1 Web small history

1.1 Hypertext

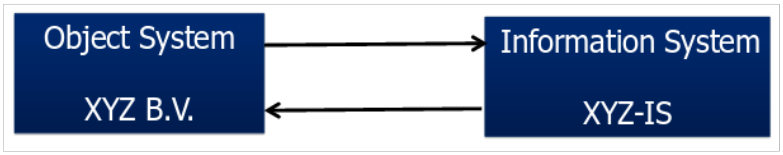
- Vannever Bush invented hypertext as idea (without implementing it) in 1945
- hypertext was supposed to be a document system with links from document to document
- many scientific implementations

1.2 Web

- first to formulate idea of Web was Tim Berners-Lee
- idea was to have hypertext, that linked to other hypertext (very simple)
- TBL's dream was about the universal sharing of information
- if his dream is succesfull, the 'Web' becomes a **realistic mirror** of society
  → the web fits this description

2 Web & Information Systems

2.1 Information System design



- mostly a mediator between **System Object** and web
- requires knowledge about the System Object
- Web can be front- or back-end here
- if the Web is the front-end we call it
  Interface
- databases in Web based **IS** have to be fresh (new thing)

2.2 Views on Web-Engineering

2.2.1 WebML View

- interfaces meant for general public
- Web-IS are there to publish and maintain large amounts of data

2.2.2 OOHDM View

Object-Oriented Hypermedia Design Method

- Web brought **Navigation** & **Operations** to IS
- Web-based IS were first good hypermedia applications

2.2.3 Nielsen's View

- on Web only constant is **change**
- a good navigation structure is the key to success

2.3 Challenges

Our focus is on applications whos purpose is to publish and maintain large amounts of data. The **Web-Browser** is the **front-end**, the **database** is the **back-end**. This presents a few challenges:

- What data do we have? **Data structures**
- How do we organize the data for access? **Navigation**
- How do we represent the data in access? **Presentation(layout)**
- How do we do the back-end **Database/repository management**

2.4 Evolution of Web

The Evolution of the Web is not a managed process. Web 1.0 was meant to mainly show content, made by the site-owner. Web 2.0 went over to having content generated and managed by the user of the site. Web 3.0 want to go over to having "Semantic Web" where everything is tagged with meta-data and not only readable by humans but also by machines.

3 Web Science

The Web is more than a software system. It is the biggest human artifact. The science of how it works is called Web Science.
The Web can be viewed as a IS, where the System Object is society. It is important to take society in account and not only the web-technology, since sitew with the same technology (e.g. Wikipedia, MediaWiki) do not operate in the same way.

Science approach — What does the Web do?
CS approach — What should the Web do?

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Together they make Web Science

The Web is a huge graph, where the Nodes are not static and are influenced by things outside of the graph.