

SEMANTIC WEB A: Future Web

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Abstract - This is the teenager generation and we can say that this is the (information technology) IT generation. Today IT field is so developed for creating "new world".IT field peoples can develop new technologies day to day. And this time IT field famous in smart with the help of web technologies. Every companies can create a new web applications with new technology. This time IT field developed a new web services, web applications, and web technologies. The www has changed the way people communicate with each other. How informationDisseminated and retrieved and how to bunnies conducted.

Web 3.0 combines human and artificial intelligence to provide more relevant, opportune and accessible information.

This paper provides overview and comparison of the web i.e. Web 1.0, Web 2.0, Web 3.0, Web 4.0 and web 5.0 were described as a five generations of the web.Last few years the phrase 2.0 has been a technological buzzword. This paper discussing the future of the Web, and the roadmap for Web 3.0 and beyond.

I. INTRODUCTION

The World Wide Web was established with the objective of accessing the data from anywhere at any time in form of interlinked hypertext language. The World Wide Web (known as the web) is not homologous to internet but is the most obtrusive part of the internet that can be defined as techno-social system for the interaction between human and technological networks.

Semantic web is the new web technology that provide a new web services & web applications

And these services & application provided a easily.

Meaningful communication between machine to machine and machine to people.

II. WEB

A mesh of find strands or net by a spider.
The web is a system of interlinked documents accessed with the help of internet. Web based on

the www (World Wide Web).World Wide Web is used for communication between application to application.

A semantic web is combination of two most popular word "**SEMANTIC + WEB**".

SEMANTIC- semantic is the process by which to describe a "Creating common meaning and help everyone + understand each other".

Web- A mesh of find strands or net by a spider. (Word wide web)

"The Semantic Web is an extension of the current web in which information is given well-defined meaning, better enabling computers and people to work in cooperation."

.....[Tim Berners-Lee]

According to Tim Berners-Lee-

I have a dream for the Web in which computers become capable of analysing all the data on the Web – the content, links, and transactions between people and computers. A 'Semantic Web', which should make this possible, has yet to emerge, but when it does, the day-to-day mechanisms of trade, bureaucracy and our daily lives will be handled by machines talking to machines. The 'intelligent agents' people have touted for ages will finally materialize."

III. SEMANTIC WEB LAYERED ARCHITECTURE

Architecture of the Semantic Web in the following three layers:

1) *The metadata layer.* The data model at this layer contains just the concepts of resource and Properties. (RDF)

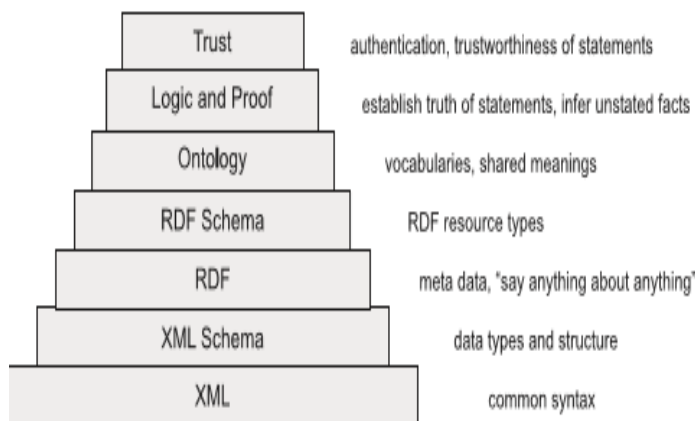
2) *The schema layer.*-web ontology languages are introduced at this layer to define a hierarchical

description of concepts (is-a hierarchy) and properties. (RDFS (RDF Schema))

3) *The logical layer.* More powerful web ontology languages are introduced at this layer. These languages provide a richer set of modeling primitives that can be mapped to the well-known expressive Description Logics.

The development of SW proceeds each step building a layer of top to another.

- 1) URI- Universal Resource Identifier (URI)
- 2) UNICODE
- 3) Extended Markup Language (XML)
- 4) Resource Description Framework (RDF)
- 5) RDF Schema (RDFS)
- 6) Web Ontology Language (OWL)
- 7) SPARQL
- 8) RIF/SWRL Rule Interchange Format/Semantic Web Rule Language
- 9) Cryptography
- 10) Trust



IV. COMPARISON OF WEB VERSIONS

Web is the largest transformable-information construct that its idea was introduced by Tim Burners-Lee in 1989 at first web---

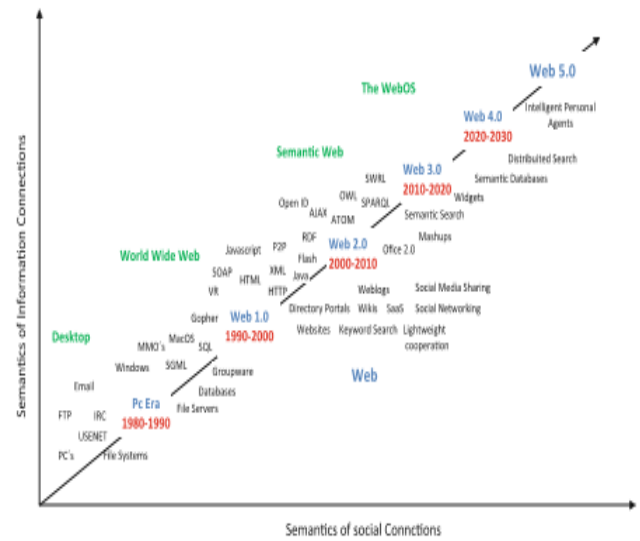
Web 1.0 referred as a web of information or percipience,

Web 2.0 as web of verbalization,

Web 3.0 as web of affiliation and

Web 4.0 as a web of integration and

Web 5.0 as web of Decentralized smart communicator.



WEB 1.0

Web1.0 was invented by Tim Berners-Lee it was a read only platform. That mean the user can only use it to read (one way communication) but can't contribute to it.

1. File and Web Servers
2. Content and Enterprise Portals
3. Search Engines (AltaVista, Yahoo!)
4. E-mail (Yahoo!, Hotmail)
5. P2P File Sharing (Napster, Bit Torrent)
6. Publish and Subscribe Technologies

V. WEB 2.0

Web 2.0 was invented by "TIME O'REILLY".

Web 2.0 user not only read information from the internet but also provided information to the web through the internet to share with other. For example-in Facebook you are allowed to write your view, upload photos and so on.

Such as **AltaVista, Yahoo and Google** are the main tools for using today web. Web 2.0 is an interactive web that mean it is called a read/write web.

VI. WEB 3.0

The third generation world wide web also known as a semantic web (web 3.0). SW build upon work in the area of AI (Artificial intelligence). If Web 2.0 is about web application and social networking, and web 3.0 is about incorporating the semantics of data interpreted by machines.

The first thing to know about the Semantic Web is that it is a Web of data (Meta data)

VII. WEB 4.0

Web 4.0 will be the read-write-execution-concurrency web. Web 4.0 is still an underground idea in progress and there is no exact definition of how it would be. Web 4.0 is also known as symbiotic web. The dream behind of the symbiotic web is interaction between humans and machines in symbiosis.

Web 4.0. In simple words, machines would be clever on reading the contents of the web, and react in the form of executing and deciding what to execute first to load the websites fast with superior quality and performance and build more commanding interfaces.

The web 4.0 also known as webOS. The webOS will be parallel to the human brain and implies a massive web of highly intelligent interactions

VIII. WEB 5.0

Web 5.0 is still an underground idea in progress and there is no exact definition of how it would be.

Web 5.0, the sensory and emotive Web, is designed to develop computers that interact with human beings.

WEB 1.0	WEB 2.0	WEB 3.0	WEB 4.0	WEB 5.0
1996	2006+	2015-2016+	+2018	Future web
Tim Berners's Lee	Time O'Reilly	Tim Berners's Lee	Ultra-Intelligent Electronic Agent	Tim Berners's Lee
The web	The social Web	Semantic Web	Mobile web, Symbiotic web	Symbiotic web (Emotional web)
Read only web	Read and write web	Read, write and execute web	read-write-execution-concurrency web	Read-write-execute and Emotional
Information sharing	Interaction	Immersion	Interaction between humans and machines in symbiosis	Open, Linked and Intelligent Web = Emotional Web
Connect information	Connect people	Connect knowledge	Connect people mind	Smart Communicator (SC)
HTML/Portals	XML/Rss	RDF/RDFS/OWL	-----	-----
web of information or percipiense	web of verbalization	web of affiliation	web of integration	web of Decentralized smart communicator
AltaVista, Google	Google personalized, DumpFind, Hakia	Semantic Search: SWSE, Swoogle, Intellidimension	Mobile web applications	3D Virtual world, avatar

IX. CHALLENGES OF SW

- The development of ontologies.
 - Formal semantics of the semantic web language.
 - Proof and trust.
1. The Availability of Content\
 2. Ontology Availability, Development and Evolution
 3. Scalability of Semantic Web Content
 4. Multilinguality
 5. Visualization
 6. Semantic Web Languages Standardization
 7. The OKE challenge (open knowledge Extraction)
 8. Wikidata– bonus.

X. BENEFITS OF SW.

1. Computer can operate automatically. Since computer can make decision like people do, they can complete work automatically.
2. Computer can also customize business systems and companies can run the more economically requiring less human effort.
3. Data sharing can be done more easily with the semantic web.

4. Scalable, reusable, sharable course content.
5. We can use a standardized way to store and query information efficiently.

XI. OPPORTUNITIES OF FUTURE WEB

Today, the Semantic Web sites as an extension to the World Wide Web, providing a standardisation of the way the relationships between web pages are expressed. The World Wide Web Consortium (W3C), is dedicated to building the technology stack to support a 'web of data'. According to the W3C.

"The Semantic Web provides a common framework that allows data to be shared and reused across application, enterprise, and community boundaries".

The truth is that there are many current Semantic Web projects and many useful applications that have already been developed. However, to create a true Semantic Web then all documents and data within the web must be compiled with Semantic Web technologies in mind, to enable a semantic search engine to have a true picture of all of the information available. Without the full picture, the full story cannot be told. The wider context, the opportunities are far greater than the individual or commercial gains that the Semantic Web and linked open data can provide. Many governments are now part of the Open Government Data (OGD) movement and are working towards this future, publishing data on economic activity, energy consumption, public spending and other key metrics. Using Semantic Web technologies to understand vast quantities of data, it is becoming possible to efficiently leverage this information to enable better decision making in areas such as low carbon development, renewable energy, disaster management and agricultural policy.

XII. EXAMPLE OF SEMANTIC WEB-

- LINKED DATA SEARCH ENGINE
- MEDICAL – HEALTHBASE
- DBPEDIA
- BBC MUSIC
- ETOURISM

XIII. CONCLUSION

The WWW has changed the way people communicate with each other and this development has also changed the way we think of computer. Originally they were used for computing numerical calculations. SW is a new concept that means how computer, people, and the web can work together more effectively.

TIM BERNERS-LEE wants anyone to be able to put information on a computer and make sure that information is accessible to anyone, anywhere else anytime with the help of semantic web. Web 5.0 as a quasi-emotive web described as fifth generation web in this paper. Future work on this paper will focus on the deeper and broader research about the new possible invention in the journey of World Wide Web and its issues.

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