Transport, Health and Environment Pan-European Programme

Consultant report on the THE PEP Clearing house existing website
architecture
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The report was prepared in line with the decision of the 26th meeting of the Bureau of THE PEP (November 21, 2014), to highlight technical information and cost implications involved in migrating THE PEP Clearing house to a modern platform.
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Executive Summary

The report evaluates the technical architecture of the existing THE PEP Clearing House platform utilized for the dissemination of information on transport, health and environment and covering scientific, legal and policy aspects. The report describes the existing architecture and functionality of the platform i.e. website framework, programming language, website and domain server details including email addresses, and integrated software applications. Further the report identifies the technical concerns in the existing platform, and sets out four possible scenarios for decision makers to consider.

Information in THE PEP Clearing House is organized by topics structured in areas, categories and sub-categories in line with the priorities of THE PEP, providing users with a comprehensive and facilitated approach to find information by using keywords or search within predefined categories. From a technical point of view, the Clearing House relies partly on internal resources and partly on external services. The internal resource is the UNOG ICTS web server which hosts all documents and contents. Externally, at an annual maintenance cost (2450 USD), it relies on a Domain Name Server provider, and a search platform provider.

The key technical concerns identified are: the process of updating information is tedious due its primitive mechanism and needs Information Technology professional support to carry out the tasks; server downtimes or slow server responses resulting in non-availability of website; no automated tool for user login and password creation. On the administrative side the focal points roles and responsibilities are not clearly defined. All these issues have led to many instances where requests to create website credentials were not addressed.

In order to address this situation the report looks at four options:

Option 1: Managing the existing search platform as it is without any further investment incurring an annual maintenance cost. However, this does not address the problems identified above.

Option 2: For a one-off investment (17,500 USD), migration from the existing search platform to a modern Content Management System, giving complete control to users for managing the website with minimal Information Technology professional support and no annual maintenance or service cost.

Option 3: As an extension of the second option, in line with Paris Declaration vision, supporting THE PEP Academy by integrating an e-learning platform into the Clearing House. The cost associated with establishing an e-learning platform could perhaps be recovered from participants.

Option 4: Shutting down operations of the Clearing House, so abandoning the purpose of THE PEP Clearing House that was to provide a common platform for sharing information. The final option would result in the information being made transferred to the two THE PEP secretariats’ websites.

The costs and benefits of these options are discussed in more detail within the report.
Objective of the consultancy

1. In line with the decision of the 26th meeting of the Bureau of THE PEP (November 21, 2014), the secretariat of THE PEP was requested to review the webpage on THE PEP Clearing House\(^1\) and prepare a proposal on how best to integrate the Clearing House within the existing United Nations Economic Commission for Europe (UNECE) architecture. The objective of the consultancy is to:
   - Outline the specific technical measures to migrate from the existing outdated search platform to a modern platform with estimation of an approximate cost of one-off investment to redesign the site and time frame and human resources (man/month) to complete the task.
   - Outline the specific technical measures to host the management of the domain name of the Clearing House, emails under UNECE architecture.

About the THE PEP Clearing House

Background

2. THE PEP Clearing House was originally set up in November 2005 to provide an Internet portal bringing together a range of policy, legal and scientific information, including good practices, on issues relevant to transport, health and environment. It aims to provide interactive facilities for the exchange of views and good practices on THE PEP implementation thereby representing a reference base and main platform for all actors and organs within the framework of THE PEP. In so doing, the Clearing House expects to address particularly the needs of Eastern Europe, Caucasus and Central Asia (EECCA) countries and South-Eastern Europe, also by enabling access to Russian speaking users.

3. There are a number of alternative internet platforms that provide fragmented information on urban transport, cycling, health and environment issues. However, none of these websites provide all this information in one location. Nor do they, at the same time, provide access for Russian speaking users. Providing such an information source to member States is fundamental for them to be able to identify good practice and apply the most appropriate techniques to their individual situations.

4. During the Fourth High-level Meeting on Transport, Health and Environment held from 14 to 16 April 2014 in Paris, member States signed the Paris Declaration that lays out their vision for the achievement of sustainable and healthy urban transport and mobility. One of the elements of this vision includes THE PEP Clearing House,

\(^{1}\) THE PEP Clearing House [http://www.thepep.org/CHWebSite/](http://www.thepep.org/CHWebSite/)

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Note: Acronyms are defined in Annex I
which will support THE PEP Academy\(^2\), a new implementation mechanism. Given this requirement, it is important that the Clearing House is updated to reflect current user requirements and technology in order to make it more accessible, and to provide greater value to member States.

**Information Structure**

5. Information in THE PEP Clearing House is organized by topics structured in areas, categories and sub-categories in line with the priorities of THE PEP. On the basis of this tree structure, information is differentiated between three sources of data repositories namely:
   - internet sites
   - documents (electronic files containing information) available on the Internet, and
   - isolated, non-electronic documents (information presented in the website pages)

6. The internet and document sources are grouped more specifically into ‘policy documents’, ‘legislation’, ‘case studies’, ‘research and methods’, and indicators and data as set out in Figure 1.1 below.

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Figure 1.1: Categorization of internet and document sources on the THE PEP Clearing house

7. The main navigation bar of the website shows the non-electronic documents arranged into principal and secondary pages on subject matters addressed by the THE PEP (Chart 1.1). In addition to the English, these pages are made available in French and Russian. Considering the home pages and corresponding subpages, the website counts approximately 18,000 words (about 600 words per page on 30 principal and secondary pages) as content defining the areas of work.

Chart 1.1: Hierarchal structure of the subject matter topics addressed by the THE PEP Clearing House

Search mechanism

8. The Clearing House website provides users with a comprehensive and searchable approach to finding information (Figure 1.2):
   - by using keywords (indexes)
   - by searching within categories (directories)

9. Several international partners i.e. UNEP, OECD, EU, ECMT, European Science Foundation, REC, and CEI etc. are referred to as “nodes” and act as an entry points working directly on the issue/s dealt with in the Clearing House. The search tool
allows users to find information available and access it even though the information is maintained by the original providers of information (the nodes mentioned above). The website retrieves information existing on other partner websites rather than providing this information itself by creating a network of “nodes”. This approach was used as it limits the amount of information that needs to be stored on our servers.

10. In the option of indexing method using key words, the Webmaster inserts into the system the website that will be stored into the index. The search engine then automatically stores the contents of indexed sites (HTML pages, PDF, DOC files, images, etc.), updates every page it has already stored at determined intervals and deletes those that are no longer available on the nodes websites. Hence, the nodes are required to update their own website, and would not need to constantly upload information and data to the Clearing House. This search method allows users to search by keyword within pre-selected websites, with the search engine ranking the search results by relevance. It implies that users give the search engine the word they are looking for, and the engine displays the list of pages and documents found in the database that matches the words provided. The search engine determines itself the ranking of the results. The search engine also specifies the categories within which a document is located.
11. In the directory method, the information is classified into pre-defined categories (as shown in Figure 1.1) by the Webmaster inserting a new site. A brief description of the site, its name, and most importantly the category or categories in which the site should appear are provided. This search method gives users the possibility to limit searches to one particular category and obtains results that are limited to this category. In this manner, users will obtain only the answers that are relevant to the specific category.

Technical Information

Website architecture

12. From a technical point of view, THE PEP Clearing House relies partly on internal resources and partly on external services (Table 1.1). The internal resource is the United Nations Office of Geneva (UNOG) - Information Communication and Technology Services (ICTS) web server\(^1\) which hosts all activity related of the THE PEP Clearing House i.e. all the content or documents on the website are stored on the ICTS server. The ICTS provides dedicated web server services to UNECE at an annual charge which is not financially apportioned within sub programmes or projects.

13. Externally, THE PEP Clearing House relies on a name server\(^2\) (domain) hosted by AXONE, Geneva, at an annual charge of 50 USD for hosting the domain name\(^3\) (www.thepep.org) and email address\(^3\) (xxxxx@thepep.org).

14. The search platform (Fusionbot) is used as a navigation tool to find documents tagged using predefined metadata\(^4\) or categories integrated into the website. It was developed by LOGIKA Corporation (Chicago) and has an annual charge of 2400 USD related to the servicing of the software. This is a high cost that results mainly from the use of an obsolete system.

<table>
<thead>
<tr>
<th>Application Framework</th>
<th>Specifications</th>
<th>Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Website Programming Languages</td>
<td>ASCII, CSS, JavaScript, XML</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Web Server</th>
<th>Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>193.239.220.42</td>
<td>UNOG ICTS</td>
</tr>
</tbody>
</table>

Note: Kindly refer to Annex II for definitions of technical terminologies

\(^1\) THE PEP Clearing house correspondence email accounts are: webmaster@thepep.org, CHsubmit@thepep.org, CHfeedback@thepep.org, secretariat@thepep.org
Table 1.1: Technical Specifications of THE PEP Clearing House

| Name Server | ns1.gva.ch.colt.net (212.74.78.22) | ns1.zrh1.ch.colt.net (212.74.77.22) | AXONE, Geneva |
| Search Engine | Web based Search Application | LOGIKA Corporation, Chicago (Fusion Bot) |

15. The operational functions of THE PEP Clearing House are currently managed by the UNECE Transport and Environment Divisions’ regular budget staff. Some support is also provided by WHO Europe THE PEP specialised staff. There are only a limited number authorized users with access to manage and edit documents and to modify personal details (phone number, email address, etc.).

16. Since uploading content elements to the website needs technical knowledge of computer programming, technical assistance is provided by the UNECE Information Service Unit (ISU) in interim patches when needed.

17. In 2013, over 100⁴ work hours were provided by the ISU unit and UNECE regular budget staff in relation to the updating of the content, upgrading website functionalities and fixing backend technical issues. The list of activities and technical issues resolved included:

- The integration of Web Analytics into THE PEP Clearing House to analyse and assess traffic on the website.
- The upgrading of the website framework to ASP.NET 4.0 enabling faster website accessibility and reduced server downtime.
- The resolution of a technical issue faced on THE PEP Clearing through the use of a project management tool (Confluence JIRA).
- Removing the limitation on the maximum size of files that can be uploaded.
- Rectifying broken links (error links) to nodes or partner websites.
- Resolving document attachment issues that were not allowing some users to upload documents to the website.
- Removing the limitation of 255 characters on the ‘Submission Form’.

Note: Kindly refer to Annex II for definitions of technical terminologies

Pitfalls with the current system

Technical

18. A number of international partners have highlighted technical issues that they have faced while accessing the website. Either they were unable to access the website due to server downtimes or slow server responses (i.e. the domain server is hosted on a shared server where many other domain names are hosted leading to slower performance from the server) or unable to upload documents. Since there is no continuous technical support provided by ISU or other technical staff within the THE PEP secretariat, the technical problems remain unresolved for a long period resulting in non-availability of website.

19. The current website does not have an automated user Identification (ID) and password generation function. Therefore the focal points or administrators of the website are responsible for manually creating the user ID and password on request. This function is usually automated within websites now. Without this automation and definite focal points assigned, there have been many instances where requests for new IDs have not been addressed for a long time or not at all resulting in discontent among potential users.

20. The document statistics tracker\(^5\) integrated into the website is not functioning and needs bug fixes. There is a lack of understanding of the document traffic inflow into the website and segregation of documents for reporting purposes is tedious.

21. With the enhanced functionalities offered by Content Management Systems\(^7\) (CMS) available in the market currently, search platform integrated into the website developed a decade ago is largely considered as an outdated mechanism. One of the varied features offered by CMS applications includes metadata functionality enabling authorized users to index or categorize document with metatags\(^vi\) or keywords of their preference unlike pre-defined categories defined on THE PEP Clearing House.

Administrative

22. Focal points’ roles and responsibilities among the THE PEP secretariat are not clearly defined. There is no defined sector (i.e. Transport, Health or Environment) focal point or dedicated staff managing the Clearing House on a regular basis resulting in disparity of roles and responsibilities within the secretariat. Also there is no dedicated THE PEP secretariat staff reviewing information published by several international partners or authorized users on a regular basis.

23. The partner or node organizations’ contribution has been nominal with few documents shared or linked through the Clearing House in the recent past. Among the varied reasons for lack of contribution could be of the tedious task of uploading information on to the website. The user needs to be proficient with creating new

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\(^5\) CH reports and background material: [https://unece.unog.ch/the-pep/en/pep_ch_reports_backgd_material.htm](https://unece.unog.ch/the-pep/en/pep_ch_reports_backgd_material.htm)
author names and institution identities while uploading documents in scenarios if they are not available in the predefined list. Further documents that are uploaded are only visible on the website after at least 48 hours, therefore the user is unsure whether the document has been uploaded or not.

24. THE PEP Clearing House correspondence email accounts established for submission of documents, feedback or comments are diverted to the former THE PEP staff or volunteers resulting in queries from users not being responded in an appropriate manner.

25. Domain name server registration currently managed by third party vendor (AXONE, Geneva) is renewed year on year by the vendor without the prior notification from the THE PEP secretariat.

Proposed Action Plan

26. In order to address the issues identified on the previous pages and to make the Clearing House fit for purpose for current needs a number of possible options have been reviewed as set out below.

Option 1: Business as usual

27. This option would require managing the existing search platform as it is with patches of support from UNECE ISU to fix technical problems. However it runs at the risk that the site will be increasingly outdated incurring a high cost for maintenance of an obsolete search platform, also making it increasingly complicated to maintain and impacting its ability to attract active users.

Option 2: Modernizing architecture

28. Modernising the core architecture would entail updating the technology and improving technical functionality (search options, user-friendliness etc.) of the system. Technically this solution would require switching to a name server (domain) hosted by UNOG ICTS and migrating to an open source Content Management Application like TYPO 3 (UNECE website currently functions on a similar architecture). UNECE ISU is discussing possibilities with UNOG ICTS to host the domain name (www.thepep.org) without any annual hosting charges and integrating into the CMS application. Migrating to the ICTS servers will address the technical concerns (highlighted on section 17, 24) enabling THE PEP Clearing House to function with minimal downtimes due to continued server support provided by ICTS without incurring a annual server maintenance cost.

29. With migration to Content Management Application, non-technical users will have complete control over their website content i.e. focal points with no computer programming knowledge can make changes to websites that only a developer or individual with technical knowledge was able to do previously (highlighted in section
This application will allow users to make amendments with minimal effort and time, as well as upload and review information shared instantly.

30. The administrative and technical challenges (highlighted in paragraph 19) of creating user identification and passwords can be addressed by integrating a “Front end user registration” plug-in into the CMS application. This will automate the process of user identification and password generation. This however will need to be supported by a control mechanism where the documents uploaded by the user to the website will first need to be approved by the focal points or administrator.

31. In addition, to ensure continued support is provided in maintaining the THE PEP Clearing House by the secretariat, roles and responsibilities of focal points (highlighted in section 22) need to be clearly defined with sector specific i.e. Transport, Health or Environment dedicated staff to be identified to carry out the tasks. Focal points should consistently review, through the website, contents and documents, respond to queries from users and focus at increasing the visibility of the THE PEP Clearing House.

32. On the cost side, the integration would result in an annual savings of 2450 USD (paid to AXONE and Logika Corporation as mentioned above), since there would no longer a need to rely on external services for the running the THE PEP Clearing House. The one-off investment costs of undertaking these activities are set out in Table 1.2 below. In addition, there will also be some ongoing operational costs resulting from the tasks set out above. To be prudent we have assumed these to be the same as the previous costs, that is about 100 hours per annum. This accounts for a reduced amount of time necessary to carry out technical activities and greater time for focal point input. This is equivalent to about 3.5 days per focal point/IT support per annum.

**Benefits**

- Non-technical users to operate and manage the website with minimal effort and time.
- Reduced costs of maintenance and site operations with annual saving of 2450 USD.
- Minimal intervention required from Information Technology (IT) professionals for day-to-day operations of the website.
- Reliable internal server services enabling continued service of the website with minimal downtimes.
- Better user experience with consistent layout and design of the website.
- Will be compliant with user accessibility requirements enabling users to access information more easily.
- Increased website traffic as internet search engine optimization mechanism ranks website pages on the basis of most visited, usability and user friendliness as variables.
## Cost Estimate

<table>
<thead>
<tr>
<th>Details</th>
<th>Man hours in days (i)</th>
<th>Man hours rate in $ (ii)</th>
<th>Cost ($) (i X ii)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Migration of Website Architecture</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Domain Hosting/Transfer Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Name Server switching (Domain)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Content and Document Migration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Backup: documents/contents from existing THE PEP Clearing house website)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recovery – documents/contents from existing THE PEP Clearing house website)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Migration of Website Architecture</td>
<td>05</td>
<td>250</td>
<td>1,250</td>
</tr>
<tr>
<td><strong>Website Development</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Website template layout and design</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(HTML / CSS / JavaScript etc. programming based)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Website Development</td>
<td>12</td>
<td>250</td>
<td>2,500</td>
</tr>
<tr>
<td><strong>Content Management System Integration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Integration of Content Management System (CMS) to new website</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Configuring required plugins into CMS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(TYPO 3 Console, Front end user upload, Front end user registrations, Site Search, Video Content Element, User, Contact form uploader, Event Management and Registration, RSS feed, Mobile optimization etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content Management System Integration</td>
<td>05</td>
<td>250</td>
<td>1,250</td>
</tr>
<tr>
<td>(existing users)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-----</td>
<td>-----</td>
<td></td>
</tr>
<tr>
<td>Access rights (existing users)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Search Engine Optimization             |     |     |
| (Metadata/Keywords inclusion into website) | 02  | 250 |
|                                        |     | 500 |

| Testing                                |     |     |
| End user testing                       | 05  | 250 |
| Cross browser testing                  |     | 1,250|

| Content Development                    |     |     |
| Rewriting of existing content          | 25  | 250 |
| New Content development                |     | 6,250|

| Translation                            |     |     |
| Translation of content to French       | 18,000 | 0.15 | 2,700 |
| Translation of content to Russian      | 18,000 | 0.10 | 1,800 |

| Total Cost (in USD)                    | 17,500 |

Table 1.2: One off investment with cost breakdown for upgrading THE PEP Clearing house

Option 3: Expanding functions

33. More than a separate option, this option would be an extension of option 2. In addition to the integration of the Clearing House into existing UNECE architecture, it would entail providing additional services, for example in the direction of supporting the THE PEP Academy capacity-building activities and training modules. The work involves adding functionality to what is set out in Option 2, it would not require reworking of the work identified in Option 2.

34. This option would require allocating budget to employ a full-time Content Specialist and further investment to integrate an e-learning platform into the website. The Content Specialist would not necessarily need to be in-house and would cost about an average of 65,000\(^7\) USD per annum. The e-learning platform would further strengthen the purpose of THE PEP Clearing House for exchanging views and good practices through virtual classrooms or webinar sessions with the target audiences. The courses could be offered to a wide array of participants and would be subject to an enrolment fee or charged for each session to cover the cost of establishing the e-learning platform.

\(^6\) Plus programme support costs at 13%.

\(^7\) Swiss Federal Statistical Office. Available at www.bfs.admin.ch/bfs/portal/en/index/themen/03/04/blank/key/lohnstruktur/nach_branche.html
35. In addition to the one-off investment in option 2, e-learning software application would incur an annual cost of at least 1500 USD (100 users or software licenses), depending on the number of users and licenses required.

36. Further, complementary, services could include information dissemination and communication with users in the form of newsletters and online forum. Furthermore, information resources, such as Databases and Statistics could also be included. These features will actively engage the partners or users with the ongoing THE PEP activities, promote research papers or available documents, promote upcoming events, create visibility among potential users, and would be an effective means to maintain relationship with them.

Option 4: Shutdown THE PEP Clearing House operations

37. This option, not contemplated at the Bureau meeting, would involve shutting down THE PEP Clearing House operations and diverting traffic to WHO EURO and UNECE websites to be utilized as online communication platforms. This would lead to disparity in maintaining the THE PEP vision of having a single interactive facility for the exchange of views and good practices, create difficulties for users to access two websites to seek relevant information and remove the benefits of having such a system as set out in paragraph 3 above. There would also be a one-off cost associated with the transfer of the information on to the separate websites.

Summary of Recommendations

<table>
<thead>
<tr>
<th>No</th>
<th>Option</th>
<th>Benefits</th>
<th>Drawbacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Business As Usual</td>
<td>• No further investment&lt;br&gt;• Existing search platform with indexing and categorizing functions&lt;br&gt;• Predefined keywords to tag documents</td>
<td>• Outdated search platform&lt;br&gt;• Non availability of automated user ID tool&lt;br&gt;• Constant support from Information Technology (IT) team&lt;br&gt;• Ongoing operational costs&lt;br&gt;• Unreliable external server&lt;br&gt;• Less friendly user interface&lt;br&gt;• Tedious task of uploading documents or contents&lt;br&gt;• Less attractive for users, hence reduced traffic</td>
</tr>
<tr>
<td>2</td>
<td>Modernizing</td>
<td>• Modern platform</td>
<td>• One-off investment cost</td>
</tr>
</tbody>
</table>

| **architecture** | • Better features and functionalities  
• Automated user ID tool  
• Metadata tagging function  
• Reduced operational costs  
• Minimal IT support  
• Reliable internal server  
• User friendly  
• Better user experience  
• Easier information accessibility for users  
• Search Engine Optimized  
• Increased active users | • Time and effort required to upgrade the platform |

| **3** | **Expanding functions**  
(benefits and drawbacks in addition to option 1) | • In line with Paris Declaration vision  
• Varied services like training, webinars, newsletter, data repository offered  
• Operational cost recovered through a pricing model for courses offered | • Cost involved in employing a full time content manager |

| **4** | **Shutdown THE PEP Clearing House operations** | • No operational cost | • Complexity in accessing information due to dissemination of information between two THE PEP Secretariat websites.  
• One-off cost of transfer |
Annex I - Acronyms

CEI Central European Initiative
CMS Content Management Systems
CSS Cascading Style Sheets
DOC Document
ECMT European Conference of Ministers of Transport
EECCA Eastern Europe, Caucasus and Central Asia
EU European Union
HTML Hypertext Mark-up Language
ICTS Information Communication and Technology Services
ISU Information Service Unit
OECD Organisation for Economic Co-operation and Development
PDF Portable Document Format
REC Regional Environmental Centre for Central and Eastern Europe
THE PEP Transport, Health and Environment Pan-European Programme
UNECE United Nations Economic Commission for Europe
UNEP United Nations Environment Programme
UNICC United Nations International Computing Centre
UNOG United Nations Office of Geneva
USD United States Dollar
WHO EURO World Health Organisation Regional Office for Europe
XML Extensible Mark-up Language

Annex II - Definitions

1 Server: A server is running instance of an application (software) capable of accepting requests from the client and giving responses accordingly. Servers can run on any computer including dedicated computers, which individually are also often referred to as "the server".

2 Name Server: A name server is a computer hardware or software server that implements a network service for providing responses to queries against a directory service. It translates an often humanly-meaningful, text-based identifier to a system-internal, often numeric identification or addressing component. This service is performed by the server in response to a service protocol request.

3 Domain Name: A domain name is an identification string that defines a realm of administrative autonomy, authority or control within the Internet. Domain names are formed by the rules and procedures of the Domain Name System (DNS). Any name registered in the DNS is a domain name.

4 Metadata: Metadata is data that describes other data. Meta is a prefix that in most information technology usages means "an underlying definition or description."

5 Content Management Application: A content management system (CMS) is a computer application that allows publishing, editing and modifying content, organizing, deleting as well as maintenance from a central interface. Such systems of content management provide procedures to manage workflow in a collaborative environment.

6 Metatags: Meta elements are tags used in HTML or XHTML documents to provide structured metadata about a Web page. They are part of a web page's head
section. Multiple Meta elements with different attributes can be used on the same page.