



About the World Wide Web Consortium (W3C)

The [World Wide Web Consortium](#) was created in October 1994 to lead the World Wide Web to its full potential by developing common protocols that promote its evolution and ensure its interoperability. W3C has around 500 [Member organizations](#) from all over the world and has earned international recognition for its contributions to the growth of the Web.

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A [printable version](#) of this information page is also available.

Background

In October 1994, [Tim Berners-Lee](#), inventor of the Web, founded the World Wide Web Consortium (W3C) at the [Massachusetts Institute of Technology](#), [Laboratory for Computer Science](#) [MIT/LCS] in collaboration with [CERN](#), where the Web originated, with support from [DARPA](#) and the [European Commission](#). For further information on the joint initiative and the contributions of CERN, INRIA, and MIT, please see the statement on the [joint World Wide Web Initiative](#).

In April 1995, the [INRIA](#) (Institut National de Recherche en Informatique et Automatique) became the first European W3C host, followed by [Keio University of Japan](#) (Shonan Fujisawa Campus) in Asia in 1996. W3C continues to pursue an international audience through its [Offices](#) worldwide.

Related background and historical information:

- [About the Web](#)
- [Web History](#)
- [Virtual Library](#)
- [CERN Server](#)

W3C Mission

By promoting interoperability and encouraging an open forum for discussion, W3C commits to leading the technical evolution of the Web. In just over seven years, W3C has developed more than forty [technical specifications](#) for the Web's infrastructure. However, the Web is still young and there is still a lot of work to do, especially as computers, telecommunications, and multimedia technologies converge. To meet the growing expectations of users and the increasing power of machines, W3C is already laying the foundations for the next generation of the Web. W3C's technologies will help make the Web a robust, scalable, and adaptive infrastructure for a world of information. To understand how W3C pursues this mission, it is useful to understand the Consortium's goals and driving principles.

W3C's Goals

W3C's long term goals for the Web are:

1. *Universal Access*: To make the Web accessible to all by promoting technologies that take into account the vast differences in culture, languages, education, ability, material resources, and physical limitations of users on all continents;
2. *Semantic Web* : To develop a software environment that permits each user to make the best use of the resources available on the Web;
3. *Web of Trust* : To guide the Web's development with careful consideration for the novel legal, commercial, and social issues raised by this technology.

W3C's Role

As with many other information technologies, in particular those that owe their success to the rise of the Internet, the Web must evolve at a pace unrivaled in other industries. Almost no time is required to turn a bright idea into a new product or service and make it available on the Web to the entire world; for many applications, development and distribution have become virtually indistinguishable. At the same time, easy customer feedback has made it possible for designers to fine tune their products almost continually. With an audience of millions applying W3C specifications and providing feedback, W3C concentrates its efforts on three principle tasks:

1. *Vision*: W3C promotes and develops its vision of the future of the World Wide Web. Contributions from several hundred dedicated researchers and engineers working for [Member organizations](#), from the [W3C Team](#) (led by [Tim Berners-Lee](#), the Web's inventor), and from the entire Web community enable W3C to identify the technical requirements that must be satisfied if the Web is to be a truly universal information space.
2. *Design*: W3C designs Web technologies to realize this vision, taking into account existing technologies as well as those of the future.
3. *Standardization*: W3C contributes to efforts to standardize Web technologies by producing specifications (called "Recommendations") that describe the building blocks of the Web. W3C makes these Recommendations (and other [technical reports](#)) freely available to all.

Design Principles of the Web

The Web is an application built on top of the Internet and, as such, has inherited its fundamental design principles.

1. *Interoperability*: Specifications for the Web's languages and protocols must be compatible with one another and allow (any) hardware and software used to access the Web to work together.
2. *Evolution*: The Web must be able to accommodate future technologies. Design principles such as simplicity, modularity, and extensibility will increase the chances that the Web will work with emerging technologies such as mobile Web devices and digital television, as well as others to come.
3. *Decentralization*: Decentralization is without a doubt the newest principle and most difficult to apply. To allow the Web to "scale" to worldwide proportions while resisting errors and breakdowns, the architecture (like the Internet) must limit or eliminate dependencies on central registries.

These principles guide the work carried out within W3C Activities.

W3C Activities

W3C does most of its work with an explicit mandate from the Membership. As described in the Process Document (refer to [section 3.1 of the 8 February 2001 version](#)), the [Members](#) review proposals for work called "Activity proposals". When there is consensus among the Members to pursue this work, W3C initiates a new Activity.

[W3C Activities](#) are generally organized into [groups](#): Working Groups (for technical developments), Interest Groups (for more general work), and Coordination Groups (for communication among related groups). These groups, made up of representatives from Member organizations, the Team, and invited experts, produce the bulk of W3C's results: [technical reports](#), [open source software](#), and services (e.g., validation services). These groups also ensure coordination with other standards bodies and technical communities. There are currently over thirty W3C Working Groups.

To facilitate management, the **Team** organizes W3C Activities and other work into five domains:

Architecture Domain

The Architecture Domain develops the underlying technologies of the Web.

Document Formats Domain

The Document Formats Domain works on formats and languages that will present information to users with accuracy, beauty, and a higher level of control.

Interaction Domain

The Interaction Domain seeks to improve user interaction with the Web, and to facilitate single Web authoring to benefit users and content providers alike.

Technology and Society Domain

The W3C Technology and Society Domain seeks to develop Web infrastructure to address social, legal, and public policy concerns.

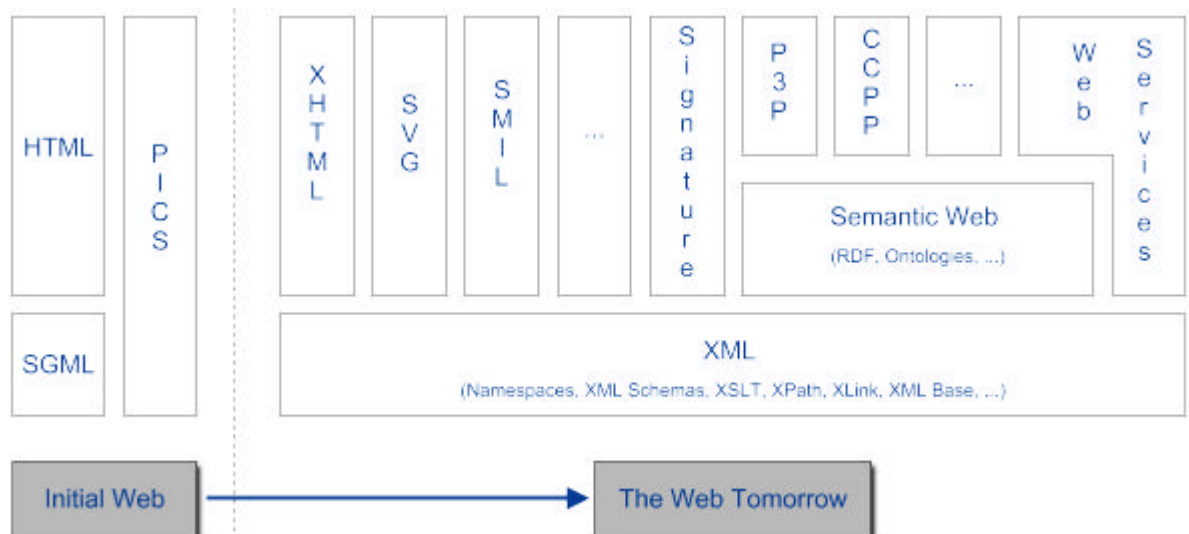
Web Accessibility Initiative (WAI)

W3C's commitment to lead the Web to its full potential includes promoting a high degree of usability for people with disabilities. The Web Accessibility Initiative (WAI), is pursuing accessibility of the Web through five primary areas of work: technology, guidelines, tools, education and outreach, and research and development.

In addition, the **Quality Assurance (QA)** Activity and **Patent Policy** apply to all domains. For information about the Activities of each domain, please refer to the domain's home page.

Some W3C Recommendations to date

Guided by these design principles, W3C has published more than forty Recommendations since its inception. Each Recommendation not only builds on the previous, but is designed so that it may be integrated with future specifications as well. W3C is transforming the architecture of the initial Web (essentially HTML, URIs, and HTTP) into the architecture of tomorrow's Web, built atop the solid foundation provided by XML.



W3C Recommendations include:

- (X)HTML: Several versions of HTML have stabilized the explosion in functionalities of the Web's primary markup language. HTML 3.2 was published in January 1997, followed by [HTML 4](#) (first published December 1997, revised April 1998, and revised again as HTML 4.01 in December 1999). [XHTML 1.0](#), which features the semantics of HTML 4.01 using the syntax of XML, became a Recommendation in January 2000. [XHTML 1.1](#), the modularized version of XHTML, was published in May 2001. The modularization of XHTML makes it possible to develop various XHTML profiles, well adapted to particular device types or user communities. [XHTML Basic](#), published in December 2000, is an example for an XHTML profile developed for Web clients such as mobile phones, PDAs, pagers, and settop boxes.
- CSS: Two versions of CSS offer site designers a rich palette for styling Web pages. By allowing the separation of structure and presentation, style sheets make site management easier and promote Web accessibility. CSS can be used to control the presentation of HTML as well as of any XML

content. CSS1 was published in December 1996, and [CSS2](#) in May 1998.

- [XML 1.0](#): The XML 1.0 Recommendation (published in February 1998) was the first step towards the next generation Web, allowing each community to design languages that suit their particular needs and integrate them harmoniously into a general infrastructure based on XML. Since XML 1.0, a number of Recommendations have been added to the XML infrastructure. [XML Namespaces](#) was published in January 1999, [Associating Style Sheets with XML documents](#) was published in June 1999. [XSLT](#), for XML transformations, and its companion [XPath](#), were published in November 1999: using these technologies an XML file can be transformed into any other type of XML file, for example into XHTML or SVG, for the purpose of presentation. [XLink](#) and [XML Base](#), both published in June 2001, define a general hyperlinking vocabulary to XML. A major step forward was made with the publication of [XML Schema structures](#) and [datatypes](#) in May 2001. XML Schemas provide functionalities above and beyond what is provided by DTDs and are essential in defining complex XML applications.
- DOM: The Document Object Model is an application programming interface for providing access to document structure, style, events, and more. Because it does not rely on a particular programming language, it facilitates the design of active Web pages and provides a standard interface for other software to manipulate HTML and XML documents. [DOM Level 1](#) was published in October 1998 followed, in November 2000, by DOM Level 2. (DOM Level 2 is a set of 5 documents; see the [DOM Technical Reports page](#) for more details and links.)
- [MathML 2.0](#): MathML 2.0, published in February 2001 (based on an earlier release published in July 1999), is the fundamental tool for marking up mathematics on the Web using XML.
- [PNG](#): Portable Network Graphics is an extensible file format for the lossless, portable, well-compressed storage of raster images. Unencumbered by IPR issues, PNG has become one of the most widely used raster image formats on the Web, implemented by all major browsers. PNG was published in 1996.
- [WebCGM](#): WebCGM is based on CGM (Computer Graphics Metafile), an ISO Standard for vector and composite vector/raster picture definition. CGM has a significant following in technical illustration, electronic documentation, the CAD industry, to name just a few application areas, which already use a large number of documents coded in CGM. WebCGM allows the publication of these documents on the Web without a major investment in conversions, thereby ensuring interoperability among users. WebCGM was first published in 1999, with a second release in 2001.
- [SVG 1.0](#): Scalable Vector Graphics (SVG) 1.0, was published in September 2001. SVG is a major breakthrough in bringing vector graphics to the Web. Based on XML, editable by any text editor and manageable by search engines, SVG provides a rich graphics content and animation facilities, offering a strong alternative to the usage of bitmaps images.
- [SMIL 2.0](#): SMIL 2.0 allows authors to create synchronized multimedia presentations on the Web. SMIL 2.0 will also play a vital role in the new generation of internet-aware phones. It was published in August 2001 (and is based on an earlier version, completed in June 1998).
- [RDF](#): The Resource Description Framework Model and Syntax specification (published in February 1999) is the first Recommendation on which the Semantic Web will be built. RDF provides a standard vocabulary and encoding techniques to attach metadata to any resource on the Web.
- [PICS](#) : Several PICS (Platform for Internet Content Selection) specifications (October 1996, December 1997, May 1998) describe a mechanism for allowing users to select and filter labeled Web content. PICS provided a first example of using metadata on the Web.
- [XML-Signature](#): published in February 2002, is an important step towards the Web of trust. It defines an XML-based framework to add digital signatures to resources on the Web.
- [P3P 1.0](#): the Platform for Privacy Preferences (P3P) 1.0, published in April 2002, provides a standard, simple, automated way for users to gain more control over the use of personal information on Web sites they visit.
- Web Accessibility Guidelines: The Web Accessibility Initiative has published two Recommendations so far to promote access to the Web for people with disabilities. The principles of these guidelines also benefit all users and are very similar to guidelines for mobile access. The [Web Content Accessibility Guidelines 1.0](#), which explains how to author accessible Web pages and sites, was published in May 1999. The [Authoring Tool Accessibility Guidelines 1.0](#), which explains how to build authoring tools that produce accessible content and are accessible to users with disabilities, was published in February 2000.

Challenges for tomorrow

In other specifications, W3C is addressing a number of challenges for the Web of tomorrow.

- *Ensure access to the Web by many devices*. The Web is becoming accessible from a wide range of devices including cellular phones, TV, digital cameras, and in-car computers. Interaction with resources on the Web can be achieved through a key pad, mouse, voice, stylus or other input devices. There is a danger that that only parts of the Web will be accessible from these devices.

W3C is dedicated to ensure that the Web universe is not fragmented. W3C has recently started two activities, namely [Device Independence](#) and [Multimodal Interaction](#) (started in 2001 and 2002, respectively) to contribute to W3C's goal of universal access. These activities continue and complement the work already started by the modularization of XHTML or of SMIL, the development of the [CC/PP](#) framework (Composite Capability/Preference Profiles), the rise of [XSLT](#), the Web Accessibility Guidelines, etc., which all contribute to the effort to ensure equal access to the same information space.

- *Promote best practices.* W3C cannot ensure the implementation of its specifications unless the community of developers and users are convinced of their worth. Promotion and education are critical to W3C's success. Part of this effort includes publishing guidelines for good practices (including the Web Accessibility Guidelines already available), offering [validation services](#) (developed within W3C or by its partners), test suites, prototype and sample applications, and responsiveness to public input and questions. W3C's work does not stop when a Recommendation is published, but continues through the promotion, support, maintenance, and improvement of its specifications.
- *Coordinate with international regulatory bodies.* The integration of the Web into people's daily lives requires consistency with existing regulations and those in development (e.g., for the protection of personal information). An ongoing dialog between legislators and Web developers is necessary to ensure a regulatory environment that is fair, precise, and realistic.
- *Account for cultural diversity.* To ensure access to the Web by people speaking different languages, with different writing conventions, and having different cultural backgrounds, W3C will continue its important work in the [Internationalization Activity](#).
- *Encourage research.* The Web owes some of its rapid growth to advances in research achieved over the last thirty years. Continued evolution at a comparable rate will require new research in the areas of knowledge representation, protocol optimization, and, in general, architecture design for large-scale distributed systems.

W3C Organization

To meet its goals (universal access, semantic Web, Web of trust) while exercising its role (vision, design, standardization) and applying its design principles (interoperability, evolution, and decentralization), W3C process is organized according to three principles:

1. *Vendor neutrality:* The W3C hosts (MIT, KEIO, INRIA) are vendor and market neutral, as is the [Team](#). W3C promotes neutrality by encouraging public comment on specifications during their entire life cycle.
2. *Coordination:* The Web has become phenomenon so important (in scope and investment), that no single organization can or should have control over its future. W3C coordinates its efforts with other standards bodies and consortia such as the [IETF](#) (Internet Engineering Task Force), the [WAP Forum](#) (Wireless Application Protocols Forum), the [Unicode Consortium](#), the [Web3D Consortium](#), and several ISO committees.
3. *Consensus:* Consensus is one of the most important principles by which W3C operates. When resolving issues and making decisions, W3C strives to achieve unanimity of opinion. Where unanimity is not possible, W3C reaches decisions by considering the ideas and viewpoints of all participants, whether W3C Members, invited experts, or the general public.

W3C Process

These organizational principles are embodied in the Member contract and the [W3C Process Document](#), which govern W3C's operations. The Process Document is a public document that describes the [W3C Organization](#), [W3C Activities](#) and [Groups](#), how [consensus](#) governs W3C work, the [W3C Recommendation Track](#), and the [W3C Submission Process](#).

W3C Members

Through investment and active participation in [W3C Activities](#), the Members ensure the strength and direction of the Consortium. Members include vendors of technology products and services, content providers, corporate users, research laboratories, standards bodies, and governments, all of whom work to reach consensus on a direction for the Web. These organizations are typically investing significant resources into the web, in developing software products, in developing information products, or most commonly in its use an enabling medium for their business or activity. There has been a strong desire that the stability of the Web should be maintained by a competent authority, and many prospective W3C Members have expressed their desire to provide funding in support of that effort. W3C is thus financed

primary by its [Members](#) and, to a lesser extent, by public funds. W3C Membership is available to all organizations.

Some benefits of W3C Membership include:

- A seat on the [W3C Advisory Committee](#) ("AC"). The AC consists of one representative from each Member organization. The Advisory Committee representative is the official link between the Member organization and the Team. The Advisory Committee reviews proposals for new [Activities](#) and [proposed Recommendations](#).
- The ability to provide strategic direction to the Consortium
- Access to the [Member Web site](#) (*Members only*) containing information on events, technologies, software releases, working groups, forums, mailing lists, news and announcements.
- W3C news services, which include updates on W3C activities, announcements for meetings, workshops and conferences; calendar of events, and team information is sent directly via email to AC Representatives and posted on the Member Site.
- Participation in Interest Groups, Working Groups, and Workshops
- The right to use the W3C Member Logo on your Web site and to participate in press releases through, for example, testimonials.

For more information about Membership, please consult these resources:

- [Frequently Asked Questions \(FAQ\) about W3C Membership](#)
- [How to Join W3C](#). Membership is open to any organization which signs a Membership Agreement.
- [The list of current W3C Members](#)
- [The Member home page](#) (*Members only*).

W3C Team

The [W3C Team](#) includes more than sixty researchers and engineers from around the world who lead the technical Activities at W3C and manage the operations of the Consortium. Most of the Team works physically at the three host institutions ([MIT/LCS](#) in the United States, [INRIA](#) in France, and [Keio University](#) in Japan).

Led by the Chief Operating Officer ([Steve Bratt](#)) and the Director ([Tim Berners-Lee](#)), the Team has a number of roles, including:

- To provide direction to W3C by keeping up-to-date on new technology, market fluctuations, and the activities of related organizations;
- To organize and manage W3C Activities so as to optimize the achievement of goals within practical constraints (such as resources available);
- To ensure cooperation between Members while promoting innovation;
- To manage the [W3C Web site](#): <http://www.w3.org>;
- To communicate W3C results to the [Members](#) and the Press:
 - [W3C press releases](#)
 - [W3C in the press](#)
- To market W3C results to gain wide acceptance for them in the Web community.
- To market W3C and attract new Members -- the larger the member base, the easier it will be to promote W3C Recommendations.

For more information about the Team, please consult these resources:

- [People of the W3C](#)
- [Conflict of Interest Policy](#)
- [Presentations given by the W3C Team](#)
- [Upcoming events with W3C participation](#)
- [How to Contact W3C](#)
- [Job openings at W3C](#)

W3C Technical Architecture Group (TAG)

The W3C Technical Architecture Group (TAG) was created in July 2001 to provide stewardship of the Web architecture. The TAG will document cross-technology Web architecture principles, and resolve

architectural issues. Chaired by the W3C Director, the TAG consists of five elected and three appointed participants. Like other W3C Working Groups, the TAG will use the W3C Recommendation track to build consensus around its documents. The TAG will conduct its work on a public mailing list.

For more information about the TAG and Architectural Recommendations, please consult the [TAG home page](#).

W3C Advisory Board

The W3C Advisory Board was created in March 1998 to provide guidance to the Team on issues of strategy, management, legal matters, process, and conflict resolution. The Advisory Board, which is elected by the Advisory Committee, is not a board of directors and has no decision-making authority within W3C; its role is strictly advisory. The Advisory Board also proposes changes to the [W3C Process](#) to the Advisory Committee.

W3C Offices

In order to promote international involvement in Web development and in W3C, a number of countries have established W3C Offices. These local points of contact help ensure that W3C and its specifications are known in those countries. Each Office works with its regional Web community to develop participation in [W3C Activities](#).

Please consult the [Offices home page](#) for more information about the role of the Offices and current Office locations.

W3C Liaisons

W3C is the organization where core Web technologies are developed. There are many other organizations developing standards for the Internet or the Web in general, and in some cases, their activities may overlap with W3C activities. To allow clear progress, it is important for the role and domain of operation of each organization with respect to the Web and W3C be identified and for communication between the two organizations to be efficient. The [list of W3C Liaisons](#) provides information about the nature of coordination with other organizations, and lists contact information.

W3C and the Public

The Web community extends far beyond the technical development happening at W3C. From the start, new Web technology has been created and has spread through grass roots efforts. There are many ways for people interested in the Web but who are not employees of a [Member organization](#) to pursue their interest through W3C:

- *Participate in discussions on [public W3C mailing lists](#).* The Consortium hosts discussions on a number of public email lists. Please read the archives to see if your questions or comments have already been addressed.
- *Contribute to [W3C open source software](#).* Early implementation of new technology in open source makes a huge difference to the market, to the credibility of the technology, and to the ability of people anywhere, in commercial or academic labs or at home, to build one each step by experimenting with the next. If you make a trial implementation of a Working Draft, you provide invaluable feedback on the specification, and you get into the edge of the edge.

If you make a definitive contributed implementation of a standard at any stage in the process, then you further test it, but also you create a platform which allows anyone developing code a way of picking up the new functionality - in a standard way - very fast. Also, by seeding the marketplace with initial implementations, you put pressure on manufacturers to stick to the spec too, leading to a more interoperable Web.

- *Translate a [technical report](#).* Contribute to the [list of translations of technical reports](#), and find out how to volunteer and collaborate with other translators.
- *Participate in a Working Group as an invited expert.* If you have a high level of expertise in a specific field which is being addressed by a current W3C Working Group, you may ask the Chair to invite you to participate, even if you do not work for a [Member organization](#). This status is reserved for those prepared to devote significant time toward the the Working Group. It is not to be taken on primarily

as a learning activity. You'll need to sign the [invited expert agreement](#) to take care of IPR issues before you can start. Please contact the Chair or the W3C Team Contact for the relevant Working Group for more information. Their email addresses should be on the home page of the managing [Activity](#).

- *Attend conferences where W3C participates.* The Consortium generally runs its own "W3C Track" of sessions at the [International World Wide Web conferences](#). The public is invited to attend, to ask questions, to give feedback, and to talk with the Team. To find the next one, check the [International WWW Conference series home page](#)

W3C is hosted by the [Laboratory for Computer Science](#) at [MIT](#), by [INRIA](#) and [Keio University](#) with support from [DARPA](#) and the [European Commission](#).



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Based on a French version by *Jean-François Abramatic*, created December 1999

Last updated: \$Date: 2002/07/13 09:27:46 \$ by \$Author: ivan \$

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