

A Review Paper on New Web Development Technology

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Abstract: The paper offers an overview of the new features of web technology. A general idea for a new version of HTML (Hyper Text Markup Language), i.e. HTML5, and other tools presented in this paper is legal specification and implementation of similar technological and operational solutions that already exist was used with various hacks and plug-ins proposed by web developers. Many of these apps will work now used in browsers. Apps may access these functions through the newly defined program applications. The latter include multimedia support, dynamic image rendering, geolocation, multithreading, local data storage etc. HTML5 also introduces a semantic tag, which can be used for tagging document structure and its features and data. New version of HTML imposes strict split page content from your style. Style can only be done using CSS (Cascading Style Sheets) language. New The CSS version, i.e. CSS3, has a modular structure, where different modules define different aspects of style. I cycles for the development of individual modules independently and for their support and functionality in various browsers.

Keywords: Hyper Text Markup Language.

I. INTRODUCTION

The concept of the World Wide Web is inseparably bound in Hyper Text Markup Language (HTML) – the descriptive language of web pages. HTML uses a tag web-based semantics tags by identifying their elements: categories, categories, titles, tables, lists, collaborative forms and more. Things with their corresponding qualities can be made a single nest another, to build a common tree structure. HTML is enabled and the inclusion of external resources in web documents, such as photos, videos and more and be part of a web page. One of the best ways to improve the web is to use different definitions of structure and style. I the overall structure of web pages and their content is present is described in HTML, while its final presentation and style are not in the CSS (Cascading Style Sheets) domain. Such segregation makes it easier to adapt and control in the final appearance of the web page and reduce the complexity of the HTML record and finish insignificance in the definitions of style. Separation of style-based content enables more web pages sharing the same style and one page for multiple use different styles at the same time. Apart from CSS, JavaScript is a scripting language commonly used in conjunction with HTML. JavaScript I which translates to a web browser and provides web pages through cooperation and power. JavaScript code can work with DOM (Document Object Model) using a different API (Application Programming Visual connector) user-based event libraries.

By the 1990s most of the web pages had stopped is mainly intended for reading and browsing while I the first decade of the new century brings with it great power web pages and applications. Users are "browsers" only The Web but also have contributed to it by producing and uploading their content. The so-called Web 2.0 emerged and brought about major changes on the web as well development. A new way to communicate with the Web also requires the emergence of web languages with the main purpose of formalizing some of the best practices already established in web development. In this paper we summarize new novel commitments to new levels and web protocols. We are very much looking forward to the new version of HTML by introducing its new features and extensions. We also list some The most important JavaScript APIs enable a completely new web development approach by providing er-based website, geolocation information, duplex full connections between the browser and the server. and other exciting new features. We also produce some new options in CSS syntax. The last one introduces it many options for new designs and makes it easy and stan dardize some features that have been there before but suffered from browser support.

II. HTML 5

HTML has been in continuous development since its introduction in the early 1990s. Most of its features and functionality are defined by certain features, but some of them are also the result of good processes for developing and implementing HTML in popular browsers.

Original HTML version - HTML4 – checked use for about ten years. According to W3C (World Wide Web Consortium) [1] is one of the worst of HTML4 that "does not provide sufficient information to construct interactive objects each other and, more importantly, with critical weight of featured content. Same goes to XHTML1, which describes XML production of HTML4, and DOM Level2 HTML, which defines both your JavaScript API HTML and XHTML ...".

To provide better flexibility and flexibility in HTML usage at the same time time makes web pages engaging and deliverable better user experience, HTML5 development started within the WHATGW program (Web Hypertext Application Technology Working Group) and W3C Organization. Improvements are supported reading the existing HTML4 implementation, fine processes and web analytics already used content.

HTML5 [2] will go back and forth with it HTML4 and XHTML1, supports both, HTML and XML (eXtensible Markup Language) syntax. It will do it again introduces new connections to support modernization styles, such as rich online applications (RIA). Currently, these workspaces rely heavily on complex JavaScript coding and related plug-ins, such as Adobe Flash [3], Microsoft Silverlight [4] and Sun. JavaFX [5]. A general view of the web engineers are using the essential functions of such links in the browsers themselves and remove I relying on various affiliate plug-ins.

HTML5 is expected to reach the candy status of the status quo by 2012 and become recommendation in 2022 [6]. While working on HTML5 will not be completed yet in the next few years, many of its functions are supported web browsers[7].

2.1 Changes in Language

Most web pages today use common structural elements such as headings, footer and sidebars to display semantic structure of the page. Because HTML versions used today do not give a special mark for this purpose, web developers use div and span element, give them a different id and / or sort them into classes. HTML5 introduces a set of innovations, allowing semantic marking of document structure. Represents a direct change of standard div and span elements. Current and new how to edit a web page is shown in Figure 1.

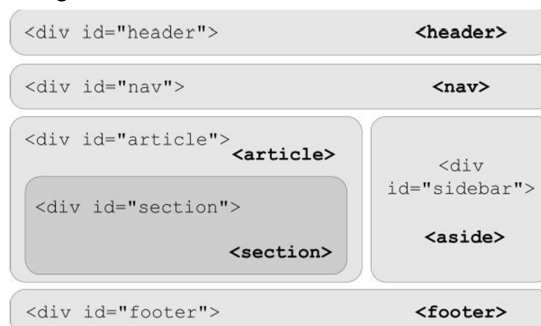


Figure 1: Current (using div elements) and new method (using new features introduced in bold) to building a web page. HTML5 introduces some new features, Among the most popular are:

- Features that support multimedia and explicit content: video, audio and canvas. These features explained in detail in the following chapters;
- Embedding using embedded, captured content with plug-ins;
- Numerical indicators (progress, meter, time etc.);
- Ruby to specify annotations used in East Asian typographies.

HTML5 imposes strict separation of content once and for all web page style design, characterized by the absence of presentation attributes (e.g. alignment, length, border, size) and objects (e.g. font, center, strike, u). The style and design of the page can only be done with CSS. Frames are also not supported in HTML5, because of them negative impact on web page usage.

Elements a and space have a new attribute, called ping. Defining URLs (Same places for resources), where the browser can send a notification when a user you visit the link. User tracking is currently plentiful is done by redirecting the server side, which causes a long wait for the selected page. Ping attribute allows the user agent to notify the user that addresses will be notified. In the event of a confidential concern, a the user can turn off notifications when he / she can do not contribute to the re-administration. Other novels in HTML5 also include new ones world attributes, relationships in link elements and a, events and many others.

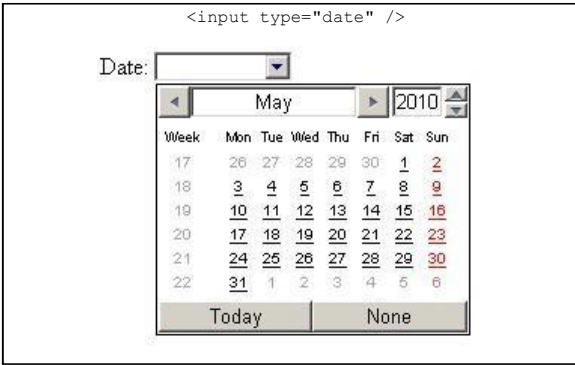
2.2 Web Forms

Web forms enable communication between web clients and web server. Data on user-submitted forms is sent to the server, which responds according to values found (e.g. returns a search result). I However, the selection of widgets used in the forms is limited.

One of the best ways to improve the web is to authorize complex data on the client side. I The latter is pre-built using JavaScript with any other client separate writing languages. Providing new form widgets and to avoid data verification on both sides, a few create custom form widgets that can be used using third-party JavaScript libraries. The needs of the developers encouraged the development of a new generation of Web forms, called the Web Forms 2.0, found its way into HTML5 specification. New widgets are introduced as new values for input element attribute type (phone, search, url, email, time of day, date, month, week, time, place date time (number, width, color). Without new widgets, HTML5 also introduces the enhancements of these existing and automated authentication of embedded data.

In terms of forms, two more novels should be discussed in this context. The first is about it form elements, which do not have to be a decrease in form factor. He can be placed anywhere in the HTML document and linked to it proper form by using their new form factor. I The second innovation is about the use of HTTP (Hyper Text Transfer Protocol) methods when deploying. data on server. Next to GET and POST, in HTML5 and PUT and DELETE methods are supported.

Figure 2: New date form widget.



The figure shows a date picker widget. At the top, there is a label "Date:" followed by a dropdown menu showing "May" and a year selector showing "2010". Below this is a calendar grid with columns for "Week", "Mon", "Tue", "Wed", "Thu", "Fri", "Sat", and "Sun". The grid contains dates from 1 to 31. At the bottom of the calendar are two buttons: "Today" and "None". Above the calendar, there is a code snippet: `<input type="date" />`.

2.3 Semantics

HTML tags are intended to describe how they are made show information and not what this information is it said. An important practice on the Web is the introduction of semantics into applications. Without explanation document formatting in HTML5 semantic marker used to record microdata and assistive technology for disabled users.

2.4 Minimum Data

The microdata method [8] enables information on HTML documents, primarily targeted end users (contact details, location details etc.), so that it is machine-readable and therefore can be used automated processing (e.g. targeting, searching, storage, contrast, analysis etc.).

The microdata model is made up of groups of named structures. Items and structures presented in the context of existing elements. An an item can be created using an itemcope attribute on an feature. Each item has its own type (itemtype), globally itemid and set of word value pairs. I itemprop attribute can be used in any des cendants of an object to express the structure, while the value of this the attribute indicates the value of a structure (Figure 3).

```
<div itemsscope itemtype = "http://example.org/band">
  <p> My name is
    <span itemprop = 'name'> Janko </span>.
  </p>
  <p> My band is called
    <span itemprop = 'band'> Four Parts </span>.
  </p>
  <p> I am
    <span itemprop = 'nationality'> Slovenian
    </span>.
  </p>
</div>
```

Figure 3: An example of using microdata.

2.5 Accessibility

An important part of Web content right now is not accessible to disabled users, especially those based on auxiliary tools, for example screen readers and Braille keyboards. The big problem for such people tools for reading and translating used content improved, often user reviews updated with a combination of AJAX technologies (Asynchronous JavaScript and XML), HTML and JavaScript. Auxiliary technology is not well understood roles, regions and structures of such widgets as well can't follow refreshing content in web pages.

To overcome this problem, Web Accessibility Initiative (WAI) started ARIA (Accessible Rich Internet Applications) [9] project. Details of ARIA describe a semantic model, which enables authors describe widgets in a logical and ethical manner, text structure and areas to be reviewed. In this way, auxiliary technology will come together sufficient information to make advanced web applications can also be used for people with disabilities.

```
<li role = "menuitemcheckbox"
  aria-checked = "true"> Filter by Saving Change
</li>
```

Figure 4. Example of using ARIA attributes. List item part (li) is assigned a role (responsible for the role) of a feature that acts as a checkbox item. Its first property 'checked' is set to true (using aria- * set of attributes). Use In JavaScript, the attribute can be changed depending on the user actions.

According to the semantic model, authors can identify roles and features on the page and explain regions and their structures. Regions and structures are defined the current semantic state of element and property so it may change from time to time while in On the other hand the role remains unchanged when the page updates.

2.6 Audio and Video

Before HTML5, audio and video playback content the browser only happens using third-party plug-ins when Adobe Flash is at the forefront technology. In addition to introducing new audio and video content for embedded on a web page, HTML5 also defines a deceptive interface for such content without the need for plug-ins.

The standard solution was the same choice a format supported by all browsers. Basic requirement for such a design was that it should not be patented. It should also have good compression and image quality and minimal processing requirements. Hardware A recording solution should be available. Instead of the most popular are MP3 and H.264, the W3C organization select Ogg Vorbis for audio and Ogg Theora for the video records, mainly because both are unlicensed, which is not true to MP3 rival and H.264.

Despite all that said, the real draft of HTML5 specification does not specify default format and any other formats that must be supported browsers. Final agreement between W3C and browser vendors have not been reached. Therefore individual vendors decide on formats built into their formats browsers.

Apple does not support Ogg Theora in its Safari browser, due to lack of hardware acceleration and other uncertainties regarding copyright. Use On the other hand, the Mozilla Foundation and Opera are opposed to use of H.264 due to expensive

license. Google Chrome supports both Theora and H.264. Lastly, However, it cannot be included in an open source project Chromium is also highly supported because it is used by Google YouTube, the world's most important video site.

2.7 Drawings

In the latest web development image submission to web pages are only possible with the help of plug-ins, such as Flash or Silverlight. With HTML5, The function required for image rendering is used in browsers in the form of Canvas and SVG (Scalable Vector Graphics) technology. Graphical elements are fully integrated into HTML and are a part of the document object model (DOM). Their style can be defined in CSS and can be changed with JavaScript.

The canvas enables flexible rendering of images, e.g. graphs, bitmap images, animations and games, used text. The feature of the canvas and its features are wide and length defines the displayed region, which is accessible by JavaScript code using the Canvas API drawing works.

The canvas does not distinguish between its contents the image also does not contain a relationship between these items (such as DOM). The basic elements of the canvas image is pixels. The image provided is final and cannot be resized. Each image items cannot be accessed, processed or processed with. To make any changes, the whole image must be redrawn.

The basic Canvas API enables 2D rendering. 3D delivery will take place using the web standard WebGL. Although WebGL is still in development, it is backed by the most popular experiments browsers. HTML5 also supports native rendering of the browser using SVG (Scalable Vector Graphics). SVG is an XML-based language to describe 2D vector images. Unlike Canvas, SVG enables to provide high clarity at any magnification level due to its vector nature. Today, SVG is widely used in static expression content (maps, programs etc.) with the help of the browser plug-in ins. SVG is based on a special XML object model which can be the only obvious things accessed and implemented using JavaScript. SVG empowers and collaborates using event handles as they are signed to any SVG image object.

```
<canvas id = "canvas" width = "838" height = "220" />
<script>
var canvasContext = document. getElementById
("canvas"). getContext ("2d"); canvasContext.fillRect
(250, 25, 150, 130); canvasContext.beginPath ();
CanvasContext.arc (360, 110, 100, Statistics.PI * 1/8,
Math.PI * 12/8); canvasContext.lineWidth = 20;
canvasContext.lineCap = 'round';
canvasContext.strokeStyle='rgba (255,0,1,0.6)';
canvasContext.stroke ();
</script>
```

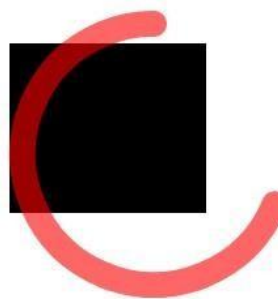


Figure 5: Feature of the canvas and the use of its content using JavaScript (extracted from [10]).

III. PRESENTATION AND STYLE OF CASCADE SHEETS (CSS)

The markup languages are used primarily for descriptions basic structure of web documents and pages while open on the other hand the final presentation and presentation are usually defined by CSS - the style sheet language which describes the semantics of the presentation. How to sign web pages with CSS is almost 14 years old CSS 2.1 is the best of the last 12 years. It is widely supported by most of the web browsers also emerged rapidly over the past decade. And new languages to mark new CSS proposed again. CSS3 is a new standard that is currently available in draft mode or candidate recommendation. Very high value CSS3 standard [11] is divided into several modules which are developed individually at different continuous speeds and power. Various modules enable browser vendors increasing use. Several CSS3 modules are already supported by most of the current browsers. The new standard is completely reversed is accompanied by the addition of new buildings as well performance.

The new Selectors module introduces a variety new ways of attaching objects to a consistent style. The most exciting addition is the ability for this select tags based on their placement in DOM. The commands: last child, nth-child (n) and: nth-last child (n) enable gene identification based on their positions on the parent list of children's items. For example the command: nth-child (3n + 2) can include a group of three objects after a second feature. Other commands also make

comparisons of tested elements, childless or items that do not comply with the stated declaration. I shell elements can also be selected based on the existence of a specific attribute and only part of feature.

For example, `img[alt * = "good"]` can be select all images with a different feature that contains I the word "good".

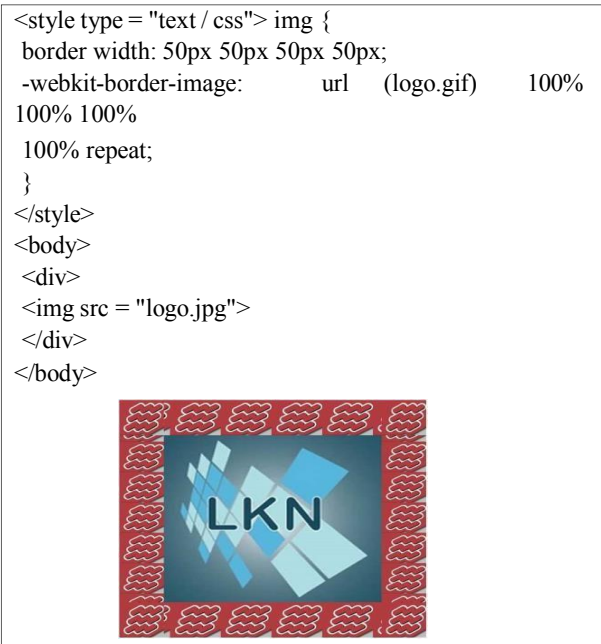


Figure 6: Use of one image as a border for another image

A module on Backgrounds and Borders enables I the use of multiple domains that can be resized placed comparatively or completely. Allows reuse of photographs in several different scenarios and the completion of the most accurate measurement of the various areas. Module also makes restrictions on using gradients, round corners, shadows and even border images. Border image location allows an image file to be used as the object border. An example is shown in Figure 6. Gradient structure enables the parameters or background to move from one color in the other order. Color module describes different capabilities to set all colors in the document. The new rgba com mand enables color specification as well element blur. Colors red, blue and green must be defined by the total value or percentage of tags while the alpha value must be between 0.0 and 1.0. For example, an alpha value of 0.8 defines something with 20% light. From now on all web designers have to pay attention to the set of so-called secure fonts on the Web. New Fonts Module allows the font file to be inserted as an external file as well achieved by font family structure. The new @ font face rule allows fonts to be played online directory, for example the command `@font face {font-family: 'myFont'; src: url (../myFonts.ttf ') format ('truetype'); }`. If the order is not supported with the browser returns the following specified font to font family property. Key issues with the new font types font licensing and copyright. Embedded fonts can be easily downloaded from any page.

Two new outgoing modules are also Transitions and Animation that enables the transformation and movement of page elements into 2D or 3D space. With changes the developer can specify a specific type of CSS to live from one region to another in a smooth way. change. For example, clicking on an image may result change the size of the image. Animation on the other hand allows multiple CSS repetitions buildings simultaneously several times. I animations can be categorized using key frames. Each of the categories of elements between the key frames is automatically rated by the browser.

3.1 APIs

HTML5 introduces a number of standard APIs features that already exist in modern browsers. Support for these features can be traced to sites such as [7] or [12].

Offline Features

The Web has evolved from a Web of simple hyper- linked documents to a compilation of web applications. These

applications are becoming increasingly similar in desktop applications so they need the same resources.

The first step to using local storage is to find out even if the user agent has an internet connection. W3C's Offline Web Applications [13] suggest the use of two events ("online" and "offline") posted to A window object and IDL (Interface Definition Language) called "onLine" in the Navigator object. This allows the app to determine efficiently whether to work with remote services or notified by browser when status changes. In the past, using cookies was the only option keep data in place [14]. Although that kind of a Hack into HTTP-free state, cookies have been widely used to store small amounts of data on a client.

Cookies have two disadvantages: limited storage (in width 4kB) and the fact that they are sent to the server every request. HTML5 introduces a simple storage concept with draft Web Storage [15]. Storage is accessed via IDL attribute and supports simple key / type of value storage. The last two types are considered in draft: storage location and session. While local storage was available is designed to store data continuously even after user use stops browser, data retention session expires right after the browser window closes. In addition, the session storage also solves the issue of simultaneous use of application conditions because each window contains- separate session storage.

This type of storage does not go unnoticed sy. Since it can contain sensitive information, it is very important it is important for user agents to handle the data carefully [16] - not allowing access to operating systems under another domain and extracting data immediately after application.

Web storage is used in many large browsers with a different level of adherence to standards [12]. Too little agreement is too complicated end types. SQLite [17] is a SQL compliant database that became popular with Google as part of Google Gears - an extension available to all major browsers add support for some inactive features obtained from user agents at that time. This type of transaction tional storage was also proposed in W3C for standard zation use, but drafts were suspended as it was too biased. in respect of SQLite and no other implementations. Google Chrome and Opera support SQLite while Mozil and Microsoft openly oppose this approach.

Another W3C draft of advanced storage is called Indexed Database API [18] (renamed from Simple Web DB [19] in late 2009). At the API level, this draft is still valid perhaps similar to the Web site draft, but it is actually the key implementation / value store. This Specification is much more advanced than Web Storage as it is and describes database, object stores (tables in DBMS - Language Database Management System), indicators, relationship vessels, commas and transactions. At the time of writing, no User agent used Indexed Database support API even though the Google team started working in March 2010 and Mozilla directed its use of Firefox 4.0.

3.2 Geolocation

HTML has become a very popular technology on mobile devices and platform cross-response problems on mobile devices. As the market sys tem operating system is fragmented (iOS, Android, Mae mo / MeeGo, Symbian etc.), the eco technology of HTML technology is the only real weight against traditional applications. Geolocation is one of the "deadly technologies" in mobile world. An ecosystem for applications emerged and also enhances the capabilities of existing applications. While geolocation is found differently mobile platforms for a long time, still exist represented by W3C. When determining the location of device, software does not depend on one, but on the breadth of technology that includes GPS (Global Positioning System), Wi-Fi, RFID (Radio Frequency Identification) and portable radio technology.

```
// Exit the archive storage
navigator.geolocation.getCurrentPosition ( job
(pos) {

    warning ("lat:" + pos.coords.latitude

+ ", Long:" + pos.coords.longitude)

}
);
```

Figure 7: Example of using the geolocation API

[22] using a Navigator object by retrieving the repository stored. In addition, the framework includes the ability to do this automatically notifies the application when the device location changes.

3.3 Web Staff

While JavaScript within the browser supports asynchronous to communicate with servers, the user interface is always there drawn and connected to the same music. This means that although difficult computer tasks can be performed on the server without slowing down the user's visual speed, there is no way to do it inside the browser.

```

page1.html
var w = New worker ("worker.js");
w.postMessage ("page1"); w.onmessage =
function (evt) { notification (evt.data);
}
employee.js
onmessage = function (evt) { postMessage
("Hello" + evt.data);
}

```

Figure 8: Sample code that shows the connection between request page (top frame) and task script (bottom frame).

postMessage () method and message event holders are used communication.

Draft Web Workers is designed to address this episode [23]. The idea of webmasters to allow background performance for long-term use or computational calculations without interrupting or slowing down user-browser interaction.

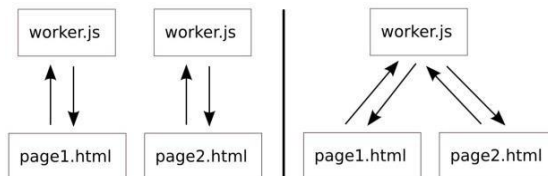


Figure 9: Both pages request "worker.js" as Worker (left) which leads to different literary contexts. The right picture represents both pages linked to a single instance of SharedWorker.

A series (called a web-language worker) is being created by using the Tool object. The Work Object takes a one parameter: the JavaScript file name to use. This means that the code is generated separately the thread is always contained in a separate file. While Employee items always present new employee status items, SharedWorker items are shared between voking texts. This means that more than one text can connect to the same SharedWorker example.

Two links between the web browser and server side process In the original web model, the browser always asks for a web page or parts of a web page. HTTP 1.1 Specification limits browsers to two simultaneous connections with a valid web server fast loading and rendering of multiple pages images or multimedia content. In the past, "comet" the model changed this classical model for the last time one of the two connections is permanently live with real-time data exchange with the server. The web server can use this link to push data out of the browser browser to explicitly request it. In some cases just one long-term connection can be used instead two connections at the same time. There have been several different uses of this program but all rely on AJAX and its XMLHttpRequest object.

HTML5 WebSocket Protocol [24] is a new browser-based way to push browser-based data clients. It is part of the HTML5 specification and it is intended for use within texts on web pages. It provides a complete duplex connection without need multiple HTTP connections. WebSocket application starts as a standard HTTP request from the client again then upgrade to WebSocket protocol by special first handshake between client and server. I Lastly establish a continuous HTTP connection that can be used to send data in full duplex mode. I The connection is managed via JavaScript which requires data to be in text-based format.

WebSocket protocol places a very small amount of responsibility on it web servers also allows existing machines to manage double the contact number at the same time. Other The main advantage of the protocol is its ability to break through firewalls and proxies. WebSocket finds a representative server also automatically establishes a tunnel to pass through by proxy by releasing HTTP CONNECT statement. The latter asks the representative to open a TCP / IP connection to a specific host. The same solution also applies to establishing secure connections (Secure Sockets Layer, SSL).

V. CONCLUSION

General view of HTML5 and other tools presented in it this paper is the official definition and development of similar technological solutions and resources that are already being implemented in various ways. hacks and plug-ins proposed by web developers. I most of the modern rich and collaborative designs was based on Adobe Flash technology supported by all major browser vendors. Flash plug-in provide excellent multimedia content support, especially animations and moving scenes. HTML5 facilitates the implementation of such work using native browser support.

A remarkable new trend on the web today is the introduction of semantics into web documents. The web the content is structured and designed primarily for re-reading understood by people; therefore the computer cannot provide any comprehensive assistance with analysis, search and data processing. The introduction of semantics will do eventually leading to the third generation of the Web, called the Semantic Web [25].

New development processes, rich web content as well the need for semantics in web documents already manifesting themselves by doing. Except for others changes to HTML syntax and vocabulary, too important new features in HTML5 introduction of semantics in the form of microdata and ARIA attributes, RIA support for bringing the new version available, multimedia support and dynamic graphic rendering.

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