

W3C

and the

OPEN WEB PLATFORM

by Jeff Jaffe

The

WORLD WIDE WEB

"Thirty years ago, we couldn't know that something called the Internet would lead to an economic revolution."

BARACK OBAMA

FEBRUARY 2011

The

WORLD WIDE WEB CONSORTIUM

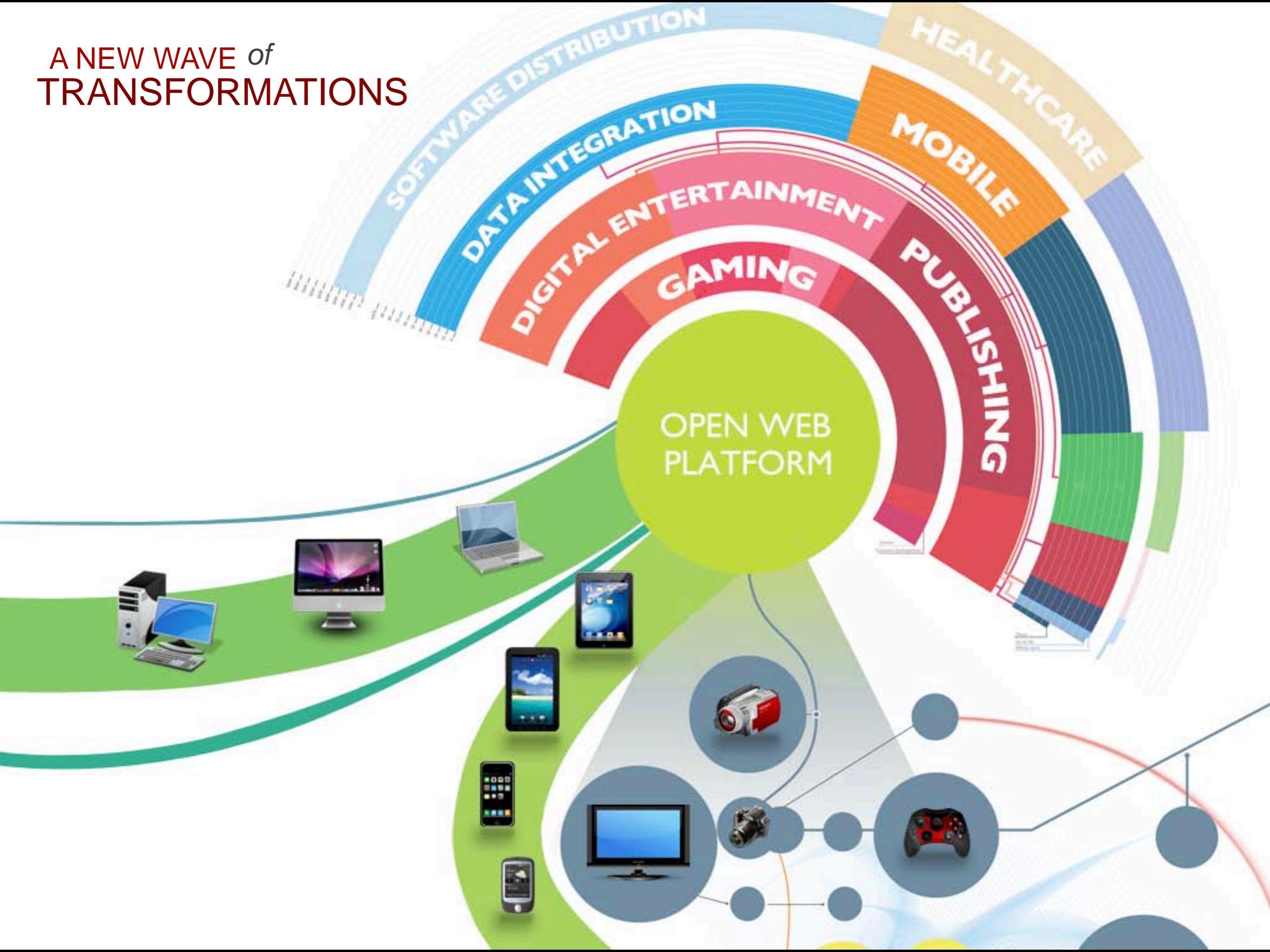
Actually, we had some ideas about that ...



TIM BERNERS-LEE

WEB INVENTOR AND W3C DIRECTOR

A NEW WAVE of TRANSFORMATIONS





OPEN WEB PLATFORM

A platform for innovation, consolidation and cost efficiencies.

W3C is shaping the future of global business.

Web pages are more beautiful, interactive, intelligent

HTML5 provides cross-browser interoperability and all major browser vendors plan to support it

Video a first-class citizen

Simplified data integration

Numerous devices

Tools for social networking (privacy, security, identity)

WEB IS CENTRAL

The

USAGE

- Accessed by billions
- In many languages
- Vital for information sharing, entertainment, education, commerce

TECHNOLOGY

- Common, pervasive, and interoperable
- Internationalized
- Widely used by developers
- Linked sites and linked data

INDUSTRY IN TRANSITION

TELEVISION



*Goodbye TV, hello multi-platform multi-media delivery
and interaction.*

WEB TRANSPORTS AND ENHANCES TV

- Analog-to-digital conversion is nearly complete
- User generated content commonplace on Internet
- Convergence has started, but where will it take us?
 - User content and premium content
 - How much integration of Web content into programming?
 - Internet, wireless, or conventional distribution
 - Device: TV, laptop, handheld
- Different stakeholders have different perspectives
 - Traditional broadcast
 - Telecoms
 - Content providers
 - New entrants (youtube, netflix, hulu, pandora, ...)
 - Device manufacturers

WHAT'S ON TELEVISION FROM W3C

HTML5

CSS3

SVG Graphics

Widgets

Device APIs and Protocols (DAP)

Codecs

Security

Privacy

Accessibility

New

NEXT GENERATION PRIORITIES FOR TELEVISION

Multimedia, multi-device delivery and interaction

Dual screen scenarios

Adaptive streaming of content

Enhanced viewer experience

Home networking

E-commerce (example: social networking and shopping during program)

Content protection

Testing

Accessibility

Action spotlights

OPEN WEB PLATFORM AND TELEVISION

INTEREST GROUPS

Web and TV Interest Group formed

JANUARY 2011

WORKSHOPS

Web and TV Workshop

TOKYO, SEPTEMBER 2010

Web and TV Workshop

BERLIN, FEBRUARY 2011

Preliminary Recommendations

APRIL 2011

Final Recommendations

JUNE 2011

Web and TV Workshop

HOLLYWOOD, TBD

LIAISONS

IPTV, MPEG, DLNA

INDUSTRY IN TRANSITION

MOBILE



*The **Open Web Platform** is the new mobile operating system.*

The

WEB IS THE PREMIER PLATFORM FOR DIVERSITY OF MOBILE SPACE

HANDHELD INTELLIGENT DEVICES ARE UBIQUITOUS

- App Distribution
- More diversity of device types
- Greater degree of globalization of the Web

BUT NOW THIS PLATFORM IS DRIVING NEW CAPABILITY

- Focus of last several years has been the Mobile Web Initiative
- Increasingly, the same web, independent of device, processing power, screen size, etc.
- Location-based applications
- A platform for Web Applications, not just Web browsing

*The role of
W3C*

WHY MOBILE IS ON THE MOVE AT W3C

Mobile Web Initiative

HTML5

SVG Graphics

Device APIs and Protocols (DAP)

Privacy

Accessibility

NEXT GENERATION PRIORITIES FOR MOBILE

Web Apps (features + connectivity + standards
+ community)

Real-time communications and audio/video p2p streams

Points of interest

Geolocation

Augmented Reality

Widgets: packaging and securing of downloadable apps

Web Notifications

Web Events

New APIs (telephony, bluetooth, NFC, SIM, ...)

Offline Storage

Mobile Web for Social Development

OPEN WEB PLATFORM AND THE MOBILE WEB INITIATIVE

WORKSHOPS

Mobile and Web Technologies in Social and Economic Development

JUNE 2011

NEW WORKING GROUPS

- Real time communications
- Points of Interest
- Augmented reality
- Web notifications
- Web events

MOBILE WORLD CONGRESS 2011

Announcements: WAC (Appstores), Microsoft, AT&T

INDUSTRY IN TRANSITION



GAMING

The gaming industry seeks full feature app development platform for distributed and social games.

The

WEB IS FOR MASSIVE MULTI-PLAYER GAMES ON ANY DEVICE

- › Popularity of Web has driven web-based games
- › Social networking has changed the types of games that are played on-line
 - Driving requirements on performance, graphics
- › Mobile games require a new level of flexibility
- › Mobile game consoles with unique requirements
 - Web based development platform

WHY W3C IS A PLAYER IN THE GAME INDUSTRY

HTML5

DOM

Scalable vector graphics (SVG)

CSS 3.0

Security

Geolocation

Audio APIs

The

NEXT GENERATION PRIORITIES FOR GAMING

- Drive hardware enhancements implementability of spec on hardware
- 3D
- Web performance
- Consistency of implementation across platforms
 - Drives the need for a more complete tool set, debugging
- Offline cache; tools for visibility into resources
- Identity management
- Location and point of interest

Action spotlights

OPEN WEB PLATFORM AND GAMES

FOCUS ON
DEVELOPERS

Lyon workshop with developers at
TPAC 2010

Herzliya, Garage Geeks

JUNE 2010

WORKSHOPS

Identity in the Browser Workshop

MAY 2011

NEW WORKING
GROUPS

- Web performance
- Points of interest
- Augmented reality
- Audio

INDUSTRY IN TRANSITION

PUBLISHING



The Web is a full-featured, multimedia publishing ecosystem.

WEB HAS TRANSFORMED PUBLISHING DOCUMENTS, DATA

INDUSTRY LEADERS HAVE LONG
LEVERAGED THE WEB FOR
PUBLISHING

- Convenient access
- Varied pricing models
- Linked data

THE MARCH OF TECHNOLOGY CONTINUES
TO MAKE THE WEB EVEN MORE
ATTRACTIVE

- Even richer linking
- Fonts framework to enliven presentation
- Electronic book readers

*The role of
W3C*

THE BIG NEWS AT W3C IN DOCUMENTS AND DATA

HTML

XML

Semantic Web

SVG Graphics

CSS

XSL

The

NEXT GENERATION PRIORITIES FOR PUBLISHING DOCUMENTS AND DATA

Provenance is the next game changer to
increase the usage of linked data

Fonts Framework

Action spotlights

OPEN WEB PLATFORM AND PUBLISHING

ANNOUNCEMENTS

WOFF Font Framework

AUGUST 2010

NEW WORKING
GROUPS

▸ Provenance Working Group

REPORTS OF
SUCCESS

3.6% of Web data uses RDFa

INDUSTRY IN TRANSITION

GOVERNMENT DATA



The Web is increasing government transparency, efficiency, and lowering costs.

The

WEB HAS IMPROVED GOVERNANCE

GOVERNMENTS WORLD-WIDE ARE
PUBLISHING THEIR DATA IN AN OPEN
FASHION

- Linked government data a major theme due to public service nature
- Accessibility is key as the Web replaces paper forms
- Digital access is a “right” not a privilege
- Social networking has impact on politics in many countries

WHY THE PEOPLE ELECTED W3C AS THE FORUM FOR OPEN GOVERNMENT DATA

Web accessibility Initiative

HTML

XML

Semantic Web

eGov Interest Group

Internationalization

The

NEXT GENERATION PRIORITIES FOR GOVERNMENT DATA

- Web of Data
 - Accelerate open linked data
- Data Integration
 - Across agencies
 - Health
- Accessibility
 - Content authoring guidelines
 - Captioning for video
- Security
- Privacy

Action spotlights

OPEN WEB PLATFORM AND GOVERNMENT

NEW WORKING
GROUPS

Provenance Working Group

WORKSHOPS

Web Tracking and User Privacy Workshop

PRINCETON, APRIL 2011

Identity in the Browser Workshop

MOZILLA, MAY 2011

Federated Social Web Europe

SUMMER, 2011

DIRECT ENGAGEMENT
WITH GOVERNMENT

- › FCC VPAAC for captioning
- › EU Programs
- › EU Digital Agenda
- › Meetings with various governments worldwide
- › Also with government-oriented system integrators

INDUSTRY IN TRANSITION

DEVICES



The Web is everywhere.

The

WEB ACCOMMODATES A WORLD OF DEVICES

- › Desktop, then laptop, now wide range of devices
- › They have in common that they access the Web
- › Device manufacturers differentiate in form, function, capability
- › Aside from TV, the Web is moving into many consumer devices: automobiles, watches
- › Silicon manufactures and device manufacturers collaborate to specialize function; optimize performance

*The role of
W3C*

HOW W3C BUILDS A WEB OF DEVICES

Mobile Web Initiative

HTML5

SVG

CSS

WOFF Fonts

InkML

Multimodal Framework

The

NEXT GENERATION PRIORITIES FOR DEVICE MANUFACTURERS

- Considerations related to performance
 - What can be reduced to silicon
- Freezing specs earlier
- Testing
- Video codec standardization
- Offline storage as a design point

Action spotlights

OPEN WEB PLATFORM AND DEVICES

WORKSHOPS

- Two Web and TV Workshops
- Invitation to IEEE HQME Workshop
(offline storage of Web video)

TESTING

- HTML5 test harness

NEW WORKING GROUPS

- Web Events Working Group
- Web Performance Working Group

INFORMAL DISCUSSIONS

- Automotive sector
- Video codecs

WORLD IN TRANSITION

SOCIAL NETWORKING



SOCIAL WEB IS THE WEB OF PEOPLE

The Social Web has introduced an order-of-magnitude more people who are putting content on the Web.

They want the latest and greatest in video, image, graphics, and flexibility of device access. The scale of social networks drives performance concerns.

They are exploiting linkages between data as never before.

Constantly developing new paradigms: e.g., real-time communications.

The scale of social networks drives performance concerns.

Usages of the social network have accentuated privacy concerns (next section).

WHAT SOCIAL NETWORKING “LIKES” AT W3C

HTML5

CSS

RDFa

SVG Graphics

Federated Social Web Incubator Group

NEXT GENERATION PRIORITIES FOR SOCIAL NETWORKING

URGENCY INCREASES FOR LONG-STANDING TECHNICAL ISSUES

- Security, privacy, One Web (mobile)

FOCUSED TECHNICAL ISSUES

- Scalability of performance
- Provenance of semantic web

Action spotlights

OPEN WEB PLATFORM AND SOCIAL NETWORKING

WORKSHOPS

Web Tracking and User Privacy Workshop

PRINCETON, APRIL 2011

Identity in the Browser Workshop

MOZILLA, MAY 2011

NEW WORKING GROUPS

- › Provenance Working Group
- › Web Performance Working Group
- › Real-time Communications Working Group

REPORTS OF SUCCESS

3.6% of Web data uses RDFa

WORLD IN TRANSITION

SECURITY AND PRIVACY



The

A WORLD OF RISKS

PRIVACY CONCERNS HAVE BEEN WITH THE WEB FOR YEARS

- The concerns have moved from trade journals and policy gatherings to the front page of every newspaper with the advent of social networking, behavioral tracking

SECURITY CONCERNS HAVE BEEN WITH THE WEB FOR YEARS

- Cross-site scripting, request forgery
- It must become easier to build secure yet powerful apps

ELECTRONIC WARFARE, CENSORSHIP, WEB SHUTDOWNS, DENIAL OF SERVICE

W3C TRUSTS THE COMMUNITY WILL MANAGE RISK

- The Web Platform has evolved a unique security model
 - Sandboxing and mobile code; visit any site, securely
 - Different trust domains for different Web applications
 - Upcoming work on Web app security will ease development
- A growing consensus that with Web standards defined at W3C, there is a responsibility to address privacy and security systematically
- Some areas (WebID) have been worked on elsewhere and resulted in Balkanized solutions: need to bring together at W3C

The

NEXT GENERATION PRIORITIES FOR SECURITY AND PRIVACY

▸ Tracking

- It also can lead to unwanted intrusion into personal lives
- The tools to mitigate intrusion are confusing to novices and inconsistent
- Tracking and profiling of users can lead to beneficial value-added services
- The balance between these are hotly debated, poorly understood, and vary by culture

▸ Identity

- Identity now part of core web architecture. Need for consistent experience through browser.

▸ Security in general

- WebApps, HTML5

Action spotlights

OPEN WEB PLATFORM SECURITY AND PRIVACY

WORKSHOPS

Privacy Workshop

MIT, DECEMBER 2010

Web Tracking and User Privacy Workshop

PRINCETON, APRIL 2011

Identity in the Browser Workshop

MOZILLA, MAY 2011

PROGRAMS

EU PrimeLife Project

NEW WORKGROUPS

New Web Apps Security

MAY 2011

WORLD IN TRANSITION

*The Web continues to change commerce,
governance, leisure, education, relationships,*

...





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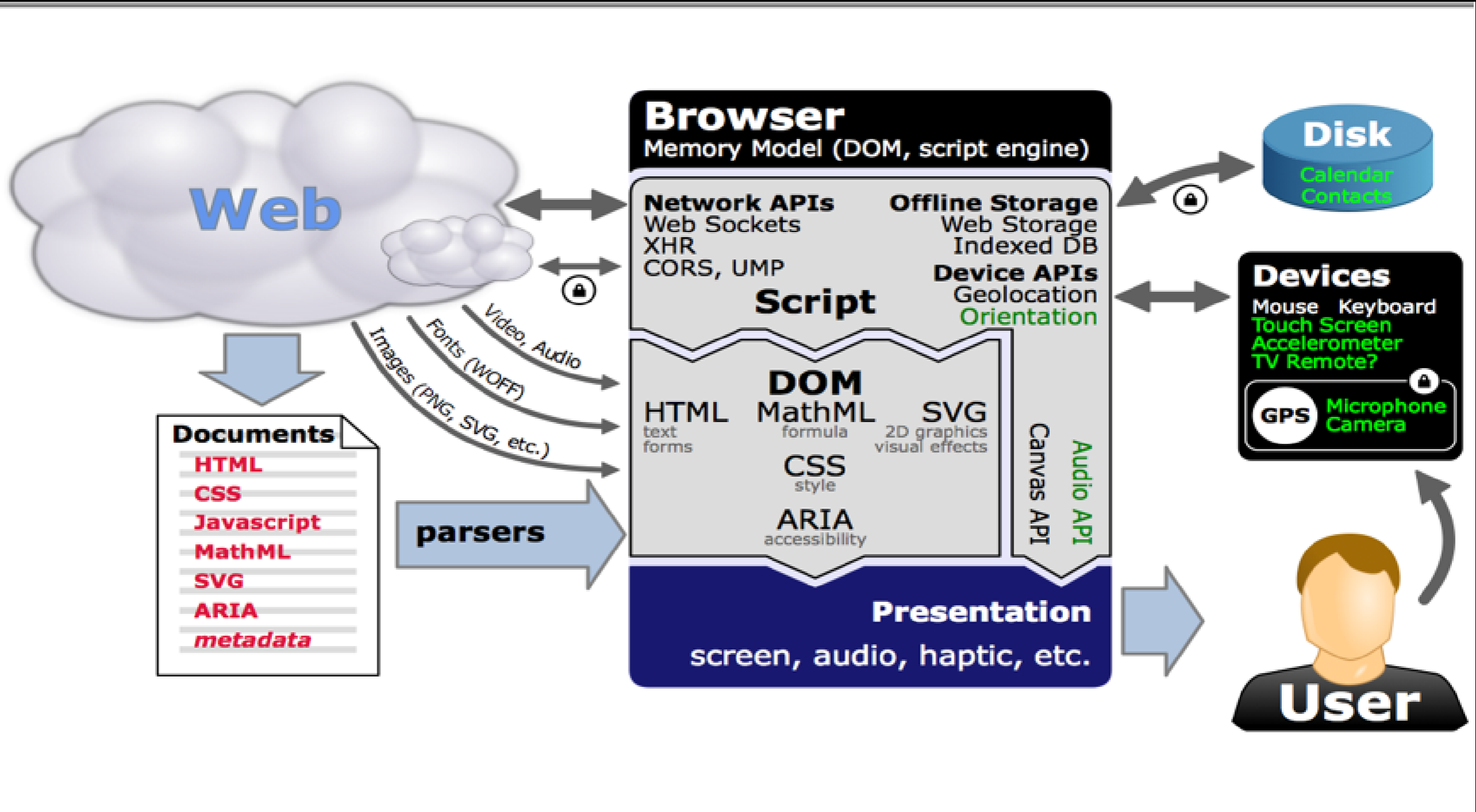
HTML5 provides cross-browser interoperability and all major browser vendors plan to support it

Video a first-class citizen

Simplified data integration

Numerous devices

Tools for social networking (privacy, security, identity)



LINKED DATA STACK

SEMANTIC WEB APPLICATIONS

NATIVE APPS

BROWSER APPS

Query and update

SPARQL, APIs

RDF Bridges

GRDDL, R2RML
POWDER

Linked (RDF) Data &
Common Vocabularies

SKOS, FOAF, vCARD

DATA ON THE WEB

XML, RDFa,
Spreadsheets,
Databases, RDF
files

Inferencing

Rules, RDFS, OWL

MODES OF PARTICIPATION

Working Groups: Where standards are created

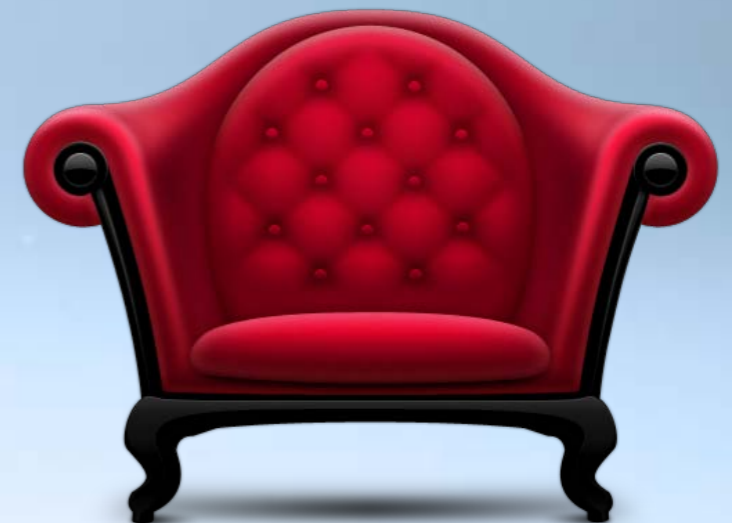
Business Groups: Where industry or geographical stakeholders build consensus and have a direct path of influence

Community Groups: Open to all; where pre-standardization brainstorming takes place

Workshop: Open to all; gain insights on emerging areas

Many others: Events, discussions, document reviews, code.

Sponsorships: Organization, Event, Developer, Web for All



INDUSTRY AT



Telco

Games

Devices

Broadcasting

Social Networking

Consumer Electronics

LG

NEC

Sony

Zynga

Netflix

Comcast

Facebook

China Unicom

DIVERSE AND GROWING STAKEHOLDERS

RECENT MEMBERS

The

OPEN WEB PLATFORM

Geeky but important

Widgets Javascript API's
DOM SVG CSS HTML5
Web fonts
OWL WE Mobile Applications
WOFF MAKE WAI-ARIA
SMIL Geolocation API's
Semantic web

YOU GET

- Value creation
- Economic revolution
- Industry transformation
- A platform for innovation

W3C

**BUILD A SHARED FUTURE
ONE STANDARD AT A TIME**