

CHAPTER

INFORMATION, PLEASE?

Our knowledge is a receding mirage in an expanding desert of ignorance.

—Will Durant

“Let your fingers do the walking” was the ubiquitous slogan for the Yellow Pages, developed back in 1964 by Geers Gross. It presaged a culture that today can find anything and everything online. The premise back in 1964 was that, rather than going from store to store, you could find what you were looking for in the commercial telephone book.

Back then, getting information was practically synonymous with asking the telephone company operator for a number. My, how things have changed: Today it might be a challenge to locate a telephone book or getting a live person on the line when calling directory assistance.

Given the information explosion that followed the introduction of the Web into almost every corner of the earth, now our fingers never stop walking. (With an amazing lack of foresight, the tagline was scrapped in 1998 by the Yellow Pages Publishers Association; at the time, the association’s president called it “a little boring.” Little did he know.)

Almost every generation has had access to more information than the one preceding it. It was maintained by some historians that Aristotle (384 BCE–322 BCE), in his day, knew everything – that is to say, he knew almost all that was to be known in his time. The same has been said for other polymaths, such as Francis Bacon (1561–1626) and Thomas Young (1773–1829).

Today it is clear that no one could even begin to amass knowledge that comes close to knowing everything. Whether any one person has ever known all there was to know is both debatable and unprovable; however, it is clear that each person who comes into the world today is able to know a progressively smaller and smaller percentage of the world’s knowledge.

More information has been produced in the last 25 years than in the last five centuries. Indeed, it has been said that a weekday paper edition of the *New York Times* contains more information than an average person living in the seventeenth century would have been exposed to in a lifetime.

The impact of the amount of information created merely in the last decade is numbing.

To see the problems that can result from this, one need look no further than the reaction of the National Archives and Records Administration (NARA) in 2009 when it discovered that the outgoing Bush administration would be turning over approximately 100 terabytes of information. That is 10 times that of what the Clinton administration generated in the same amount of time eight years earlier. To deal with the impending flood of content, NARA launched an “emergency plan.” And this is an agency whose sole mission is to keep records.

In the past decade, we have created billions of pictures, documents, videos, podcasts, blog posts, and tweets. If these remain unmanaged, it will be impossible for anyone to make sense out of any of this content because we have no mechanism to separate the important from the mundane.

Going forward, we face a tremendous paradox. On one hand, we have to ensure that what is important from our time is somehow preserved. If we don’t preserve it, we are doing a tremendous disservice to generations to come; they won’t be able to learn from our mistakes as well as from the great breakthroughs and discoveries that have occurred in our time. On the other hand, we are creating so much information that may or may not be important that we routinely keep everything.

Key inventions and discoveries, starting with papyrus (ca. 3500 BCE) and ink (2697 BCE) but more recently photography (1839), the commercial telegraph service (1844), the typewriter (1868), the telephone (1876), xerography (1938), the DEC PDP-1 mini computer (1960), ARPANET (the military predecessor to the Internet, created by the U.S. Defense Department's Advanced Research Projects Agency, which today is called DARPA) (1969), e-mail (1971), mobile phones (1973), the personal computer (1974), and the World Wide Web (1991), have facilitated increased access by democratizing content creation and distribution.

How democratic has information become? The answer may best be illustrated by what Tim Berners-Lee, inventor of the World Wide Web, wrote in 1999 in his book *Weaving the Web*:

Suppose all the information stored on computers everywhere were linked. Suppose I could program my computer to create a space in which anything could be linked to anything. All the bits of information in every computer . . . on the planet would be available to me and to anyone else. There would be a single, global information space.

The discoveries in the past 150 years have changed where, how, and with whom we work. They have facilitated the creation of a workforce comprised largely of knowledge workers, rewritten (or in some cases eliminated) the boundaries between work and private life, and created new workplace problems, such as Information Overload, which were heretofore considered only in theoretical terms.

Larry Bowden, a vice president at computer giant IBM, told me he knows this firsthand. "Information Overload basically slows me down because I'm interacting with information that's irrelevant and out of context and not allowing me to get to the end point to have the impact that I want."

Information Overload is causing people to lose their ability to manage thoughts and ideas, contemplate, and even reason and think. We are becoming instead, as Ted Koppel told his *Nightline* television audience in 1986, "a nation of electronic voyeurs whose capacity and appetite for dialogue is a fading memory." Active engagement, it would appear, belongs to an earlier generation. Bursts of 140 characters in the form of individual tweets seems to have replaced more thoughtful means of communication for

millions of people; instead of in-depth analysis and thought, we accept brief, fleeting, ephemeral thoughts that are of little consequence and have little impact.

I spend much of my time in meetings with people who are extraordinarily tech savvy, many of them senior and top executives at large companies that either create or consume large amounts of software and information (or sometimes both). Literally every person I have spoken with has confessed how he feels overwhelmed by the sheer quantities of information he is expected to consume in a day. This doesn't even take into consideration the technologies that noisily compete for a person's attention. What no one has yet realized is, however, the tremendous economic impact that this has on organizations and the legions of knowledge workers employed therein.

If for no other reason than to make it possible for future generations to be able to access information generated by us in the present, as well as what they themselves generate, we need to take the appropriate steps to solve this problem – and we need to do this now.

How do we accomplish this? It is clear (at least to this writer) that the tools we need to find information are lacking. The amount of information we have is simply too much for individuals to manage unaided by some form of technology, yet the tools we have available to us simply can't keep up. Even the latest advances in search and discovery don't seem to keep up with the massive amount of information that piles up when we are not looking.

Technology and our use of it have evolved in the past 150 years in ways that truly numb the mind. However, man has not necessarily evolved along the same path. A computer is designed to accomplish a specific task, to compute things, but this does not mean that is an extension of how we as humans work; we do not work the same as machines. This puts us in conflict with our tools, which takes a toll, not only emotionally and intellectually but on the bottom line as well.

For all intents and purposes, we are at the very beginnings of a new Information Age, and unlike past epochs, such as the Industrial Age, we are moving at such a fast pace that mistakes are amplified. (The term "Information Age" is not new, however, even though, according to *The Death of the American Telephone & Telegraph Company* by James R. Messenger, AT&T coined the

phrase in 1982. The first mention of the term that I can locate (thanks to Google Books) dates back to 1915, in an article entitled “The Demand for the Illustrated Information Article” although the author, A.H. Martin, had a very different sense of what was meant.)

The very notion of a modern-day corporation, something that came about once the Industrial Revolution got under way, will most certainly change as the Information Age evolves. Companies are already becoming somewhat virtual, but this trend will increase dramatically in the coming years.

A true virtual company might work more like the way movie producers in Hollywood form a production company for a single film. Workers with the right set of skills come together for the duration of the project and then move on to something else. In the coming years, smaller and more flexible organizations will be able to compete favorably with larger ones as a result of being able to draw on resources previously available only to the larger ones – as well as on some resources larger organizations simply cannot tap into.

Meanwhile, workers will be more attracted to such smaller entities because of the greater flexibility offered by such organizations for these very reasons.

Today, a virtual workforce is the calling card of a few leading edge companies. JetBlue, an airline founded in 1998, never built a traditional call center to take reservations. Each and every person in the call center works from home, a fact that few if any callers are aware of.

While many believe that all of our technological innovations and changes have done much good for humankind by increasing the standard of communications and living, these changes must be looked at critically, with the recognition that they may in fact do far more harm than anyone anticipated.

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