Birth of the World Wide Web

AUTHOR P R HILL

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This article covers the conception of the World Wide Web with profound gratitude to the British pioneer and visionary Sir Timothy Berners-Lee...

The Web has a body of software, and a set of protocols and conventions. Through the use hypertext and multimedia techniques, the web is easy for anyone to roam, browse, and contribute to [http://www.w3.org/WWW/].

The History

Vannevar Bush was an electrical engineer and inventor, who in the 1930s, constructed the first analog computer, and sowed the first seed. He was obsessed with modern science, and wrote an article about how he perceived the future to be. He considered a future device for individual use. It was like a mechanized private file and library. He called it the Memex. The idea of this article was that machines would be needed to help humankind, to cope with the information of the future. This was ultimately to trigger the Web. The article was shelved until after the Second World War. Atlantic Monthly, an intelligentsia magazine published it, it was called: As We May Think

Douglas C. Engelbart read the article by Bush, which remained an inspiration in his work. After working for NASA for a while, he went onto pursue his dream, which was to inspire

successive generations of computer scientists. He would devote his life to a crusade to use

computer power to augment human capabilities. This, he achieved, and with his team went

onto invent bit-mapped screens, graphics-based interfaces, multiple windows, and many

other things. He also invented the Mouse, used today on millions of desktops worldwide.

Another person to whom, the article made an impact was Ted Nelson, a man in pursuit of his

dream, which was the Xanadu project. The idea was all media contents were to get

permanent addresses, which can be addressed by any one independent of their documentary

context. The project has been in development for more than 30 years. The Xanadu

connective structure is extremely different from that of HTML or any system. The structure

consists of both links and transclusions, Nelson made the connection in the technology

needed to drive the associative linking, envisioned by Bush. He came up with

"nonsequential writing." He later coined the term hypertext.

Pioneers such as Vannevar Bush, Douglas Engelbart, and Ted Nelson, started the idea of the

Web. However, it took Tim Berners-Lee to bring it to fruition. He had read, "Enquire" a

book similar to "As We May Think" by Bush. The vision he had of the Web is about

anything, being potentially connected, with anything. He saw the web as an open challenge.

The goal Berners-Lee wanted to achieve was global communication, for all, not just the

elite. He devised a way of using hyperlinked documents, while working at CERN. In his

spare time, he wrote the program "ENQUIRE" (Using Ideas from the book). It was a

notebook program, which allowed links to be made between arbitrary nodes. Each node had a title, a type, and a list of bi-directional typed links. It was never published; this program formed the conceptual basis, for the future development of the World Wide Web.

By 1980, there were many obstacles in the way of exchange information on the Internet. There were also many computer network systems, but few shared common features. A user had to understand complicated and inconsistent systems. Big investments had to be made by users, because information had to be accessed in different ways. There was a great need to have a way of linking connections on the Internet. Tim Berners-Lee dream was to have computers linking via the Internet worldwide. He achieved this with the hypertext system, and its protocols.

Timothy Berners-Lee

The Englishman, Tim Berners-Lee changed things forever on the Internet, by allowing information to be obtained from any source, and in a simple way. He developed the Hypertext System and protocols, otherwise known as the World Wide Web. The idea was that documents should be editable by their readers. The system grew rapidly, and allowed communication globally. Berners-Lee is currently the director of the World Wide Web Consortium and he occupies the 3Com Founders chair, at the M.I.T Laboratory for Computer Science, where he is currently employed.

Berners-Lee worked for [Cern](#) as a software engineer in 1989. He proposed a global hypertext project. This was to be known as the [World Wide Web Hypertext Project](#). Berners-Lee working in collaboration with Robert Cailliau in 1990, went onto develop the protocols i.e. (HTTP) [Hypertext Transfer Protocol](#), (URL) Uniform Resource Locator, and (HTML) Hypertext Mark-up language. One of the main features of the World Wide Web documents is their hypertext structure.

Hypertext is a way to link, and access information of various kinds, as a web of nodes, in which the user can browse at will. It provides a single user interface to large classes of information reports, notes, databases, computer documentation, and on-line help. In November 1990 Berners-Lee and Cailliau wrote the first WWW client, a What-You-See-Is-What-You-Get [WYSIWYG](#) hypertext browser/editor that ran using [NeXTStep](#), it was very sophisticated but only available on [NeXT](#) machines which was not wholly suitable to their needs. They needed a browser that would function on non-graphical displays. Nicola Pellow (an English graduate student) achieved this by writing a simple [Line-Mode browser](#).

CERN launched the Web in 1991. It was clear that the small team at CERN, could not do all the work needed to develop the system further, so Berners-Lee put a plea out via the Internet for other developers to join in. Marc Andreessen, and Eric Bina, working for the National Center for Supercomputer Applications (NSCA), took up the plea; in 1993, they had released their first version of a Mosaic browser, this Mosaic version was created in under three months, it had multiplied tenfold in little over five months. The software ran in the X Window System environment.

The idea of a browser is as a software tool, for viewing and navigating, through a web of hypertext documents like a Mosaic Browser. Andreessen was interested in combining the existing Internet framework, with the multimedia applications made available by hypertext, and the World Wide Web. At the time, it was difficult to find and access documents on the Internet. It was then necessary to learn the usage of such programs as FTP, Gopher, and Telnet, to utilize the Internet.

The impact of the World Wide Web on the world has been phenomenal. Tim Berners-Lee provided a global communication system, which has been likened to a giant database. Last year Internet firms spent 293m in the UK. At the end of May of this year, the numbers of homes connected to the net is 10 million - up from 6 million a year earlier. The figures mean that every eight seconds one UK household is connected to the Internet for the first time. In turn, they log onto the hypertext language, to browse the World Wide Web. 429 Million People worldwide have Internet access.

Conclusions

Ted Nelson has a different view of the Web: "Word processing is a completely warped process," he says - "Windows 95 is little more than Scrabble tiles, with font sugar on top." He goes on to call the Web. "Wonderful for people who like unfinished writing." In an article from Xanalogical Media Nelson stated." The World Wide Web is a delivery system for separate closed units - a system that allows only embedded links pointing outward. This is simple but

naive - creating a tangle of ever-breaking one-way links, breaking whenever documents are moved, or modified." It would be in the greater interest of the industry if Nelson's work had reached completion, for without the inventor, we would have no comparison and without comparison, progress would stand still.

Without the World Wide Web being in the public domain, access would be denied to the average person. If any company, or person, had owned the World Wide Web, its growth would have become stunted. Berners-Lee designed the World Wide Web and deliberately kept it 'Non-Proprietary, and free'. The Web should remain an open standard for all to use. It started elitist but rapidly turned into a mass medium. From the start Berners-Lee was convinced HTML, would be the only language to survive the future. The World Wide Web Consortium and Berners-Lee have as their goal the need to lead the Web to its full potential. The Consortium is always looking for ways to improve the hypertext system; they see the future as needing to use the following programmes: SVG: Scalable Vector Graphics additionally, XML Signature furthermore, RDF-Model Data and much more.

The World Wide Web is global, allowing for growth in any sector. New ideas are thought of all the time, with input from even the smallest countries. Communication is the key, allowing it to be so prolific; which is just as Berners-Lee had envisaged it. Progress does not stand still; it is made by a combination of a person(s) idea, triggering another idea. Inventions, which are overlooked or rejected, can sometimes be adopted years later (maybe Xanadu?). The celebrated historian of science, Thomas Kuhn, called this mind set a paradigm (Ref: Open University T171: Module 3: Ref: 2.3 Deep Background: 3c). The Future: Could be a programme called IT?

Alternatively, it could be the popular Open Source software operating system "Linux." Whatever it is, we owe it to these men of vision to be "Open to suggestion and forward thinking."

WWW History References

[Memex](#)	[CERN (WWW)](#)	[MOSIAC Browser](#)
[As we may think](#)	[WWW Hypertext Project](#)	[FTP](#)
[NASA](#)	[HTTP](#)	[GOPHER](#)
[Mouse](#)	[URL](#)	[TELNET](#)
[XANADU: Ted Nelson](#)	[Hypertext Markup Language](#)	[SVG:Scalable Vector Graphics](#)
[Enquire Within Upon Everthing](#)	[WYSIWYG](#)	[XML Signature](#)
[Enquire Manual](#)	[NeXTStep](#)	[RDF-Model Data](#)
[3COM](#)	[NeXT Machines](#)	[Open Source](#)
[M.I.T](#)	[Line-Mode Browser](#)	

Additional Information

Information gathered for this article was mainly obtained from the World Wide Web, and the course T171 from The Open University. The book "Where wizards stay up late" was also a valuable source of information. Author's Katie Hafner and Matthew Lyon a Touchstone book: Published by Simon and Schuster...

Quote from Article Author

"The World Wide Web is like a living entity which awakens at the press of a key"

Follow links for more information

Berners Lee: [Biography](#) - Berners-Lee: [Book Extracts](#) - Berners-Lee: [Work at M.I.T](#)

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