

The Web: “A Nostalgic View of the Past and Informed Hopes for the Future”

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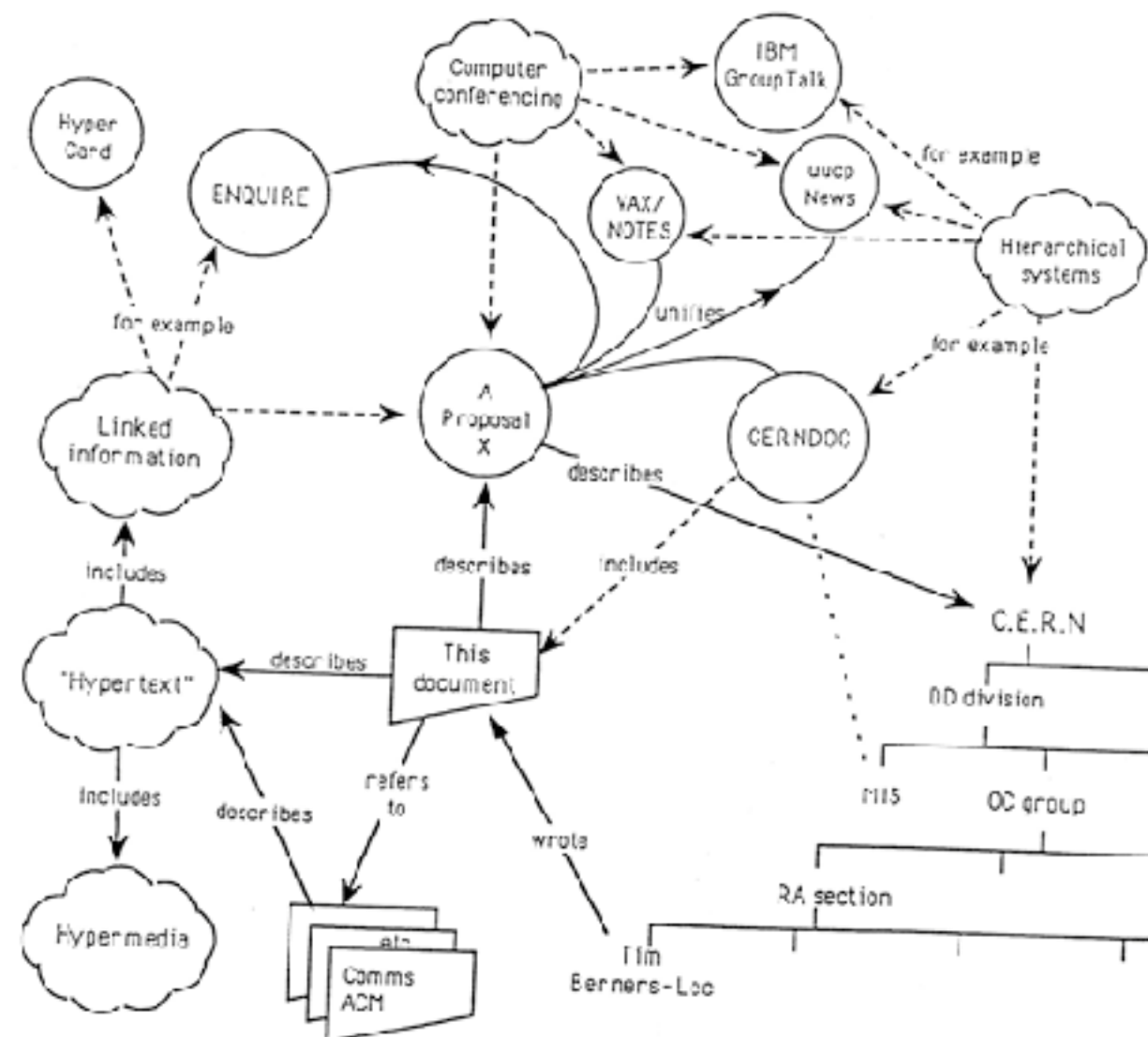
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Information Management: A Proposal

Abstract

This proposal concerns the management of general information about accelerators and experiments at CERN. It discusses the problems of loss of information about complex evolving systems and derives a solution based on a distributed hypertext system.

Keywords: Hypertext, Computer conferencing, Document retrieval, Information management, Project control

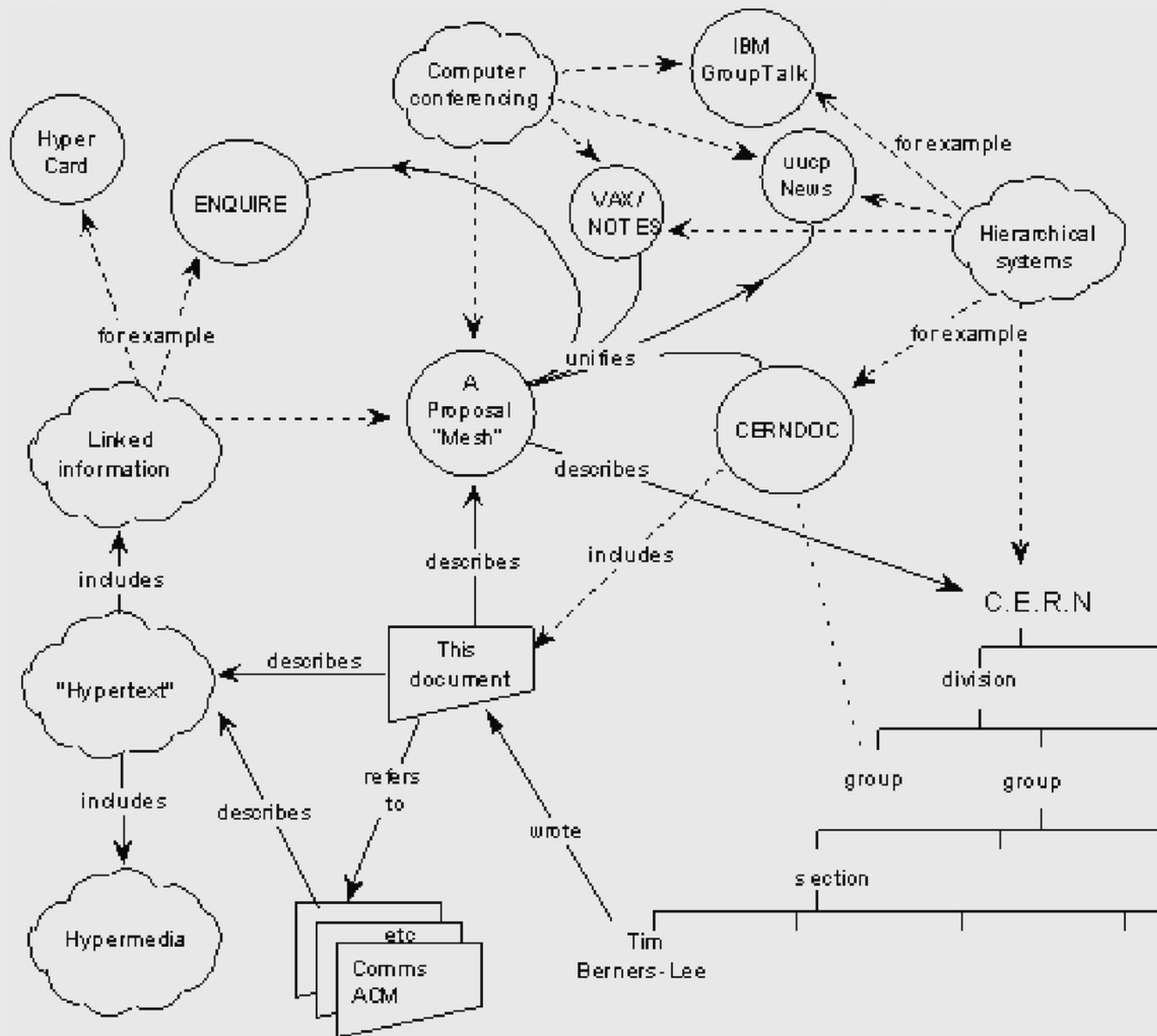


The Web was invented to solve a particular problem

- to facilitate the sharing of documents and services within international HEP collaborations (who used various OSs and tools)
- to “make life easier” for computer-phobic physicists

The invention of the Web was a convergence

- the demands of the physics/scientific communities
- the state of technology at CERN
 - availability of the Internet
 - popularity of client-server systems
 - adoption of SGML for document processing
 - interest in the NeXT and OOP
- Tim B-L's interests
 - hypertext systems
 - open source software



The big ideas of the Web

- resources on the network can be identified with unique simple addresses (URIs)
- simple protocols and software can be used to request, retrieve and display these resources
- simple linking allows resources to address additional resources
- all of the above should be free, non-proprietary, and subject to open standards

What were the dreams for the Web?

- global collaboration
- a positive use of technology
- empowerment
- societal change (hopefully for the positive)
- free and open

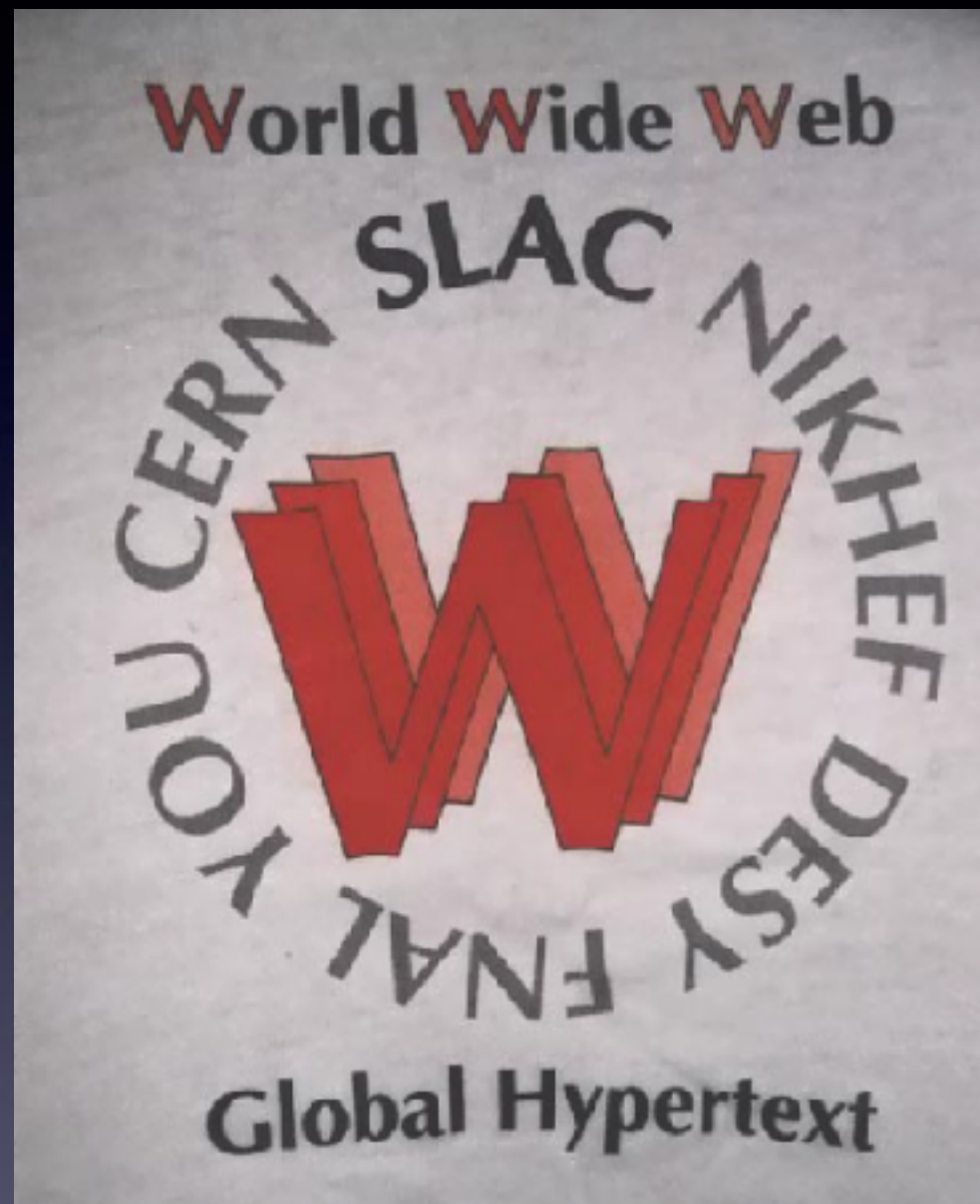
WWW comes to SLAC



December 12, 1991

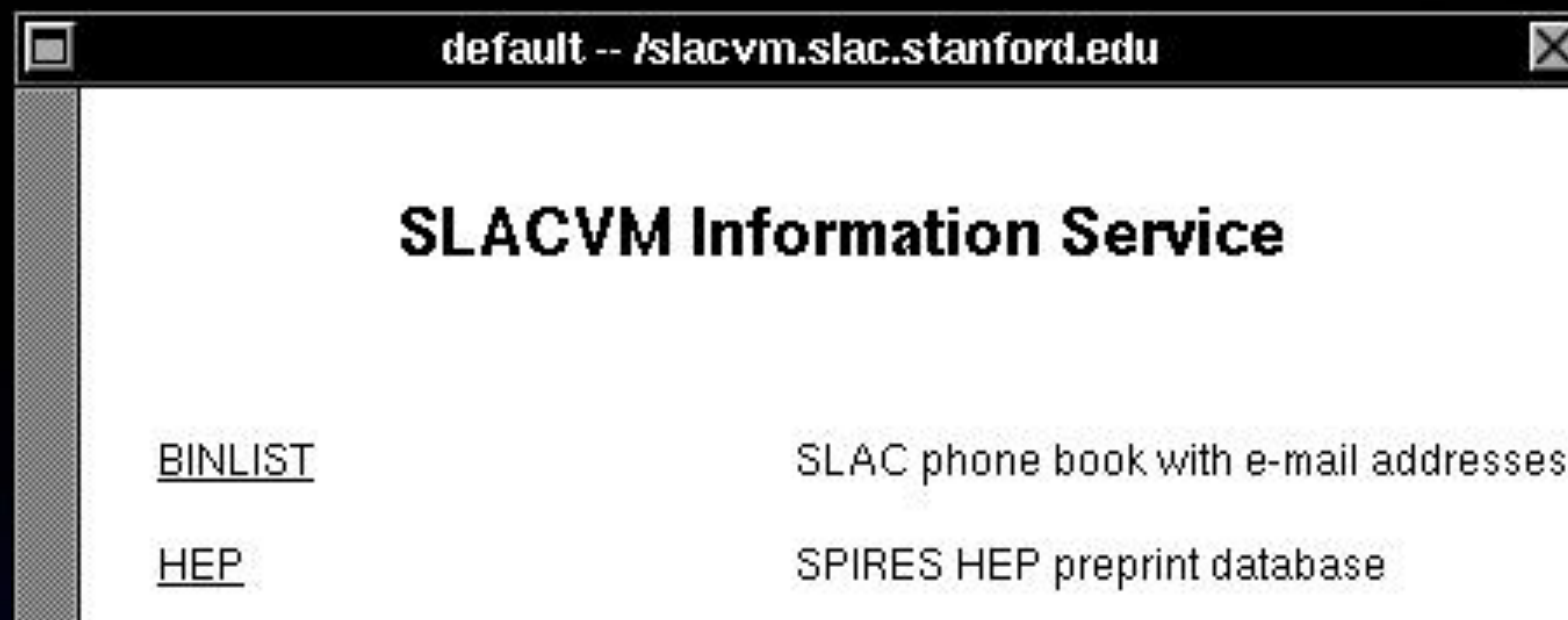
What is SLAC?

- part of the US National Laboratory system operated by Stanford University
- in the beginning was devoted to high energy/particle physics; now more to basic energy science
- was a major collaborator with other physics laboratories



But SLAC had a unique interface challenge

- the HEP preprints database was widely used by the physics community (SPIRES-HEP)
 - based on SPIRES (Stanford Public Information Retrieval System)
 - laboratories such as CERN needed access to SPIRES-HEP
 - notoriously bad interface and difficult to use
 - the first database accessible through WWW - the first Web “killer application” since it provided access without requiring an account



You can search this index. Type the keyword(s) you want to search for:

SLAC SPIRES HEP Preprint database search

Use standard SPIRES search terms such as...

find author Perl, M
find title tau and date 1980

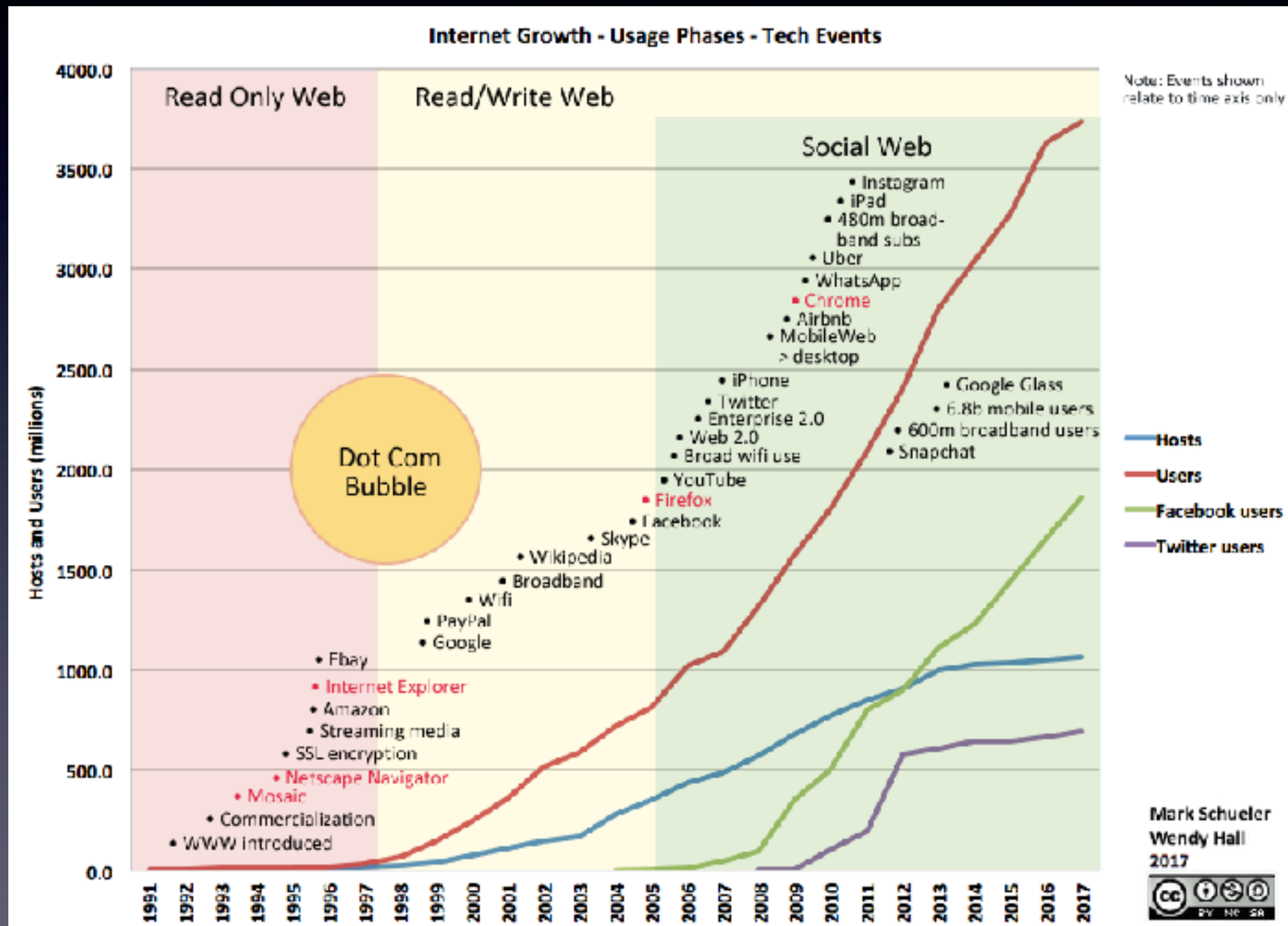
The early Web was naive

- there were very little concerns about security
- mainly handled via server file system permissions or IP address
- no password or data encryption
- no concerns about digital rights management

Web drivers

- the Web would have perished if
 - it had remained in the HEP community
 - it had not been open source
 - it had not been driven by innovation/
commercialization - e-commerce (forms,
CGI, SSL, etc.) was “the killer app”

A look at Web evolution



- Each of these phases effectively re-wrote the Web in terms of
 - applications
 - devices
 - software - less dependence on browsers; more emphasis on interactivity; the Web as a data source for applications and services
 - security and privacy
 - the effectiveness of a standards process - is the Open Web still just a dream?
 - the return of the “walled garden” - where large corporations drive usage, innovation, and policy - e.g., net neutrality, DRM

The big ideas of the Social Web

- fresh, useful data is the core
- the ability of other parties to manipulate that data
- “living” applications that can be easily adapted
- harnessing the collective experience
- “the Web as a platform” independent of user platform
- primary focus of participation and publishing
- trusting of users to provide reliable content

What about the “other Webs?”

- Web 2.0, Web 3.0
- Semantic Web
- AR/VR Web
- Web of Things
- Decentralized Web

Contributors to the “future Web”

- beyond the social/collaborative Web
- advancements in the technical fabric that supports the Web
- data and media - semantics, provenance, etc.
- mobile technology
- rich interfaces and environments
- AI
- Web ecology and science - network theory, etc.
- blockchain?

What's the “killer app” of the future Web?

- maybe there won't be one...
- my guess is that linked data + semantics + mobility + rich interfaces + personalization + AI will lead to numerous “killer apps”
- what are the unknown ways to use the Web and its resources?

“The future of the Web isn’t just about those of us who are online today, but also those yet to connect” - Tim Berners-Lee

Thank You!
Questions? Comments?

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