CS Group and the Internet

Anecdotes
The emergence of A&R Networks
Europe

Norway: UNINETT
Layering principle

- Functions clustered into layers
- Each layer has only two neighbors
- Changing one layer => changing two interfaces only
On Metaphors

Graphical Presentation from Norway, 1976
Perception

Peripheral

Application

Core

Low Level

High Level

7 Application
6 Presentation
5 Session
4 Transport
3 Network
2 Link
1 Physical
The emergence of A&R Networks Europe

UK: JANet

Full Protocol Stack

Peter Linnington
University of Kent
Driving on the Left
Driving on the Left

- British standard for email addresses

bob.smith@UK.AC.UCL

- Country: UK
- Domain: Academic Community
- University: University College of London
backfire
Driving on the Left

Argument: bob.smith@UK.AC.UCL

“Follows telephone numbering hierarchy”
(country code, area code, …….)
shooting yourself in the foot
Driving on the Left

- Reason: bob.smith@UK.AC.UCL
  "Follows telephone numbering hierarchy"
  (country code, area code, ……)

- Response of the community
  "Precisely, this is not telephone, this is mail"
Att. Mr Robert Smith
University College of London
United Kingdom
CS and World-wide structures

May 88
I convene the 2nd meeting in Geneva

* Coordinating Committee for Intercontinental Research Networks
Abandon of power

Oct 88
Special CCIRN Meeting, West Virginia, USA

Focused on IP Coordination

Vint Cerf:

“We wish you, the Europeans, to set up a structure to allocate IP addresses in Europe. It is not good we keep doing it for you.”
Abandon of power

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Oct 88
Second CCIRN* Meeting, West Virginia

▪ My two European colleagues: “Sorry, we do not foresee any future for IP in Europe.”

▪ I reassured our American colleagues: “CERN will look after it”
Europe: the Protocol War rages

- European Commission, most countries strongly opposed to TCP/IP
- They support the OSI technology

TCP/IP
Proponents and opponents fight each other
Europe: the Protocol War rages

TCP/IP Proponents
- Austria
- Ireland
- Netherlands
- Nordic Countries
- CERN

OSI Proponents
- Germany
- Italy
- UK
- Switzerland
- European Comm.
Six people attended

- Mats Brunel (SE)
- Rob Blokzijl (NL)
- Daniel Karrenberg (DE)
- Enzo Valente (IT)
- Olivier and myself (CERN)
20 years later - Anniversary Celebration

Fluckiger  Karrenberg  Valente  Martin  Blokzijl
CS Contribution to Internet Structures

May 89
Rob chairs the 1st RIPE meeting

May 92
Daniel formally opens the RIPE NCC

Karrenberg

BlokJil
CS Contribution to Internet Structures

IETF
Created

Internet Engineering Task Force

The fully open structure no develop Internet Standards

Brian Carpenter, CERN Chair 2005 -2007
CERN – The IP Star

War Will Last 5 years

CERN Largest Internet Hub in Europe
The Dawning of the Web

TBL releases First Web Server

Marc Andreessen and Eric Bina release MOSAIC

First Graphical Browser

University of Illinois
No Industrial Interest !!

... Until

Jim Clark
founder, Silicon Graphics
In common?

- H. Hollerith
- S. Jobs
- B. Gates
- L. Page
- S. Brin
- M. Zuckerberg

All outstanding Managers and Technicians
Industrial Interest?

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Netscape

Jim Clark
founder, Silicon Graphics

A Programmer
In IT business, understanding technology is key to success.
When paths have crossed
Dear Colleagues,
Some of you asked about the conditions for the distribution of new versions of the CERN WWW Library of Common Code (libwww), the CERN Line Mode Browser (www) and the WWW HTTP Daemon (httpd).

The new versions will remain freely available, for general use, and at no cost.

The only change is that the material distributed will remain copyrighted by CERN. As a consequence, a copyright notice will have to appear in copies, but also, the rights of the users will be protected, in particular by preventing third parties to turn free software into proprietary software, and deny the users the rights to freely use the material.`
Distribution of CERN WWW software
Francois Fluckiger (fluckiger@vscrena.cern.ch)
Tue, 15 Nov 1994 17:37:15 --100

Group: WWW-Talk

The proper copyright notice is being ratified and will be available in a few days.

We hope all those who have trusted CERN WWW software will continue to do so, and will appreciate that these conditions not only maintain the free distribution but better protect it.

Francois Fluckiger
Leader, WWW development, CERN
On Nov 16 1994, 11:57, Tony Sanders <sanders@...> wrote:

> We hope all those who have trusted CERN WWW software will continue to 
> do so, and will appreciate that these conditions not only maintain the 
> free distribution but better protect it.

No, I don't buy any such nonsense. It's either free or it's restricted.

Sounds more to me like they are going to start charging for access to the technology.
June
1994
Leaving CERN to the W3C, MIT
ORGANISATION EUROPEENNE POUR LA RECHERCHE NUCLEAIRE
CERN EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

STATEMENT CONCERNING CERN W3 SOFTWARE RELEASE INTO PUBLIC DOMAIN

TO WHOM IT MAY CONCERN

Introduction

The World Wide Web, hereafter referred to as W3, is a global computer networked information system.

The W3 project provides a collaborative information system independent of hardware and software platform, and physical location. The project spans technical design notes, documentation, news, discussion, educational material, personal notes, publicity, bulletin boards, live status information and numerical data as a uniform continuum, seamlessly interrogated with similar information in local, regional or worldwide. The documents available on a web may reside on any computer supported by that web.

...
Declaration

The following CERN software is hereby put into the public domain:

- W3 basic ("line-mode") client
- W3 basic server
- W3 library of common code.

CERN's intention in this is to further compatibility, common practices,

CERN relinquishes all intellectual property rights to this code, both source
and binary form and permission is granted for anyone to use, duplicate, modify
and redistribute it.

Geneva, 30 April 1993

W. Hoogland
Director of Research

H. Weber
Director of Administration
Free Software Movement in its infancy

Free Software Foundation

Richard Stallman
Free Software Principle

- Protect freedom by keeping ownership

- Grant **anyone** the
  - perpetual
  - irrevocable

right to use, copy, distribute, **modify**
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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
Thank You