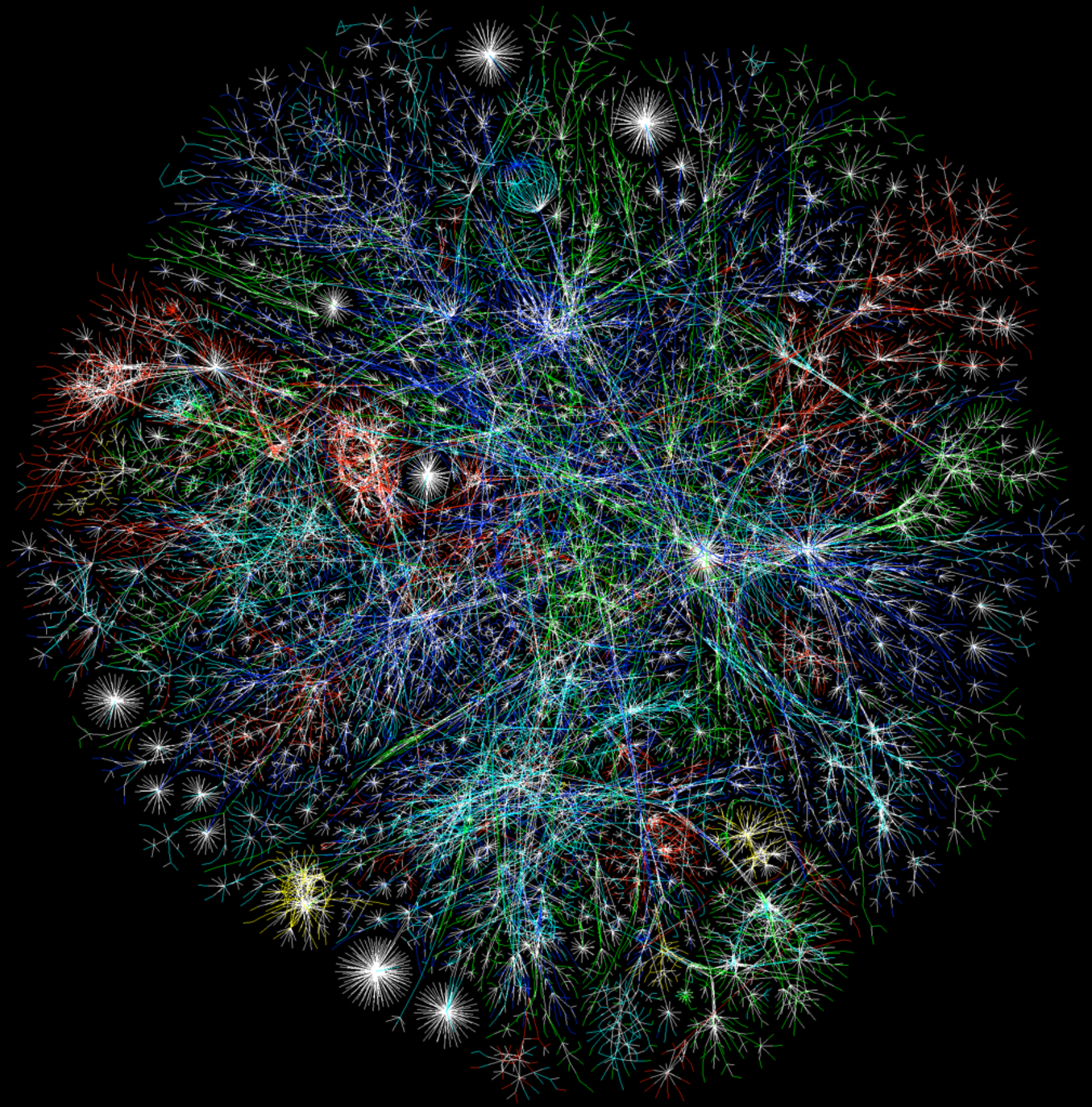
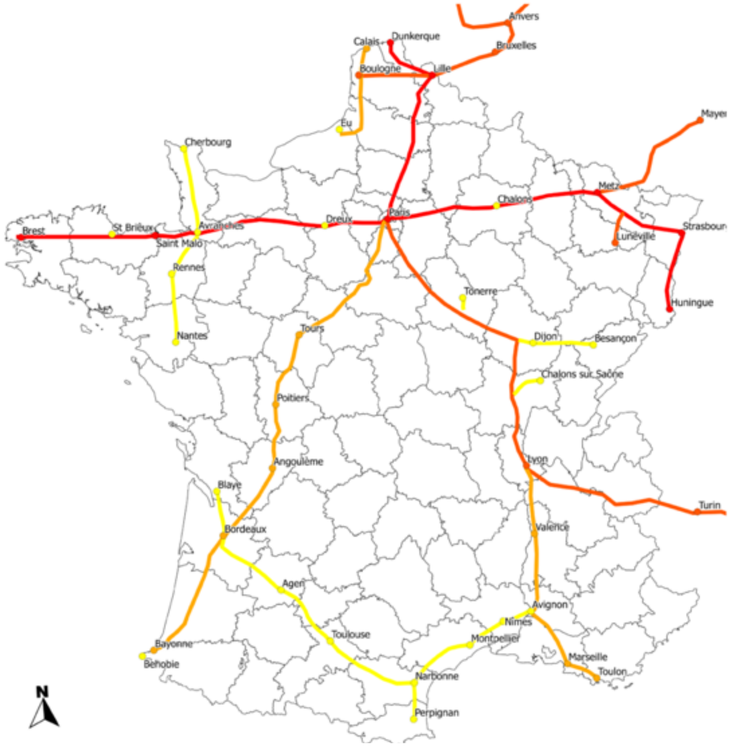
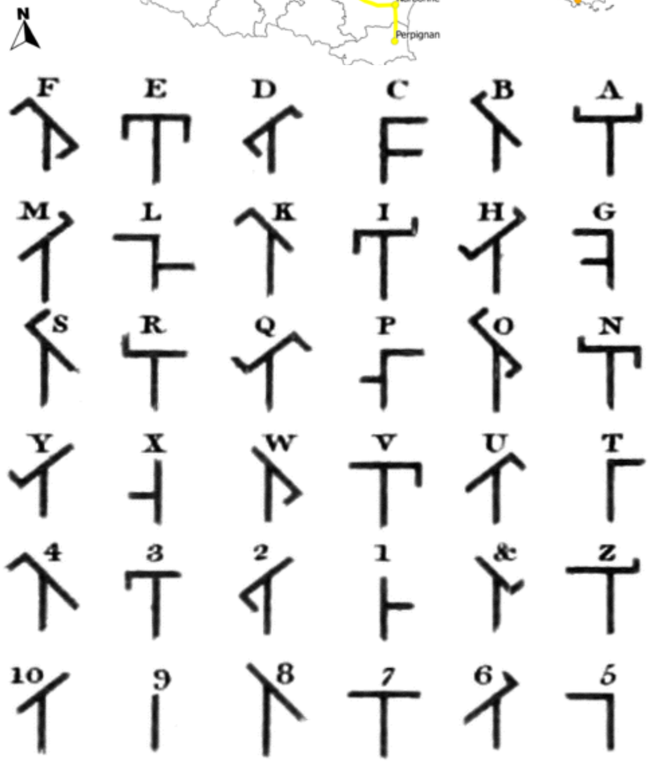
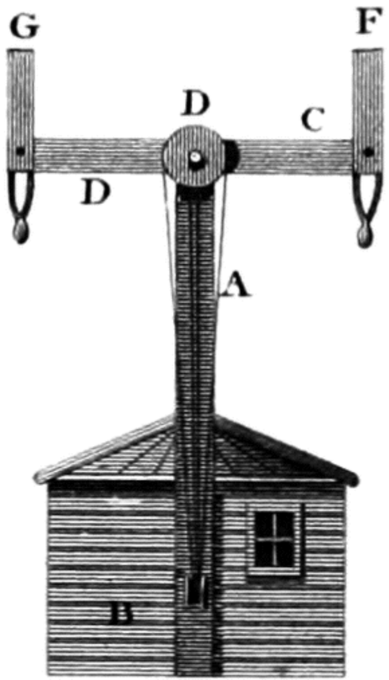
RESILIENCE

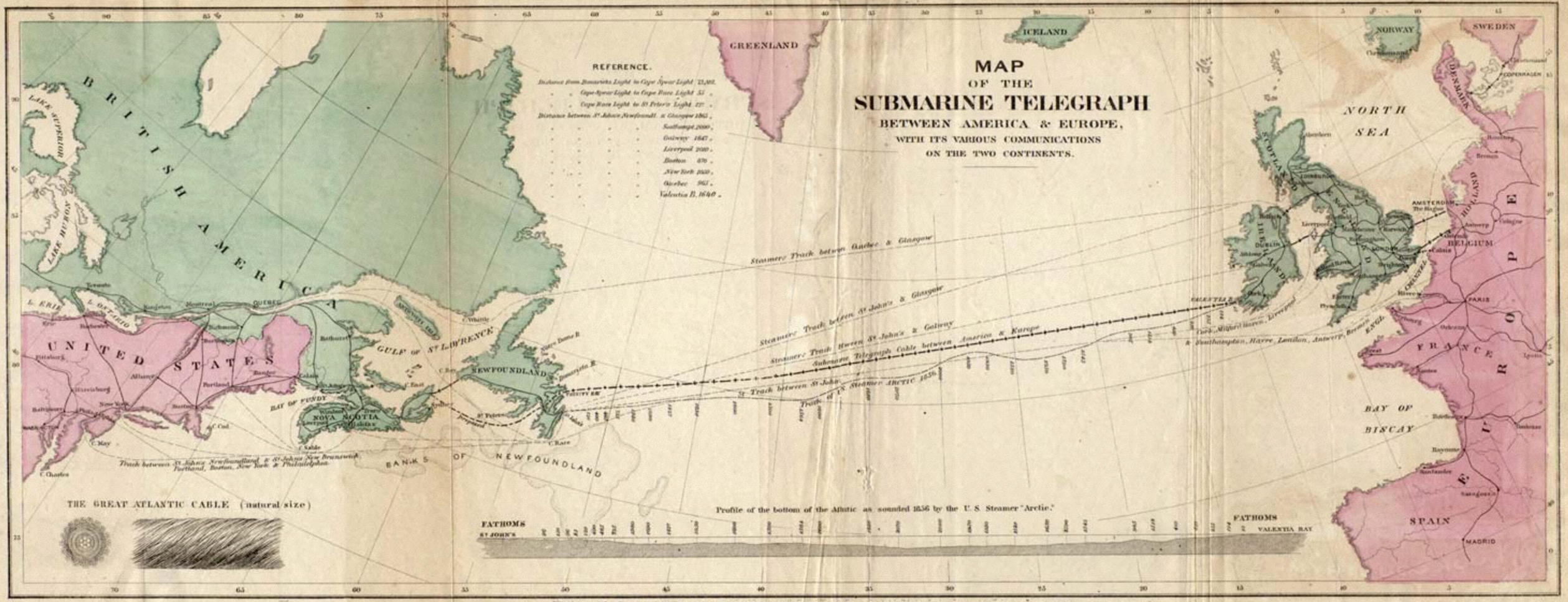
SHARD



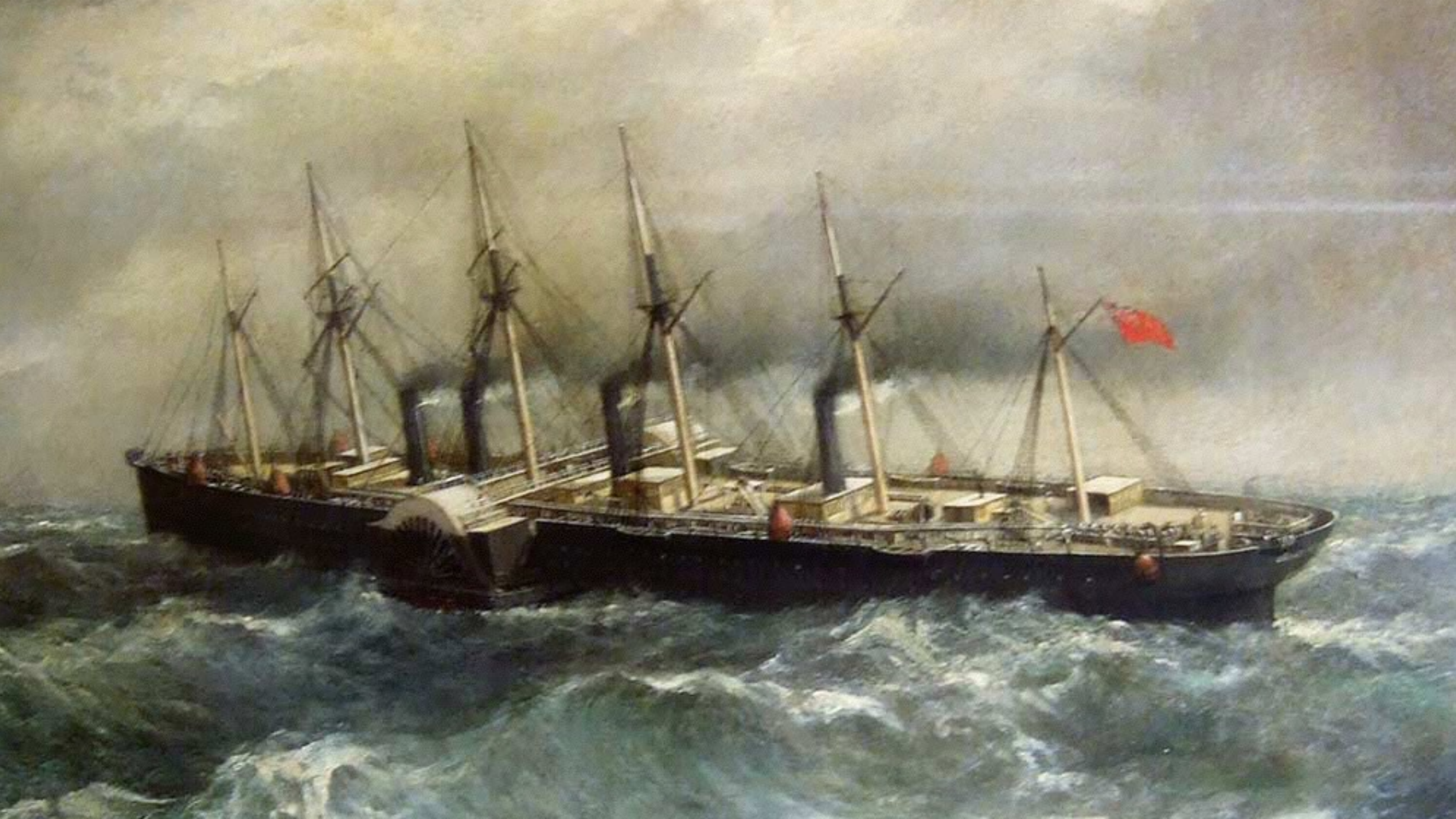

Anvers
Calais
Dunkerque
Bruxelles
Boulogne
Lille
Eu
Mayer
Cherbourg
Metz
Chalons
Paris
Dreux
Strasbour
Brest
St Brieux
Avranches
Lunéville
Saint Malo
Rennes
Tonerre
Huningue
Nantes
Tours
Dijon
Besançon
Chalons sur Saône
Poitiers
Angoulême
Lyon
Blaye
Turin
Bordeaux
Valence
Agen
Avignon
Nimes
Toulouse
Montpellier
Bayonne
Marseille
Behobie
Toulon
Narbonne
Perpignan


N
F E D C B A
M L K I H G
S R Q P O N
Y X W V U T
4 3 2 1 & Z
10 9 8 7 6 5


G
F
D
C
D
A
B



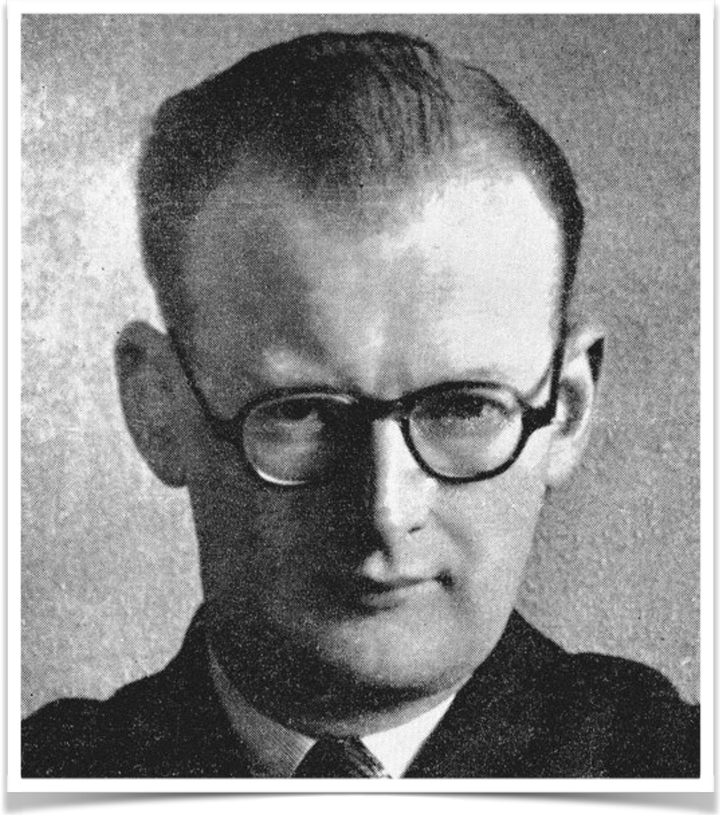
Printed for HOWE'S ADVENTURES & ACHIEVEMENTS OF AMERICANS.

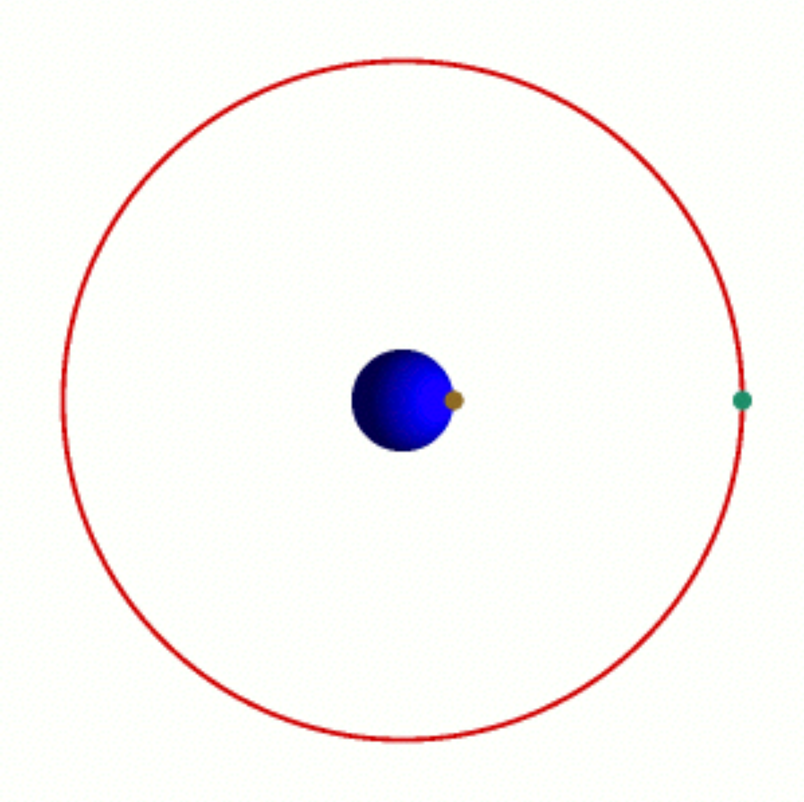


"It is a triumph more glorious,
because far more useful to mankind,
than was ever won by conqueror
on the field of battle."

—President James Buchanan
to Queen Victoria

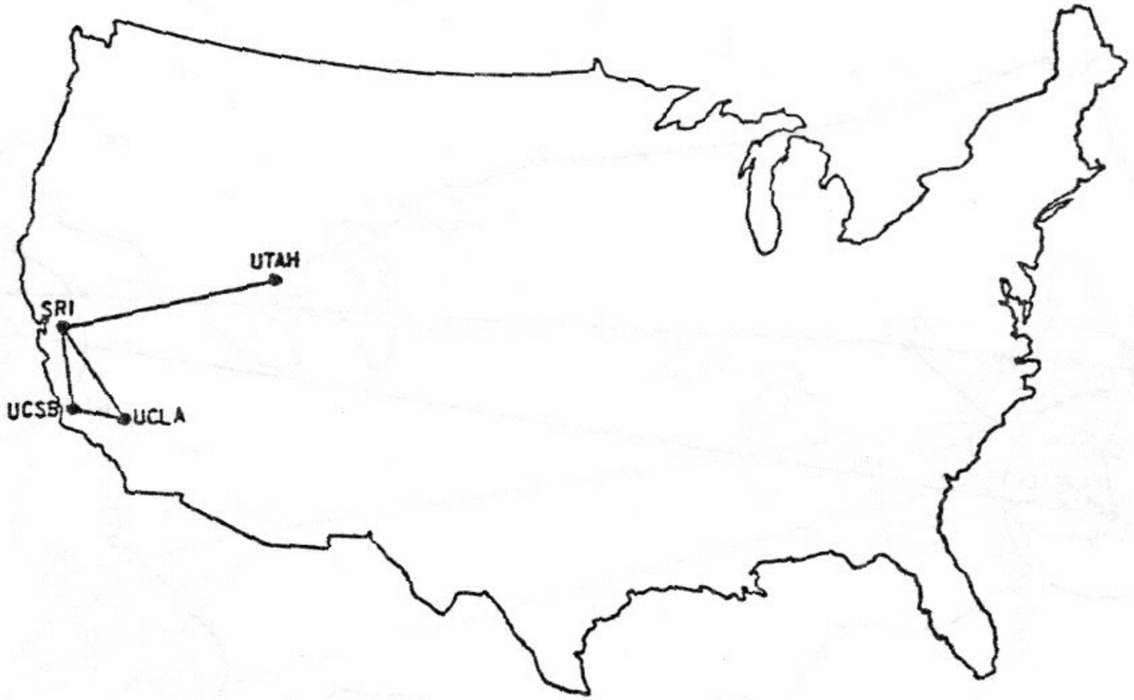
231





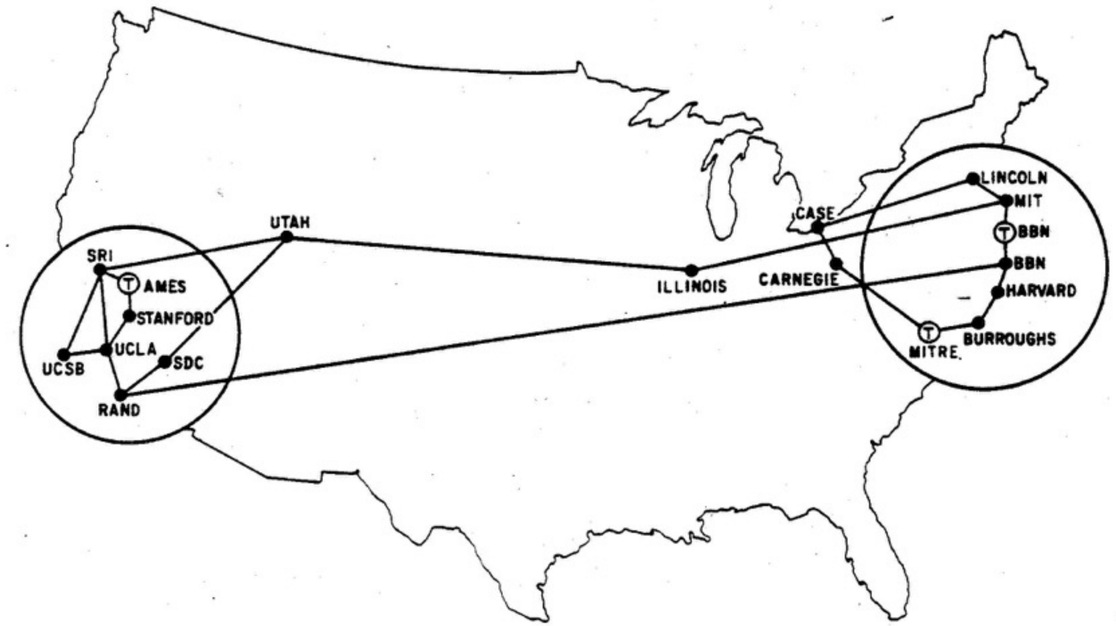
A NEW MAP of the SUBMARINE CABLES connecting the World,

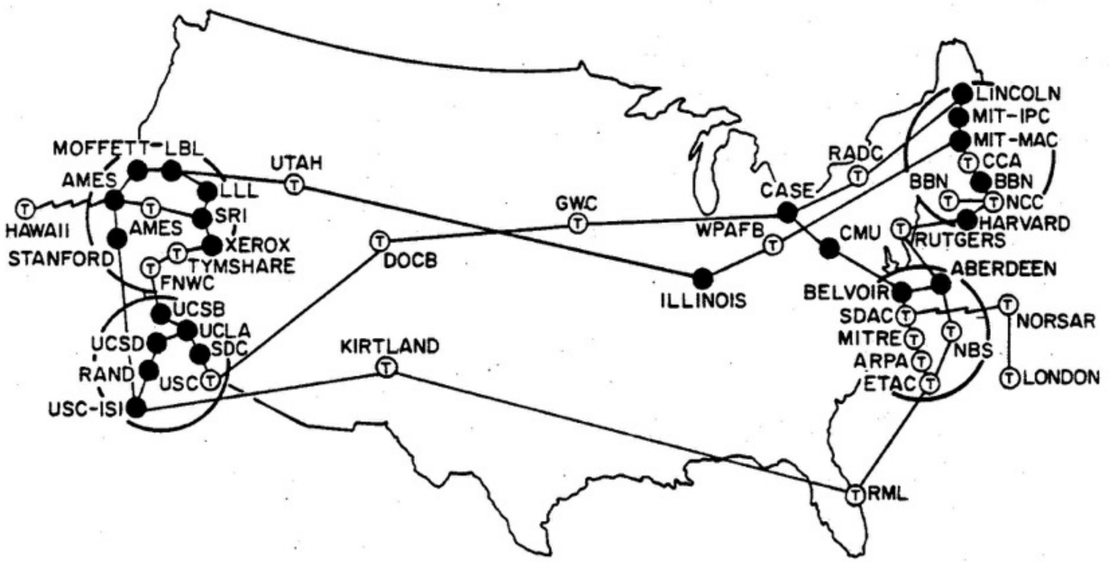
according to the best Authorities with all the latest Discoveries to the PRESENT PERIOD, 2015.



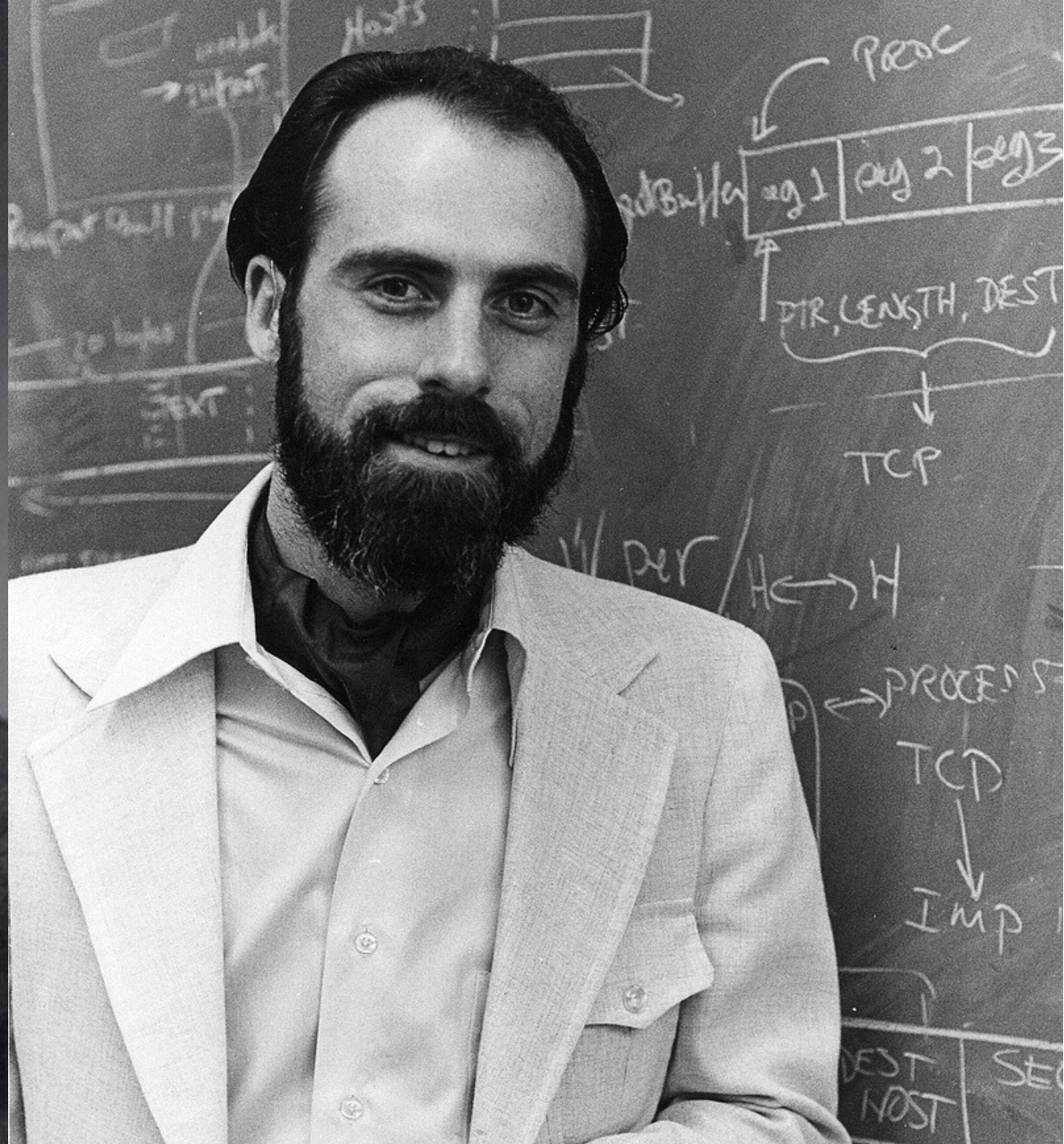
The ARPANET in December 1969

lo


SRI
AMES
STANFORD
UCLA
UCSB
SDC
RAND
UTAH
ILLINOIS
CASE
CARNEGIE
LINCOLN
MIT
BBN
BBN
HARVARD
BURROUGHS
MITRE


MOFFETT
LBL
AMES
LLL
SRI
AMES
XEROX
TYMSHARE
FNWC
HAWAII
STANFORD
UCSB
UCLA
SDC
UCSD
RAND
USC
USC-ISI
UTAH
DOCB
KIRTLAND
GWC
ILLINOIS
WPAFB
CASE
RADC
CMU
LINCOLN
MIT-IPC
MIT-MAC
CCA
BBN
BBN
NCC
HARVARD
RUTGERS
ABERDEEN
BELVOIR
SDAC
MITRE
ARPA
ETAC
NBS
NORSAR
LONDON
RML

ITU


Hosts
PROC
seg 1
seg 2
seg 3
DIR, LENGTH, DEST
TCP
H ⟷ H
PROCESS
TCP
IMP
DEST HOST

“Deliver the bits, stupid.”

—David Isenberg
“Rise of the Stupid Network”

HTTP

email

ftp

telnet

gopher

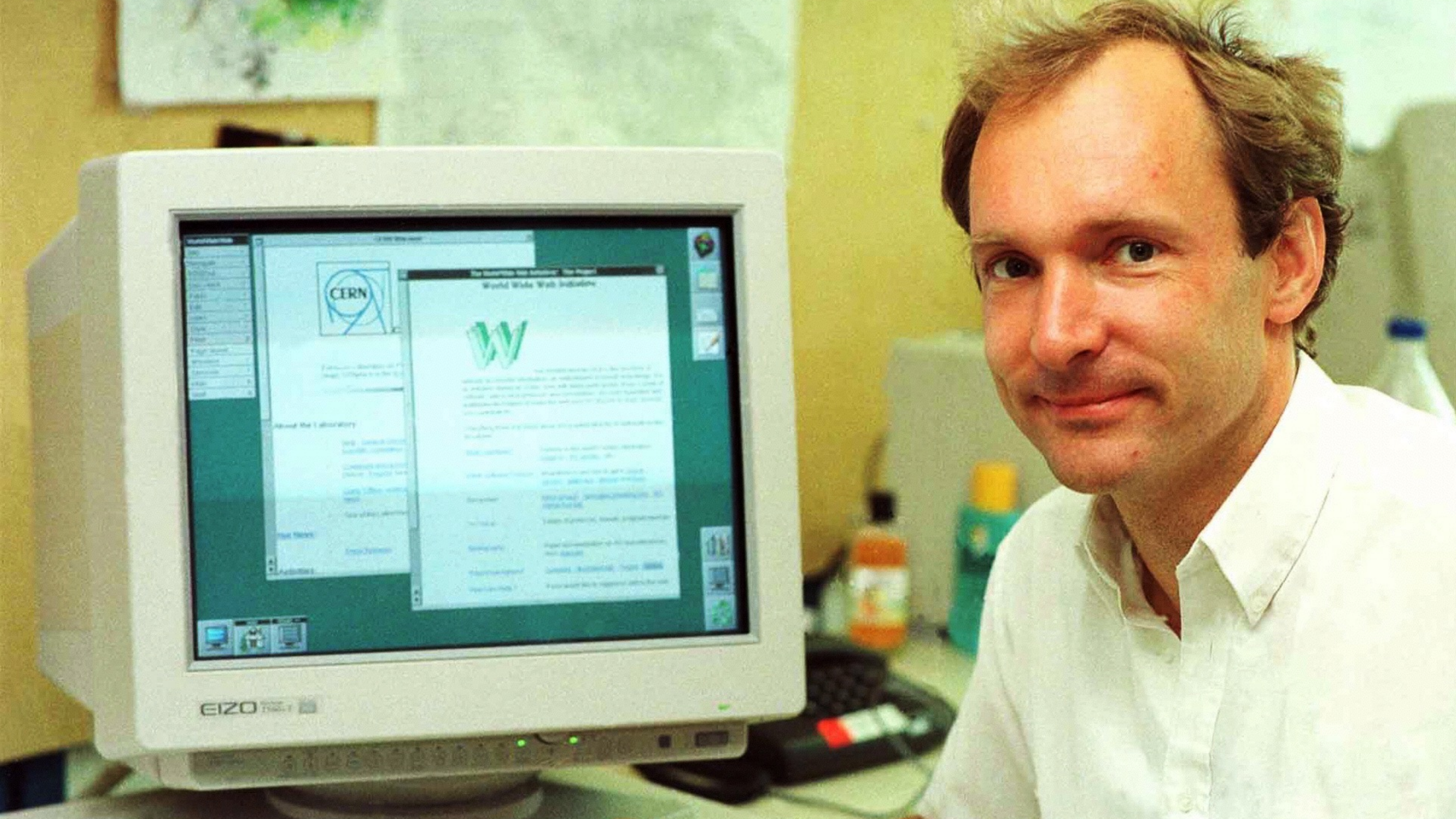
TCP/IP

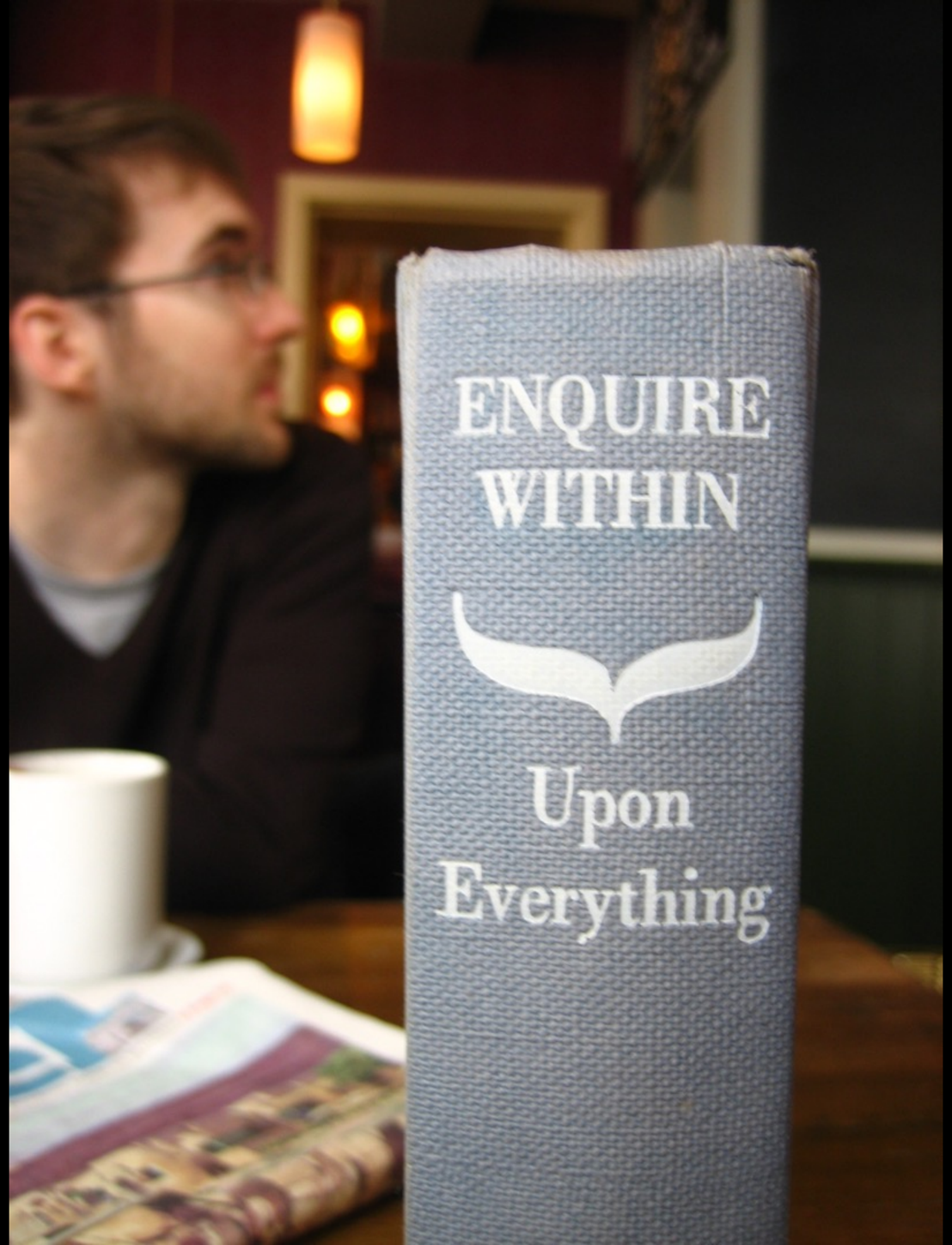
HTTP

URLs

HTML

WWW


CERN
World Wide Web Initiative
EIZO


ENQUIRE
WITHIN
Upon
Everything

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 sytstem.

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

WHERE THE
WEB
WAS BORN
In the offices of this corridor, all the fundamental technologies of the Wor
Wide Web were developed.
Started in 1990 from a proposal made by Tim Berners-Lee in 1989, the effo
was first divided between an office in building 31 of the Computing an
Networking Division (CN) and one in building 2 of the Electronics an
Computing for Physics Division (ECP).
In 1991 the team came together in these offices, then belonging to EC
It was composed of two CERN staff members, Tim Berners-Lee (GB) an
Robert Cailliau (BE), aided by a number of Fellows, Technical Student
a Coopérant and Summer Students.
At the end of 1994 Tim Berners-Lee left CERN to direct the WWW
Consortium (W3C), a world-wide organization devoted to leading th
Web to its full potential. The W3C was founded with the help of CERN
the European Commission, the Massachusetts Institute of Technolog
(MIT), the Institut National pour la Recherche en Informatique et e
Automatique (INRIA), and the Advanced Research Projects Agency (ARPA).
In 1995 Tim Berners-Lee and Robert Cailliau received the ACM Software Syster
Award for the World Wide Web. In 2004, Tim Berners-Lee was awarded the firs
Millenium Technology Prize by the Finnish Technology Award Fouridation.
The CERN Library
June 2004

"The trick... is to make sure that each limited mechanical part of the web, each application, is within itself composed of simple parts that will never get too powerful."

—Tim Berners-Lee

HTTP

URLs

HTML

WWW

HTML

HTML tags

21 elements

HTML 5

121 elements

show me

<foo>
show me
</foo>

<main>
show me
</main>

<canvas>
hide me
</canvas>

<img src alt>

<img src alt srcset>

```
<picture>
<source srcset>
<source srcset>
<img src alt srcset>
</picture>
```

CSS

OOCSS

SMACSS

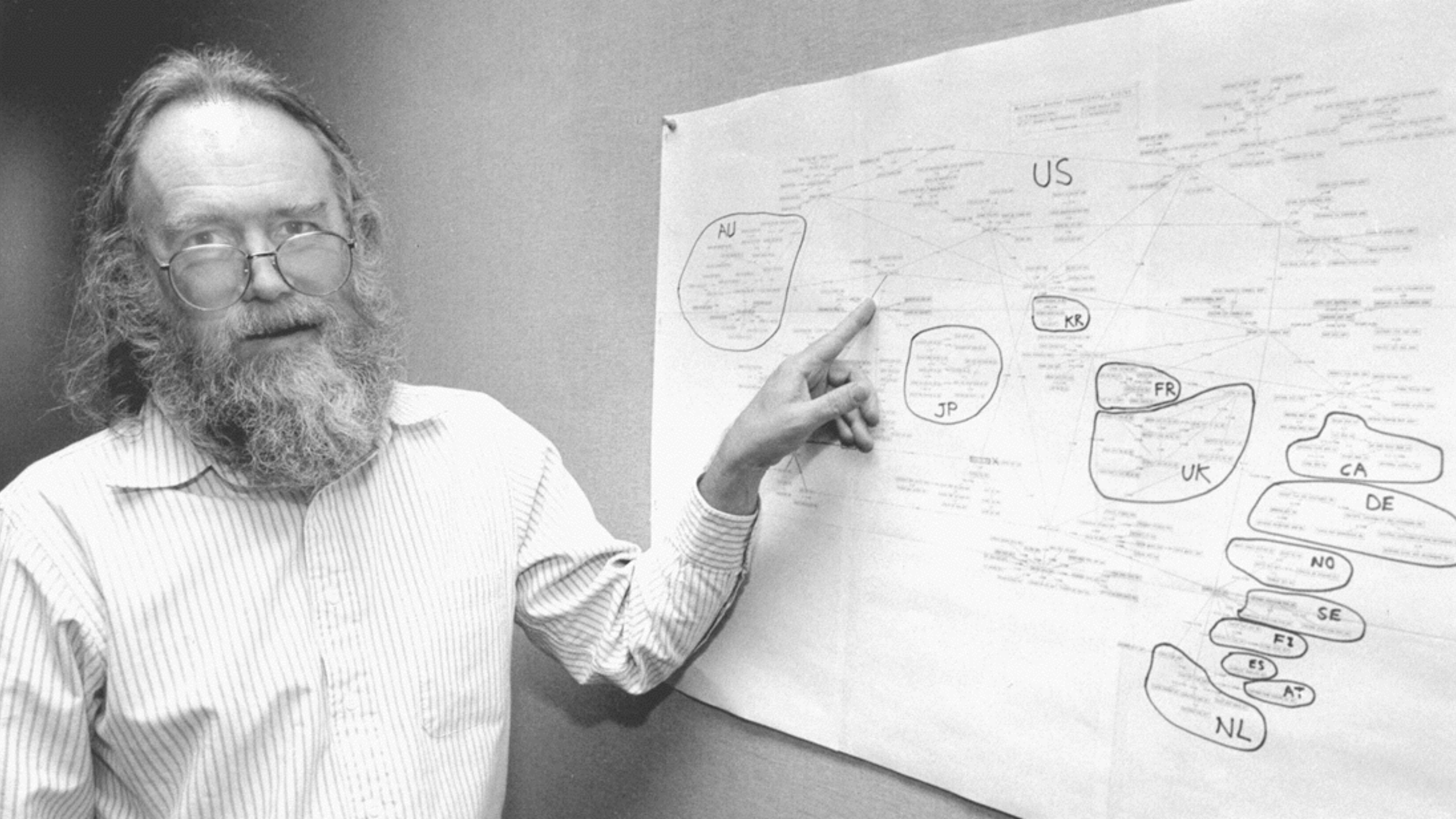
BEM

```
selector {
  property: value;
}
```

CSS
HTML

"Be conservative in what you send,
be liberal in what you accept."

—Jon Postel


US
AU
KR
JP
FR
UK
CA
DE
NO
SE
FI
ES
AT
NL

fragile

imperative JavaScript

CSS

declarative HTML

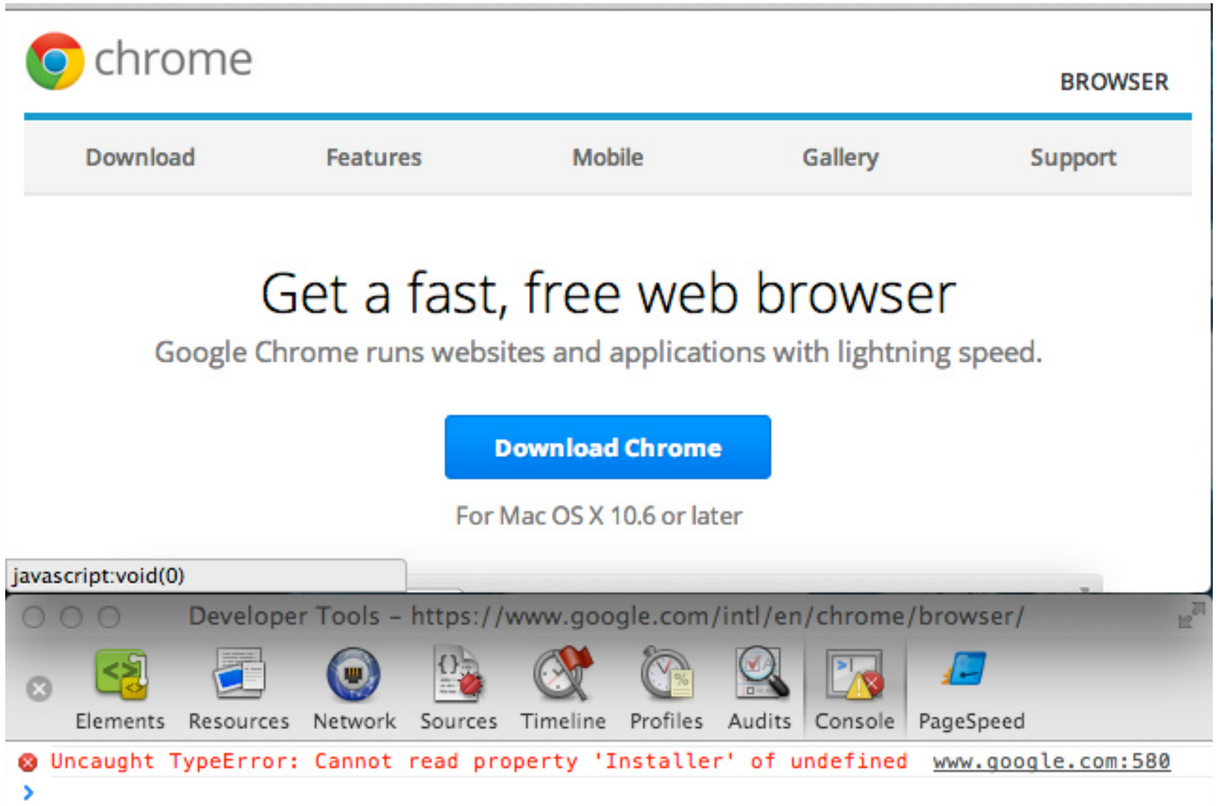
resilient

fragile

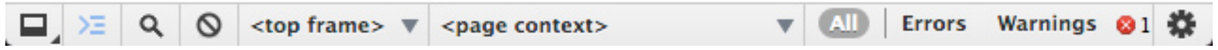
XHTML 2

fragile

JavaScript



<a href="javascript:void(0)">
Download Chrome
</a>



"Anything that can possibly go wrong, will go wrong."

—Edward Aloysius Murphy, Jr.

Everyone has JavaScript, right?

YOUR USER REQUESTS YOUR WEB APP

HAS THE PAGE LOADED YET?

"All your users are non-JS while they're downloading your JS" — Jake Archibald

DID THE HTTP REQUEST FOR THE JAVASCRIPT SUCCEED?

If they're on a train and their net connection goes away before your JavaScript loads, then there's no JavaScript.

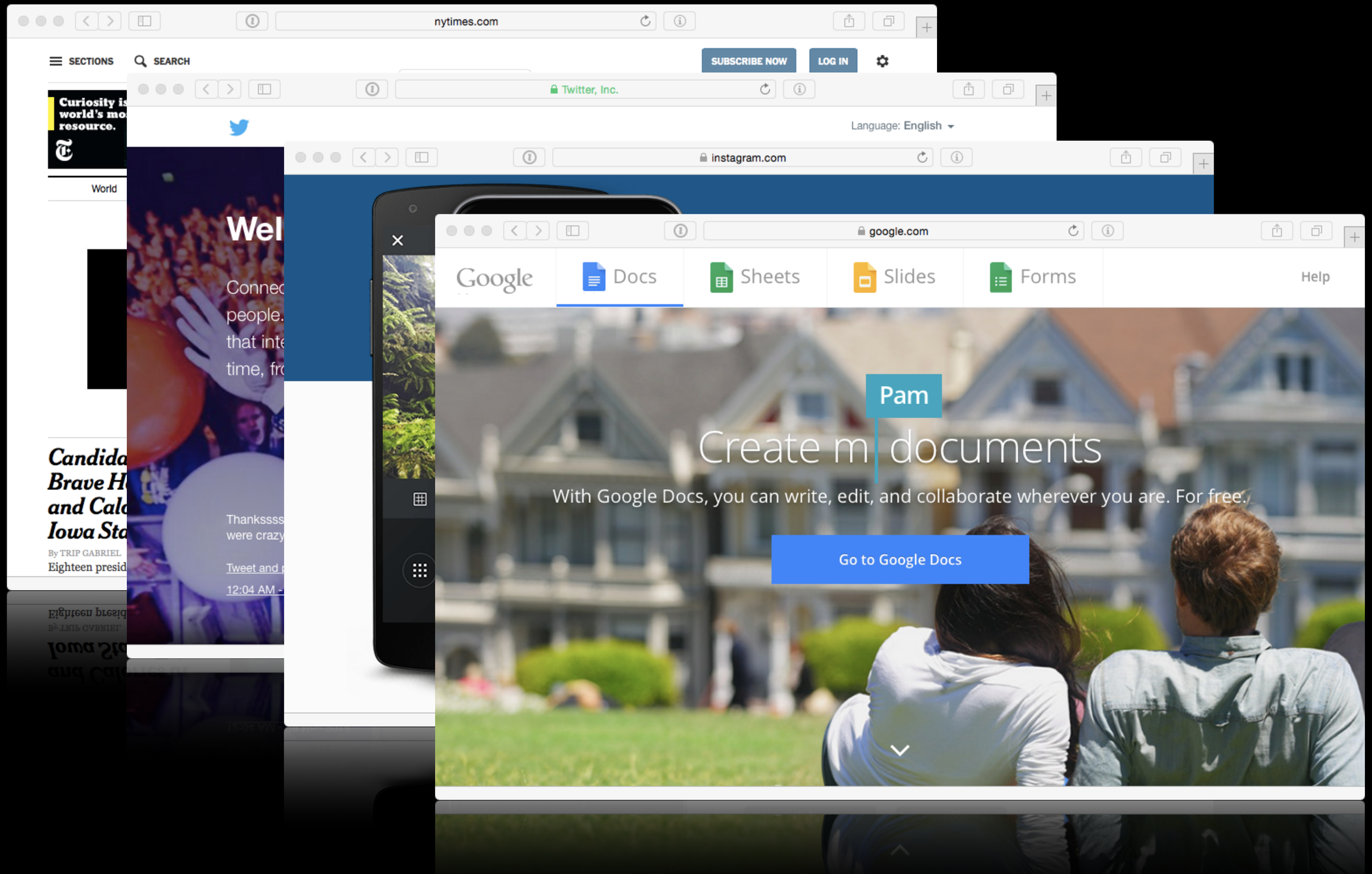
DID THE HTTP REQUEST FOR THE JAVASCRIPT COMPLETE?

How many times have you had a mobile browser hang forever loading a page and then load it

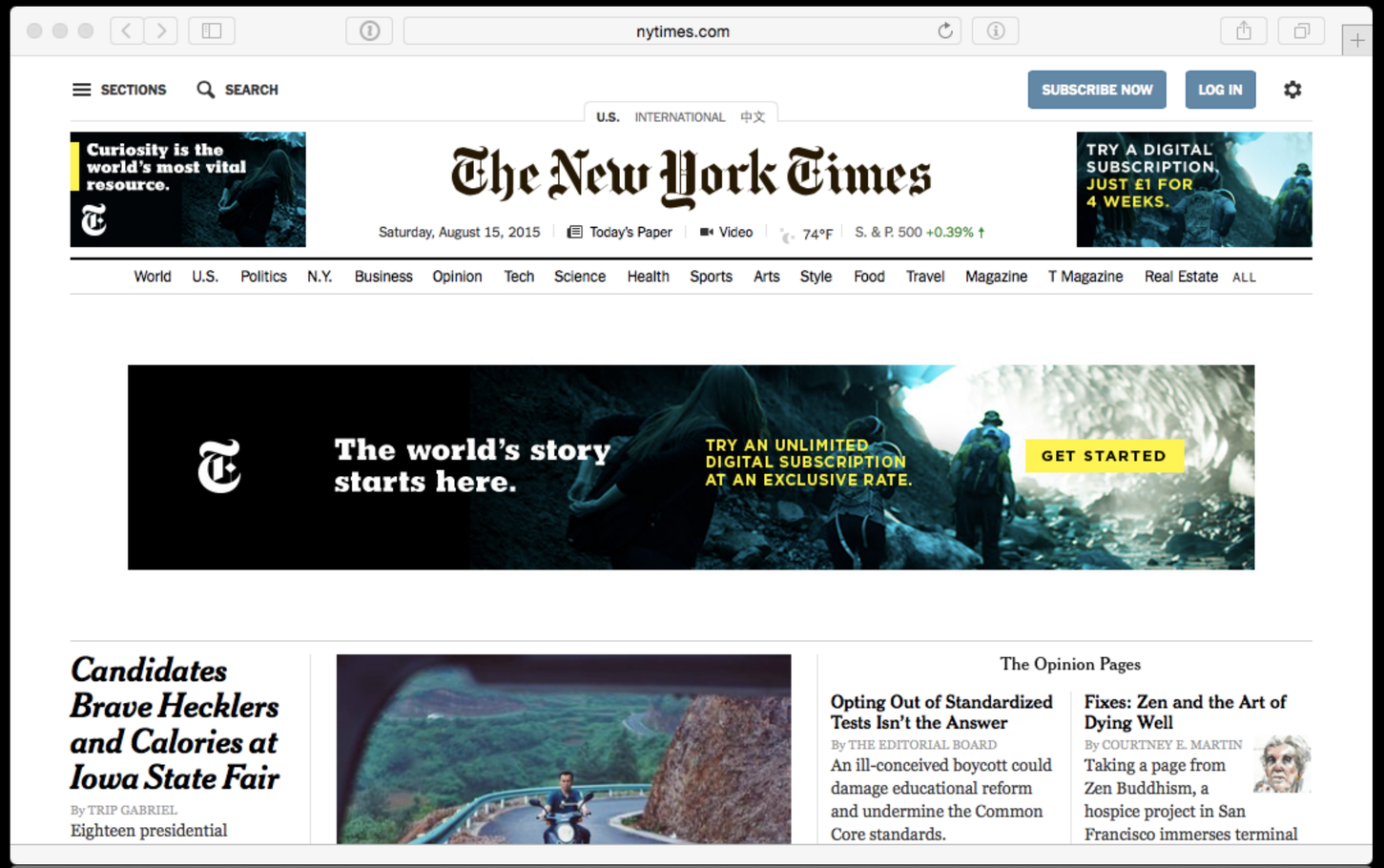
FO4304OZ01
ADAC
ÖAMTC
FO4304OZ01
FO4304OZ01
0.15

1. Identify core functionality.
2. Make that functionality available using the simplest technology.
3. Enhance!

1. Identify core functionality.
2. Make that functionality available using the simplest technology.
3. Enhance!


nytimes.com
SECTIONS
SEARCH
SUBSCRIBE NOW
LOG IN
World
Twitter, Inc.
Language: English
instagram.com
google.com
Google
Docs
Sheets
Slides
Forms
Help
Pam
Create m documents
With Google Docs, you can write, edit, and collaborate wherever you are. For free.
Go to Google Docs

1. Identify core functionality.
2. Make that functionality available using the simplest technology.
3. Enhance!



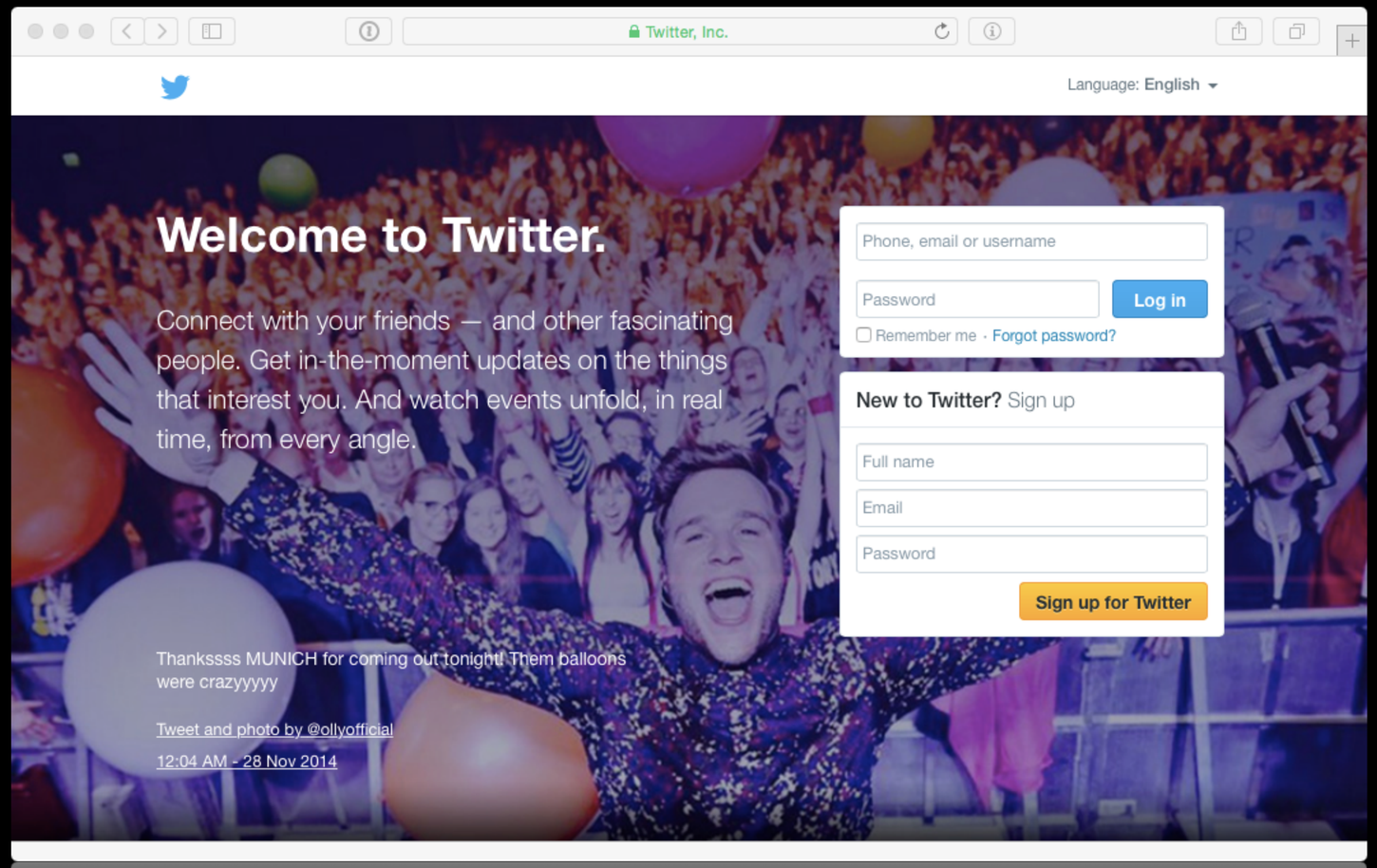
<nav>

<main>

<h1>

<p>

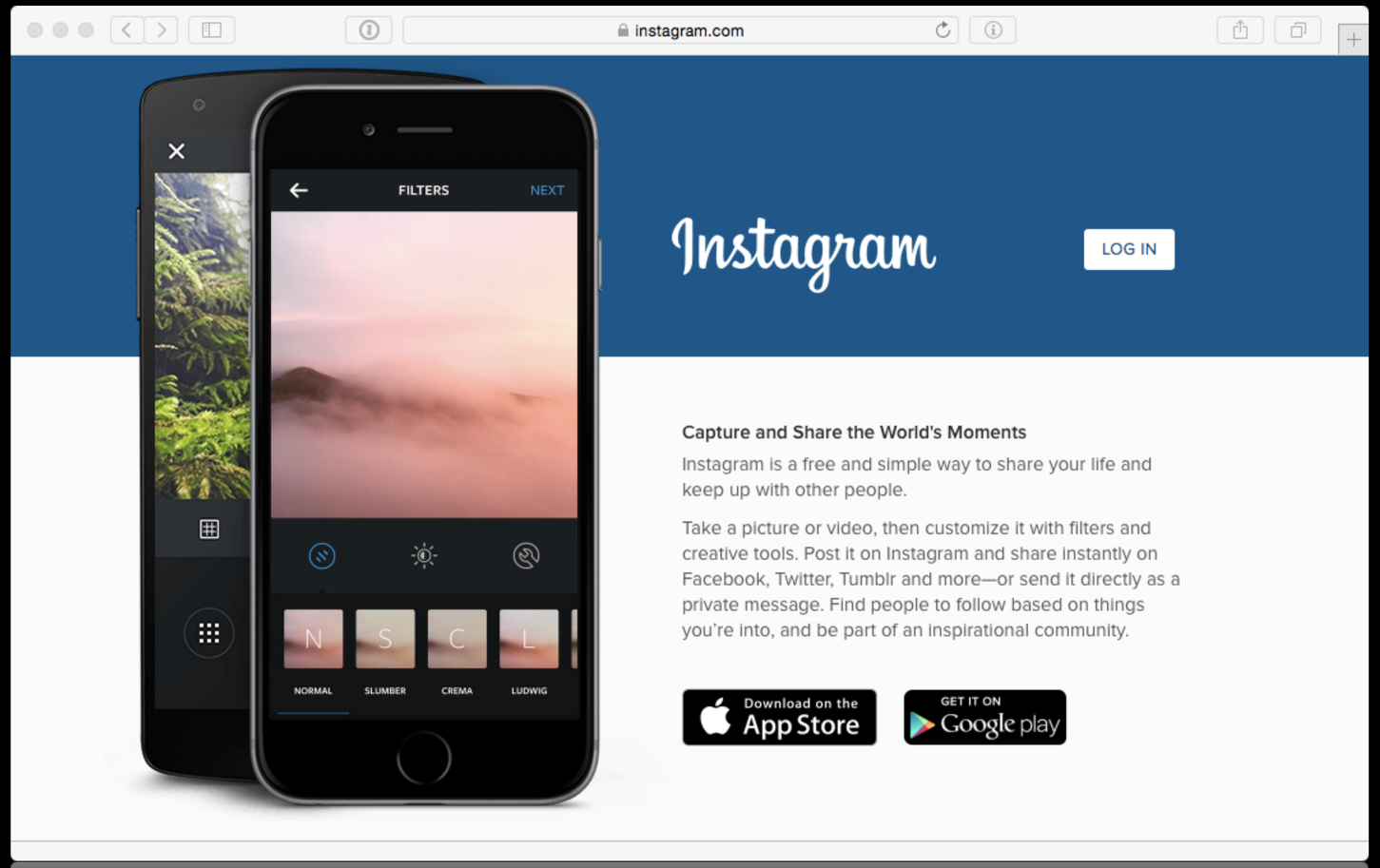
<article> <header> <footer>

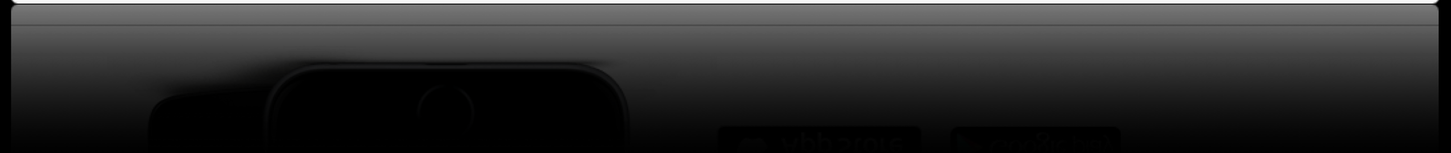


<ol>
<li>
<li>
<li>
</ol>

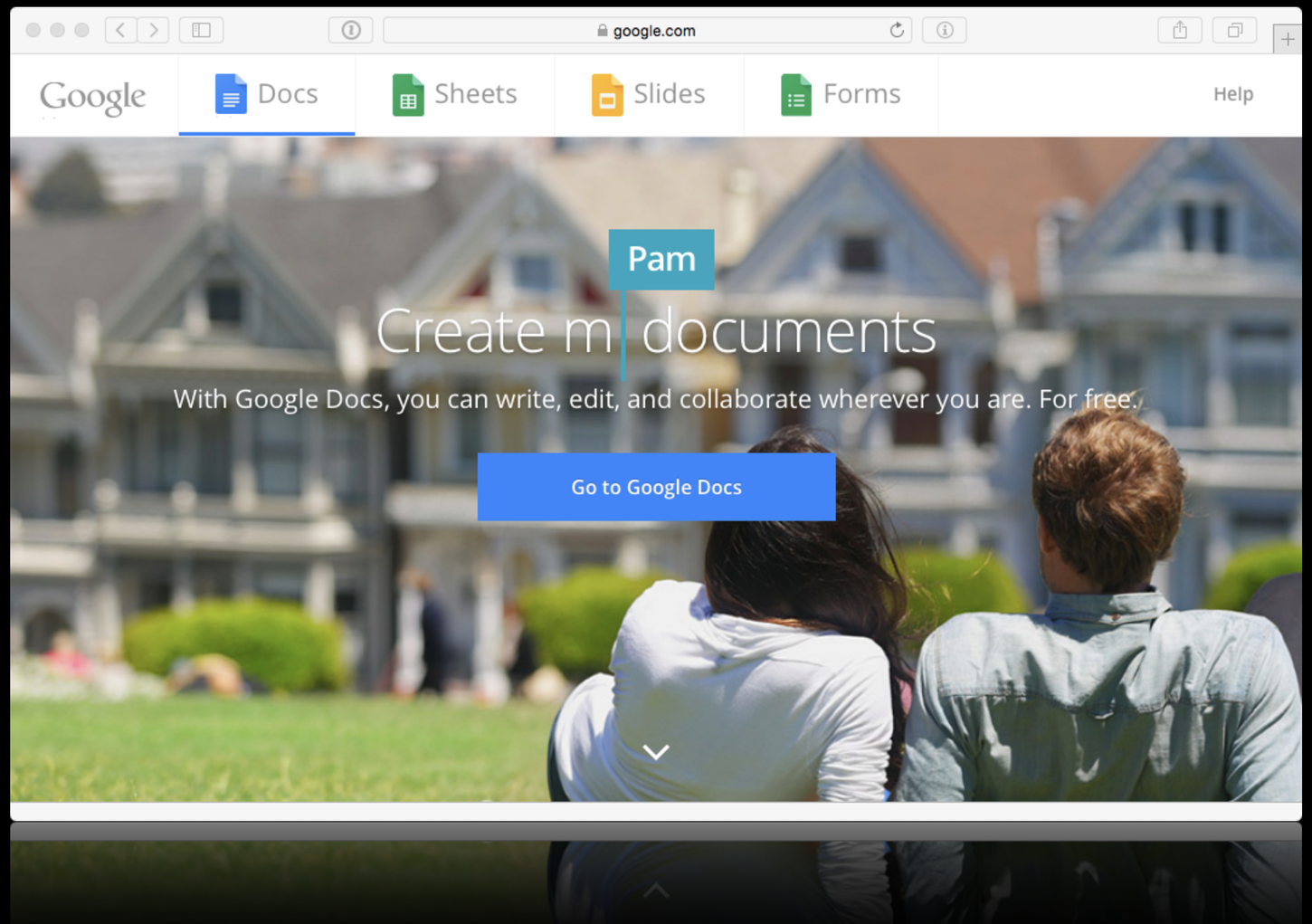
<input type="text">

<input type="file">

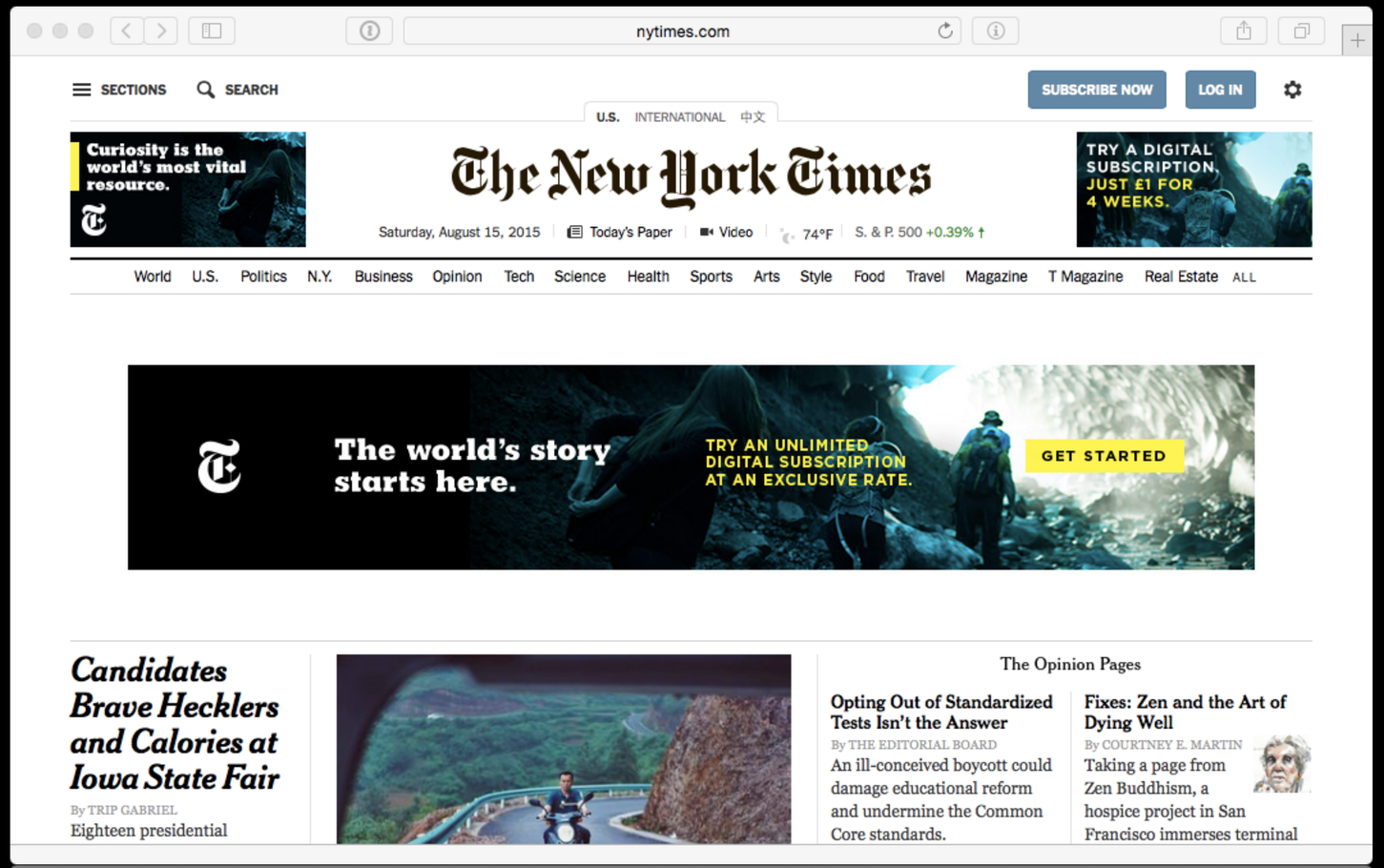




<textarea>

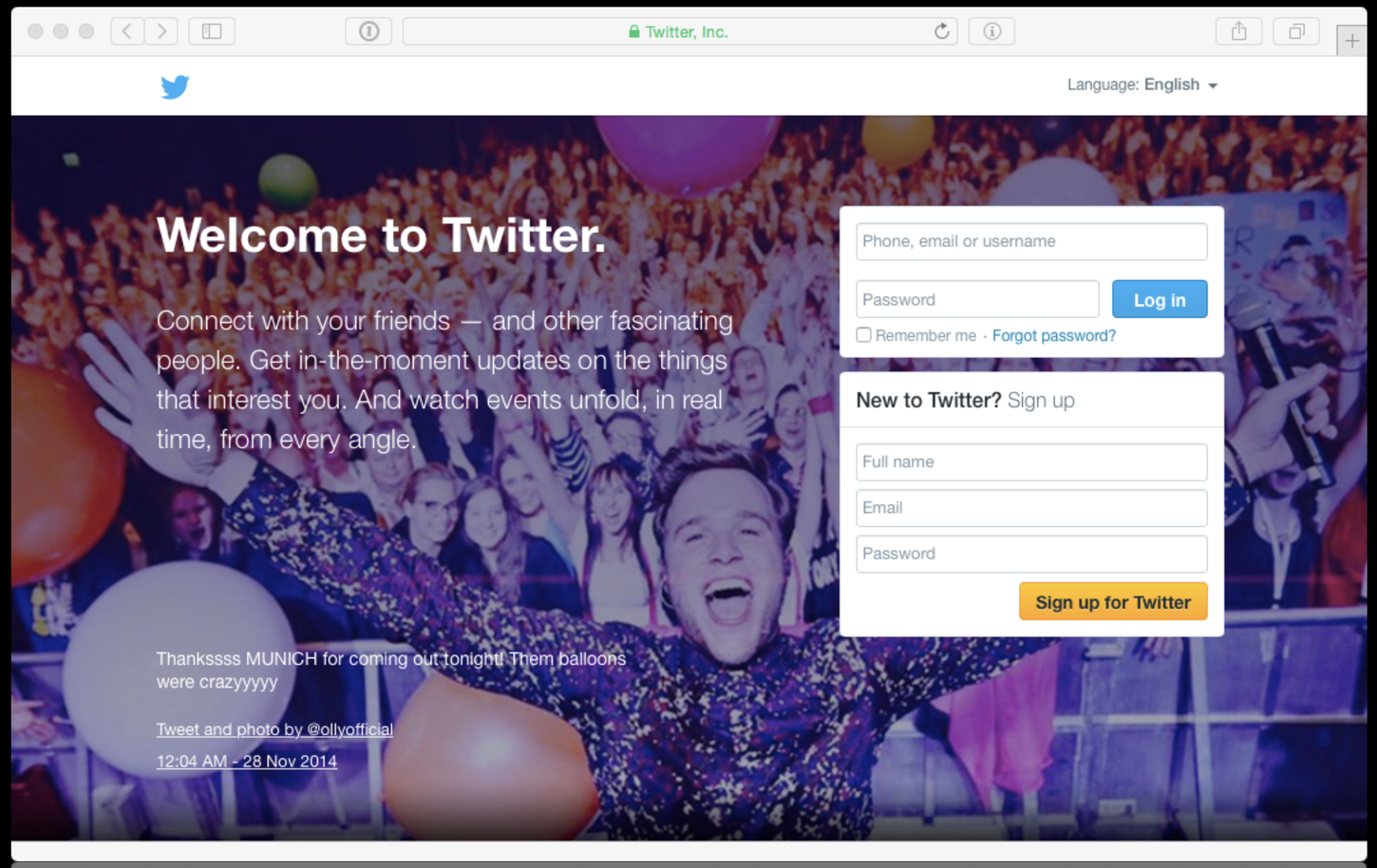

google.com
Google
Docs
Sheets
Slides
Forms
Help
Pam
Create m documents
With Google Docs, you can write, edit, and collaborate wherever you are. For free.
Go to Google Docs

1. Identify core functionality.
2. Make that functionality available using the simplest technology.
3. Enhance!



layout

@font-face

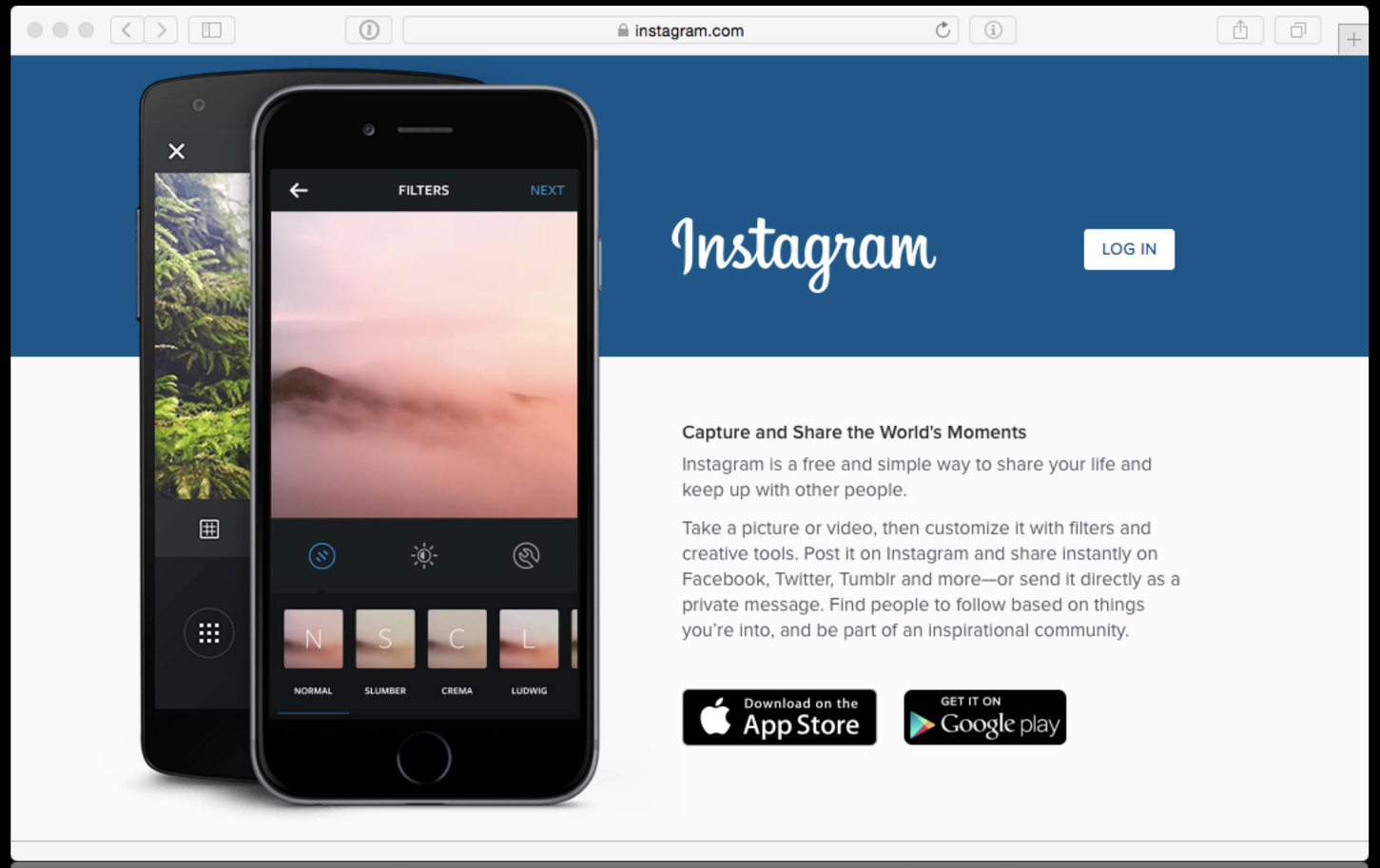


ajax

websocket

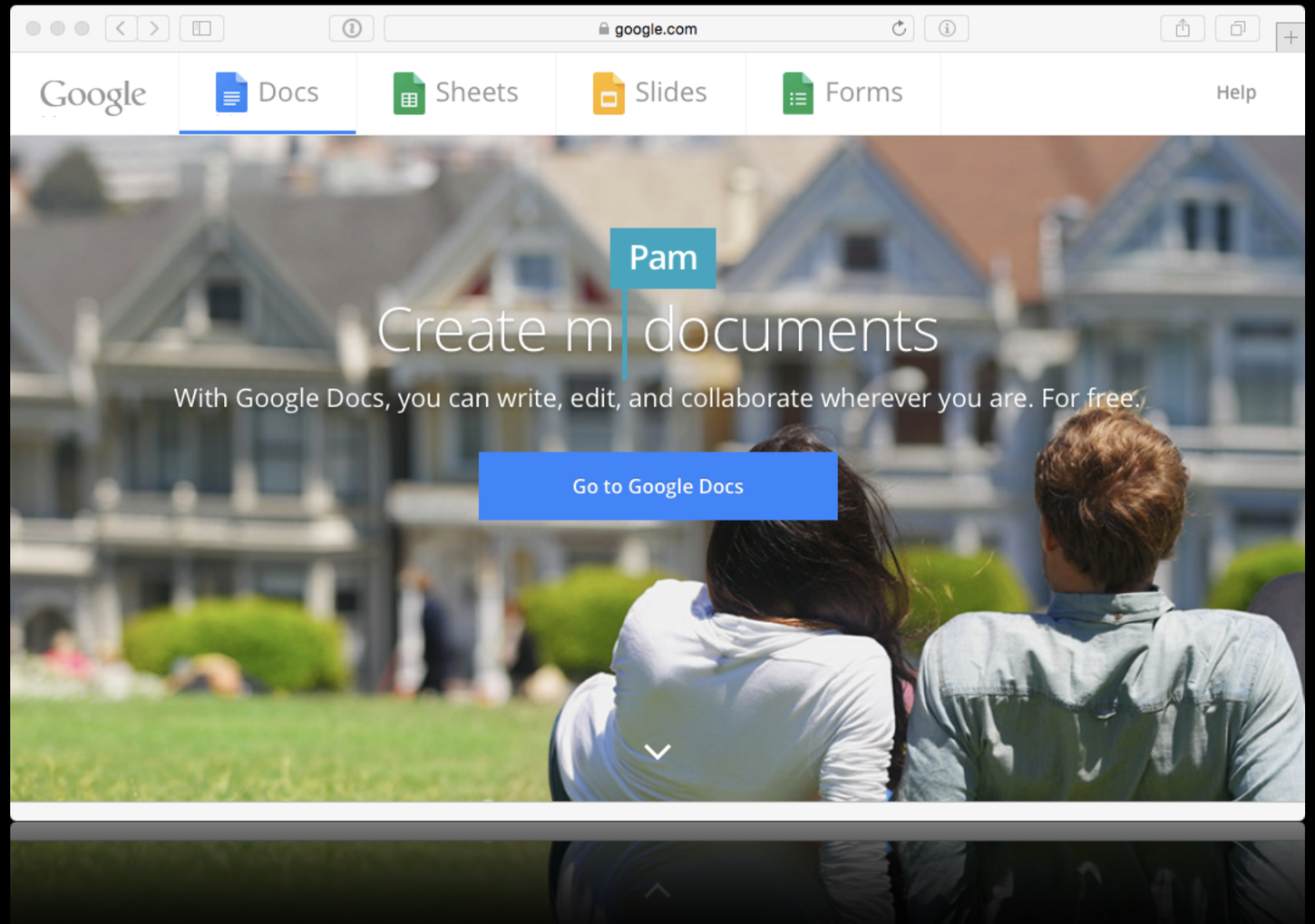
CSS filters

file API



local storage

service worker



1. Identify core functionality.
2. Make that functionality available using the simplest technology.
3. Enhance!

“This is too easy.”

“This is too hard.”

1. Identify core functionality.
2. Make that functionality available using the simplest technology.
3. Enhance!

NASA

www.nasa.gov

Jeremy

Missions | Galleries | NASA TV | Follow NASA | Downloads | About | NASA Audiences

Search

International Space Station | Journey to Mars | Earth | Technology | Aeronautics | Solar System and Beyond | History | Benefits to You

Space Station

Meals Ready to Eat: Expedition 44 Crew Members Sample Leafy Greens Grown on Space Station

Veggie Harvest: First Taste of History

NASA Events

Monday, Aug. 10: Russian Spacewalk at International Space Station, NASA TV, 9:45 a.m. EDT

Wednesday, Aug. 12: Watch the Skies! Perseid Meteor Shower Live UStream From NASA Marshall, 10 p.m. EDT

Calendar | Launch Schedule

NASA

NASA to Share the Universe with Tumblr Users

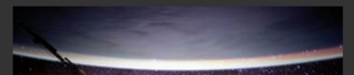
Tweets

Follow

Scott Kelly @StationCDRKelly 11h

Day 135. #MilkyWay. You're old, dusty, gassy and warped. But beautiful. Good night from @space_station! #YearInSpace pic.twitter.com/4q09y5CxGJ

Retweeted by NASA



NASA

Jeremy

www.nasa.gov

NASA

www.nasa.gov

Missions | Galleries | NASA TV | Follow NASA | Downloads | About | NASA Audiences | Search

International Space Station | Journey to Mars | Earth | Technology | Aeronautics | Solar System and Beyond | History | Benefits to You

NASA Events

Monday, Aug. 10: Russian Spacewalk at International Space Station, NASA TV, 9:45 a.m. EDT

Wednesday, Aug. 12: Watch the Skies! Perseid Meteor Shower Live UStream From NASA Marshall, 10 p.m. EDT

Elements | Network | Sources | Timeline | Profiles | Resources | Audits | Console | PageSpeed

View: Options: Preserve log Disable cache

Filter All XHR Script Style Images Media Fonts Documents WebSockets Other Hide data URLs

50.00 s | 1.7 min | 2.5 min | 3.3 min | 4.2 min | 5.0 min | 5.8 min | 6.7 min | 7.5 min | 8.3 min | 9.2 min | 10.0 min | 10.8 min | 11.7 min | 12.5 min | 13.3 min

Name	Method	Status	Type	Initiator	Size	Time	Timeline
vendor.js?nsos82	GET	200	script	(index):65	3.0 MB	2.77 s	
dscovrepicmoontransitfull.gif?itok=Hvw6IqCe	GET	200	gif	(index):1	1.1 MB	1.48 s	
share.svg	GET	200	svg+xml	vendor.js:78502	702 KB	1.56 s	
search.svg	GET	200	svg+xml	vendor.js:78502	702 KB	1.56 s	
15-167c.png?itok=mBLAOFqE	GET	200	png	(index):1	301 KB	985 ms	
mars_food_production.jpg_1.jpeg?itok=as49VeEB	GET	200	jpeg	(index):1	118 KB	545 ms	
foresee_trigger.js?v=R0357BB5A4D	GET	200	script	gateway.min.js:7	91.8 KB	30 ms	
addthis_widget.js?_=1439205190257	GET	200	script	vendor.js:9956	89.2 KB	29 ms	
nasa.js?nsos82	GET	200	script	(index):66	81.9 KB	567 ms	
volcno-plume-sarychev.jpg?itok=cOQDkd3k	GET	200	jpeg	(index):1	50.7 KB	162 ms	
sddefault.jpg	GET	200	jpeg	(index):1	50.5 KB	38 ms	
volcno-plume-sarychev.jpg?itok=ntSr3dcd	GET	200	jpeg	(index):1	40.4 KB	125 ms	
nasa.css?nsos82	GET	200	stylesheet	(index):46	38.3 KB	391 ms	
sddefault.jpg	GET	200	jpeg	(index):1	35.9 KB	34 ms	
widgets.js	GET	200	script	scald_twitter.js:8	35.1 KB	73 ms	
widgets.js?_=1439205190258	GET	200	script	vendor.js:9956	35.1 KB	34 ms	
hubble_friday_08072015.jpg?itok=kgMuZHOs	GET	200	jpeg	(index):1	28.3 KB	288 ms	
sddefault.jpg	GET	200	jpeg	(index):1	20.3 KB	23 ms	
soudelor.a2015219.0440.250m.jpg?itok=EBrRX8oL	GET	200	jpeg	(index):1	19.2 KB	152 ms	
pluto-and-charon-01.jpg?itok=9o-ZHOaQ	GET	200	jpeg	(index):1	13.8 KB	117 ms	
7XUFZ5tqS-tD6OamInITceHuglUR2dhRxWD-g_ehMMF.woff2	GET	200	font	vendor.js:6284	11.8 KB	14 ms	

87 / 139 requests | 6.7 MB / 7.3 MB transferred | Finish: 12.4 min | DOMContentLoaded: 4.04 s | Load: 7.36 s

Console | Search | Emulation | Rendering

"If you build pages with the idea that parts other than html are optional, you will create a better and stronger web page."

—gov.uk
Government Service Design Manual

developer convenience

user needs

“Ninety percent of everything is crud.”

—Theodore Sturgeon

The tragedy of the commons

640
800
1024

216 colours

Netscape 4

IE 6

Times New Roman

Verdana

Arial

Windows XP

Android 2.x

and [illegible] life.

With [illegible] 2001, you're [illegible] in the 21st century.
with [illegible] you're trying to [illegible] now.

EVERYTHING IS AMAZING
AND NOBODY'S HAPPY
quickmeme.com

“Any sufficiently advanced technology is indistinguishable from magic.”

—Arthur C. Clarke

HTTP

URLs

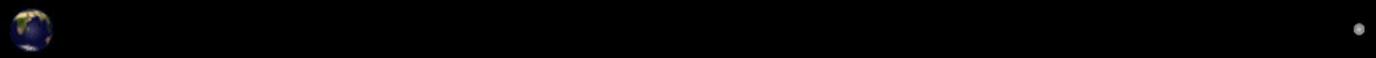
HTML

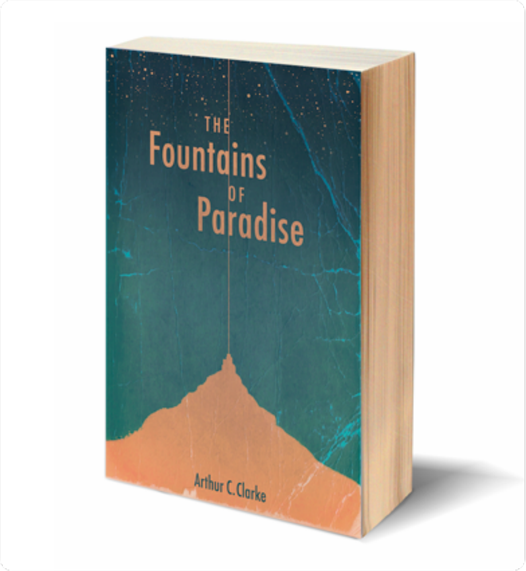
WWW

URLs

“Cool URIs don’t change.”

—Tim Berners-Lee




THE
Fountains
OF
Paradise
Arthur C. Clarke

RESILIENCE