EXHIBIT 2030

Web Characterization Terminology & Definitions Sheet

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Abstract

In characterizing the structure and content of the Web, it is necessary to establish precise semantics for Web concepts. The Web has proceeded for a surprisingly long time without consistent definitions for concepts which have become part of the common vernacular, such as "Web site" or "Web page". This can lead to a great deal of confusion when attempting to develop, interpret, and compare Web metrics.

This document represents an effort on the part of the W3C Web Characterization Activity to establish a shared understanding of key Web concepts. The primary goal in preparing this document was to develop a common interpretation for terminology related to Web characterization research. However, it is hoped that the Web community at large will also benefit from the enumeration and definition of important Web concepts.

Status of this document

This document is a working draft for review by W3C members and other interested parties. It reflects rough consensus of the W3C Web Characterization Activity Working Group. We do not claim the set of terms defined in this Working Draft to be exhaustive nor (despite our efforts) that all definitions are applicable in all situations. The purpose of this Working Draft is to bring clarity to the terms often used when talking about the Web as well as to encourage discussion of these and other terms. It is expected that future changes will be elaborations on the concepts contained in this document, rather than changes in the concepts themselves. Please send comments to the <www-wca@w3.org> mailing list which is archived at "http://lists.w3.org/Archives/Public/www-wca/"

Information on the W3C Web Characterization Activity is located at "http://www.w3.org/WCA/". A list of current W3C Recommendations and other technical documents can be found at "http://www.w3.org/TR/".

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1. Primitive Elements

Primitive elements are general concepts and terms that can be used to describe an information space like the Web. These terms are not necessarily limited to resources accessible via any particular access mechanism nor are they guaranteed to be accessible via the Internet.

In this context we use them to describe the information space known as *the Web*. However, in addition to illustrating the scope of the Web in general, the reason why we mention them here is that they are needed to define a more restrictive set of terms used in Web characterization research which we can measure and define a set of metrics for.

Resource

The URI specification describes a resource as the common term for "...anything that has identity. Familiar examples include an electronic document, an image, a service (e.g., "today's weather report for Los Angeles"), as well as a collection of other resources. Not all resources are network "retrievable"; e.g., human beings, corporations, and bound books in a library can also be considered resources..." (see also the term Web Resource).

Examples: Web page, collection of Web pages, service that provides information from a database, e-mail message, Java classes ...

URI

The URI specification defines a Uniform Resource Identifier (URI) as a compact string of characters for identifying an abstract or physical resource.

Resource Manifestation

A resource manifestation is a rendition of a resource at a specific point in time and space. A conceptual mapping exists between a resource and a resource manifestation (or set of manifestations), in the sense that the resource has certain properties - e.g., its URI, its intended purpose, etc. - which are inherited by each manifestation, although the specific structure, form, and content of the manifestation may vary according to factors such as the environment in which it is displayed, the time it is accessed, etc. Regardless of the form the manifestation's rendering ultimately takes, the conceptual mapping to the resource is preserved.

Note: For historical reasons, HTTP/1.x calls a manifestation for an "entity".

Examples: real-time information accessed from a news Web site on a particular day, up-to-the-minute stock quotes, a rendering of a multimedia Web page accessed with a particular client ...

Link

A link expresses one or more (explicit or implicit) relationships between two or more resources.

Note: The type of the relationship can describe relationships like "authored by", "embedded", etc. Types can themselves be identified by URIs as for example is the case for RDF.

Examples: An HTML `<a href="http://www.w3.org/Protocols/#News">...</a>` element, an HTML `<img src=<http://www.w3.org/icons/w3c-home">` element.

Anchor

An area within a resource that can be the source or destination of zero, one or more links. An anchor may refer to the whole resource, particular parts of the resource, or to particular manifestations of the resource.

Examples: An HTML `<a name="http://www.w3.org/Protocols/#News">...</a>` element.

Client

The role adopted by an application when it is retrieving and/or rendering resources or resource manifestations.

Examples: A Web browser, an e-mail reader, a Usenet reader ...

Server

The role adopted by an application when it is supplying resources or resource manifestations.

Examples: An HTTP server, a file server, etc ...

Proxy

A proxy is an intermediary which acts as both a server and a client for the purpose of retrieving resources or resource manifestations on behalf of other clients. Clients using a proxy know the proxy is present and that it is an intermediary.

Examples: An HTTP firewall proxy ...

Gateway

A gateway is an intermediary which acts as a server on behalf of some other server with the purpose of supplying resources or resource manifestations from that other server. Clients using a gateway know the gateway is present but does not know that it is an intermediary.

Examples: An HTTP to FTP gateway

Message

A unit of communication exchanged between equivalent network layers or services, located at different hosts.

Examples: A datagram sent from one Internet layer to another, an e-mail sent from one e-mail reader and received at another ...

Request

A message describing an atomic operation to be carried out in the context of a specified resource.

Examples: HTTP GET, POST, PUT, and HEAD requests ...

Response

A message containing the result of an executed request.

Examples: An HTML document, a server error message ...

User

The principal using a client to interactively retrieve and render resources or resource manifestations.

Examples: A person using a Web browser, a person using an e-mail reader, a person using a CRT terminal emulator ...

Publisher

The principal responsible for the publication of a given resource and for the mapping between the resource and any of its resource manifestations. See also the term Web Site Publisher

Examples: A person writing an e-mail message, a person composing a Web page

2. The Scope of the Web from the Perspective of Web Characterization

The primitive elements defined above are useful when talking about the Web in general but are too broad in practice to enable us to characterize the Web with the desired level of rigor. This does not mean that we do not consider the general terms important or interesting, but that we need a mechanism for limiting the scope of the problem of characterizing the Web.

Therefore, we define the following terms to address the question of "What is the Web?" from the perspective of Web Characterization. For the purposes of Web Characterization research, the Web may be viewed as consisting of three components: the core, the neighborhood, and the periphery:
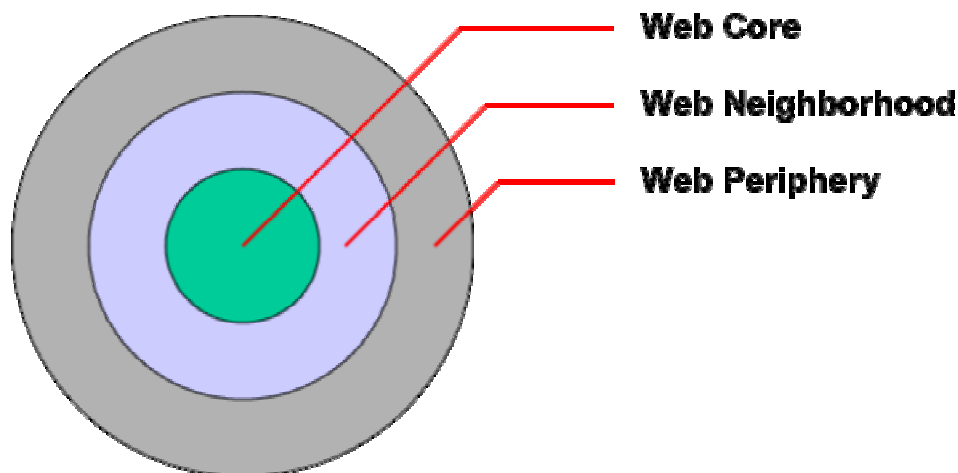
where

Web Core

The collection of resources residing on the Internet that can be accessed using any implemented version of HTTP as part of the protocol stack (or its equivalent), either directly or via an intermediary.

Notes: By the term "or its equivalent" we consider any version of HTTP that is currently implemented as well as any new standards which may replace HTTP (HTTP-NG, for example). Also, we include any protocol stack including HTTP at any level, for example HTTP running over SSL.

Web Resource

A resource, identified by a URI, that is a member of the Web Core.

Note: The URI identifying the Web Resource does not itself have to be found within the Web Core. That is, a URI written on a bus identifying a resource that is a member of the Web Core identifies a Web Resource.

Web Resource Manifestation

A resource manifestation generated by a Web resource.

Web Neighborhood

The collection of resources directly linked from a Web resource.

Web Neighborhood Resource

A resource, identified by a URI, that is a member of the Web Neighborhood.

Examples: An "ftp" link within an HTML document which can be accessed via HTTP, a "$mailto$" link within an HTML document which can be accessed via HTTP.

Web Periphery

The collection of resources on the Web which is *not* part of the Web Core or the Web Neighborhood.

2.1 Web Clients

Concepts relating to the process of accessing Web resources and render Web resource manifestations.

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