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Tracking Behavior Changes on the Web

Evidence accumulated in a major study reveals significant shifts in how people deal with knowledge and information—shifts that affect young people the most.

By David Nicholas

It is generally acknowledged that the digital transition is gathering pace as we fast forward to a future in which most of our leisure, cultural, economic and educational activities will be conducted in a virtual environment. What is not so well understood is that, as a result of this transition, we seem to have changed centuries-old ways of dealing with knowledge and information, and this is likely to have a huge impact on every aspect of society and our lives.

For some time now those on the information frontline—academics, teachers, journalists and parents—have suspected that something has changed in how people seek and use information on the Web and especially with Google. The suspicion is that there has been a significant “dumbing down” and, as a consequence, a drop in performance across a whole range of important knowledge-based activities. It is thought that the behavior of young people has dumbed down the most, and this has given rise to worries about the future of many of our treasured institutions, such as libraries and books, and values, such as trust, authority and peer review.

If these suspicions prove correct, then this is truly worrying since it means that many of the benefits that should accrue from being part of a global information society are being squandered. Can it really be the case that, having created a world in which unimaginable information resources are made accessible 24/7, we have failed to take full advantage of this by exhibiting a lazy, cavalier and crude approach to locating, evaluating and consuming this bounty? Have we become too occupied with easy access and failed miserably to address the big question—to what does this access lead?

It is not just scholarly outcomes we should be concerned about, because the Web is an encyclopedic, multipurpose environment where people go to meet all kinds of needs—health, financial, housing, etc. Success in meeting these essential needs also rests on exercising effective information strategies and methods of seeking.

For journalists, the big question might be posed differently: If in this time when people use the Web to find sources of news and information—posted by bloggers and news organizations, “citizen” journalists and governments officials—how will what is produced through journalistic rigor remain visible amid the clamor of so many other possibilities?

Evidence of Change

Lots of suspicion and many anecdotes, but is there any robust evidence of change? Turns out there is plenty. The Centre for Information and Behaviour and Evaluation of Research (CIBER) at University College London has dedicated its efforts to describing, visualizing and evaluating environments in which digital information is sought and used. And it has done so in great detail using a method called deep log analysis. As part of our research, the “digital footprints” of millions of people visiting Web sites in a wide range of strategic information environments (health, media, publishing, academe and charities) have been captured and evaluated, creating an evidence base of unparalleled size. It is not only the study’s size that should make us take note but also its robustness, since findings are based on how people actually behaved and not how they thought they behaved, or might behave in the future. (There are already far too many of these studies.)

In broad terms, what CIBER research has found is that behavior in the virtual space can be described as being active, promiscuous, bouncing, flicking and viewing. These are not adjectives we’d normally associate with an activity that most people would have thought to be staid, academic even.

There is massive “activity” associated with most Web sites. Indeed, a typical site attracts millions of visits and views and the numbers are growing astronomically. This is, in part, because existing users can access services whenever they like and wherever they are and because the digital environment draws in lots of new people to its scholarly net.

In essence, we are all scholars now. However, in practice, things are not that rosy. The tremendous activity actually masks real problems many people are experiencing in the cavernous, disintermediated information environment. It is a mistake to associate activity with satisfaction or positive outcomes, as we shall learn. Furthermore, as a sign of how much things have changed, much of the activity is, in fact, generated by robots. Half of all visitors to a Web site (a far higher proportion in the case of more esoteric sites) are robots, sent, for instance, by search engines to index content.

The virtual user is promiscuous. About half of all people visiting a site do not come back. This



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form of behavior can be ascribed to the following reasons:

Massive digital choice, which means that people shop around.

Use of search engines, which are constantly refreshing the information window.

Poor retrieval skills, which means people arrive at a site they did not want to go to.

The habit we have of leaving memories behind in cyberspace. It turns out that few people remember what they did online the hour or day before, and they pick up their memories (ineffectively) from the search engine.

Young people are the most promiscuous.

The virtual user "bounces." Half of all visitors view one to three pages from the thousands available to them on a site. They bounce in and then soon bounce out again, and they do so because of several things inherent to the Web experience:

They bounce because search engines take them to the wrong place, something that has led to a widespread and worrying acceptance of failure in the digital space.

They bounce because of the wide choice of offerings and a shortage of time, which engenders a highly pragmatic and focused approach to information acquisition.

They bounce because of the sheer pleasure of bouncing.

Young people bounce the most.

Some bouncing can be attributed to flicking, a kind of channel hopping and crosschecking form of behavior that is essential to surviving in a crowded and anonymous digital information environment. I always use my teenager daughter as an example to explain flicking. She's sitting on the sofa with a remote in her hand "watching" the TV and flicking from channel to channel and, getting rather annoyed at this, I ask her, "Victoria, can't you make up your mind what you are watching?" She replies, "Dad, I'm watching it all."

In a virtual world, all of us end up watching it all—hence bouncing and promiscuity. In information-seeking terms, however, this form of behavior represents the triumph of the horizontal over the vertical and probably represents the greatest challenge to information providers of all kinds.

Bouncing and flicking means that people spend very little time on a Web page or site. On average most people spend fewer than 15 minutes on a visit to a Web site, insufficient time it would seem to do much reading or obtain much understanding. People want quick wins. They spend more time reading short articles online than long ones; if it is long they will ignore it, read the abstract, or squirrel it away to a day when they will not read it.

In fact, there is a sense that people go online to avoid reading. Instead, what they appear to be doing is "power browsing." They race through titles, contents pages, and abstracts at a huge rate of knots. Speed is the essence. Abstracts, contents and menu pages are made for speed; they are the motorways by which users find content. This is leading to a new form of scholarship, perhaps best described as digital osmosis. As one person whom we interviewed explained, "I can update my knowledge very quickly. You see the sheer number of books is overwhelming. I can look at them very quickly—you know, within 15 minutes, I can look at three or four books—and get some very superficial knowledge of what is in them. Nevertheless it improves my scholarship, because in the back of my mind, these books already exist."

Connection to Journalism

What, then, is the significance of this behavior, especially for journalists? Perhaps best to let a journalist explain. John Naughton, writing in *The Observer*, got it right when he wrote in a January 2008 column about the findings of our study. "The study confirms what many people are beginning to suspect: that the Web is having a profound impact on how we conceptualise, seek, evaluate and use information. What Marshall McLuhan called 'the Gutenberg galaxy'—that universe of linear exposition, quiet contemplation, disciplined reading, and study—is imploding, and we don't know if what will replace it will be better or worse," Naughton concluded. "But at least you can find the Wikipedia entry for 'Gutenberg galaxy' in 0.34 seconds."

Of course, to complicate matters, it is possible that the change has not been as radical as it first seems. There is always the possibility that it was always so, and it is just that in the virtual environment we are able to observe things we could never see in the hard copy, bricks and mortar world. Even so, we cannot escape from the fact that most information providers are working with the wrong form of behavior—the Gutenberg one, with which they just feel more comfortable. Too readily they attribute the contemporary model as being simply the way kids do it, or how information will be processed in the future, when in fact nearly all of us behave like that now.

All of these changes in behavior pose many challenges for journalists. However, amid the massive choices of information and the patchwork quilt way in which it is provided and the speed at which consumers browse to find it, there is a gaping need for judgment calls made

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with the foundational strength of trust. Right now consumers of information on the Web tend to make up their own minds about the reliability of information, often through methods of personal crosschecking, and they tend to ignore the established symbols of authority. If this pattern continues, then there is a real danger that journalists will follow the path of librarians to a place where the knowledge they can offer gets swallowed up in a sea of self-discovery.

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