

eBooks - Innovation strategy and 360° reading experiments

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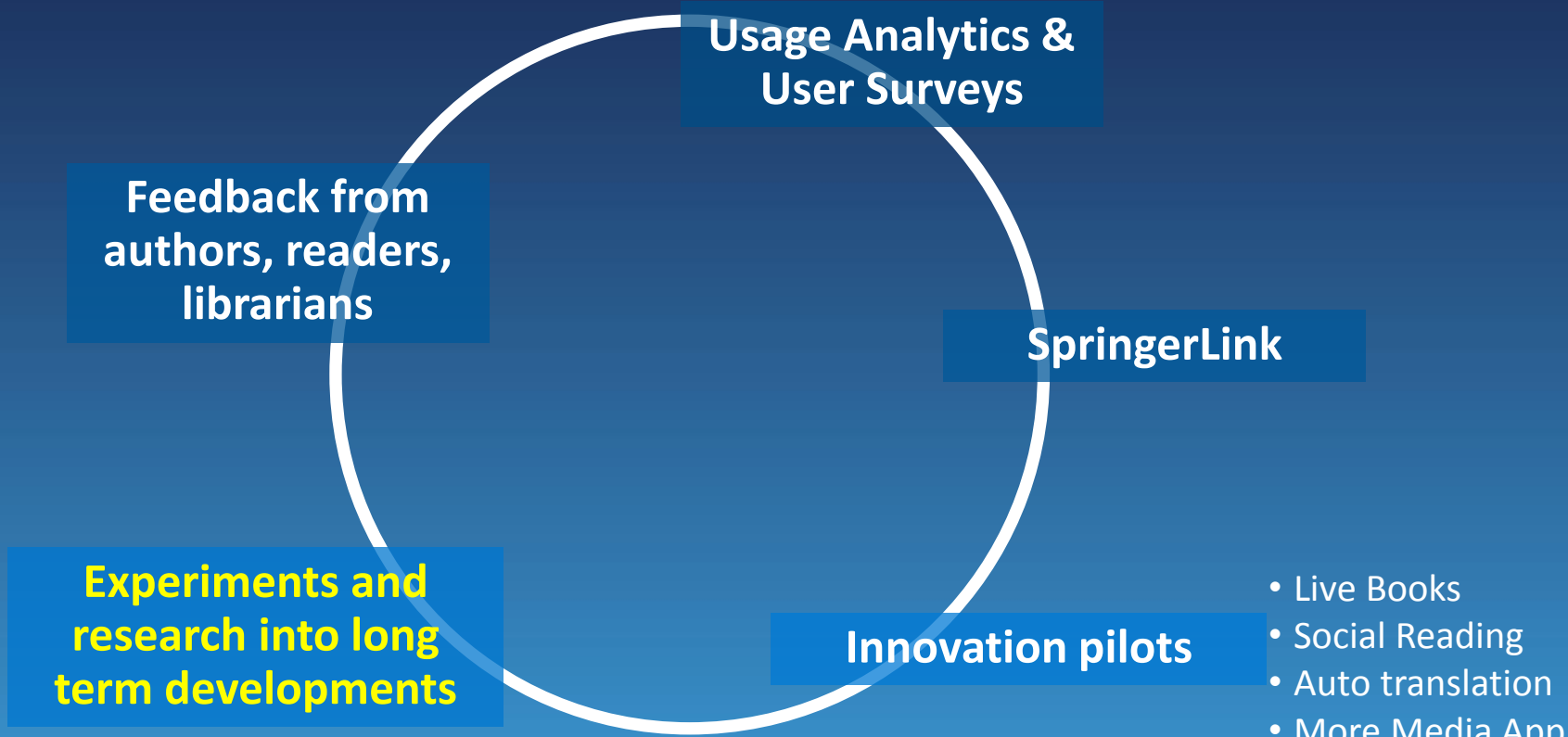
Sr. Manager Account Dev., Strategy, Outreach

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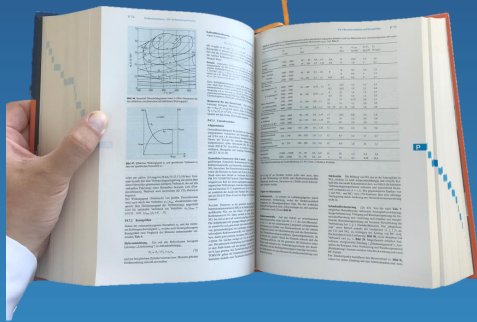
SPRINGER NATURE

Ebook Innovation Strategy

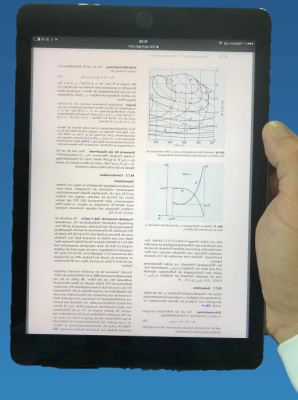


Q: How will we read books in the future?

Print?



Electronic?

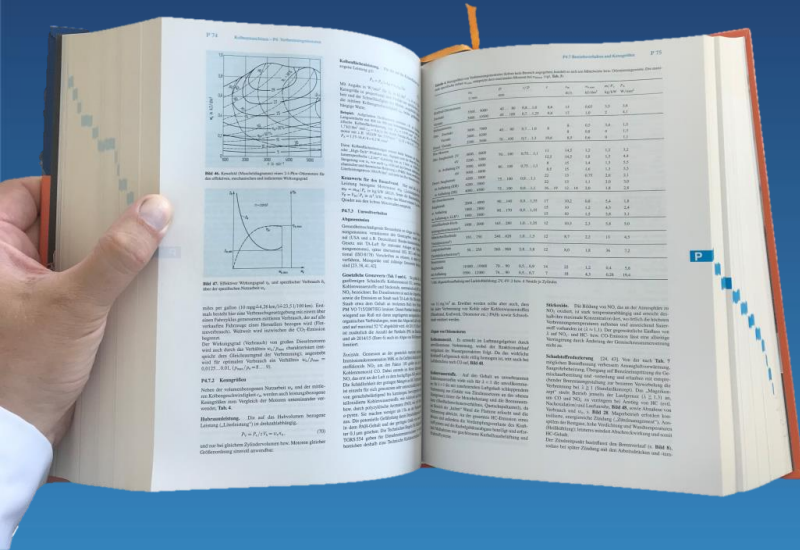


A third format?



CREDIT: KYLE BEAN

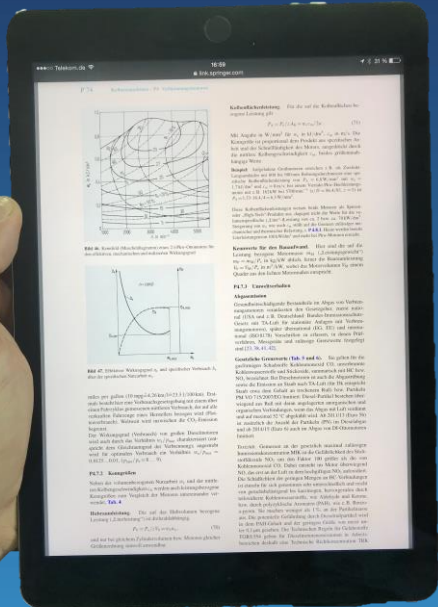
Benefits of the printed book*



- No device needed
- No electricity/ battery needed
- Open a book and read without delay
- No technical know-how necessary
- Can be borrowed, sold, passed on
- More pleasant touch and feel
- Less tiring on eye
- Orientation within the book easier

* Source: Survey among students of business informatics ,May 2018

Benefits of the eBook*



- Search by keyword
- More content immediately available
- Immediate delivery of new content
- Customize reading format (size, layout)
- Saves resources (paper)
- Durability (free from wear and tear)
- Copying is easy (for reuse if CC BY)
- Sharing is easy (to remote users)
- Multimedia integration possible

* Source: Survey among students of business informatics ,May 2018

Summary of research so far:

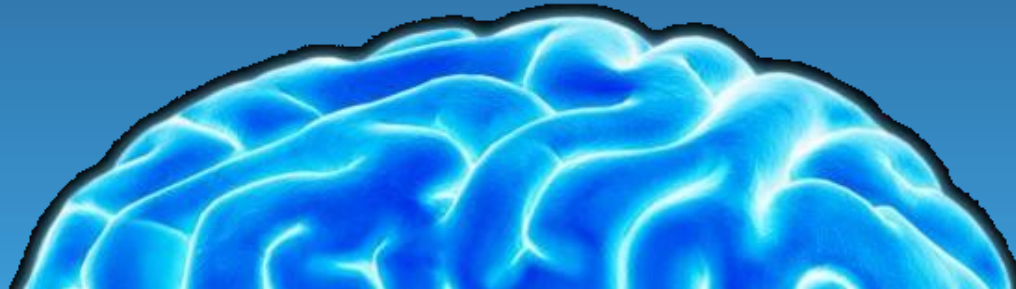
Around 100 academic studies done so far:

Pre-1992: Most studies confirm strengths of print

Post 1992:

- 50% of studies confirm strengths of print
- 50% provide more differentiated results and in half of cases confirm electronic yield better results (determining factors: length of reading, genre of content, quality of screen, etc)

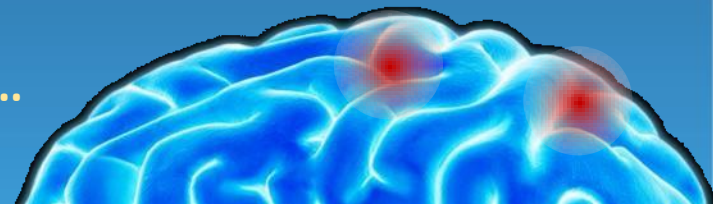
• **Some key work in area done in Norway (students) and Sweden**



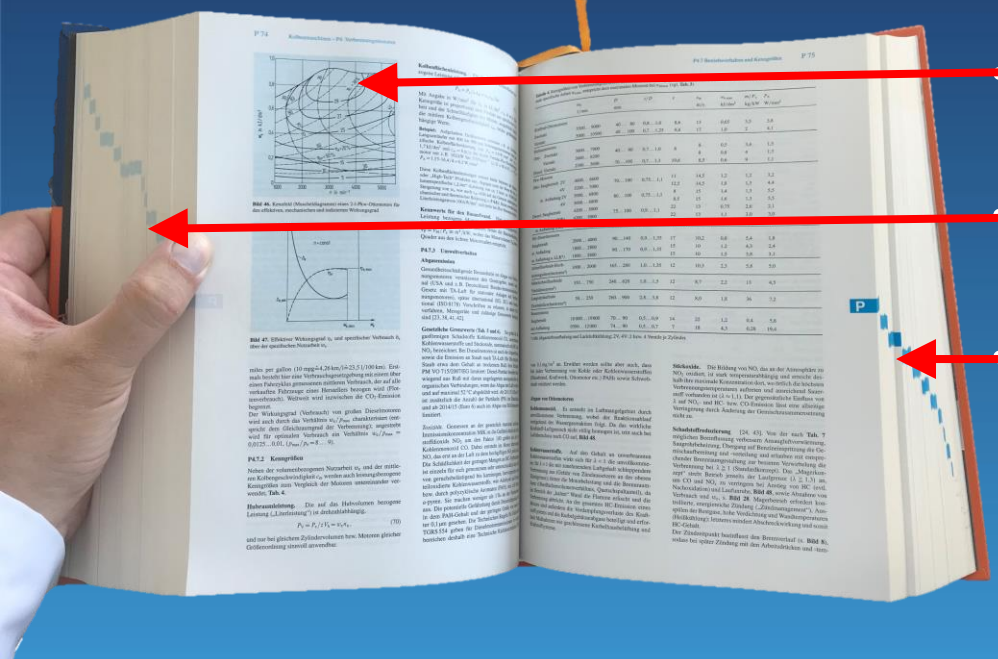
The evolution of the brain and reading

1. No dedicated reading centre, many centres used
2. Brain treats letters and words as if they are physical objects
 - Brain uses areas for “object recognition” to process
3. Brain makes mental map of letters/words
 - To do this, brain needs “spatial orientation cues” from real world to process
 - For map-making, print provides better orientation cues because print has more “physicality” than electronic.

Example: You read and something from previous page is references, you revisit quickly to help process..



Example of “orientation clues” for map making



Orientation within the page:
upper left corner is always upper left

Orientation within the book:
depth (3rd dimension) is perceptual

Navigation between pages:
fast turning pages possible.

Requirements for the „third format“

From print:

Orientation cues:

- 1) Texts must be shown in **a fixed location**.
- 2) Pages **before/after current page** clearly identifiable/measurable
- 3) Additional **spatial structures or colors** to support mapping

From electronic:

- 1) Immediate access to large volumes of content
- 2) Searchable content
- 3) Hyperlinks

360° Virtual reality reading experiment

- ✓ From print: Texts **fixed location**
- ✓ From print: Pages **before/after current page** clearly identifiable/measurable
- ✓ From E: Immediate access to **large volumes of content**

Coming soon:

- Additional spatial structures/colors
- Searchable content
- Hyperlinks



Outlook

- Further develop VR headset
- Empirical study in collaboration with Singapore University and Darmstadt University:

Context of scholarly content (STM)

Test educational outcomes:

1. Memory and recall
2. Speed of knowledge ingestion
3. Comprehension
4. Efficiency and User experience



Thank You!

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