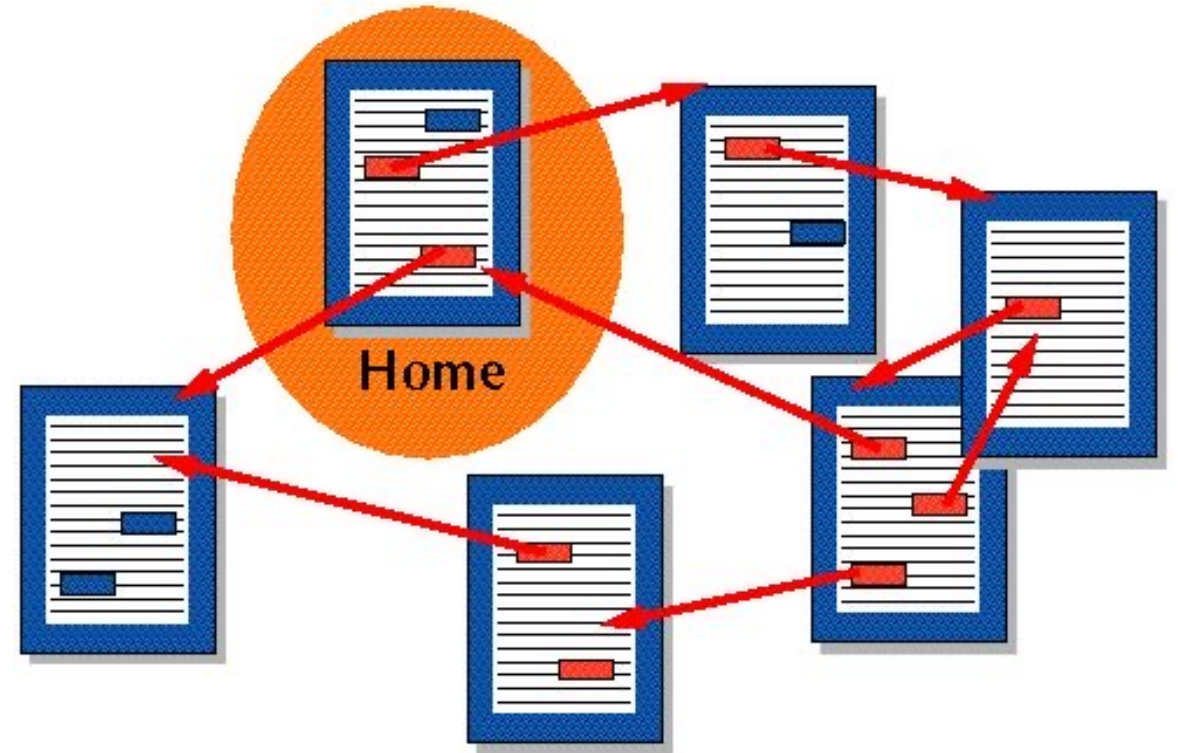


Hypertext and the World Wide Web

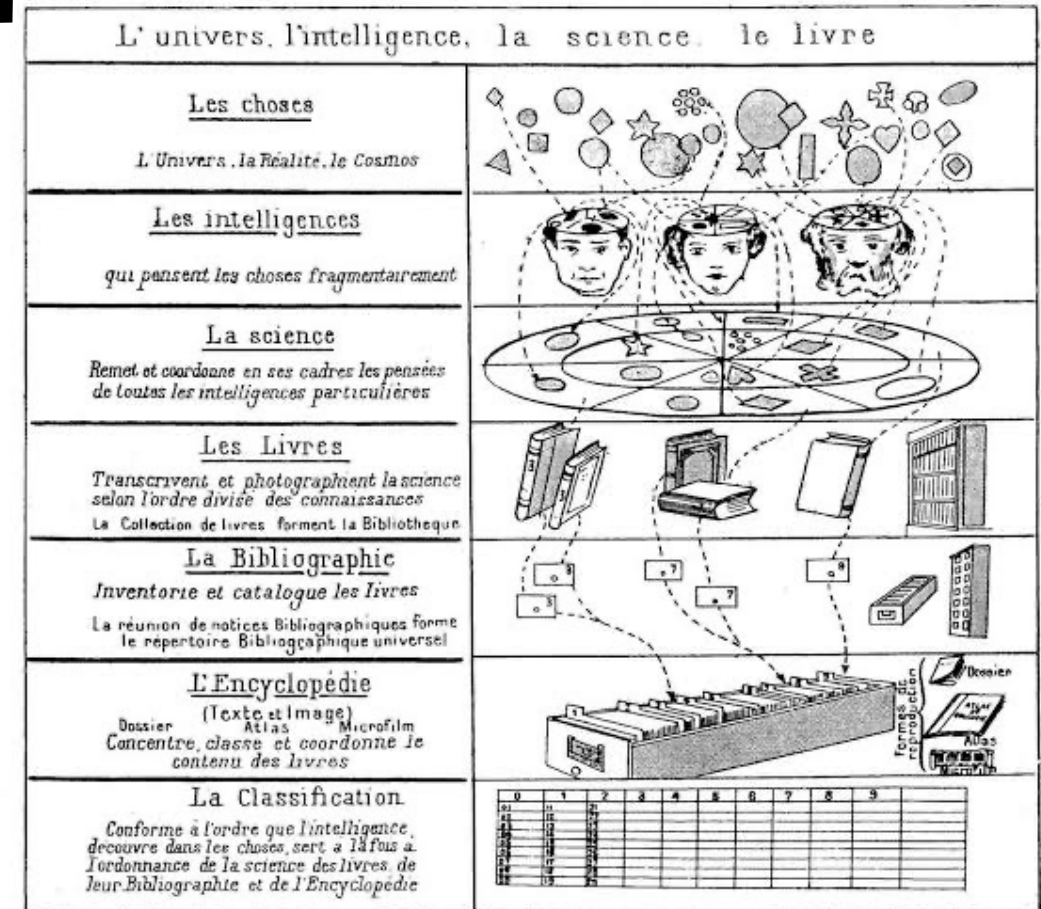
Hypertext Definition

- Hypertext is a method of organizing and presenting information in a non-linear and interconnected manner.
- In a hypertext system, information is not limited to a linear structure like traditional text. Instead, it is organized as a network of nodes, where each node represents a piece of information, and hyperlinks establish connections between these nodes.
- Hypertext revolutionized the way information is presented and accessed, giving rise to the World Wide Web (WWW) and its interconnected webpages.



Paul Otlet and the Mundaneum

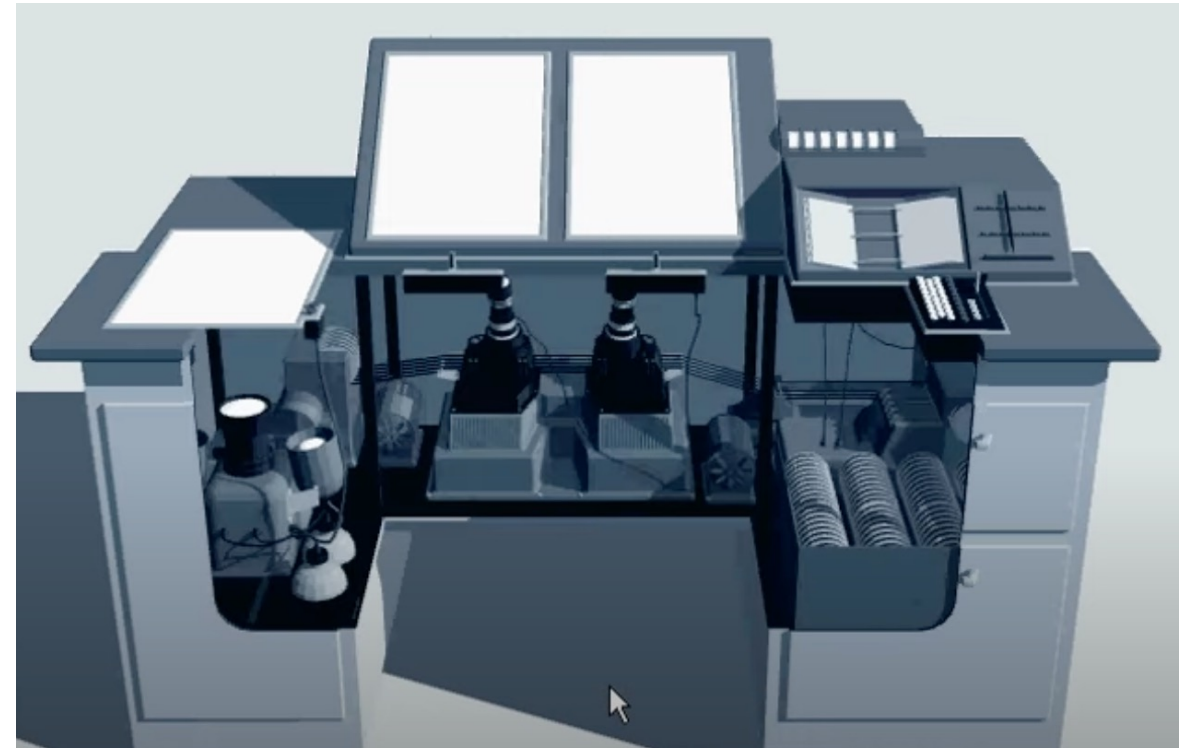
- Paul Otlet was a Belgian writer, peace activist and information scientist.
- Otlet was interested in centralizing and categorizing all the world's knowledge.
- In his *Traité de Documentation* (1934), Otlet proposed a centralized multimedia library where information could be accessed remotely via an electronic network. In addition to text, Otlet envisioned remotely accessing audio and video content.
- Otlet also proposed a means of linking documents in a way that foresaw hyperlinking.



Paul Otlet, *Traité de Documentation* (1934), p.41

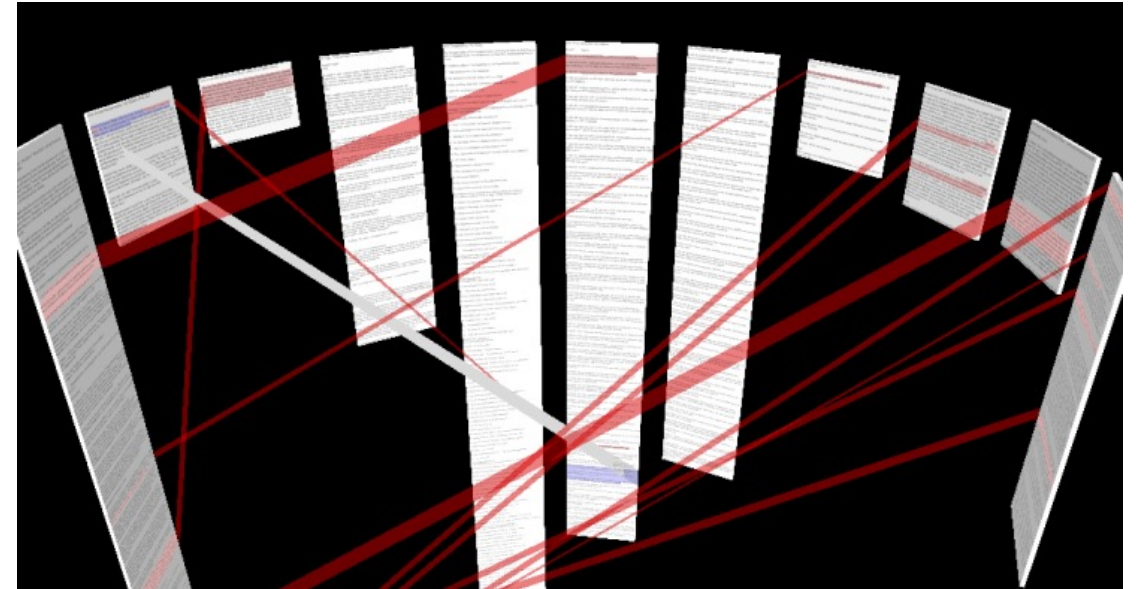
Vannevar Bush and the Memex

- Vannevar Bush was an American engineer, inventor, and scientist.
- Bush's 1945 Atlantic article "As We May Think" described many of the foundational hypertext concepts, including linking and navigating between documents via hyperlinks.
- The machine Bush described was called the Memex and stored information on film reels (one page per frame).
- Although the Memex was never built, Bush's paper laid the foundation for further developments of hypertext.



Ted Nelson and Project Xanadu

- Ted Nelson, an American academic coined the term “hypertext” in 1963 and published a paper about the topic in 1965.
- Nelson attempted to implement a system of interlinked texts, inspired in many ways by Bush’s Memex, using computer systems.
- Nelson was interested in non-linear text and envisioned a system where documents could be interrelated, hyperlinked and traversed.
- Project Xanadu, the attempt to implement Nelson’s vision, began in the 1960s but was slow to develop and never popularized. Nelson’s ideas were however very influential to future developers of hypertext systems.



Tim Berners Lee

- Tim Berners Lee is a British computer scientist credited with inventing the internet.
- While working at CERN in the early 1990s, Lee sought a way to organize decentralized and rapidly changing information within CERN.
- Referencing Ted Nelson's hyperlink concept, Lee published "Information Management: A Proposal" to solve CERN's information organization problem.
- Nelson's idea was initially met with some skepticism but he was given time to develop his proposal.



Tim Berners Lee's Foundational Technologies

- HTML: HyperText Markup Language. The markup (formatting) language for the web.
- URI: Uniform Resource Identifier. A kind of “address” that is unique and used to identify to each resource on the web. It is also commonly called a URL.
- HTTP: Hypertext Transfer Protocol. Allows for the retrieval of linked resources from across the web.

HTML Version History

HTML went through several iterations:

- In the 1990s, HTML went from version 1.0 to 4.01
- In the early 2000s, XHTML was developed, up to version 1.1
- In 2008, HTML5 was released, supporting several important new features:
 - Semantic HTML
 - Media elements (audio, video)
 - New form input fields (such as date, numeric or color)
 - Web APIs, for JavaScript programming

Hyperlinks in HTML

- The anchor tag is used for linking.
- The “href” attribute defines the page the linked element directs to.
- The example shows an *external* hyperlink.

`Inholland`

Relative Hyperlinks

- Hyperlinks can link to internal pages relative to the current page.
- The example would link to your own site's about page.

```
<body>  
|  <a href="/about">About Page</a>  
</body>
```

Internal Hyperlinks

- Hyperlinks can link to internal sections of a page.
- For the example link to work, you would need an element with a matching ID. I.e. `<section id="disclaimer">Lorem Ipsum</section>`

```
<!-- Example 1 : Hyperlinks on same page -->
<h2>
  Hyperlink to jump to chapter on same page
</h2>
<a href="#disclaimer">
  Disclaimer
</a>
```

Hyperlink to jump to chapter on same page

[Disclaimer](#)

Mailto Hyperlinks

- Mailto hyperlinks will open the user's email client and prepare to send an email.

```
<!-- Example 4 : : Hyperlinks to email -->
<h2>
    Hyperlink to email
</h2>
<a href="mailto:boris@spelkoning.teevee">
    Mail Boris
</a>
```

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