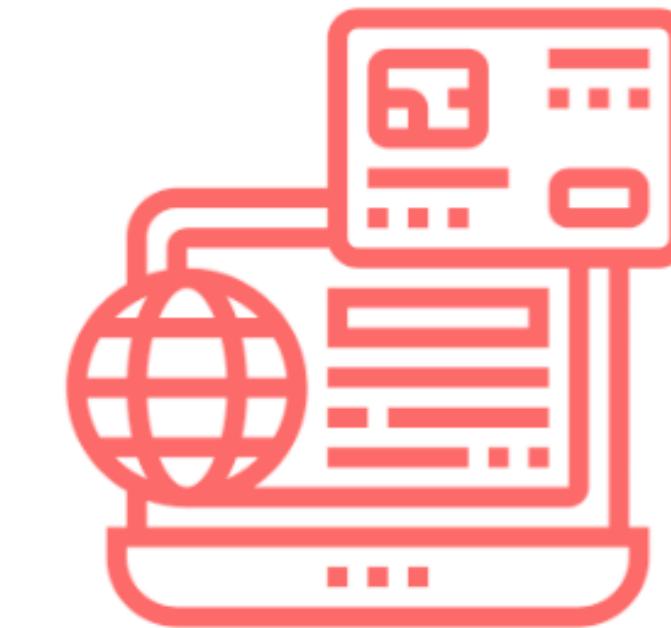




# The Internet & the Web

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The Internet & the  
Web



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The nature of the Internet  
& the web: fundamental  
characteristics

# Agenda

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Code

The Internet

The Web

# CODE is King (or Queen)

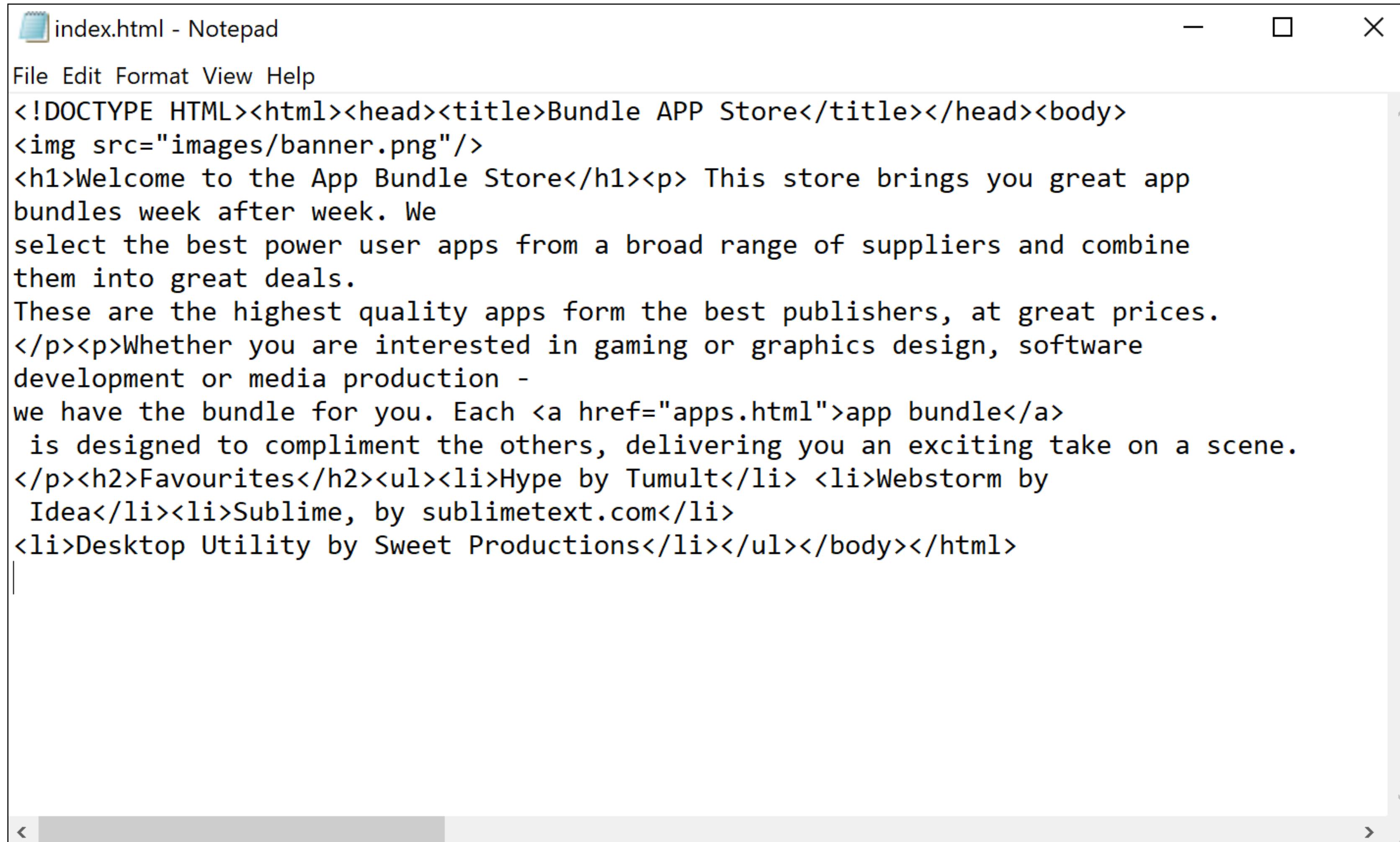
---

- The language of the Web:
  - Hypertext Markup Language - HTML
  - Cascading Style Sheets - CSS
- Build over successive labs a simple web sites from scratch.
- Focus on the structure and meaning of:

CODE *- html, css*



# The Code in a Conventional Editor



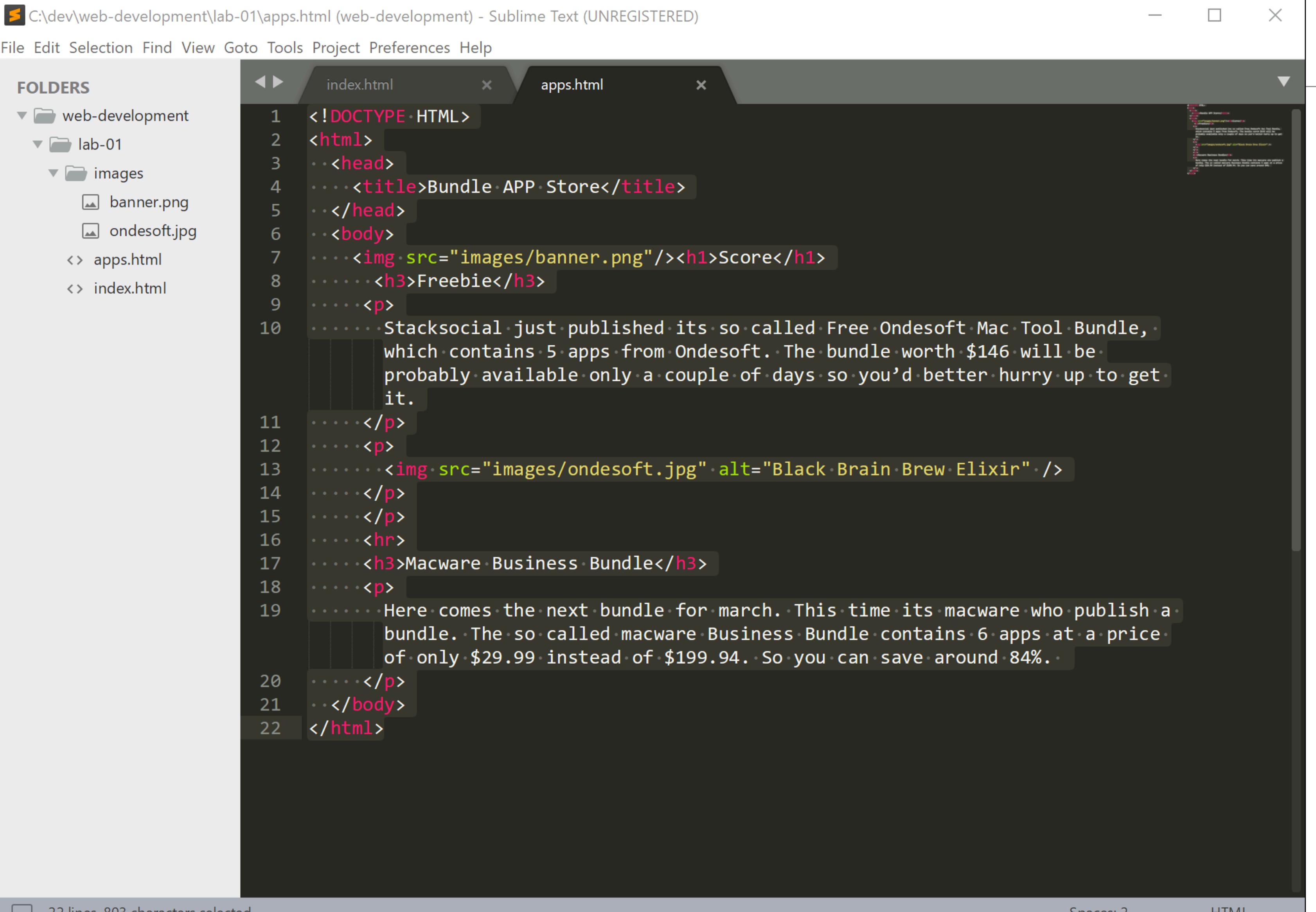
A screenshot of a Windows Notepad window titled "index.html - Notepad". The window contains the following HTML code:

```
<!DOCTYPE HTML><html><head><title>Bundle APP Store</title></head><body>

<h1>Welcome to the App Bundle Store</h1><p> This store brings you great app
bundles week after week. We
select the best power user apps from a broad range of suppliers and combine
them into great deals.
These are the highest quality apps form the best publishers, at great prices.
</p><p>Whether you are interested in gaming or graphics design, software
development or media production -
we have the bundle for you. Each <a href="apps.html">app bundle</a>
is designed to compliment the others, delivering you an exciting take on a scene.
</p><h2>Favourites</h2><ul><li>Hype by Tumult</li> <li>Webstorm by
Idea</li><li>Sublime, by sublimetext.com</li>
<li>Desktop Utility by Sweet Productions</li></ul></body></html>
```

- The actual document text - but poorly structured (indented)

# The Code in a Programmers Editor



A screenshot of the Sublime Text code editor showing an HTML file named 'apps.html'. The file path is 'C:\dev\web-development\lab-01\apps.html' and it is open in the 'web-development' project. The code is well-indented and syntax-highlighted, showing HTML tags like <html>, <head>, <title>, <body>, <img>, <h1>, <h3>, and <p>. The code includes a title 'Bundle APP Store', an image of 'banner.png', a heading 'Freebie', and two paragraphs about Macware Business Bundles. The editor's status bar at the bottom shows '22 lines, 803 characters selected' and 'Spaces: 2'.

```
<!DOCTYPE HTML>
<html>
<head>
<title>Bundle APP Store</title>
</head>
<body>
<h1>Score</h1>
<h3>Freebie</h3>
<p>Stacksocial just published its so called Free Ondesoft Mac Tool Bundle, which contains 5 apps from Ondesoft. The bundle worth $146 will be probably available only a couple of days so you'd better hurry up to get it.</p>
<p></p>
<hr>
<h3>Macware Business Bundle</h3>
<p>Here comes the next bundle for march. This time its macware who publish a bundle. The so called macware Business Bundle contains 6 apps at a price of only $29.99 instead of $199.94. So you can save around 84%.</p>
</body>
</html>
```

- Same document - pleasingly indented and syntax highlighted

# Agenda

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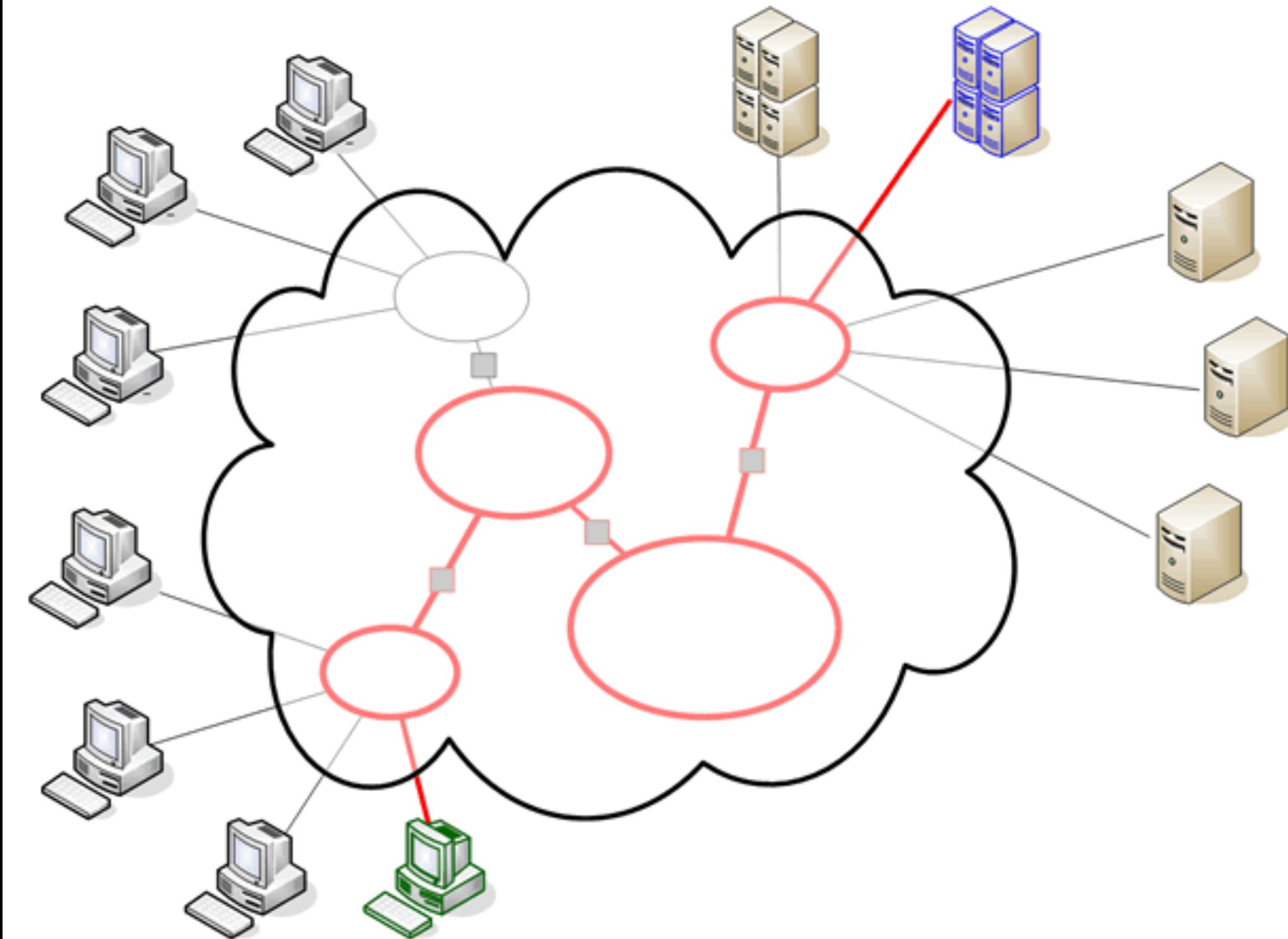
Code

The Internet

The Web

# The Internet

---



# The Internet

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<http://www.internetlivestats.com/>

---



**4,447,305,259**

Internet Users in the world



**1,742,537,939**

Total number of Websites



**99,044,261,662**

Emails sent [today](#)



**2,650,424,239**

Google searches [today](#)



**2,530,802**

Blog posts written [today](#)



**292,060,286**

Tweets sent [today](#)



**2,726,919,878**

Videos viewed [today](#)  
on YouTube



**31,984,522**

Photos uploaded [today](#)  
on Instagram



**54,399,447**

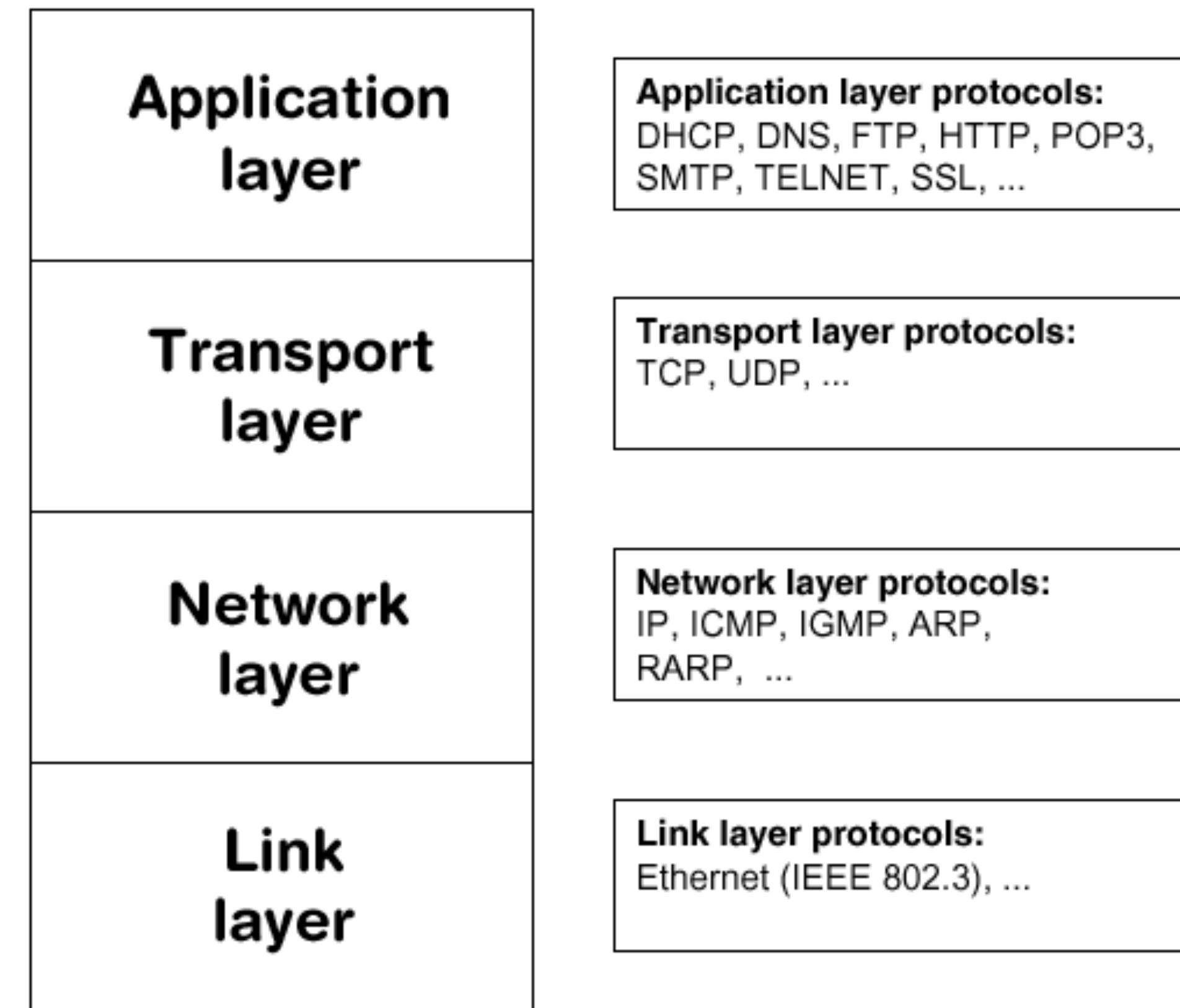
Tumblr posts [today](#)

# Underlying nature of the Internet - Protocols & Standards

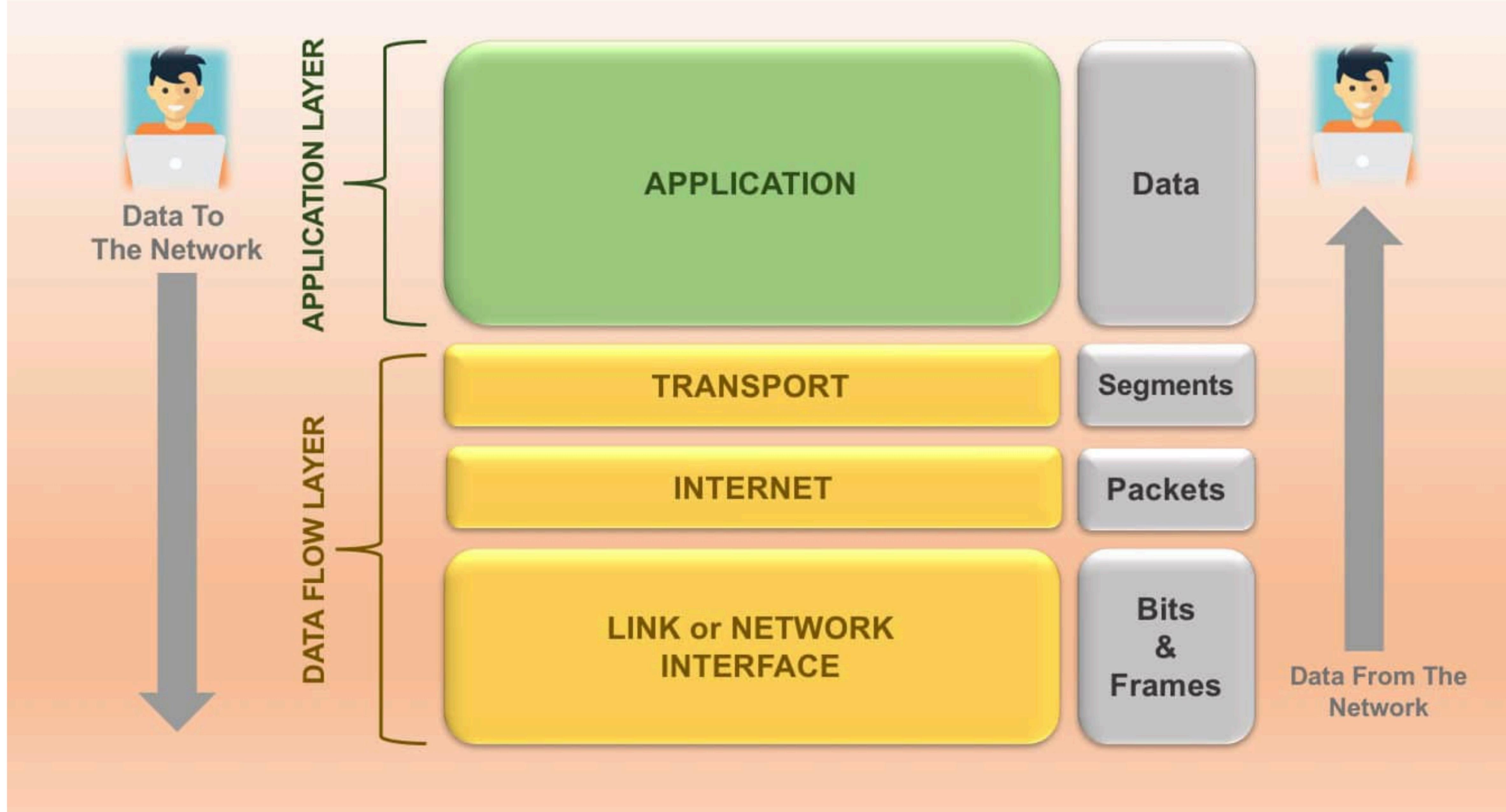
---

“The irony is that in all its various guises -- commerce, research, and surfing -- the Web is already so much a part of our lives that familiarity has clouded our perception of the Web itself.”

[Tim Berners-Lee](#) in  
Weaving the Web



You  
are  
here!  
HTTP



# Agenda

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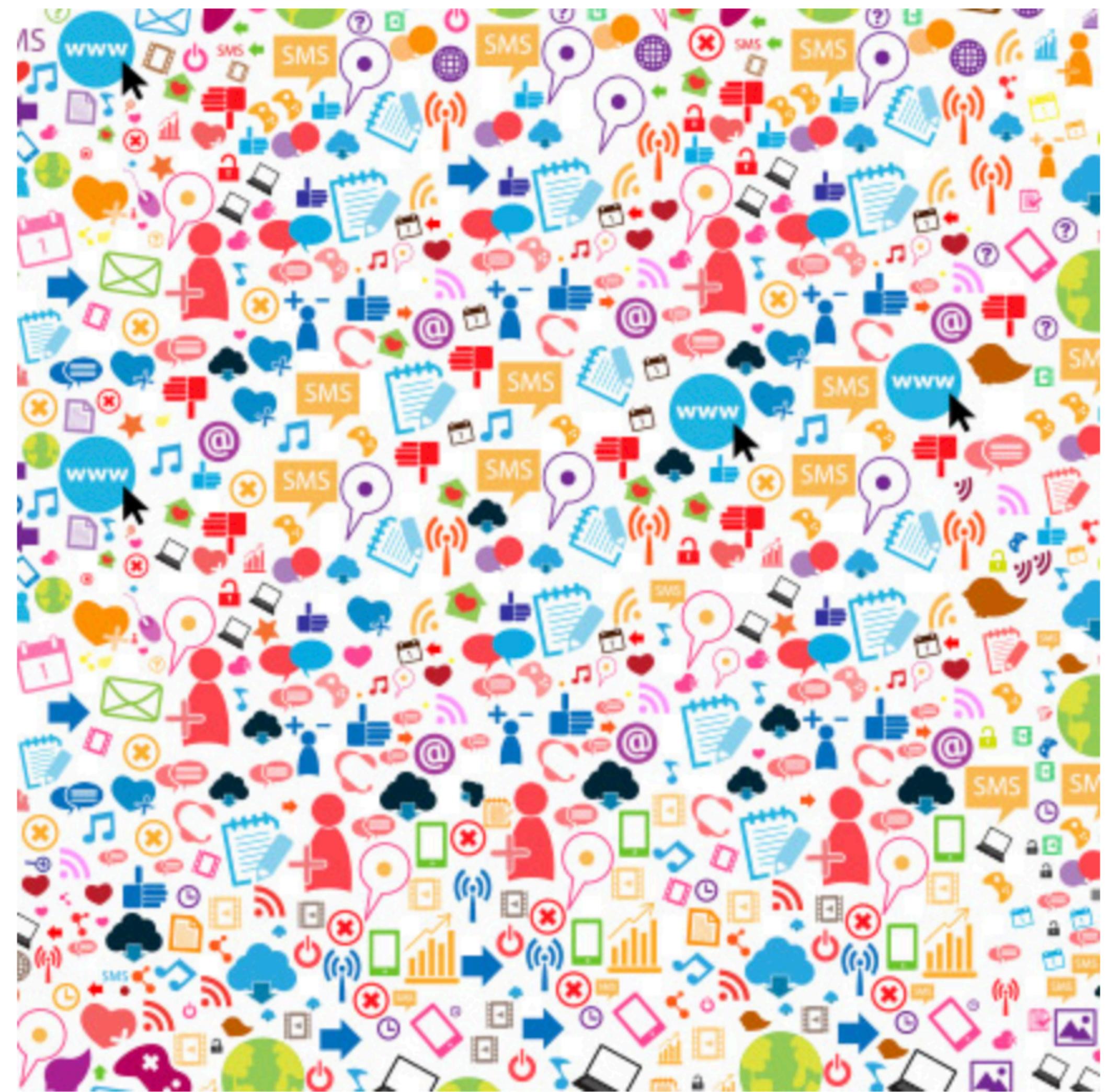
Code

The Internet

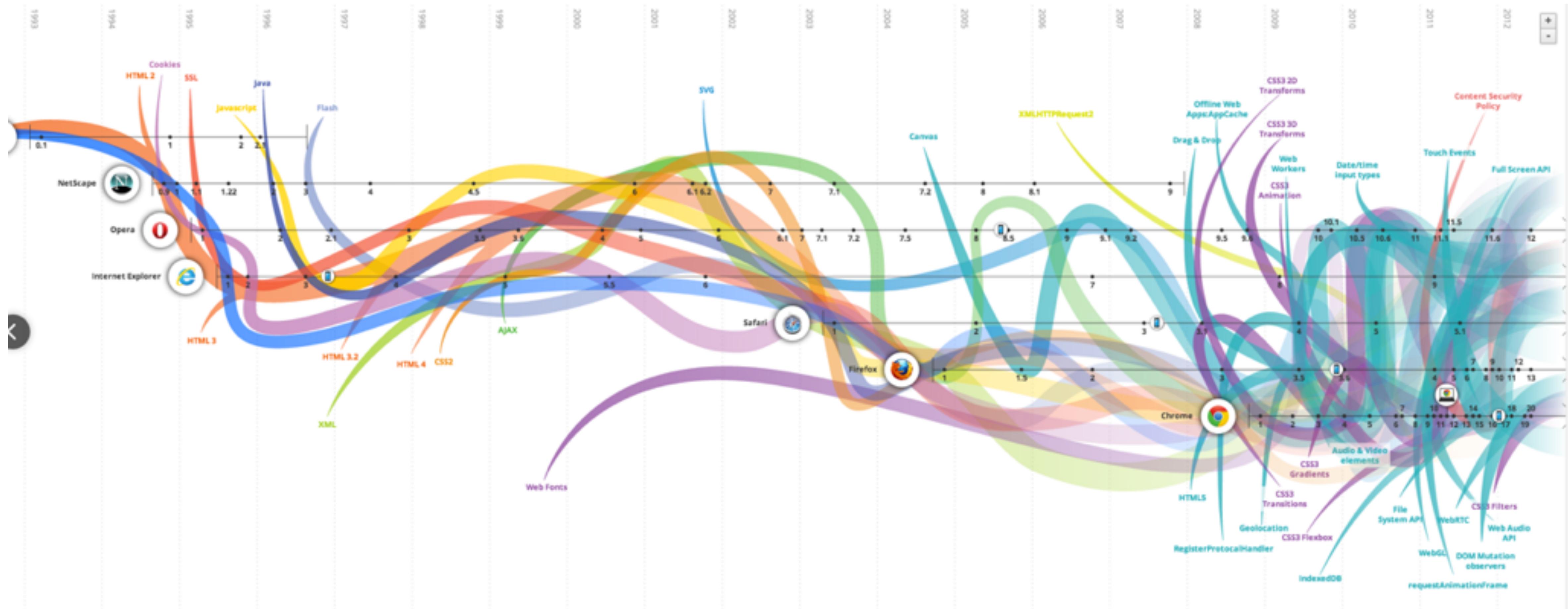
The Web

# World Wide Web

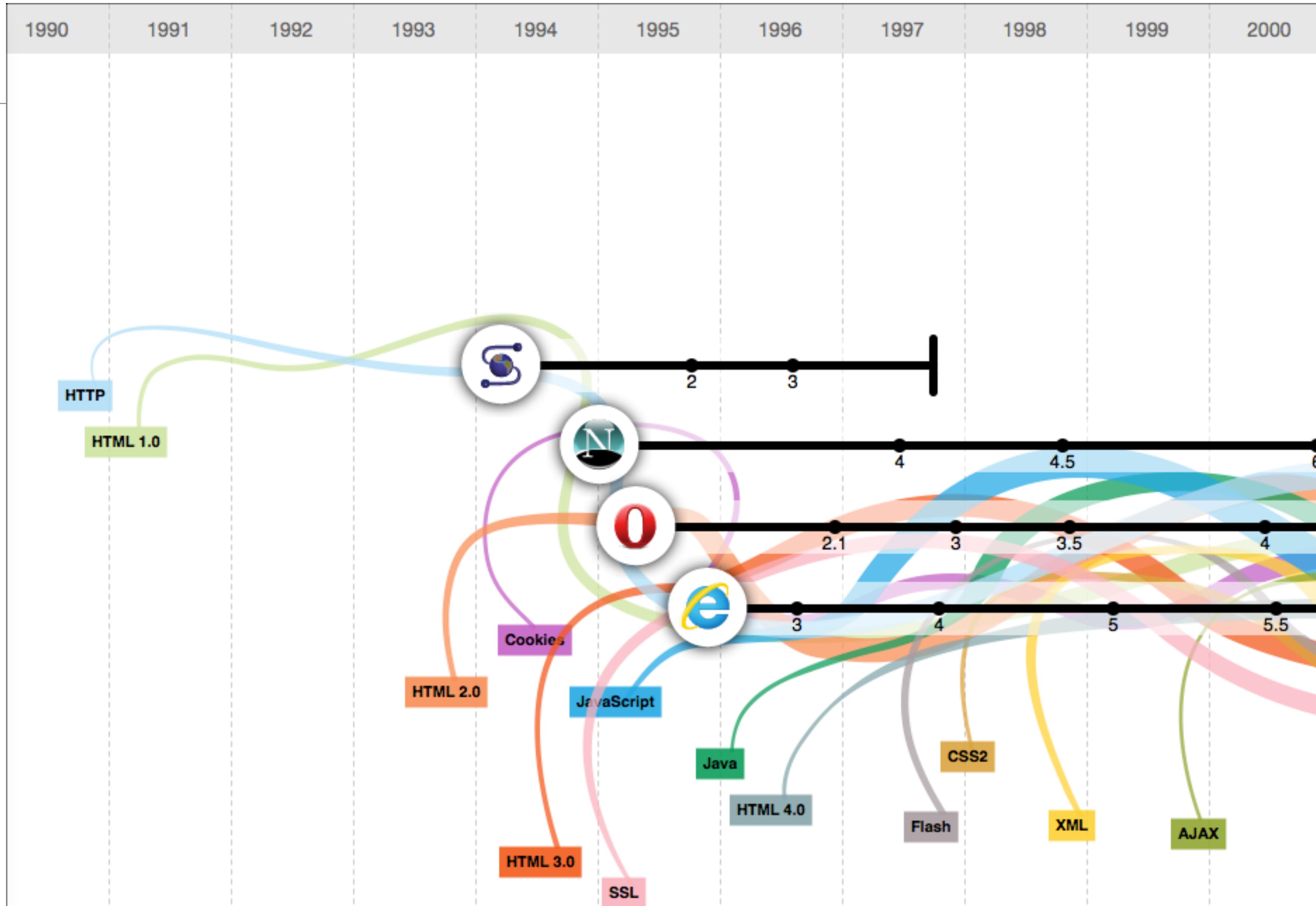
- The world wide web is a huge globally distributed collection of information and data that can be accessed via the internet with the help of http: Hypertext Transfer Protocol
  - WWW has made the Internet the most important communication medium of our days.
  - Thanks to the simple to use graphical interface – The Web Browser – the WWW provides everyone with simple access to information



# Evolution of the Web - 1990-2012

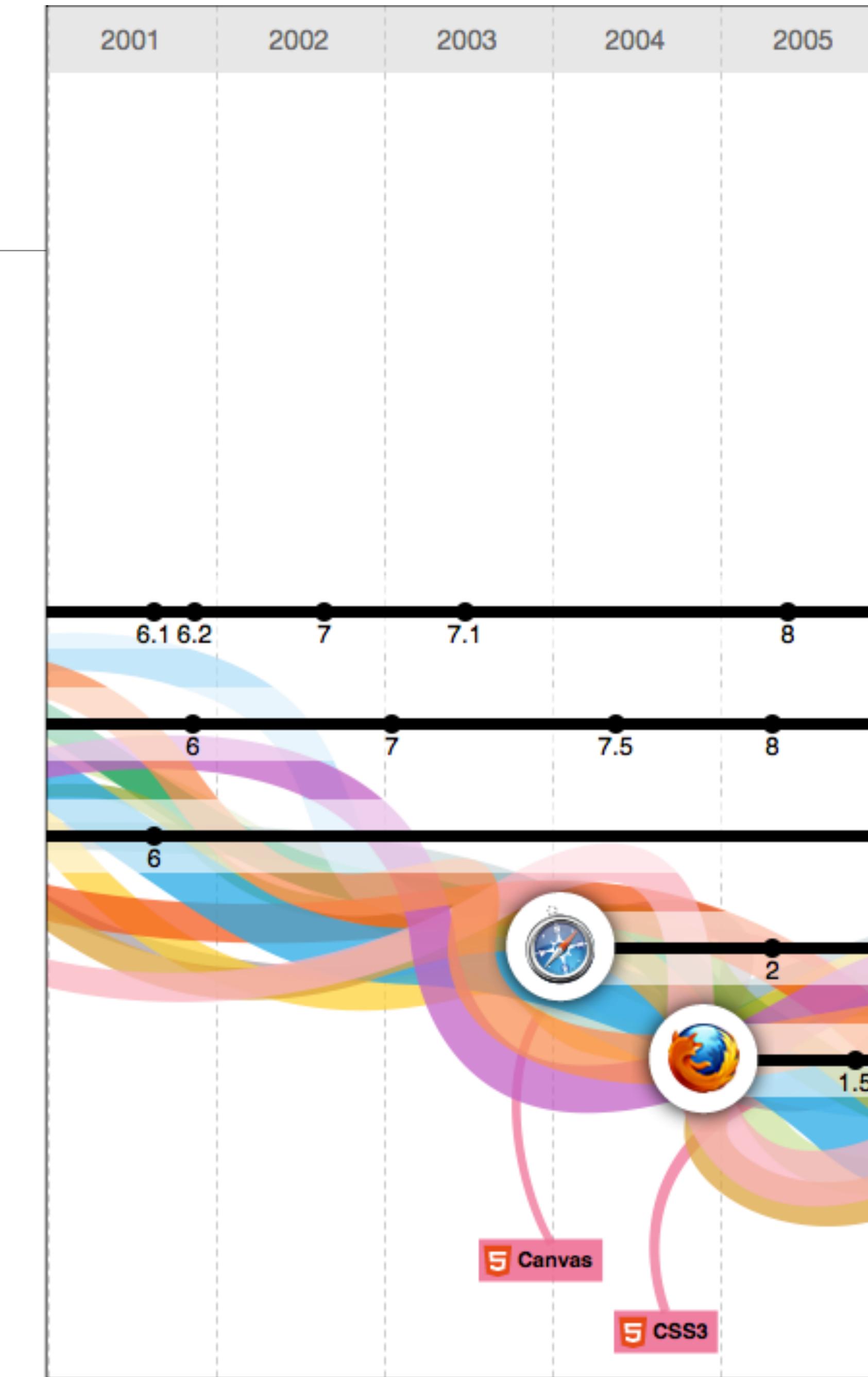
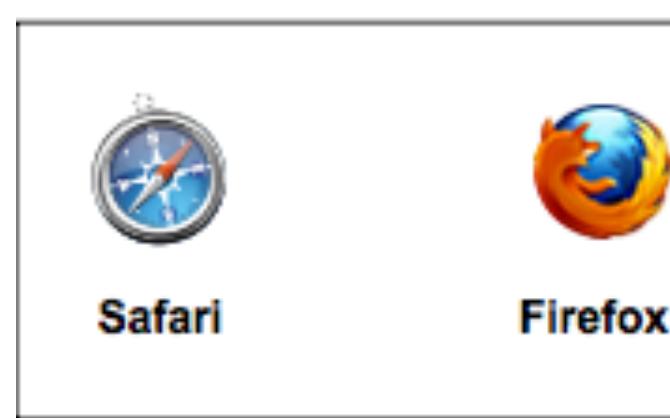


# Evolution of the Web - 1990-2000

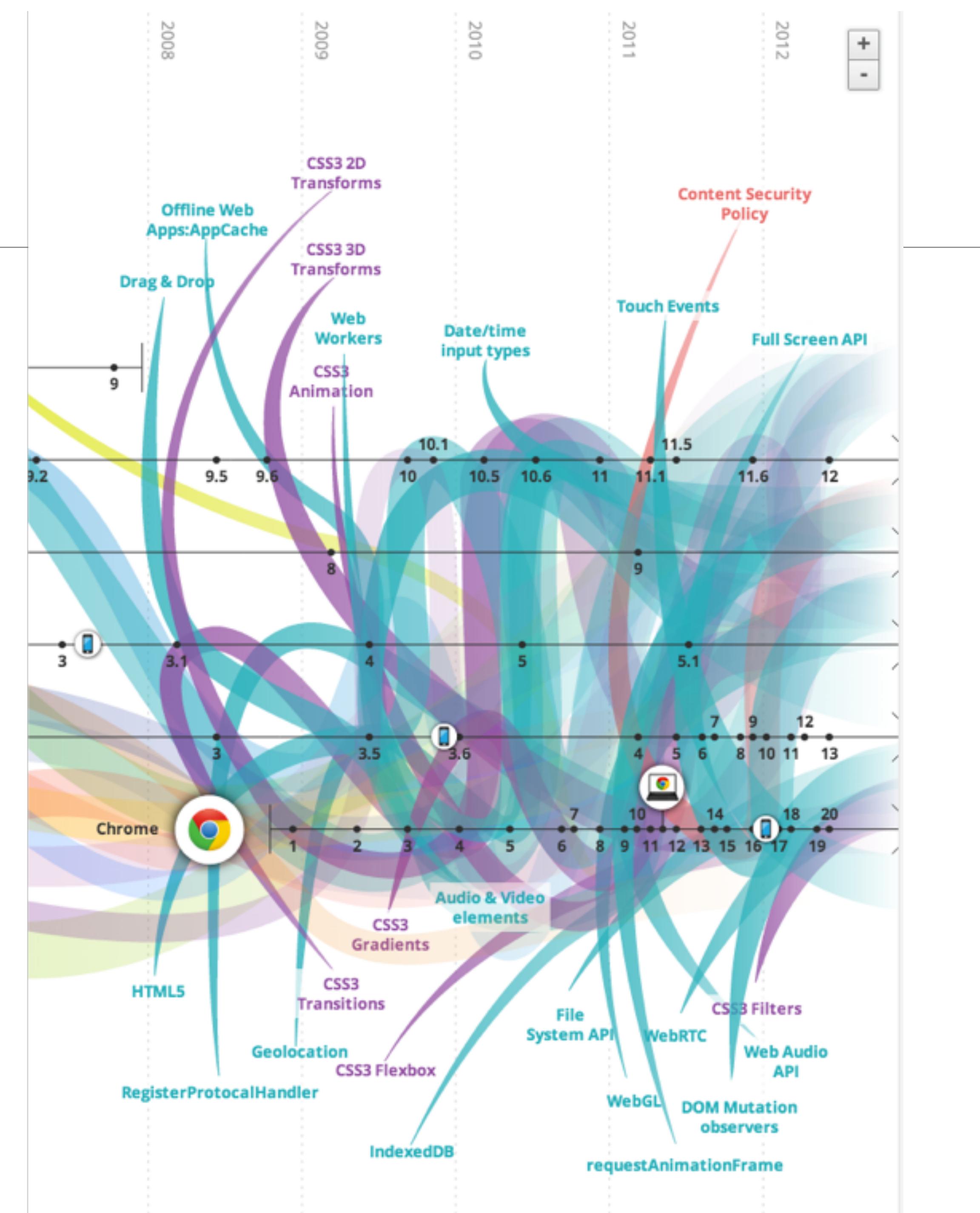
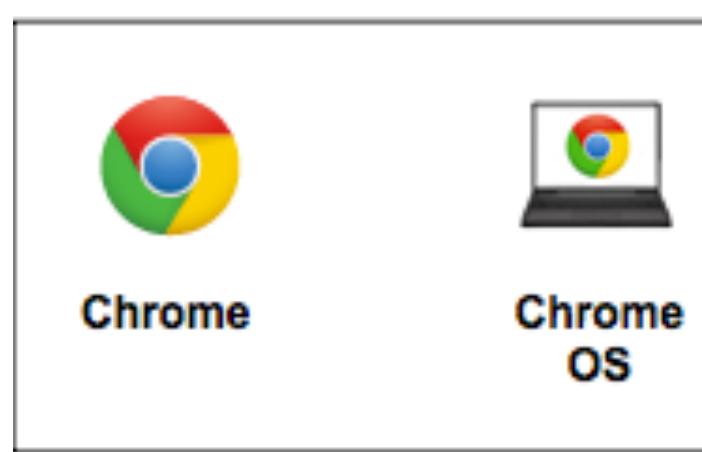


# 2001-2005

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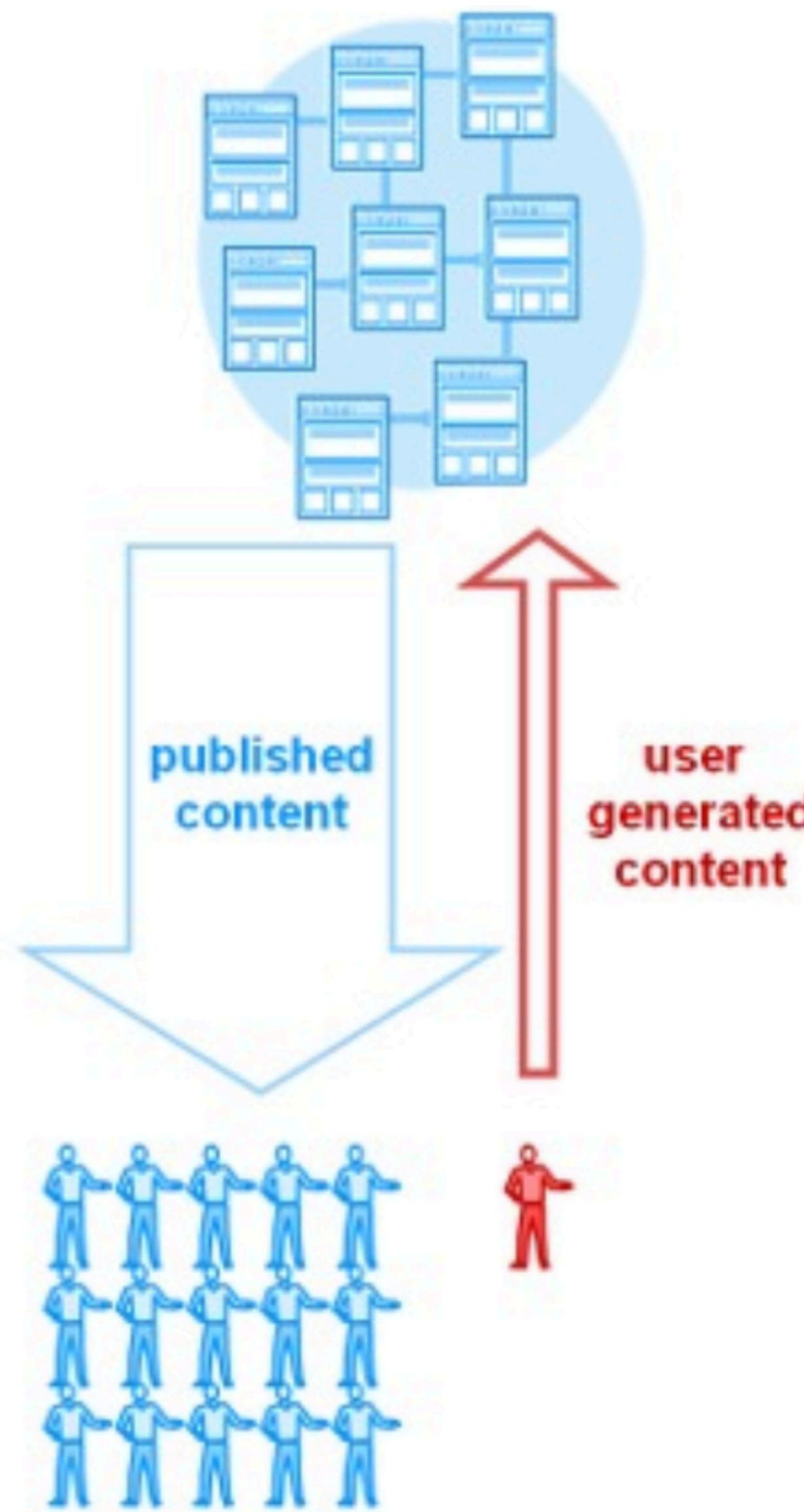


# 2006-2012



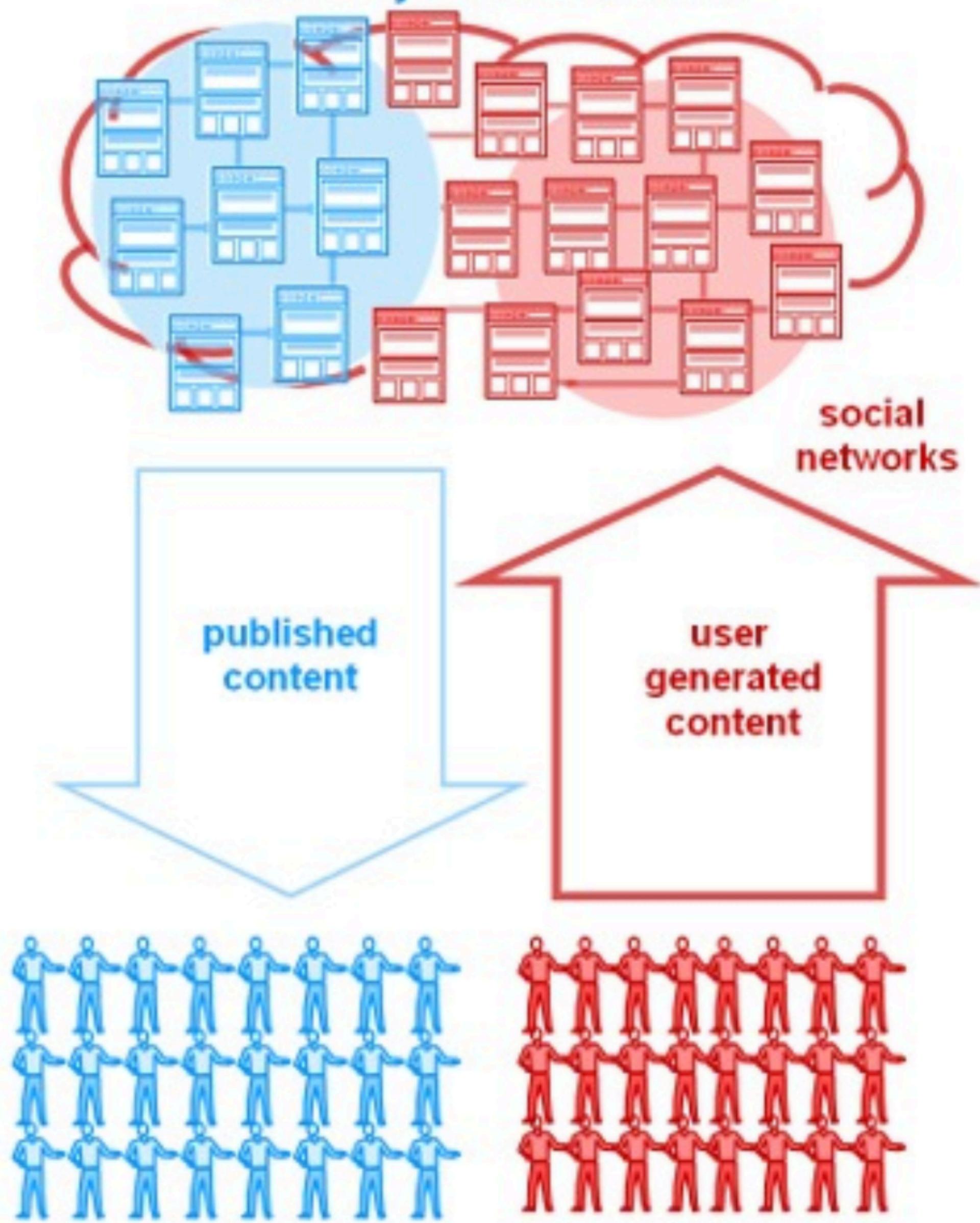
# Web 1.0

'the mostly read-only Web'

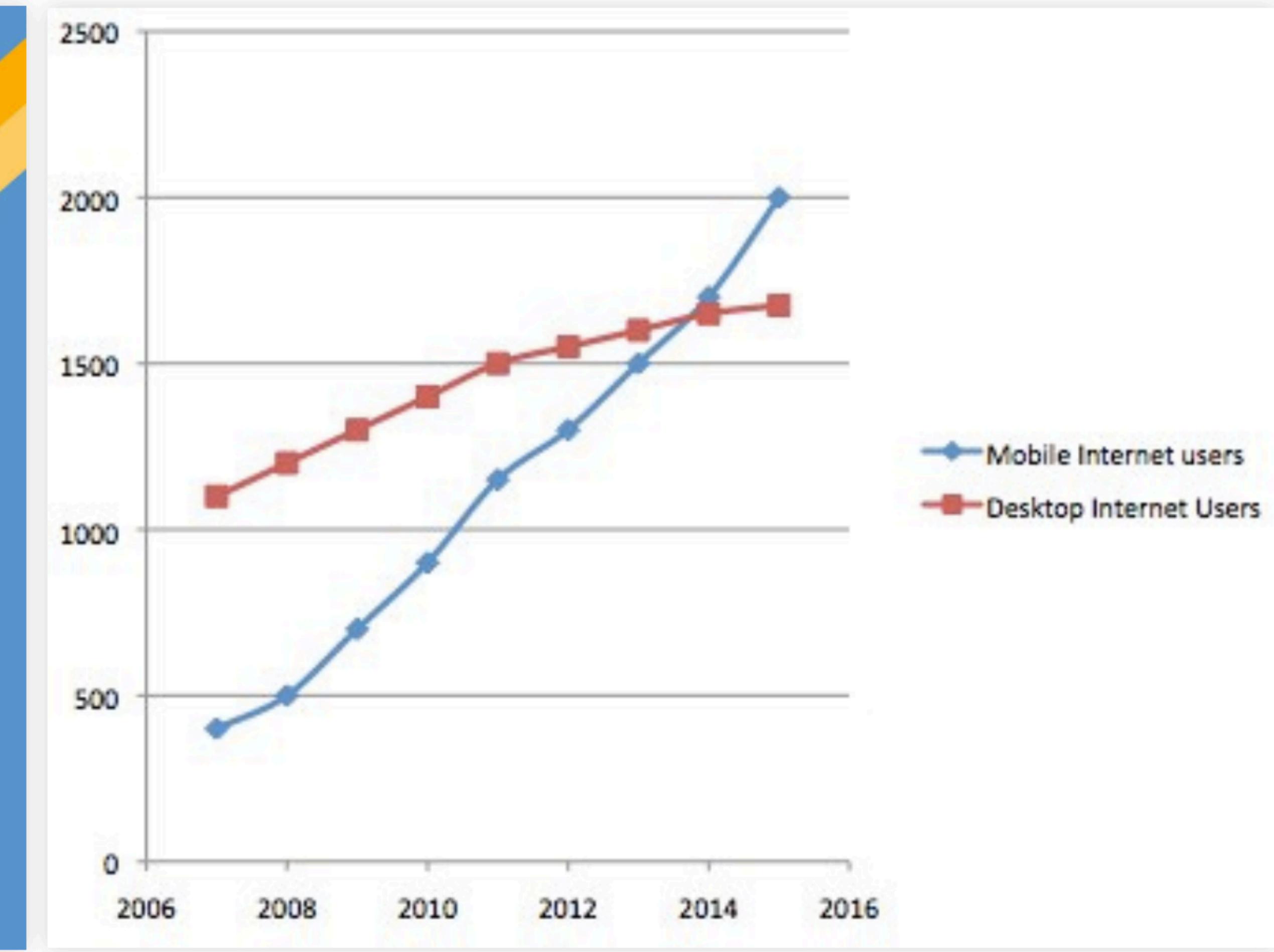


# Web 2.0

'the widely read-write Web'

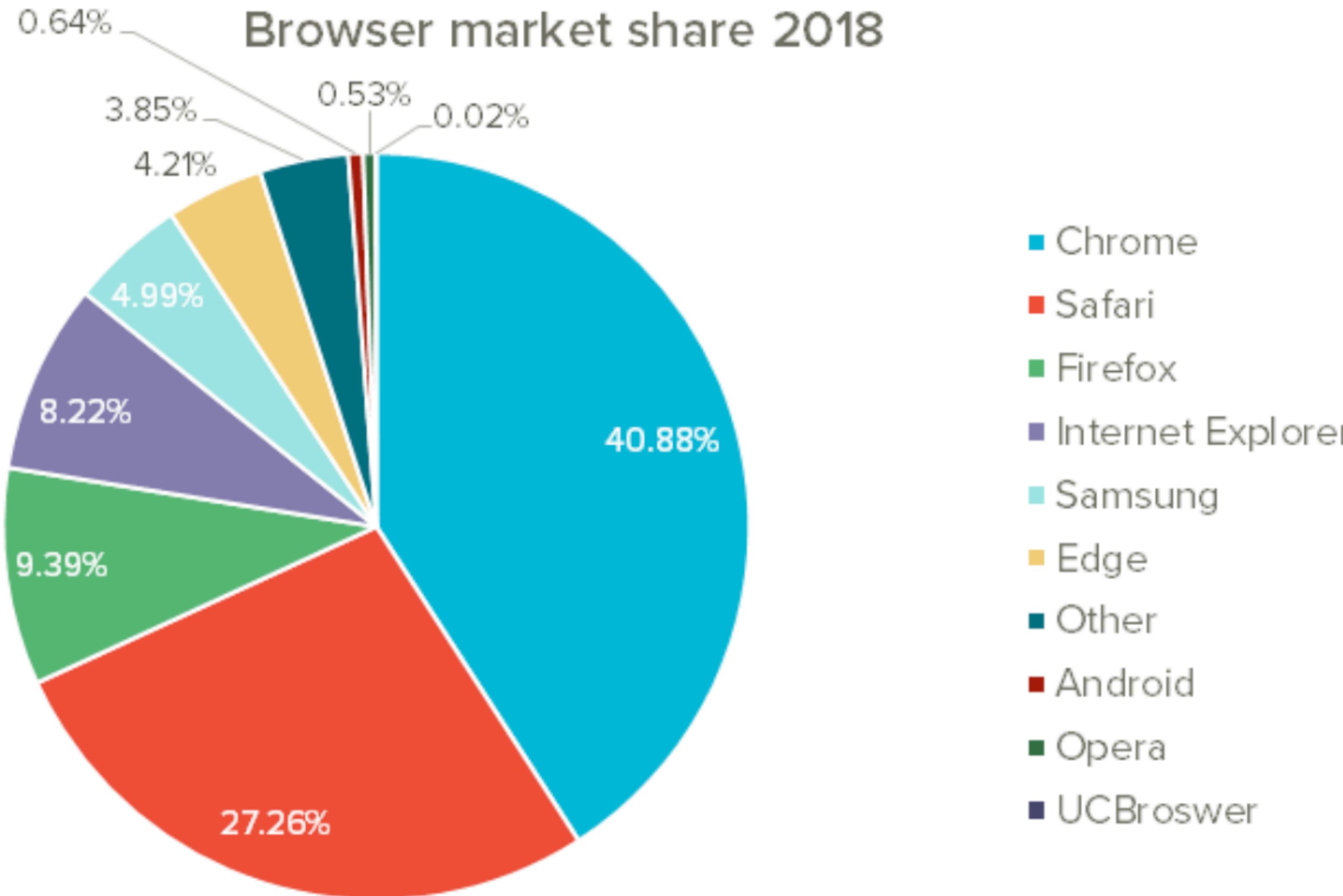


# The Mobile Revolution

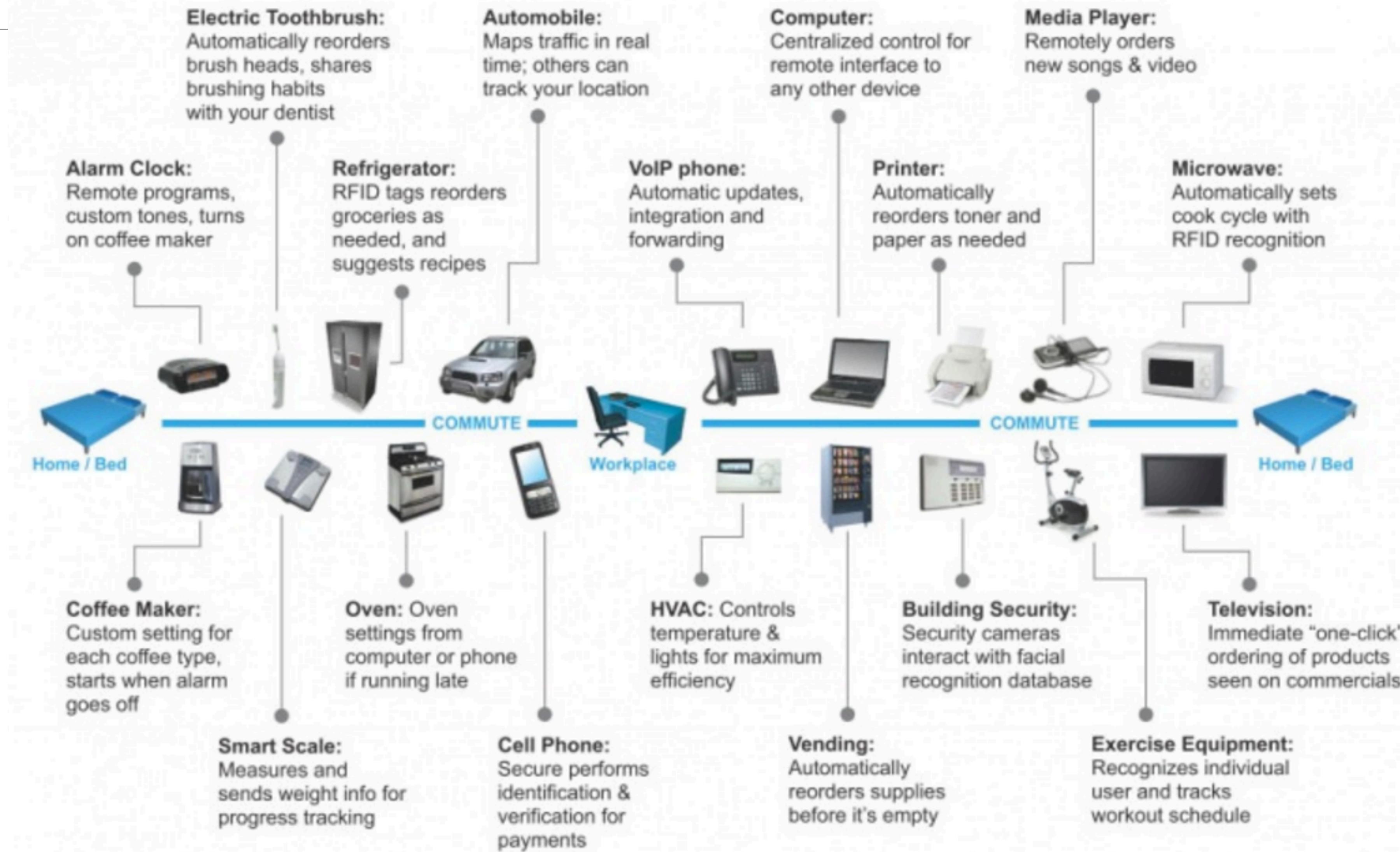


- Mobile usage of the web exceeds desktop usage

# Web Browser Wars

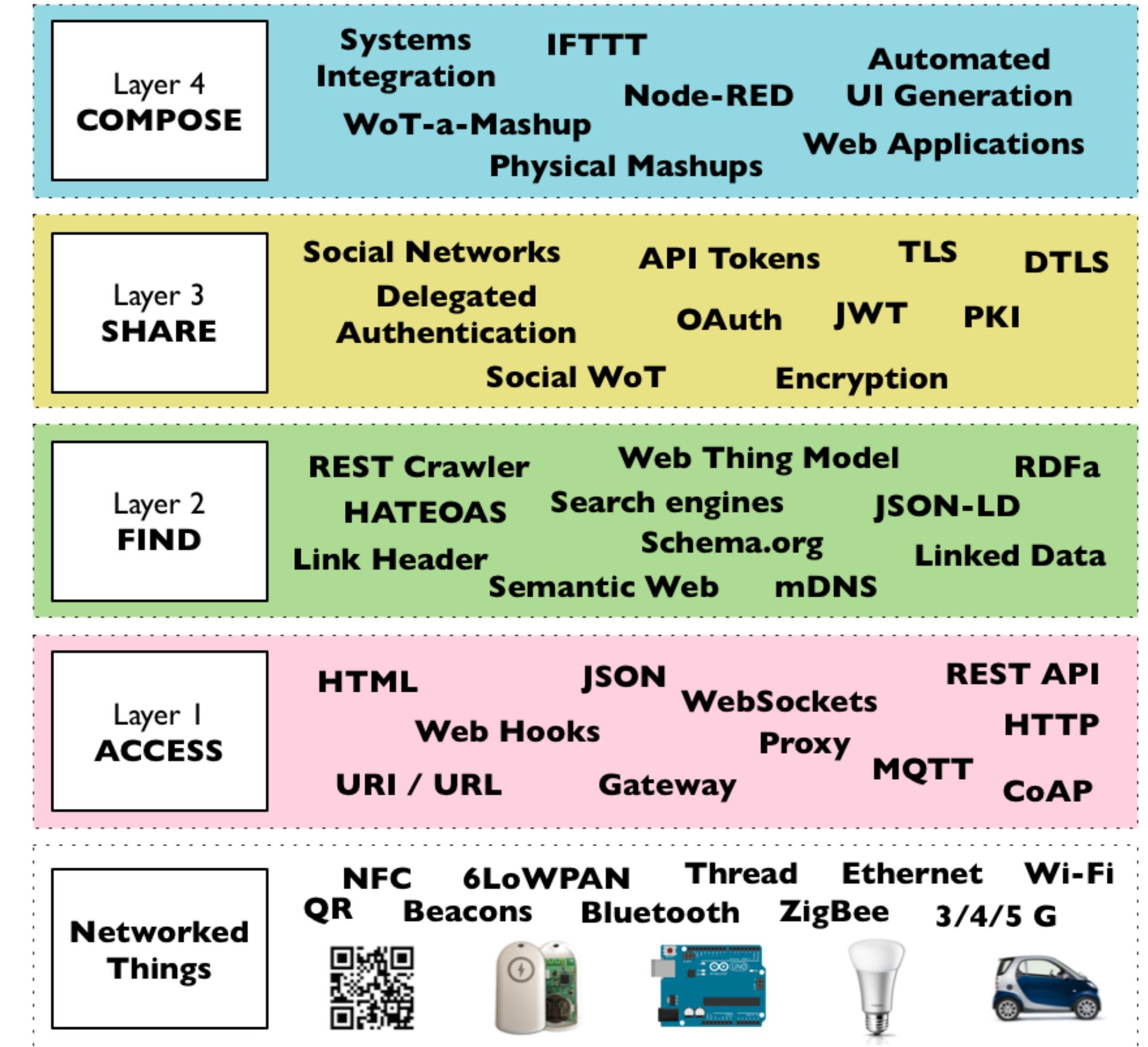


# Devices: Things!



# The Web

- Protocols & Standards
  - Protocol : agreed vocabulary to enable two programs to communicate
  - Standard: an agreed definition of the structure and meaning of a document
- Web Protocol
  - Hyper Text Transfer Protocol - HTTP
- Web Standard
  - Hyper Text Markup Language – HTML
  - Cascading Style Sheets - CSS
- Web Servers and Web Browsers use HTTP to exchange HTML documents

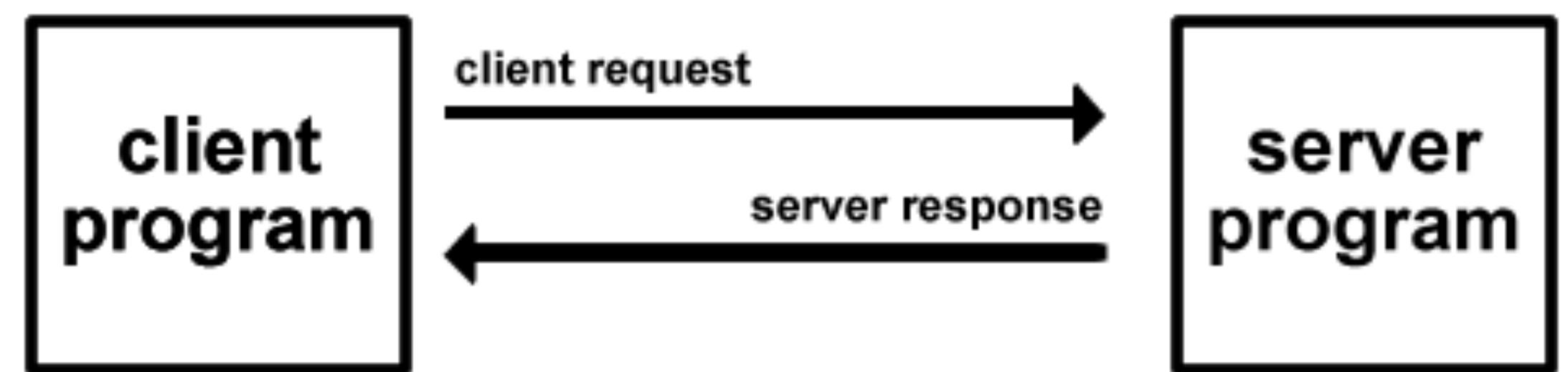


Source: Building the Web of Things: book.webofthings.io  
Creative Commons Attribution 4.0

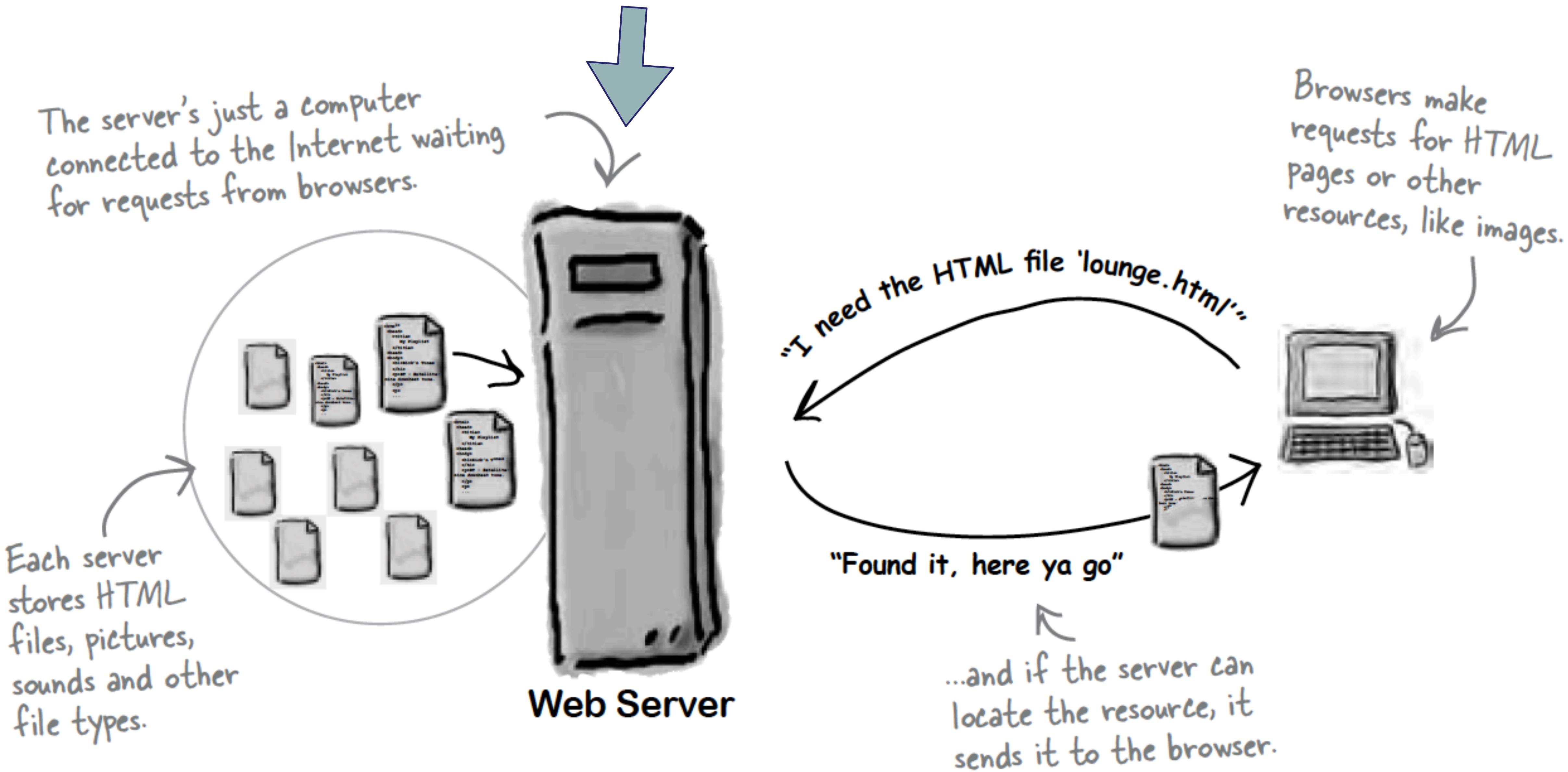
# Clients and Servers

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- Client/Server Computing:
  - The interaction between two programs when they communicate across a network.
  - A program at one site sends a request to a program at another site and awaits a response.
  - The requesting program is called a client; the program satisfying the request is called the server.



# Role of Server



# Role of Client

