

The Information Explosion: A (Very) Brief History

Infosys 218
The Quality of Information
Geoff Nunberg
2/3/09



The Information Explosion

Smithsonian Secretary Robert McC. Adams said the Smithsonian decided to plunge into the expanded exhibition "because of the rapidity with which the 'Information Revolution' is changing our world. "In the hindsight of history," he continued, "this proliferation of new ways in which to think about and use information will almost certainly be seen to rival the Industrial Revolution of the 19th century in its impact on the substance and quality of human life. We might well regard the information explosion as the dominant achievement and characteristic of our times.

--The information explosion. "Most experts now agree that general knowledge is doubling about every two years...."



The Information Explosion

And while Mr. Reagan prospered in schools without libraries, I believe that the "information explosion" of more recent years has made school libraries necessary.

This is the information age! There is an information explosion. Some students will need a longer period of time to master mathematics, science, economics, world history...



The Information Explosion: Wikipedia Weighs In

Information explosion

Information explosion is a term that describes the rapidly increasing amount of [published](#) information and the effects of this abundance of data. As the amount of available data grows, the problem of managing the information becomes more difficult, which can lead to [information overload](#) or [information fatigue](#). Fortunately, techniques to gather knowledge from an overabundance of electronic information (e.g., [data fusion](#) may help in [data mining](#)) have existed since the 1970s.

Web Servers

As of August 2005, there are over 70 million [web servers](#). [1]

Blogs

According to [Technorati](#), the number of [blogs](#) doubles about every 6 months with a total of 35.3 million blogs as of April 2006. [2]



Of complaints about the making of books...



Something has happened in the last hundred years to change the relation of the written word to daily life. Whether it is the records we have to keep in every business and profession or the ceaseless communicating at a distance which modern transport and industry require, the world's work is now unmanageable, unthinkable, without literature. ... A committee won't sit if its drivelings are not destined for print. Even an interoffice memo goes out in sixteen copies. [There is a] huge number of activities which (it would seem) exist only to bombard us with paper...

Jacques Barzun, 1954



Of complaints about the making of books...



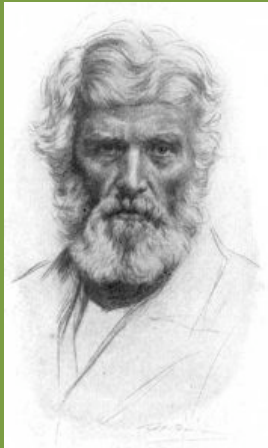
Process reproduction and the rotary press have made possible the indefinite multiplication of writing and pictures. Universal education and relatively high wages have created an enormous public who know how to read and can afford to buy reading and pictorial matter. A great industry has been called into existence in order to supply these commodities. ...The population of Western Europe has little more than doubled during the last century. But the amount of reading—and seeing—matter has increased, I should imagine, at least twenty and possibly fifty or even a hundred times

Aldous Huxley, 1934:

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Of complaints about the making of books...



Books are not only printed, but in a great measure written and sold by machinery.... Every little sect among us, Unitarians, Utilitarians, Anabaptists, Phrenologists, must have its periodical, its monthly or quarterly magazine, hanging out like its windmill into the *popularis aura* ["breath of public opinion"] to grind meal for society.

Thomas Carlyle, 1840



Of complaints about the making of books...



It will soon be the employment of a lifetime merely to learn [books'] names. Many a man of passable information at the present day reads scarcely anything but reviews, and before long, a man of erudition will be little better than a mere walking catalogue.

Washington Irving, 1820



Of complaints about the making of books...



The present age... may be styled, with great propriety, the Age of Authors; for, perhaps, there was never a time when men of all degrees of ability, of every kind of education, of every profession and employment were posting with ardour so general to the press....

Samuel Johnson, *The Adventurer*, 1753



Of complaints about the making of books...



Hence Bards, like Proteus long in vain ty'd down,
Escape in Monsters, and amaze the town.
Hence Miscellanies spring, the weekly boast
Of Curl's chaste press, and Lintot's rubric post:
Hence hymning Tyburn's elegiac lines,
Hence Journals, Medleys, Merc'ries, Magazines,
Sepulchral Lyes, our holy walls to grace,
And New-year Odes, and all the Grub-street race.

Alexander Pope, *The Dunciad* (pub. 1742):



Of complaints about the making of books...



We have reason to fear that the multitude of books which grows every day in a prodigious fashion will make the following centuries fall into a state as barbarous as that of the centuries that followed the fall of the Roman Empire. Unless we try to prevent this danger by separating those books which we must throw out or leave in oblivion from those which one should save and within the latter between what is useful and what is not. Adrien Baillet, 1685



“That horrible mass of books which keeps on growing, [until] the disorder will become nearly insurmountable.” Leibniz, 1680



Of complaints about the making of books...

Of the making of books there is no end. Ecclesiastes, 12:12



Was the perception of overload justified?

Some indicators:

Size of personal libraries

Personal library of typical French magistrate, 15th c. 60 books

Montaigne, late 16th c. 1000 books

Montesquieu, early 18th 3000 books

Annual sale of newspapers:

1750: 7 million

1810: 24 million

Increase in number of printed genres

Eighteenth Century: Earliest appearance of printed posters, theater bills, newspapers, handbills, labels, tickets, marriage certificates, papers of indenture, receipts, etc.



Was the perception of overload justified?

But books are more complicated:

Number of titles printed in England: (from Wm. St. Clair, *Reading Nation*)

1630s 600

1640s 1,600

1650s 1,200

1660s 800

1670s 1,000

1680s 1,500

1690s 1,400

1700-50 500

1750-89 600

1790-1800 800

1800-1810 800

By 1827 1,000 ("rising fast")



Nunberg's Law

An exponential curve looks just as scary wherever you get on board.





Strategies for dealing with information overload

Compendia and reference books (*Répertoires* or *Trésors*), some with pre-print antecedents. Alphabetical organization (presumes reading in parts.)

"I esteem these Collections extreamly profitable and necessary, considering, the brevity of our life, and the multitude of things which we are now obliged to know, e're one can be reckoned amongst the number of learned men, do not permit us to do all of ourselves." Gabriel Naudé, 1661 [librarian to Mazarin]

The *Cyclopaedia* will "answer all the Purposes of a Library, except Parade and Incumbrance." Ephraim Chambers, 1728



Strategies for dealing with information overload

Compendia and reference books (*Répertoires* or *Trésors*), some with pre-print antecedents

BUT: “So many summaries, so many new methods, so many indexes, so many dictionaries have slowed the live ardor which made men learned.... All the sciences today are reduced to dictionaries and no one seeks other keys to enter them.”

M. Huet, 1722



Strategies for dealing with information overload



The most accomplished way of using books at present is twofold. Either, first, to serve them as men do Lords, learn their titles exactly and then brag of their acquaintance :—or, secondly, which is indeed the choicer, the profounder, and politer method, to get a thorough insight into the Index, by which the whole book is governed and turned, like fishes, by the tail. For to enter the palace of Learning at the great gate requires an expense of time and forms ; therefore men of much haste and little ceremony are content to get in by the back-door. For the arts are all in a flying march, and therefore more easily subdued by attacking them in the rear.... Thus men catch knowledge by throwing their wit on the posteriors of a book, as boys do sparrows by flinging salt upon the tail." Swift, "Tale of a Tub," 1704



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...How Index-learning turns no student pale,
Yet holds the eel of Science by the tail.

Pope, "The Dunciad," 1728

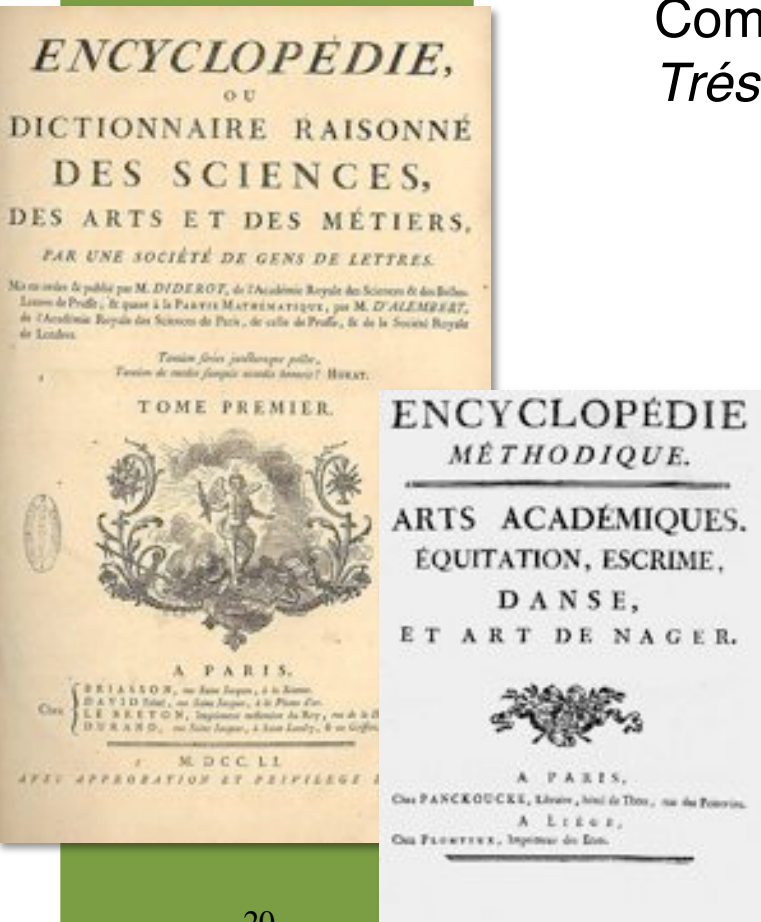
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Compendia and reference books (*Répertoires* or *Trésors*), some with pre-print antecedents

As long as the centuries continue to unfold, the number of books will grow continually, and one can predict that a time will come when it will be almost as difficult to learn anything from books as from the direct study of the whole universe. It will be almost as convenient to search for some bit of truth concealed in nature as it will be to find it hidden away in an immense multitude of bound volumes.

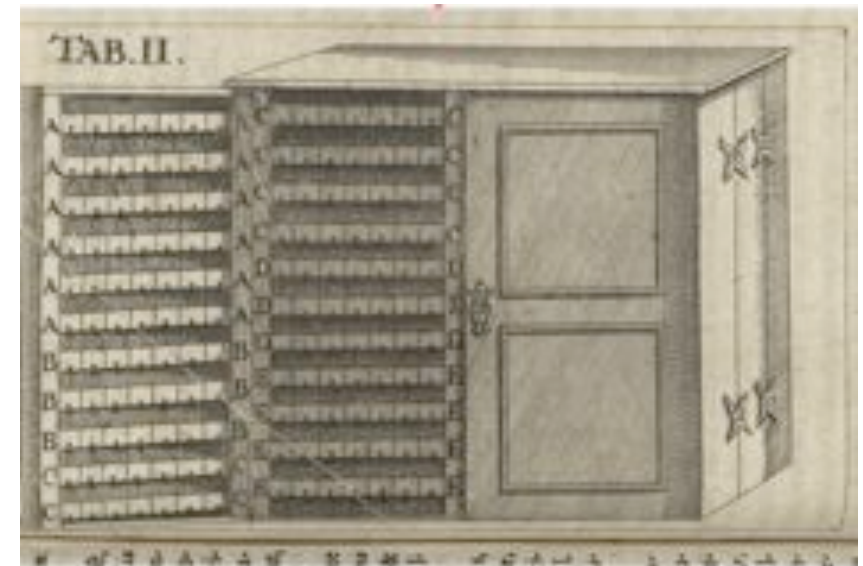
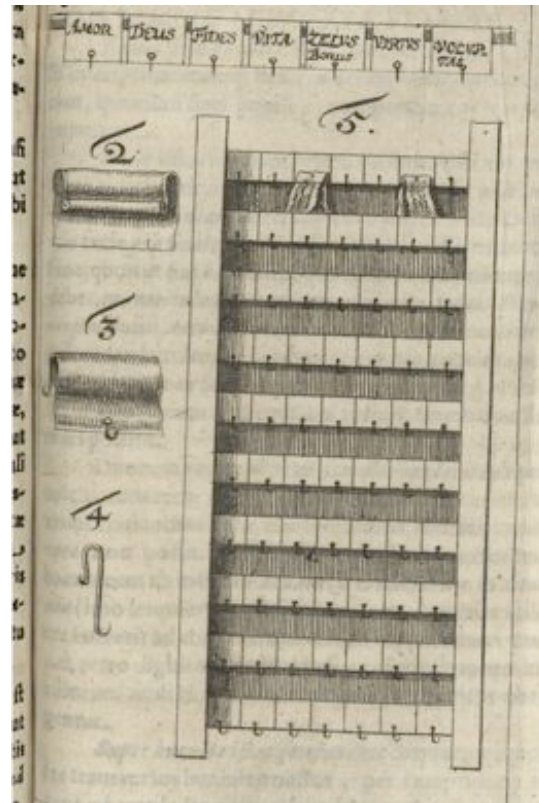
—Denis Diderot, *Encyclopédie*, 1755





Strategies for Dealing with Information Overload

Note-taking system of Vincent Placcius, from *De arte excerpendi*, 1689





Putting the "Information" in the Information Explosion?

According to one estimate, more new information has been cranked out in the last three decades than in the previous five millennia. The total amount of printed knowledge doubles every eight years. ... The phrase "I read that somewhere, but I can't remember where" has become endemic. The result? Information anxiety, described as "the black hole between data and knowledge." The difference between the two: Data is the raw material, and is passive; information is active and, ideally at least, enlightening. As we thrash around in the over-abundance of the first, the second becomes ever more elusive.

Washington Post, 2/3/89



The historical rise of 'information'

How did "information" become a central, self-conscious category in modern thought?



The emergence of “information” as a self-conscious category

What makes something count as “information” for us?



What makes something "information"?

Medium:

“information” usually presumes a fixed medium of storage or transmission.



What makes something "information"?

Medium:

Setting

"Information" belongs to public or institutional life



What makes something "information"?

Medium:

Setting

"objectivity"/transferability

Compare "medical information" with "medical knowledge"



What makes something "information"?

Medium:

Setting

"objectivity"/transferability.

Measurability

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