Real-Time Streams

The growth of the Internet has been astonishing, both in terms of its breadth of geographic cover, but also the staggering number of digital objects that have been made to populate the various webpages, databases, and archives that run on the servers. This has traditionally been a rather static affair, however, there is evidence that we are beginning to see a change in the way in which we use the web, and also how the web uses us. This is known as the growth of the so-called ‘real-time web’ and represents the introduction of a technical system that operates in real-time in terms of multiple sources of data fed through millions of data streams into computers, mobiles, and technical devices more generally. Utilising Web 2.0 technologies, and the mobility of new technical devices and their locative functionality, they can provide useful data to the user on the move. Additionally, these devices are not mere ‘consumers’ of the data provided, they also generate data themselves, about their location, their status and their usage. Further, they provide data on data, sending this back to servers on private data stream channels to be aggregated and analysed. That is,

1. The web is transitioning from mere interactivity to a more dynamic, real-time web where read-write functions are heading towards balanced synchronicity. The real-time web... is the next logical step in the Internet’s evolution.
2. The complete disaggregation of the web in parallel with the slow decline of the destination web.
3. More and more people are publishing more and more “social objects” and sharing them online. That data deluge is creating a new kind of search opportunity (Malik 2009).
The way we have traditionally thought about the Internet has been in terms of pages, but we are about to see this changing to the concept of ‘streams’. In essence, the change represents a move from a notion of information retrieval, where a user would attend to a particular machine to extract data as and when it was required, to an ecology of data streams that forms an intensive information-rich computational environment. This notion of living within streams of data is predicated on the use of technical devices that allow us to manage and rely on the streaming feeds. Thus,

Once again, the Internet is shifting before our eyes. Information is increasingly being distributed and presented in real-time streams instead of dedicated Web pages. The shift is palpable, even if it is only in its early stages... The stream is winding its way throughout the Web and organizing it by nowness (Schonfeld 2009).

The real-time stream is not just an empirical object; it also serves as a technological imaginary, and as such points the direction of travel for new computational devices and experiences. In the real-time stream, it is argued that the user will be constantly bombarded with data from a thousand different places, all in real-time, and that without the complementary technology to manage and comprehend the data she would drown in information overload. Importantly, the user is expected to desire the real-time stream, both to be in it, to follow it, and to participate in it, and where the user opts out, the technical devices are being developed to manage this too. Information management becomes an overriding concern in order to keep some form of relationship with the flow of data that doesn’t halt the flow, but rather allows the user to step into and out of a number of different streams in an intuitive and natural way. This is because the web becomes,

A stream. A real time, flowing, dynamic stream of information — that we as users and participants can dip in and out of and whether we participate in them or simply observe we are [...] a part of this flow. Stowe Boyd talks about this as the web as flow: “the first glimmers of a web that isn’t about pages and browsers” (Borthwick 2009).

These streams are computationally real-time and it is this aspect that is important because they deliver liveness, or ‘nowness’ to the users and contributors. Many technologists argue that we are currently undergoing a transition from a ‘slow web to a fast-moving stream... And as this happens