Public Opinion and the Internet

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INTRODUCTION

The development of the "World Wide Web" has had a significant impact on the formation of public opinion in democratic societies. This impact, though, has not been exactly that predicted by early 1990's prophets of the Web, who expected a decentralization of traditional mass media. If anything, the easy accessibility of the Web-enabled Internet (hereafter, "the Net") has extended the audience reach of traditional network media. Despite this, the Net is fundamentally changing the nature of public opinion.

One should be wary of thinking of this change as a technology-enabled extension of the 19th-century liberal public. In the liberal view, the Net is a difficult-to-control free speech medium. It engenders a babble of voices devoted to persuading citizens and governments of the merits and otherwise of laws and policies. Because the Web's infrastructure of servers is global, dictatorial, or even legal, control of it is difficult to achieve. This is especially true for governments that want to encourage the pragmatic benefits of computer-mediated commerce.

Yet, to see the Net simply as a free-speech medium does not do full justice to its nature. It began life as a powerful document delivery system, and, in important ways, its long-term impact on public opinion derives from that fact. The Web leveraged existing inter-networked computing to enable a new way of creating, collecting, storing, transforming, and disseminating documents and information objects. The frothy activity of instant commentary and interest group campaigning that the Net facilitates disguises the extent to which the logic of the public sphere is undergoing a long-term paradigmatic shift shaped by its origins as a document archive.

BACKGROUND

The architect of this dynamic document archive was Tim Berners-Lee (Berners-Lee, 1999; Naughton, 1999). In 1980, Berners-Lee began work as consultant at CERN, the international particle research body located near Geneva. CERN was a "city of turnover." Its principal social characteristic was a transient population. Visiting physicists who came and went did much of the center's experimentation. Scientists, on average, stayed two years. The problem that resulted was how to maintain good documentation tracking when staff turnover was so high. Berners-Lee set out to solve this problem.

His first attempt was to create a program called ENQUIRE (1980), which he dubbed a "memory substitute." He filled documents with words which, when highlighted, would lead to other documents. This was similar to the Apple Macintosh HyperCard. This application, in its turn, borrowed the hypertext concept from Ted Nelson (Nelson, 1992). Hypertext conceived information as connection or linkage. Berners-Lee adapted this idea to create the beginnings of a publicly-accessible archive of documents. The archive was initially restricted to CERN. In 1989, however, Berners-Lee conceived a plan for a universal document system. Universal meant global. The idea was to use a mix of hypertext and networked computing to link all documents and information objects in the world. The idea of a universal system was a conceptual breakthrough. A universal system meant there would be no central control or source of information, whether in the sense of a centralized undemocratic hierarchy or else a democratic hub-and-spoke network. Universal also meant the potential integration of all information systems.

Berners-Lee had another powerful idea. He thought that a universal information system should mean not only universal access to and retrieval of documents, but also the universal capacity to publish documents. He insisted (against the opposition of peers) that this should be a system in which anyone using a hypertext editor could publish a linked document. The hypertext editor was the forerunner of the HTML editor. Andries van Dam had created the first functional hypertext editor in 1967 at Brown University.

In 1990, Berners-Lee got support from CERN senior managers for what had been to that date virtually a private project. He created a program called a "browser" that provided a virtual "window" through which a user saw a web of linked resources on the existing "Internet" (i.e., the existing inter-network of networked computers that had grown up since the 1970's). His small team also created a "Web server." based on the client-server model. He envisaged a system in which information would be stored on networked computer servers. Client programs (browsers) running on other networked computers would access these servers.

How would the information be extracted from these servers? One option was to use existing technology such as TELNET or FTP. A second more powerful idea was that of the "inter-face." This concept came from the hypertext community. An inter-face was a "window" that displayed the structure of the virtual space of linked texts. Originally, node-link diagrams represented this structure. The first browsers were not graphical. Graphical interfaces came later. Marc Andressen's 1993 Mosaic browser was the first with the standard graphical interface of windows, graphics, and point-and-click functionality.

Berner-Lee's desire for universality meant that he had to ensure that public information on any networked computer anywhere in the world could be accessed through the browser. To achieve this end, Berners-Lee devised a set of protocols by which different machines could talk to each other and exchange information. One protocol specified the location of information. It was like an IP address. A second protocol for information exchange between machines was modeled on FTP. This was the HTTP (Hypertext Transport Protocol). A third protocol established a uniform way of structuring documents: Hypertext Mark-up Language (HTML). HTML was based on SGML (Standard Generalized Mark-up Language) already used in the electronic publishing world. It provided conventions for attaching tags to pages.

CRITICAL ISSUES: FROM PEERS TO AUTOPOIESIS

The result of Berners-Lee's architecture was a cheap, quick, and reliable system for accessing, retrieving, and publishing documents. Any person with access to the Internet in principle could look at any document stored on a Web server (unless it resided on a secure server where access was intentionally limited). A person with some Web server space could publish any documents they liked on the Internet, as long as they had some simple knowledge of HTML page creation.

What followed from this were two major consequences for public opinion. The first was that anyone with a relatively simple set of tools could publish their own opinions. On the Web, these opinions were accessible to anyone anywhere in the world with access to a computer and an Internet Service Provider.

Computer-mediated universal access and self-publishing created a new kind of public sphere. They also created a new set of justice and equity problems. Not everyone can afford access, and certainly not unlimited access, to the Internet. Indeed, most of the world does not have a telephone connection, let alone a computer or an ISP account. But then, most of the world has also never participated in public opinion formation of any kind. In the still limited number of countries where there is a history of strong public spheres, programs sponsored by governments and private foundations emerged in order to overcome access inequalities. Widespread provision of computing by companies and educational institutions also facilitated access to the new digital public as well. "Stealing time" from institutions for public and private Net activity emerged in the well-endowed democracies as a "quasi-entitlement," creating dilemmas for organizations as to "when and where and how" to encourage or discourage such tacit activity.

In democratic societies with long-established publics, and a correlative strong propensity to create intellectual wealth, virtually all social groups and classes have directly or indirectly benefited from the increasing access to information made possible by the Net. At the other end of the political spectrum, the Net has posed significant dilemmas for dictatorial governments. Their first instinct has been to censor Web materials. However, censorship is difficult to apply to the Net, because material is published on thousands of Web servers in hundreds of countries. Dictatorial states instead discourage access to computer hardware, the setting up of ISPs, and the local publication of sites. However, as the Net is also a major scientific and commercial medium, with implications for trade and military science, such controls also hurt a state's economic and technology performance.