

UNIVERSITY OF  
Southampton

# Open Access: The Web and Scientific Knowledge

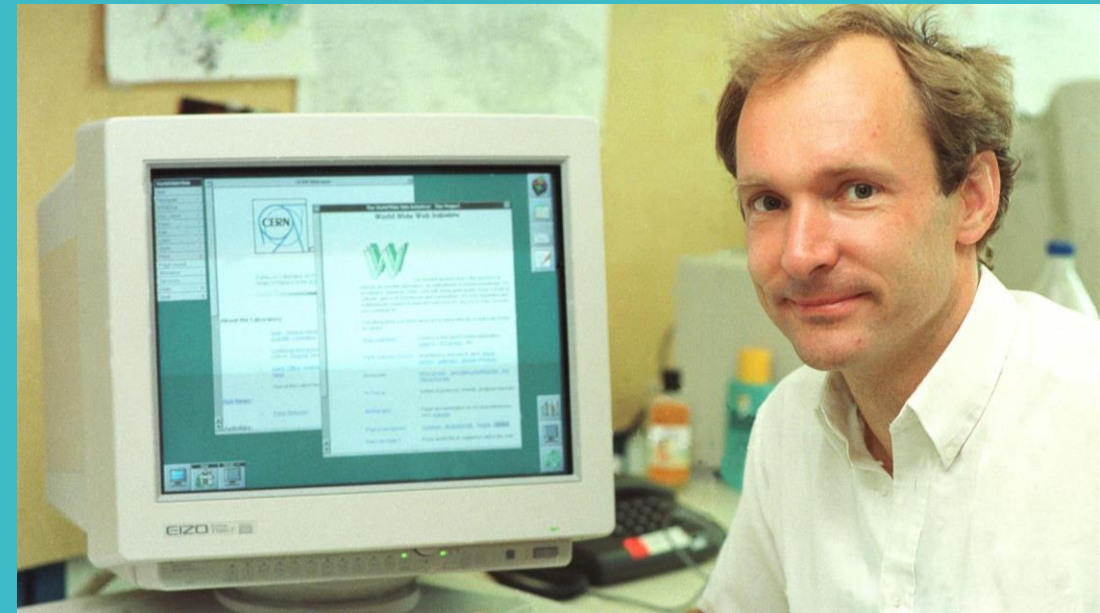
COMP3220 Web Infrastructure

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## The Original Web Challenge?

“In those days, there was different information on different computers, but you had to log on to different computers to get at it. Also, sometimes you had to learn a different program on each computer. Often it was just easier to go and ask people when they were having coffee...”

Sir Tim Burners-Lee



## WORLD WIDE WEB

The WorldWideWeb (W3) is a wide-area hypermedia[1] information retrieval initiative aiming to give universal access to a large universe of documents.

Everything there is online about W3 is linked directly or indirectly to this document, including an executive summary[2] of the project, Mailing lists[3] , Policy[4] , November's W3 news[5] , Frequently Asked Questions[6] .

What's out there?[7]Pointers to the world's online information, subjects[8] , W3 servers[9], etc.

Help[10] on the browser you are using

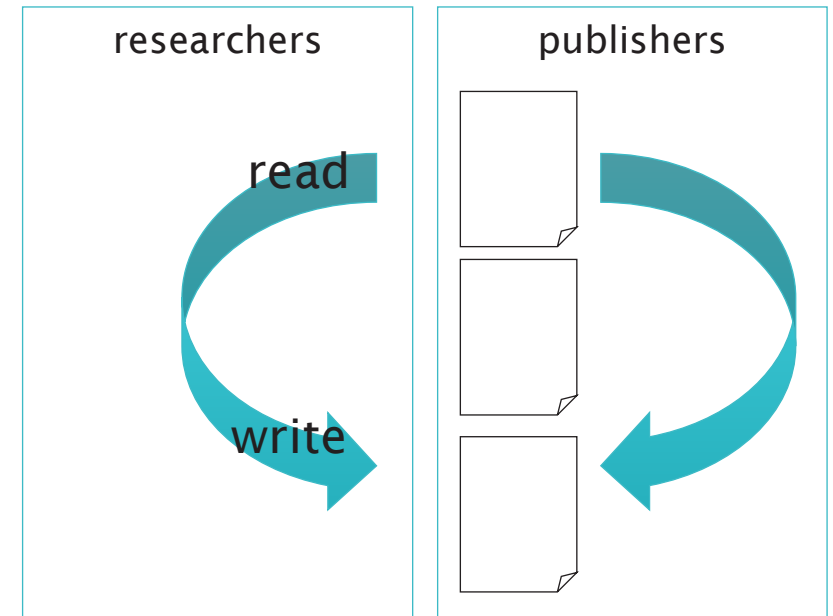
Software Products[11] A list of W3 project components and their current state. (e.g. Line Mode[12] ,X11 Viola[13] , NeXTStep[14] , Servers[15] , Tools[16] , Mail robot[17] , Library[18] )

Technical[19] Details of protocols, formats, program internals etc

<ref.number>, Back, <RETURN> for more, or Help: █

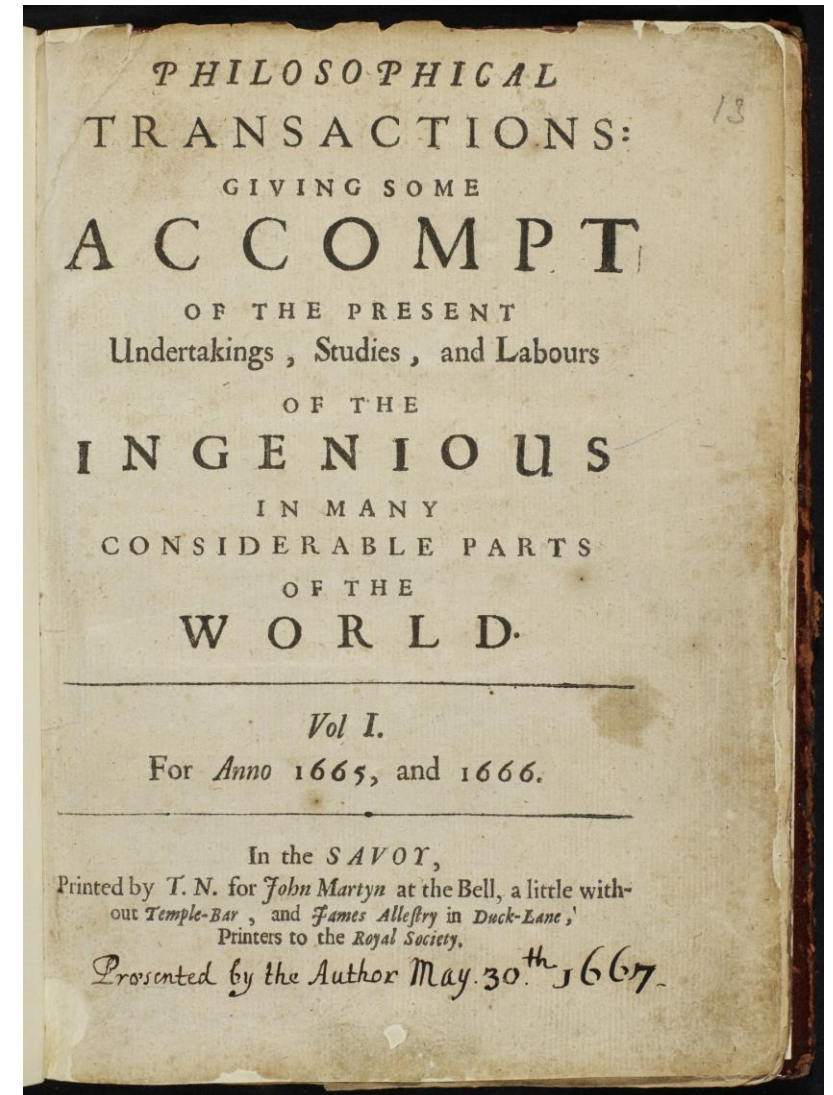
# Open Access: Tim's Problem

- Publishers owned the academic publications
- Authors writes article
  - Author signs over copyright to publishing company
  - Publishing company publishes article
  - Publishing company receives revenue from university libraries
- Author receives academic credit
  - Publication glory
  - Citations
- Universities created a whole new industry and students read and write paid for by external company
- Universities and researchers are knowledge producers and knowledge consumers



# Scholarly Publishing 1665-1960

- Scientific and scholarly societies publish their own journals
- First scientific journal March 1665  
The Royal Society publishes “Philosophical Transactions”
- University Presses not for profit but were for prestige
- For the benefit of their members, for the benefit of science



# Private Sector

- After the war 1948 **Robert Maxwell** decided to publish scientific journals and set up **Pergamon Press** which was quickly and hugely profitable
  - Bringing “aggressive publishing in science”
- In 1960’s Universities were expanding
- UK Robbins Report/expansion of higher education & science budget
- In 1968/9 STM Association founded for publishers
- The **new demand** made for a very profitable system – with an increasing number of commercial publishers moving into STM

STM - The International Association of **Scientific, Technical and Medical Publishers**

# The Serial Crisis

- Subscription prices continued to rise
- Some research fields were more affected than others
- In 2002 the Modern Language Association hoped that electronic publishing would solve the crisis



# The Problem with Paywalls

- Restricts access to research papers
- Prevents research being used
- Prevents research from being built upon

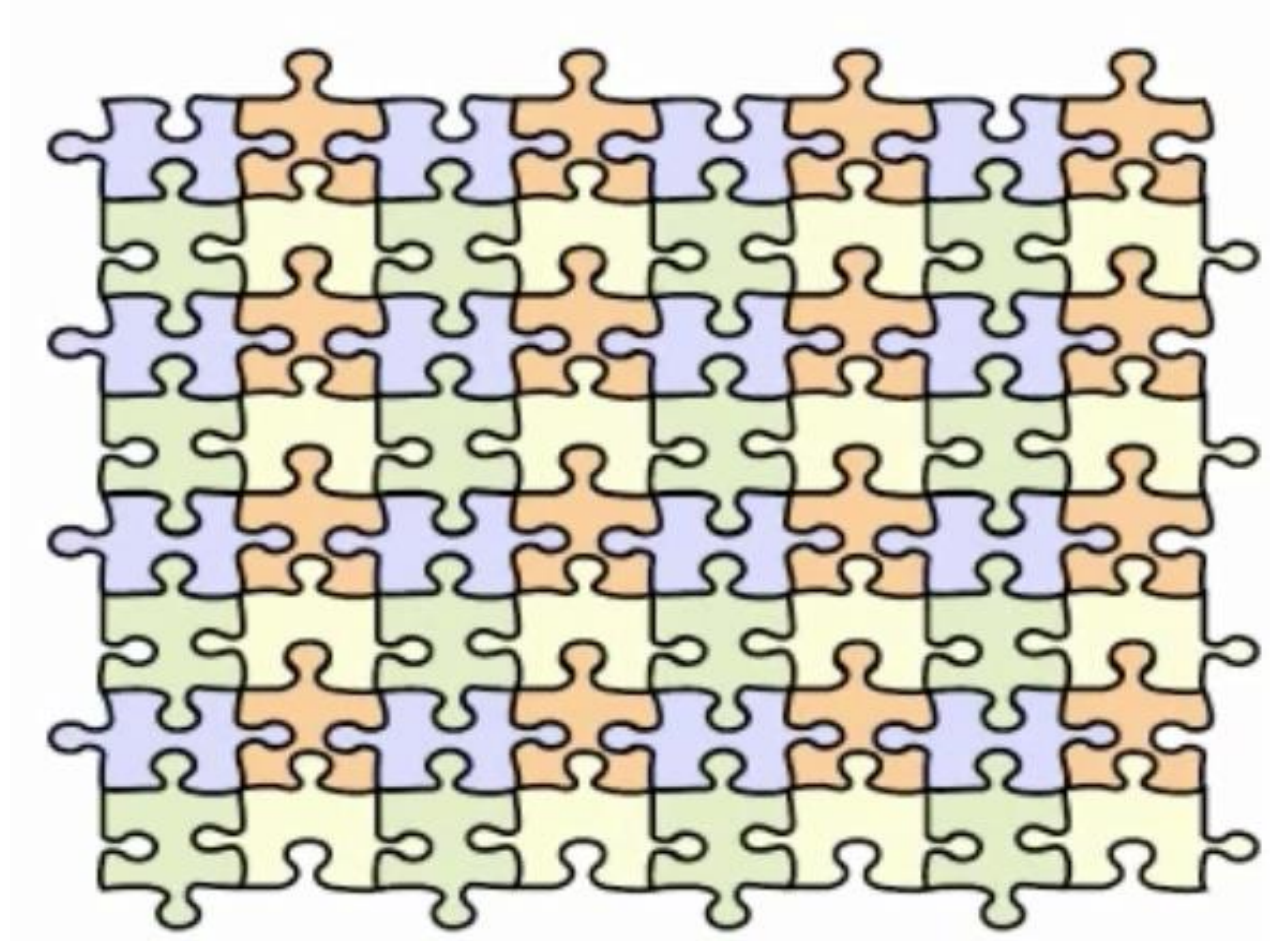
# The Twin Peaks Problem

- $\approx 24,000$  journals with 2,500,000 article/yr
- Pay wall for access
- Limited access based on universities budgets
  - Well funded universities can only afford a fraction of subscriptions
  - Less well funded universities can afford even fewer subscriptions
- $\approx \text{£}10,000$  per year for access to some journals, and prices increasing
- Universities are measured by their impact
- Fewer readers means less impact (fewer citations)

# The Literature: As We Imagine

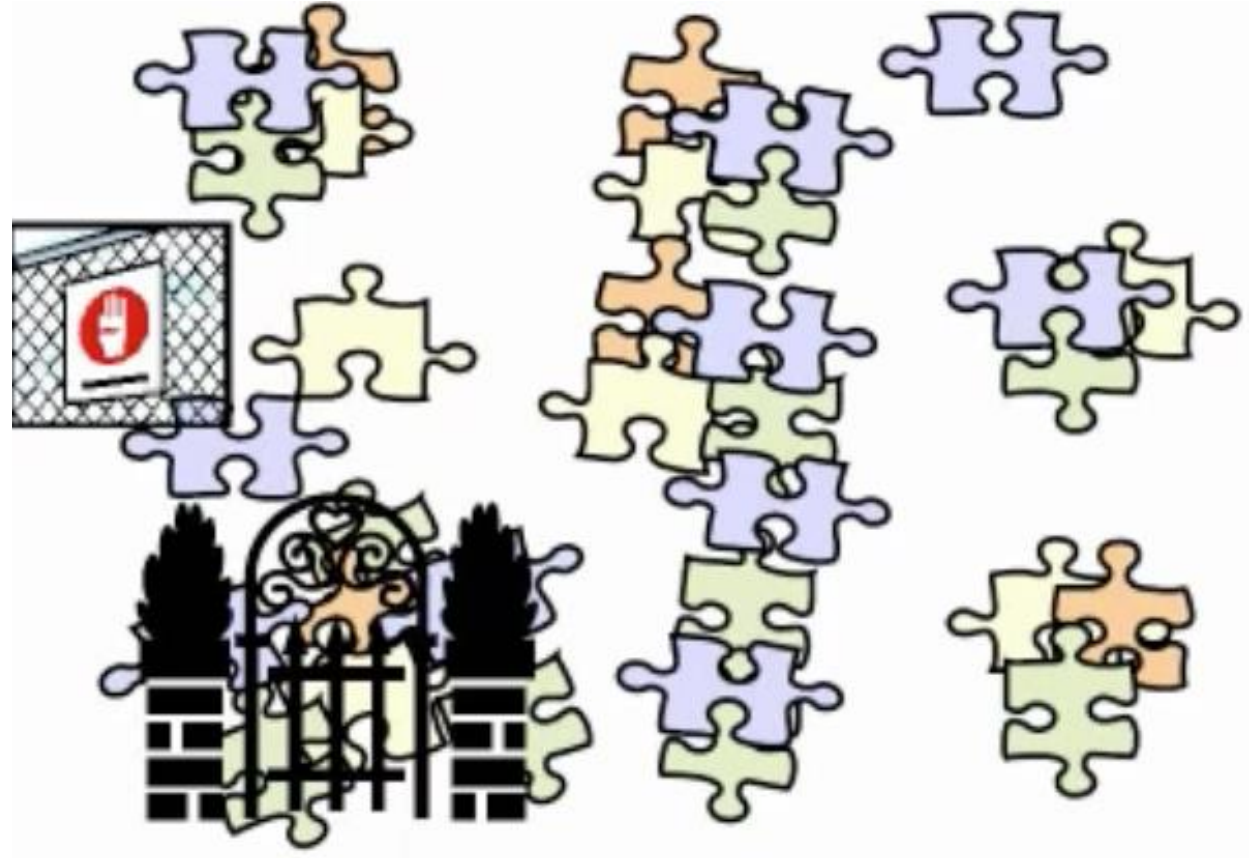
- Integrated
  - Citations
- Readily available
- Standing on the shoulders of giants

*“we see more and farther than our predecessors, not because we have keener vision or greater height, but because we are lifted up and borne aloft on their gigantic stature”*



# The Literature: As It Is

- Inaccessible
  - Hidden behind pay walls
  - Not subscribed too
- Disjoint
  - Books
  - Online journals
  - Scientific magazines



# Conclusion

- A whole publishing industry was created to support research
- Subscriptions are continually increasing, thus reducing their reach and impact
- Research universities success is based on their impact