

2. World Wide Web Consortium

W3C:

The World Wide Web Consortium (W3C) is a vendor-neutral, non-profit international organization. Organizations from all over the world, join W3C to participate in the creation of Web standards. W3C Members, staff and invited experts work together to design technologies **to ensure that the Web will continue to thrive in the face of an growing diversity of people, hardware, and software.**

Mr. Tim Berners-Lee, the inventor of the World Wide Web and others created W3C as an industry consortium dedicated to building consensus around Web technologies.

The W3C activities are being co-ordinated by MIT (Cambridge, MA, USA), INRIA (France) and Keio University (Japan). There are Around 73 full time team members in Europe, Japan & US and about **400 members** all over the world.

The W3C Role:

- ♦ Pre-competitive venue
- ♦ Work and specification coordination
- ♦ Pre-competitive joint projects
- ♦ Sample implementations.
- ♦ Reference code
- ♦ Education

W3C has four long-term **goals** for the World Wide Web:

- ♦ **Web For Everyone:** Access the Web to work together, whatever their hardware, software, network infrastructure, native language, culture, geographical location, or physical or mental ability.
- ♦ **Web on Everything:** W3C's goal is to make Web access from any kind of device (mobile phones, smart phones, personal digital assistants, interactive television systems, voice response systems, etc) as simple, easy and convenient as Web access from a desktop.
- ♦ **Knowledge Base:** Web is a vast database, W3C aims at developing a Web that holds information for both human and machine processing.

- ♦ **Trust and Confidence:** Web is useful medium for social transactions. W3C goal is to promote technologies that enable a more collaborative environment, a Web where accountability, security, confidence, and confidentiality are all possible.

W3C Process:

- ♦ Activity/WG creation: Member review
- ♦ WG Working Drafts (regular public version)
- ♦ Last Call (public)
- ♦ Candidate Recommendation: Implementation experience
- ♦ Proposed Recommendation: Member review
- ♦ W3C Recommendation
- ♦ Other documents
- ♦ W3C Notes
- ♦ Includes: Submissions

W3C Groups:

W3C Activities are organized into groups:

- ♦ **Working Groups** (for technical developments),
- ♦ **Interest Groups** (for more general work),
- ♦ **Coordination Groups** (for communication among related groups).

These groups, made up of participants from Member organizations. Team and Invited Experts, produce the draft standards, technical reports, open source software, and services. Currently **23 W3C Activities** containing **54 groups**. The details of these activities available at Annexure-I.

W3C Domains:

W3C Activities are grouped by domain. There are four domains Architecture, Interaction, Technology & Society and Web Accessibility Initiative.

- ♦ **Architecture:** The various activities in the architecture domain include formation of specifications for DOM (Document Object Model), Internationalization, URI (Uniform

Resource Identifier), Web Services, XML (Extensible Markup Language) etc.

- ♦ **Interaction:** The various activities in the architecture domain are to evolve standards for Device Independence, Graphics, HTML (Hypertext Markup Language), Math, Multimodal Interaction, Style, Synchronized Multimedia, Voice Browser, XForms etc.
- ♦ **Technology & Society:** The areas covered under this domain are the developments related to Patent Policy, Privacy, Semantic Web, XML Key Management etc.
- ♦ **Web Accessibility Initiative:** WAI International Program Office focuses on education and outreach and research and development. Web accessibility guidelines are essential for Web site development and for Web-related applications development.

Major achievements of W3C:

In its first ten years, W3C has published more than 80 web technology related recommendations. A W3C Recommendation is considered a Web standard.

Some of the web standards developed by W3C include CSS (Cascading Style Sheets) separating content from structure; WAI (Web Accessibility Initiative) guidelines for web content, HTML 4.0 that adds tables, scripting, style sheets, internationalization and accessibility features to web publishing; XML 1.0 that promotes interoperability and domain-specific mark up, it is emerging as lingua franca of web; SVG (Scalable Vector Graphics) for next generation mobile applications; Web Services Activity to provide a standard means of inter-operating between different software applications, running on a variety of platforms/ frameworks; RDF (Resource Description Framework) and OWL (Web Ontology Language) are Semantic Web standards that provide framework asset management, enterprise integration and reuse of data; Voice XML 2.0 for content delivery in interactive voice response applications etc.

W3C member and benefits of becoming W3C Member:

Membership benefits of W3C cover its involvement from simply associating with W3C endeavors,

receiving early access to Member-confidential information, assisting with driving work efforts, generating new ideas, and developing future guidelines for inter-operable web technologies. W3C members can have seat on W3C Advisory Committee, participate in W3C working group and W3C Internet Groups have right to use W3C Member logo, access to W3C information.

W3C Members help pioneer the growth process as the W3C member participate in the Standards building process for global commerce and information exchange.

The benefits of becoming W3C member are as given:

- ♦ W3C Members get upto date information about the Web technologies which helps in taking strategic decision. **This information is exclusively available to members only.**
- ♦ W3C Members are actively involved in evolving the Web and its services. Members participate in W3C Working Groups, where specifications and guidelines are developed, and in W3C Interest Groups, where discussions are conducted.
- ♦ W3C Members send engineers to work in W3C Working Groups, together with W3C technical staff, to produce technical specifications for Web technologies. **With this participation we may ensure the adequate standards of web technologies for Indic languages.**
- ♦ There is a need to involve local developer in Standards evolution so that Cultural, regional and linguistics aspects can be addressed and **correct inputs are provided to W3C committees.**
- ♦ W3C members can participate in the various Workshops, Symposia and other events organized by W3C apart from working group meetings.

Annexure I

1. Architecture Domain:

- ♦ **Document Object Model (DOM) Activity:**
DOM is a standard Application Programming

Interface (API) to the structure of documents. DOM makes it possible for programmers to write applications which work properly on all browsers and servers and on all platforms.

There is one group in this activity, named:

DOM Interest Group

♦ **Extensible Markup Language (XML) Activity:**

XML is a simple, flexible text format derived from SGML.

There are seven groups in this activity, named:

XML Coordination Group

XML Core Working Group

XML Plenary Interest Group

XML Query Working Group

XML Schema Interest Group

XML Schema Working Group

XSL Working Group

♦ **Internationalization Activity:**

This Activity is ensure that W3C's formats and protocols are open to all of the world's languages, writing systems, character codes and local conventions.

There are four groups in this activity, named:

Internationalization (I18n) Core Working Group

Internationalization (I18n) Guidelines, Education & Outreach Working Group

Internationalization (I18n) Interest Group

Internationalization (I18n) Tag Set Working Group

♦ **URI Activity: Uniform Resource Identifiers**

The URI is a single global identification system to build a global community in which any party can share information with any other party.

There is one group in this activity, named:

URI Interest Group

♦ **Web services Activity:**

Web services provide a standard means of

interoperating between different software applications, running on a variety of platforms and/or frameworks.

There are six groups in this activity, named:

Semantic Web Services Interest Group

Web Services Addressing Working Group

Web Services Coordination Group

Web Services Choreography Working Group

Web Services Description Working Group

XML Protocol Working Group

2. **Interaction Domain:**

♦ **Compound document formats Activity:**

Compound document is a document that combines multiple formats, such as XHTML, SVG, SMIL and XForms. The W3C Compound Document Formats (CDF) Working Group will specify the behavior of some format combinations, addressing the needs for an extensible and interoperable Web.

There is one group in this activity, named:

Compound Document Formats Working Group

♦ **Device Independence Activity:**

The W3C Device Independence Activity is working to ensure seamless Web access with all kinds of devices, and worldwide standards for the benefit of Web users and content providers alike. A threat we face is that only parts of the Web will be accessible from cellular phones, TV, digital cameras, and in-car computers.

There is one group in this activity, named:

Device Independence Working Group

♦ **Graphics Activity:**

Graphics play a critical role in Web, from decorative graphics through advertising to diagrams and interactive user interfaces. Scalable Vector Graphics (SVG), the current effort of the Activity, brings the powerful combination of interactive, animated two-dimensional vector graphics and Extensible Markup Language (XML).

There is one group in this activity, named:

SVG Working Group

♦ **HTML Activity:**

The HTML Working Group is chartered to evolve HTML into an XML-based markup, modularize it to make it easier to combine it with other markup languages, and correct the problems known still to exist, in areas such as internationalization, accessibility, device independence and forms processing.

There are two groups in this activity, named:

HTML Working Group

Hypertext Coordination Group

♦ **Math Activity:**

Mathematics is an essential aspect of scientific communication and education. Mathematical expressions must move seamlessly between the Web and a wide range of related environments including authoring tools and content management systems, XML-based publishing work flows, e-learning environments, and scientific computing software. The Math Activity created the Mathematical Markup Language (MathML), a highly-structured, information-rich, XML encoding for mathematical expressions, and is chartered to maintain it.

There is one group in this activity, named:

Math Interest Group

♦ **Mobile Web Initiative Activity:**

Mobile Web access suffers from interoperability and usability problems that make the Web difficult to use for most mobile phone subscribers. W3C's Mobile Web Initiative (W3C MWI) proposes to address these issues through a concerted effort of key players in the mobile production chain, including authoring tool vendors, content providers, handset manufacturers, browser vendors and mobile operators.

There are two groups in this activity, named:

Mobile Web Best Practice Working Group

MWI Device Description Working Group

♦ **Multimodal Interaction Activity:**

Web to allow users to dynamically select the most appropriate mode of interaction for their current needs. Benefits over uni-modal interaction when hands-free operation is needed, for mobile devices with limited keypads, and for controlling other devices. Users can provide input via speech, handwriting, and keystrokes, with output presented via displays, pre-recorded and synthetic speech, audio, and tactile mechanisms such as mobile phone vibrators and Braille strips.

There is one group in this activity, named:

Multimodal Interaction Working Group

♦ **Style Activity:**

CSS is playing an increasingly important role in styling not just HTML, but also many kinds of XML documents. It is also an important means of adapting pages to different devices, such as mobile phones or printers.

There is one group in this activity, named:

Cascading Style Sheets (CSS) Working Group

♦ **Synchronized Multimedia Activity:**

This Activity designed the Synchronized Multimedia Integration Language (SMIL, pronounced smile) for choreographing multimedia presentations where audio, video, text and graphics are combined in real time.

There are two groups in this activity, named:

SYMM Working Group

Timed Text Working Group

♦ **Voice Browser Activity:**

The convergence of telecommunications and the Web is now bringing the benefits of Web technology to the telephone, enabling Web developers to create applications that can be accessed via any telephone, and allowing people to interact with these applications via speech and telephone keypads.

There is one group in this activity, named:

Voice Browser Working Group

♦ **XForms Activity:**

XForms is a markup language that addresses the modern needs of electronic forms. It is based on XML, it addresses questions of authorability, usability, accessibility, device independence, internationalization, integration into different host languages, and reducing the need for scripting.

There is one group in this activity, named:

XForms Working Group

3. **Technology and Society Domain:**

♦ **Patent Policy Activity:**

Patent Policy Activity's goal is to enable W3C to implement and successfully operate the W3C Patent Policy.

There is one group in this activity, named:

Patents and Standards Interest Group

♦ **Privacy Activity:**

P3P allows people to define and publish their Web site privacy policies, and helps automate how those policies are read.

There are four groups in this activity, named:

P3P Coordination Group

P3P Interest Group

P3P Policy and Outreach Working Group

P3P Specification Working Group

♦ **Semantic Web Activity:**

Goal of the Semantic Web initiative is to create a universal medium for the exchange of data where data can be shared and processed by automated tools as well as by people.

There are four groups in this activity, named:

RDF Data Access Working Group

Semantic Web Interest Group

Semantic Web Best Practices and Deployment Working Group

Semantic Web Coordination Group

4. **Web Accessibility Initiative:**

♦ **WAI International Program Office Activity:**

It is essential to ensure that the Web is accessible to people with disabilities. The WAI International Program Office helps create a forum where representatives of industry, the disability community, research, and government work together to identify accessibility requirements and develop solutions under W3C Process.

There are four groups in this activity, named:

Education and Outreach Working Group

Research and Development Interest Group

WAI Coordination Group

WAI Interest Group

♦ **WAI Technical Activity:**

The WAI Technical Activity addresses barriers to Web accessibility on several levels. First, it seeks to ensure that the full range of core technologies of the Web, from HTML to the Semantic Web, is accessible. The WAI Technical Activity also promotes implementation of accessibility improvements in Web technologies through development of a set of three WAI guidelines as Recommendations: Web Content Accessibility Guidelines; User Agent Accessibility Guidelines; and Authoring Tool Accessibility Guidelines.

There are five groups in this activity, named:

Authoring Tool Accessibility Guidelines Working Group

Evaluation and Repair Tools Working Group

Protocols and Formats Working Group

User Agent Accessibility Guidelines Working Group

Web Content Accessibility Guidelines Working Group

References:

<http://www.w3.org>