Peer Review in Computing Research

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20th Century Peer Review

- Paper-based distribution
  - **scarcity** of resources

- Aimed at ensuring all published scholarly materials meet a certain level of **quality/merit**

- Voluntary labor from the scholarly community

21ˢᵗ Century Peer Review

You are here
Map of the Internet, The Opte Project, www.opte.org

- Electronic distribution
  - **no scarcity** of resources

- **Challenge 1: Volume** of materials is enormous and growing rapidly
  - existing system cannot scale to accommodate
    - long publication delays
    - difficulty finding reviewers
    - unavailability of content while under review

21ˢᵗ Century Peer Review

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- *Mode of distribution has changed dramatically while the mode of review is virtually unchanged*

21ˢᵗ Century Peer Review

- **Challenge 2:** Authors/users/organizations calling for review of increasingly **diverse** materials

education

reference

open science

21ˢᵗ Century Peer Review

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education   **open science**   **reference**

- Unconventional communities are developing **new ways and means of managing quality**

- Conventional scientific community should take note

Fallacy of *Misplaced Finality*

- Or, there is one definitive final content object

What's emerging:

- Content **versioning** and **open licensing** to enable reuse
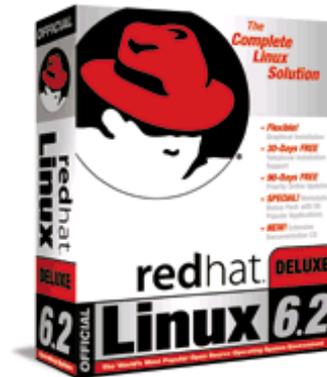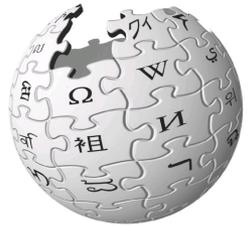
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- Reviews as separate, **public objects**

- **Post**-publication review

Fallacy of *Misplaced Focus*

- Or, must have careful selection of just the right reviewers to do justice to a submission

What's emerging:

- **Let anyone review everything**, including individuals, institutions, professional societies, …
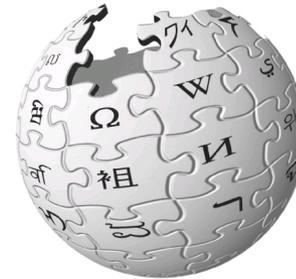
Connexions' *lenses*

social software for quality control

inspiration:

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del.icio.us
social bookmarking

IEEE
IEEE.org/cnx

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social software for quality control

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rice.edu/cnx

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johnDoe

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Moshe Vardi = *CaptainLogic*

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  to build reputation
  and to make reviews
  more valuable

- Realization of importance of **context** of use
  - some reviewers are more useful than others
  - ex: student reviews of educational materials

Conclusions

- "Exciting times" for peer review in the electronic age
  - conference vs. journal debate is just the beginning

- **New kinds of materials and communities** are blurring the line between scientific publications, educational materials, etc. and are inventing **new mechanisms for "peer review"**

- Trends:
  - increasing **openness** of content and reviews
  - careful consideration of **context** of reviews

[C. Kelty, C. S. Burrus, R. G. Baraniuk, "Peer Review Anew," *Proc. IEEE*, June 2008] [cnx.org/lenses]