Demands to and Wishes for Future Scientific Publishing

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The book will survive

...but new media calls for new publishing technology and policies

Modern publishing has many venues

Classical publishing venues:
books, journals, conference proceedings, local compendia

Modern publishing venues:

- books, journals, proceedings (need publisher)
- blog posts
- project websites at GitHub, Bitbucket, Figshare, Zenodo (w/DOI), ...
- (document sharing sites at latex-lab, Google docs, Draft, stackedit.io, ...)
- (Dropbox, Google Drive)
- promotion through Twitter, Google+, Facebook, ...

New venues also offer new publishing formats

1. **PDF** (via LaTeX)
2. **HTML** (via plain text, Sphinx, Markdown, Doconce, ...)
3. Special e-book formats: **epub**, **mobi**, ... (PDF via Calibre)
4. Interactive **notebooks** (via IPython notebook, Sage, Mathematica, ...)
5. **iBooks** (via Apple's app)

Our special requirement:

Strong support for mathematics and computer code!

PDF is for paper, HTML for screen

My assertion:

PDF works on screens, but HTML is more appealing and has much more functionality for science.

My conclusion: use generalized formats to write scientific material

- LaTeX has been the de facto standard format
- Conversion tools from LaTeX to HTML do not work well
- Solution: write in a more *primitive format* that easily *converts* to LaTeX, HTML, and whatever
  - Doconce, Markdown, Sphinx, IPython notebooks, (Google Docs)

Note.

LaTeX (paper) and HTML (screen) apply different typography. Writing in a simpler common format is different from classical LaTeX writing.

My scientific writings are converted to several formats

- Doconce source code
- PDF for printing
- PDF for screen
- HTML Sphinx CBC
- HTML Sphinx FEniCS
- HTML solarized
- HTML Bootstrap 1
- HTML Bootstrap 2
- Upcoming (?): IPython notebook, Google blog posts

Note.

HTML versions often have additional functionality (movies, embedded services, multiple-choice tests).

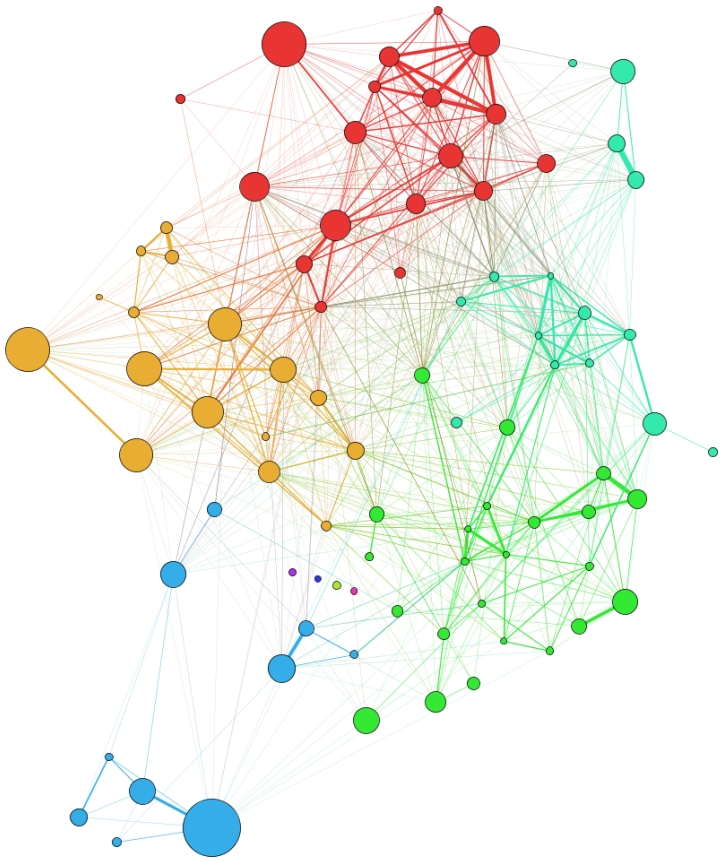
Wishlist (part 1)

- Alternative formats of a book can be published (at Springer, GitHub, Zenodo, Figshare, ...)
- Springer stamps on all derived material with a link to the official book
- During production: share files with authors professionally (GitHub/Bitbucket)

Trend: from linear monograph to graph of smaller, more independent units

- Kahn Academy success: many small teaching units (videos)
- Units are connected in a graph
- Learning is about following paths in the graph

- Tools can find personalized paths
- Units are videos, notebooks, online material, book chapters, papers, ...
- This idea is accelerated by MOOCs



Next generation video: studix.com

- Classical video: series of frames of pixels
- studix.com video is a tree of objects rendered as a film in the browser
- Objects can be handwriting, graphs, videos, notebooks, slides, sound, links to other videos, books, ...
- Very enhanced video editing!

- Browser movies are tightly integrated with books and organized as a graph

More independent teaching units support more reuse

Add to wishlist:

- Publish (modified) parts of a unit (from a book) online
- Always stamp derived material with link to the parent publication!

Fact today: publishers have no control of their copyright material

- Book chapters are easily found on the net as
  - LaTeX PDF
  - blog posts
  - notebooks
  - source files (on GitHub, Bitbucket, ...)
- No mentioning of the (final) book in these resources - I want to buy it!

Trend: visibility is key

Authors are researchers who need visibility, a big network, citations, and a significant volume of material.

Young researchers

- use top journals and publishers to bring credibility
- use GitHub, Zenodo, Figshare, ... to display research
- use arXiv.org, ResearchGate, Mendeley, ... to exhibit papers
- use Twitter, Google+, Facebook, ... to announce new material
- use amazon.com (CreateSpace) independent publishing

The publishing industry must

- realize what is happening with copyright material
- realize what the future demands are
- approve reuse of copyright material, with a watermark
- realize that visibility is the important thing for authors

Summary and wishlist

Assertions.

- Books must be available in more formats (PDF, HTML, epub, notebooks)
- The linear monograph will be a path in a graph of more independent units

Wishlist.

- Alternative formats of a book can be published (at Springer, GitHub, Zenodo, Figshare, ...)
- Publish (modified) parts of a unit (from a book) online
- Springer stamps on all derived material with a link to the official book
- During production: share files with authors professionally (GitHub/Bitbucket)