

The slow evolution of scholarly communication

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Inherently hard problems

Prediction is very hard, especially about the future.

Yogi Berra

especially because of the human element:

If people don't want to come to the ballpark,
there is nothing to stop them.

Yogi Berra

Overwhelming need for flexibility in technology and business plans:

The goals of the advertising business model do not always correspond to providing quality search to users. ... we expect that advertising funded search engines will be inherently biased towards the advertisers and away from the needs of the consumers. ... But we believe the issue of advertising causes enough mixed incentives that it is crucial to have a competitive search engine that is transparent and in the academic realm.

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Sergey Brin and Larry Page, 1998

Key mistakes of railway and Internet bubbles:

- ◆ “railroad time”
- ◆ “Internet time”

Internet time is a dangerous myth!

A modern maxim says: “People tend to overestimate what can be done in one year and underestimate what can be done in five or ten years.”

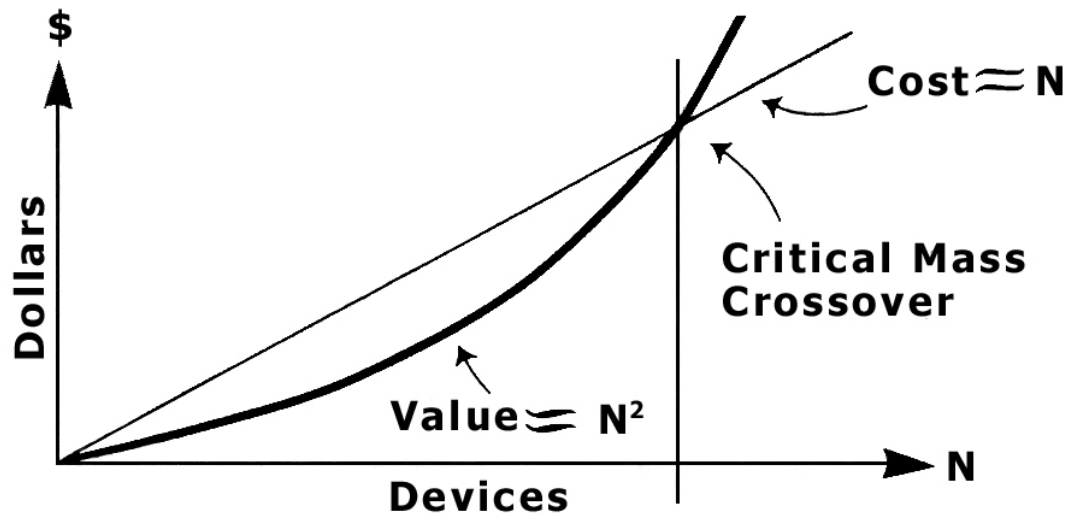
J. C. R. Licklider

“Libraries of the Future,” 1965

Important exceptions: forcing agents (and browser)

Metcalfe's Law:

The Systemic Value of Compatibly Communicating Devices Grows as the Square of Their Number:



Falsity of Metcalfe's Law:

- ◆ not all connections are equally valuable
- ◆ if true, would create irresistible incentives to merge or at least interconnect:
 - ▶ two separate networks of size n each would have total value $2 n^2$
 - ▶ single unified network of size $2 n$ would have value $(2 n)^2 = 4 n^2$

Corrected version of Metcalfe's Law:

Value of communication network of size n
grows like $n \log(n)$

Sarnoff's Law: Value of content delivery
network grows like n

Network effects present, but not as powerful as
expected

“Field of dreams” mantra

If you build it, they will come

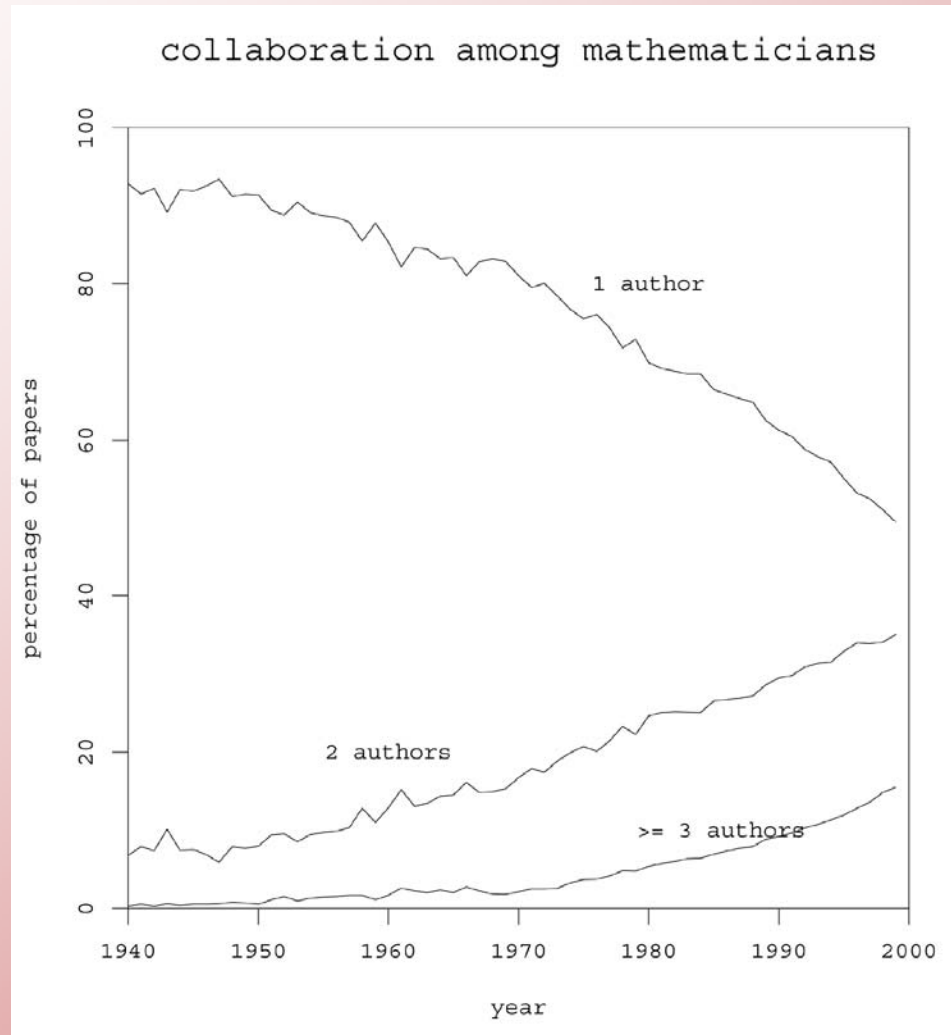
Internet bubble mantra

If you build it, they will come instantly

A realistic mantra

If you build it, they may come, but in their own sweet time (and will do things you didn't expect).

Rate of change:



Open Access:

Open Citation Project:

<http://opcit.eprints.org/oacitation-biblio.html>

Open Access:

Effects of mandates vs. encouragement: Arthur Sale chapter in the book:

Open Access: Key Strategic, Technical and Economic Aspects, N. Jacobs, ed.

<http://www.eprints.org/community/blog/index.php?/archives/93-Open-Access-Key-Strategic,-Technical-and-Economic-Aspects.html>

Human communication:

One picture is worth a thousand words

Human communication:

One picture is worth a thousand words,
provided one uses another thousand
words to justify the picture.

Harold Stark, 1970

Further data, discussions, and
speculations in papers and
presentation decks at:

<http://www.dtc.umn.edu/~odlyzko>