

Scope of the Paper

Before these questions can be answered it is necessary to define the context in which they will be examined. This paper is concerned with the time period in the Internet's history following the introduction of the Mosaic web browser in 1993. By looking at the twenty-plus years since then we shall be examining a period where what had previously been accessible to those in the know — the founding geeks, as it were — suddenly became available to the rest of us, from the geeks next in line, to those of us who wanted to be geeks, all the way through to our parents, and grandparents.

We suspect that during this period the World Wide Web, or web for short, became synonymous with the Internet for a majority of its users. Certainly we're prepared to place a bet that most people couldn't conceive of an Internet without browser-based technology — how would one navigate a new city, send emails, find out where Kim Kardashian is?

By concentrating on this period we are not trying to ignore the significance of the work that went into the Arpanet, or the development of TCP/IP. And neither are we ignoring the implications of applications-based computing which has become ubiquitous in the age of the smartphone. In taking seven case studies from the period since 1991 we are concerned with the major developments on the web that got us here, to 2012, and the lessons these case studies can teach us about what questions we need to keep asking as the Internet develops over its next twenty years. We think we have chosen significant tipping points; reader reaction will let us know whether we were right.

In zooming in on the infancy of the Web, we are naturally restricting ourselves to looking at the stories of those who were active during this period, and, equally naturally, this involves a focus on the nations that have been at the forefront of Internet development. The majority of our case studies look at events that began in the United States and, even in the two studies that don't address U.S. interests directly, the hand of the U.S. can be seen in both the development of the technology involved used to implement Internet surveillance and censorship, or the values involved in seeking a revolution that ends in U.S.-style democracy. The future development of the Internet will be decided by many nations; but the values inherent in its underlying construction are almost entirely those of one nation alone. Therefore we are examining in most cases a very American story, with global implications.

Which actors are we looking at? Three points of a connected triangle: users, governments, and businesses. The interplay of these three forces drives the development of the Internet, and their interactions manifest themselves in everything from innovation to regulation to competition. In the age of the Internet users not only consume information they produce it, and the rules they play by in this regard bear little resemblance to those that existed before the Web went mainstream; just ask Metallica, the proprietors of the Pirate Bay, or Hosni Mubarak. Users, therefore: producers, consumers, and activists.

The early years of the Internet have often been described as a wild frontier, but in reality it didn't take governments long to try to impose some order on the online world. The extent to which they have been successful, with the closed Internet societies of China or Iran on the one hand, versus the more open networks enjoyed by the netizens of the west on the other, is still open to question. The only sure thing, as evidenced by the previous quote from Sarkozy, is that the will to civilise the Internet exists, and is very much a force of the now.

This leaves the business sector. Like governments, the speed of the Internet's development post-World Wide Web caught many large businesses flatfooted, and instead delivered the future to the nimble. The concept of the Internet startup, now a mainstream phrase, was something entirely new in the mid 1990s. The success — and massive growth of some startups — has turned several legacy industries on their heads, and the consequent competition between old and new companies to deliver what users want and/or preserve business models is now one of the most powerful forces driving the development of the Internet and, thanks to businesses interaction with government, the legal frameworks that surround it. Picture all of the processes that led to Google vs. Viacom, and you've got an idea of the tension between these actors.

Case Studies

To explore where we are and how we got here, and to try to identify what questions we must consider as we move forward, we have chosen to examine what we consider to be seven key moments in the development of the Internet. Each of our case studies tells the story of a particular moment in the Internet's history:

- The development of the Mosaic Browser: we begin with the key Internet development that gives our paper its timescale, and consider how important the Mosaic browser was in the development of the World Wide Web and the structures that govern it
- The birth of online commerce: we consider how the development of trust online led to the rapid growth of e-commerce and the founding of Amazon, one of the companies that would go on to dominate the World Wide Web and influence the expansion of business online
- The story of search and the emergence of an Internet giant: we analyse how Google grew from a garage operation to an Internet behemoth, while defining the Internet's advertising-supported business model and setting the bar for the collection of user data
- How technology challenged both business and social norms: starting with the development of Napster, we show how technology fostered a culture of sharing and innovation online, undermining the entertainment industry's business models *and* the copyright system, while turning a generation on to free stuff
- Taking repression online: in the shadow of the great Firewall of China, we look at the way governments are able to use Internet technology to censor and monitor their citizens, and the extent to which the filtering of information is becoming commonplace
- Going social and the emergence of the 'networked public': starting with MySpace, we look at how social networking has redefined personal privacy on the Internet by encouraging us to befriend, share, and reinforce the concept of connecting online
- Technology and transparency: we ask if the so-called Twitter and Facebook revolutions achieved anything more concrete than government and media scrutiny of their disruptive properties, or if the growing use of social media really will have a positive effect on democracy

Following a recap of the what our case studies can teach us about the Internet's development until today, our paper will conclude by trying to identify the sorts of questions we need to be asking about how we want the Internet to develop in future, and what sorts of forces will play a role in providing the answers.