make their electronic and information technology accessible to people with disabilities. Section 508 was enacted to eliminate barriers in information technology, to make available new opportunities for people with disabilities, and to encourage development of technologies that will help achieve these goals. The law applies to all Federal agencies when they develop, procure, maintain, or use electronic and information technology. *Under Section 508 (29 U.S.C. 794d), agencies must give disabled employees and members of the public access to information that is comparable to the access available to others.*
- **Americans with Disabilities Act (ADA) of 1990** - Americans with Disabilities Act (ADA) prohibits discrimination and ensures equal opportunity for persons with disabilities in employment, state and local government services, public accommodations, commercial facilities, and transportation. The ADA requires that reasonable accommodations be provided in meeting the needs of individuals with disabilities. Reasonable accommodation includes any change or adjustment to a job or work environment that permits a qualified applicant or employee with a disability to participate in the job application process, to perform the essential functions of a job, or to enjoy benefits and privileges of employment equal to those enjoyed by employees without disabilities. *In the context of web accessibility, reasonable accommodation may include: acquiring or modifying IT equipment or devices, or providing reader and interpreters and other assistive devices.*
- **Assistive Technology Act of 1998** - The Assistive Technology Act establishes a grant program, administered by the U.S. Department of Education, to provide Federal funds to support State programs that address the assistive technology needs of individuals with disabilities. *Section 212 (Technology transfer and universal design) and Section 213 (Universal design in products and the built environment.) for example, promote technology transfer to further the development of assistive technology and products that incorporate the principles of universal design (i.e. design for all).*

The European Union:

- **The Council of the European Union**, in response to the eEurope 2002 Action Plan, pledges to enable all citizens to participate in the opportunities provided by the Information Society. The Commission on the Accessibility of Public Websites and their Content requires national administrations to seek constantly to improve the accessibility of their web pages and explore new and better ways to deliver web content and services as new technologies and new versions of the guidelines are developed [8.4].

International:

- **Disability Discrimination Act (DDA)** - Part III of the DDA refers to the provision of goods, facilities and services. Section 5.23 states, "For people with visual impairments,



the range of auxiliary aids or services which it might be reasonable to provide to ensure that services are accessible might include ... **accessible websites.**” Similarly, Section 5.26 states, “For people with hearing disabilities, the range of auxiliary aids or services which it might be reasonable to provide to ensure that services are accessible might include ... **accessible websites.**”

3.3 Adopting Web Accessibility offers tangible benefits

There are many benefits associated with adoption of accessibility efforts in developing web-based products and services [8.5]. The web content available with accessible design consideration, also called as ‘universal design’, encompasses following benefits:

- **Increased benefits for both users and web site providers.** Every user, regardless of physical, sensory and cognitive disabilities, constraints and/or technological barriers can access the information, use the services, buy the products, and talk to the people associated with each Web site. In other words, satisfied users may become loyal users, continue using the web site, and even recommend to others. Similarly, as a website provider can benefit from accessibility in many ways such as increased audience, improved maintainability and efficiency, improve social reputation, compliance to existing and future legal requirements, and much more.
- **Increased Market Share and Audience Outreach.** Disabled and special needs users have spending powers too, by making the websites accessible to such people increases overall market share and outreach. Further, for many families, disabled people (both as system developers or users) are the primary bread-earning members. Accessible systems can enhance the outreach to such families by way of making their jobs easier and more result-oriented, and hence increasing their professional potential.
- **Minimum Redundancies.** Lack of accessible information sources often leads to a need for alternative ways of accessing information, which perpetuates a need for increased resources spent on maintenance of alternative sources. Accessible design, on the other hand, can eliminate or reduce investments on alternative information sources. *[For instance, in order to access Ford Information Policy, Financial Statements, etc, blind employees often need to use phone service or print-outs with Braille fonts in order to fulfill their need. Extra investments on such alternative ways can be minimized if the information systems are built in the first place with accessibility in mind.]*
- **Demonstration of Social Responsibility** i.e. the public relations benefits of demonstrating social responsibility. Ford Motor Company has a reputation of being forward-thinking and socially-responsible organization. It is an important responsibility to reach out and adopt fair and non-discriminative stand for wide variety of people with different types of disabilities, such as blindness, color-blindness, and learning and cognitive disabilities.
- **Reduced Legal Liability** i.e. reduced risk of legal action resulting in high legal expenses and negative image. (See Sec 3.4 for details)
- **Financial Gains and Cost Savings** from increased web use due to increased potential market share, search engine visibility, and increased usability.

3.4 Pitfalls of not Adopting Accessibility



In the current economic state, it is very crucial for any organization to avoid significant legal expenses. There have been several instances, big and small, wherein corporations have suffered legal damages and negative reputation due to non-compliance of accessibility in their products and services. Some of the notable examples are as seen below:

- **Target.com:** In February 2006, a lawsuit was filed against Target Corporation by the National Federation of the Blind (NFB). The suit charged the company website (www.target.com) being inaccessible for the visually impaired people and, therefore, violated the ADA as well as two California civil rights statutes: the California Unruh Civil Rights Act and the California Disabled Persons Act [8.6].

Outcome: The court granted the plaintiffs' motion to certify a nationwide class under the ADA for injunctive relief. The court also granted the plaintiffs' motion to certify a California subclass for both injunctive relief and statutory minimum damages. This set a precedent that retailers must make their websites accessible to the blind under the American Disability Act (ADA).

- **Sydney Organizing Committee for the Olympic Games (SOCOG):** In June 1999, Bruce Maguire, an Australian blind person lodged a complaint with the Human Rights & Equal Opportunity Commission (HREOC) under Disability Discrimination Act. The complaint was for the inaccessibility of the Sydney Organizing Committee for the Olympic Games (SOCOG) website. As per the complaint, Maguire, unlike most blind people online, could not use a screen reader to read aloud the elements of a web page. Instead, he had to use a refreshable Braille display. But neither technology could render into voice an image that lacked a text equivalent [8.7].

Outcome: On 24 August 2000, the HREOC released its decision and supported Maguire's complaint, ordering certain access provisions to be in place on the Olympics.com site by 15 September 2000. SOCOG ignored the ruling and was subsequently fined Aus \$20,000.

- **Priceline:** PRICELINE.COM web site was challenged by Robert Gumson, a blind internet user to be inaccessible to the assistive technology used by the blind and visually impaired. Priceline had not complied with the ADA, New York Executive Law or New York Civil Rights Law [8.8].

Outcome: The organization behind Priceline.com had to pay legal claims of \$37,500 to improve their web sites' accessibility to settle an investigation by New York Attorney General Elliot Spitzer.

- **American Express (Amex):** In December 2007, Amex changed its statements from HTML to PDF format which cannot be read by screen reader software used by the visually impaired users. A blind user from Perth has threatened to take American Express to court because he can no longer read his credit card statements online. Royal National Institute of Blind People (RNIB) has received many complaints from blind individuals having difficulty in accessing the financial statements [8.9].

Outcome: American Express has promised to fix the website and, as an interim solution, is offering to send out hard copies of the statements in large prints and Braille format.



4.0 Tools and Usage Scenarios

4.1 Practical Examples of accessible web based tools and devices

- Screen reader software such as 'JAWS', available for visually impaired users, uses an advanced text-to-speech synthesizer that reads out loud the web site content to the user
- Deaf phone Internet services use the 'Internet Relay System' that helps deaf or mute people to call someone through the assistance of an operator. Deaf people can also contact loved ones easily through the SMS service of mobile networks.
- 'Adaptive keyboards' are designed for users with physical disabilities. Users with reduced range of motion may require smaller keyboards. Conversely, those without fine motor control may require a keyboard that is somewhat larger. Keyboards that offer fewer choices are helpful to users who benefit from a more structured learning environment and one-handed keyboards are helpful for those who can only type with one hand. For users who are only able to use a mouse (or assistive technology that emulates a mouse), the keyboard itself can be represented on screen using software.

4.2 Usage Scenarios

Following are some of the scenarios illustrating how some of the Ford internal disability resources are coping with existing technology.

- A blind employee from Ford Finance uses a Braille based keyboard in performing his daily job functions. The Braille keyboard assists in performing all the tasks that could be done through a regular keyboard.
- Biometric fingerprinting recognition device helps a blind purchaser to store and retrieve password information and access secure data.
- Wireless device for an employee with degenerative disease that has affected the use of mouse and keyboard.
- Read & Write Gold software provides the most complete support tool for dyslexic IT buyer. Its discrete toolbar offers users speech feedback, spell checking and word prediction for practically any Windows program, e.g., word processing, spreadsheets, DTP, encyclopedia, web pages, help files or educational program.

5.0 The Business Imperative

5.1 Cost Considerations

When Accessibility is incorporated from the beginning of Web development projects, it is often a small percentage of the overall Web site cost. However, following considerations are imperative when institutionalizing accessibility [8.10]:

- **Initial costs** including, but not limited to, acquiring knowledge, establishing processes, and increased development and testing time.
- **Training and development costs** including the cost of employees' time away from work, and cost of new skill development.
- **Costs of hiring** employees or consultants with accessibility expertise.



- **Costs of incorporating accessibility** into protocols and procedures such as increased costs for quality assurance testing and usability evaluation.
- **Costs of assessing and fixing** existing web site accessibility including auditing and evaluating costs. Making accessibility improvements in existing Web sites is always more costly in personnel time than incorporating accessibility in news sites.
- **Costs of purchasing** accessibility evaluation tools and assistive technologies.
- **Costs of upgrading** existing technologies and tools.
- **On-Going Costs** such as additional development time, and additional testing time in every project.

5.2 Alignment with Strategic Objectives

An effective Business Case for Ford Accessibility will confirm to Ford's higher-level objectives and motivations. There will be initial costs for implementing Web Accessibility; however, initial costs will eventually be offset by healthy return on investment. In order to commit initial resources, Ford needs to understand not only the benefits outlined above, but also needs to recognize how subtle nuances of Ford's strategic objectives and Web Accessibility objectives complement each other's expected outcomes.

One Ford Behavior (Replaced Q1 2008,) for instance, demonstrates clear relationship with Accessibility outcomes [8.11, 8.12]:

- **Foster Functional and Technical Excellence**

- Know and have a passion for our business and our customers: Accessibility is a way to know and respect our customers' diverse set of special needs, abilities, and aspirations.
- Demonstrate and build functional and technical excellence: Accessibility addresses interoperability, quality, reduces site development and maintenance time, reduces server load, enables content on different configurations, and brings in technical excellence
- Ensure process discipline: Accessibility metrics and guidelines determine the level of compliance against published grammars, strict adherence of which injects discipline into web development process.
- Have a continuous improvement philosophy and practice: Achieving accessibility should be a key component of any continuous improvement strategy.

- **Own Working Together**

- Believe in skilled and motivated people working together: Accessibility helps include people and their ideas irrespective of their physical disabilities, and removes obstacles to collaboration across the organization.
- Include everyone; respect, listen to, help and appreciate others: One key objective of achieving accessibility is to respect a diversity of needs and aspirations of others.
- Build strong relationships; be a team player; develop ourselves and others: Building strong relationships while fostering personal development requires equal access to information.
- Communicate clearly, concisely and candidly: Writing that is clear and concise is a key component of achieving accessibility.

- **Role Model Ford Values**

- Show initiative, courage, integrity and good corporate citizenship: Web accessibility can impact an organization's employees, stockholders and board members, suppliers and



vendors, partners and collaborators, customers, and others. Thus Web accessibility is an integral part of corporate citizenship.

- Improve quality, safety and sustainability: Accessibility addresses the root issue of web software quality, and not just a cosmetic make-over. Lean code leaves less room for errors. Safety (Security) is a natural outcome. Sustainability requires us to enable people in our communities to participate fully in both the production and consumption of our products and services. Accessibility improves access to people, fosters more participation, and hence more sustainability.
- Have a can do, find a way attitude and emotional resilience: Accessibility is another way of refocusing efforts for a major quality of web content for the broadest possible audience.
- Enjoy the journey and each other; have fun – never at others' expense: Ignoring Accessibility is always done at the expense of others.

- **Deliver Results**

- Deal positively with our business realities; develop compelling and comprehensive plans, while keeping and enterprise view: As explained above, comprehensive adherence to Accessibility leads to direct cost savings (through decreased technical costs, decreased potential for high legal expenses, among others.)
- Set high expectations and inspire others: Equal access to corporate communications (by our Employees and Customers) should be amongst the highest of our expectations. Public relation efforts to comply with disabilities also reinforce established social reputation and inspire other organizations.
- Make sound decisions using facts and data: As mentioned above, sizeable population across the world suffers from some disabilities. If the Internet use by persons with disabilities continues at its current growth rate, it should match the Internet use of the non-disabled in a few years.
- Hold ourselves and others responsible and accountable for delivering results and satisfying our customers: Refocusing efforts on achieving accessibility of content for broadest possible audience.

6.0 Institutionalizing Accessibility in Ford IT: The Roadmap

As part of the effort to ensure that Ford IT institutionalizes accessibility in an organized and successful manner, it is important to come up with a plan that incorporates all the essential steps that need to be undertaken. We envision following 10-step process [8.13, 8.14]:

6.1 Create Interdepartmental Accessibility Committee

As opposed to a single person championing accessibility, it is important for various decision-makers and implementers alike to share a common vision and commitment about accessibility within Ford IT. This common commitment can be best carried out by a formalized committee. Although committees can be slower to bring a change, their efforts will have long-lasting effects by way of their coming to agreement on important issues. The key, therefore, is to form a committee that represents stakeholders from various business and functional units, and to ensure that each committee member performs the tasks that correspond to them.

Further, in order to make accessibility widely accepted across the Ford IT, it is also important that key members of the committee should be respected individuals in their respective field or regions and have the ability bring change with their colleagues. It is also important to identify a high-level champion or spokesperson for Web accessibility.



6.2 Identify and Overcome Initial Challenges

Key task during initial assessment is to identify potential challenges or the stumbling blocks to adopting Accessibility.

- Ford IT is Large and Decentralized: Ford IT operations are so large that it might be difficult to maintain any kind of control over all of the people and parts of the organization working on delivering accessible websites and applications. These problems can often be solved by creating a central team or a Center of Excellence responsible for accessibility of all released websites and software.
- Lack of Accessibility Training: Accessibility is not taught in mainstream technology courses. Most web developers are therefore not aware about disability issues or accessible technologies.
- Prioritization Issue: Ford IT's main commitment is to serve other business units (and not always the end-consumer in the marketplace.) Due to internal project dynamics, budgetary issues, and disparate and conflicting objectives, teams may not support accessibility as a high priority.
- Other: Ford may have a unique set of challenges not represented in the above list. Have the committee identify these challenges and their potential solutions. This will allow the committee to begin to implement the appropriate solutions.

6.3 Review Global Accessibility Standards

Our review has identified two key accessibility standards applicable to Ford IT: Web Content Accessibility Guidelines (WCAG,) and Section 508. WCAG guidelines consist of 3 levels of

checkpoints; Priority 1, 2 and 3 (A, AA and AAA). Priority 1 checkpoints are the most basic requirements and **must** be complied with in all of the web content development efforts. This ensures accessible web documents (content) for the disabled users. Based on our initial assessment, we recommend a compliance objective of **at least priority one i.e. A and priority two WCAG 1.0 i.e. AA.**

Similarly, Section 508 consists of two sub-sections (sub-section 1194.2 Application and sub-section 1194.31) that we strongly believe need to be in compliance with for the entire Ford IT developed web content. Based on our initial assessment, we recommend full compliance with Section 508 especially the sub-sections mentioned above.

The standards identified above need to be further reviewed and analyzed in detail by the web accessibility committee. Later it needs to be translated into a higher level matrix that would govern the standpoints for the Ford IT Accessibility policy. For instance, these standards recommend specificities pertaining to style sheets, frame usage, alt text, etc, but whether or not those specificities are relevant for Ford IT needs to be ascertained in detail by the working committee. The committee needs to analyze the business imperatives, the internal technology capabilities, and management's commitment to invest more resources in it.

6.4 Review Off-the-shelf Assistive Technologies/ Software

Comprehensive adoption of Accessibility requires procuring and utilizing both Developer and User tools and devices that are readily available in the market. While Developer tools are needed to identify errors in design and code, User tools assist disabled users in accessing web information with ease. Our initial review has identified a number of such tools (See Appendix 8.d for details.) However, the Accessibility Committee should review each of the available tools for their suitability to Ford web users' development environment.



6.5 Review the Internal Technology Environment and understand feasibility of Adoption

Assess current awareness of the need for Web accessibility by surveys or interviews within Ford. Conduct surveys with individuals in departments with different roles relating to the Websites. Assess expertise of Ford's Web developers with regard to accessible Web design. Assess suitability of current software to support development of accessible Web sites. Estimate resources required to address the needs.

6.6 Adapt Global Standards to Define Ford Accessibility Policy

The next step in the institutionalization process is to *adapt* the existing global web accessibility standards and guidelines and define them into 'Ford Accessibility Policy'. This policy would adhere to WCAG WAI 'AA' and be consistent with *Section 508*. Also it needs to take into consideration all the technical and legal implications that have been reviewed in the previous steps in the process.

6.7 Develop Specification Checklists

A handy accessibility checklist should be developed based on the 'Ford Accessibility Policy'. This checklist should include all the accessibility checkpoints required to be considered while developing Ford IT applications and web sites. The purpose of the checklist would be to serve as a quick reference guide for all the accessibility standards and checkpoints that need to be considered while developing Ford web sites and applications.

6.8 Roll-out to SDM

After establishing the policy and checklist, it is time to roll-out. As part of the roll-out activity, it is important to review the SDM as well as to ascertain where the accessibility activities fit best in the

process. This may involve some changes in the SDM, but it is advised to have accessibility *fit into* current SDM. A time-specific implementation plan should be laid out that takes into consideration the following task points: i) Establishing timelines (this may vary from few weeks to few months, depending on how many projects that will be affected, ii) Setting up priorities or phases in terms of what standards to achieve for what project in what phase and on what timeline, iii) Delegating responsibilities to groups, sub-groups, and individuals for each project in each phase, and iv) Monitoring progress. These tasks may or may not occur in order, but should be addressed when needed.

6.9 Communicate/ Provide Training

Plan training schedules for different roles in the organization, and conduct training sessions for development and design teams. Develop a web site, publish brochures or mass-emails about accessibility information and distribute them. Incorporate Web Accessibility policy into relevant organizational documents and templates. Establish forums for exchange among Web developers, such as regular meetings and mailing lists.

6.10 Monitor Compliance

Specify the evaluation process to be used for Accessibility, and ensure quality of the process. Integration with established Software QA is a good option. Conduct ongoing monitoring/ audits of Accessibility for various projects.

7.0 Conclusion

Accessibility efforts impact an organization at various levels including social, legal and financial. Based on assessment and review, we strongly believe in institutionalizing accessibility efforts at Ford IT and ensure that web content (information) developed at FORD is accessible to a larger audience and includes the disabled community without any discrimination. We know that we currently have accessibility efforts at a very rudimentary phase. However, as proposed in the roadmap, if Ford IT



team across the globe drives all the efforts positively in the direction of meeting the requirements, the accessibility institutionalizing process would be smooth and rewarding.

8.0 References

- 8.1 "Introduction to Web Accessibility," W3C; Retrieved from <http://www.w3.org/WAI/intro/accessibility.php>
- 8.2 "Web Accessibility Benefits," <http://www.design-ecommerce.com>; Retrieved from <http://www.design-ecommerce.com/Web-Accessibility-Benefits.html>
- 8.3 "Global Approach to IT Accessibility," Oracle Corporation; Retrieved from <http://www.oracle.com/accessibility/globalapproach.html>
- 8.4 "Council Resolution of 25 March 2002 on the eEurope Action Plan 2002: accessibility of public websites and their content (2002/C 86/02)," <http://www.legi-internet.ro>; Retrieved from <http://www.legi-internet.ro/index.php?id=149&L=2>
- 8.5 "Why accessibility is important to you," <http://www.webnauts.net>; Retrieved from <http://www.webnauts.net/accessibility.html>
- 8.6 "Target Corporation Suit Alleges Website Not Accessible by Blind," Ronald L. Scott; Retrieved from [http://www.law.uh.edu/healthlaw/perspectives/2006%5C\(RS\)TargetWebsiteFinal.pdf](http://www.law.uh.edu/healthlaw/perspectives/2006%5C(RS)TargetWebsiteFinal.pdf)
- 8.7 "Reader's guide to Sydney Olympics accessibility complaint," <http://contenu.nu/>; Retrieved from <http://contenu.nu/socog.html>
- 8.8 "Travel sites settle New York accessibility investigation," <http://www.out-law.com>; Retrieved from <http://www.out-law.com/page-4823>
- 8.9 "Blind man angered by bank changes," <http://www.bbc.co.uk> Retrieved from http://news.bbc.co.uk/1/hi/scotland/tayside_and_central/7336586.stm
- 8.10 "Financial Factors in Developing a Web Accessibility Business Case for Your Organization," W3C; retrieved from <http://www.w3.org/WAI/bcase/fin#direct>
- 8.11 "Why Ford's Culture Supports Web Standards & Accessibility: Building the Case for Web Accessibility at Ford Motor Company," Michael Mistak; Retrieved from <https://www.tc2.ford.com/ts/WebCOE/default.aspx>
- 8.12 "One Ford," Retrieved from <http://www.one.ford.com/portal/communities/community.asp?UserID=1449263&CommunityID=670&intCurrentPageIndex=0>
- 8.13 "8-Step Implementation Model," <http://www.webaim.org>; Retrieved from <http://www.webaim.org/articles/implementation/committee.php>
- 8.14 "Developing a Web Accessibility Business Case for Your Organization: Overview," W3C; Retrieved from <http://www.w3.org/WAI/bcase/>



9.0 Appendix

9.1 W3CAG Official Standard1.0

<http://www.w3.org/TR/WCAG10/#Guidelines>

9.2 Sec 508 Official Standard

<http://www.section508.gov/index.cfm?FuseAction=content&ID=12>

9.3 Industry Case Studies

http://www.sean.co.uk/a/webdesign/accessibility_excellence.shtm

<http://www.theukwebdesigncompany.com/articles/tesco-accessibility.php>

<http://www.oracle.com/accessibility/collateral/commitment-accessibility-bloor-white-paper.pdf>

9.4 List of Available Tools

Following are some of developer (accessibility evaluation) and user tools (assistive devices/ software) that are readily available in the market for purchase:

9.4.1 Developer Tools (Accessibility Evaluation Tools):

Validation Tools: Web content accessibility validation tools are the online tools that identify errors in design related to WCAG and Section 508 standards. Examples include Accessibility Color Wheel, Cynthia Says, WAVE, WebXact

Accessibility Extensions: Accessibility extensions are available for popular Internet browsers (Internet Explorer, Netscape, Firefox, and Mozilla) that help evaluate the page currently on the browser window. These accessibility extensions are easily downloadable and once installed, afford extra menu options within the browser itself. Examples include AIS Accessibility Toolbar, Web Developer Extension for Mozilla-based Browsers, and Accessibility Extension for Mozilla/Firefox

9.4.2 User Tools

Screen Readers: A screen reader is assistive technology software that helps the blind, visually impaired people to access the web information content in the form of a) text-to-speech b) sound or c) Braille output. Examples include Jaws (Job Access with Speech,) Windows-Eyes.

Screen Magnifiers: Screen Magnifier devices assist the people with low-vision to view the screen information in a magnified fashion. Examples include Zoom Text Xtra, MAGic, and Dolphin Lunar.

Voice recognition software: Voice/Speech recognition software is used by physically disabled people who cannot use a mouse and/or keyboard. It basically accepts the audio input from a disabled user and converts into text commands for the computer. The text commands control applications and mouse movement and help the disabled user to communicate ideas in written format. Examples include Dragon Naturally Speaking, IBM ViaVoice and iCommunicator.

New Assistive Devices/Software: Examples include Surf Right Toolbar, Connect Outloud, and pwWebSpeak.