

# EVOLUTION OF THE WEB

Jelena Jovanović

Email: [jeljov@gmail.com](mailto:jeljov@gmail.com)

Web: <http://jelenajovanovic.net>

# Web 1.0

- The initial building of the Web
  - Based on posting printed media (books, news,...) online
- Key areas of interest centered on:
  - protocols such as HTTP,
  - open standard markup languages, such as HTML and XML,
  - the first Web browsers,
  - Web development platforms and tools,
  - Web-centric software languages such as Java and Javascript,
  - the creation of first Web sites,
  - the commercialization of the Web and Web business models, ...

# Web 1.0

- 1999-2001 - *dotcom boom*
  - Huge investments in *dot-com startups*
  - Entrepreneurs, many of whom without well-founded and well-thought of ideas, use the popularity of the *dot-com* hype to get money from the investors
- In 2001, the balloon bursts and starts a period of disillusion and total disappointment in the Web and its prospects

# Web 2.0

- The term became popular after O'Reilly Media Web 2.0 conference in 2004
- Web 2.0 refers to:
  - the changes in the ways people utilize the Web,  
NOT to a new wave of technology
  - the 2<sup>nd</sup> generation of Internet-based services that emphasize online **collaboration** and **sharing** among users

The Internet has opened almost limitless possibilities for  
contributing, collaborating, & connecting

# Web 2.0

Read/Write Web



*“I designed [Web] for a social effect – to help people work together – and not as a technical toy. The ultimate goal of the Web is to support and improve our web-like existence in the world.”*

Sir Tim Berners-Lee, Weaving The Web

*“The real world is about distances  
keeping people apart.*

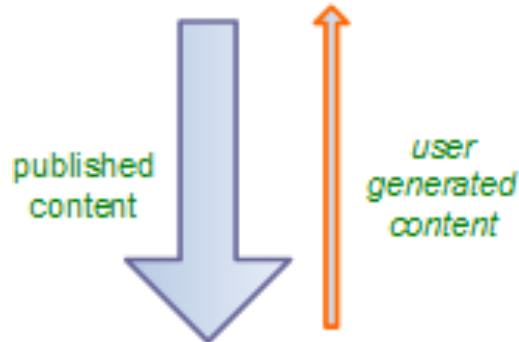
*The Web is about shared interests  
bringing people together.”*

*David Weinberger*

# Web 1.0

"the mostly read-only Web"

250,000 sites



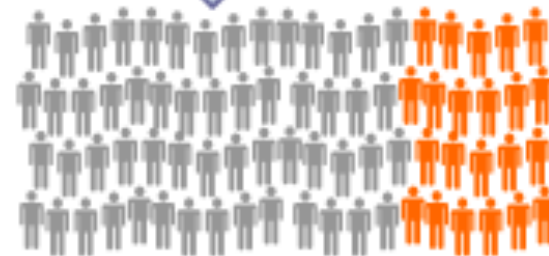
45 million global users

**1996**

# Web 2.0

"the wildly read-write Web"

80,000,000 sites



1 billion+ global users

**2006**



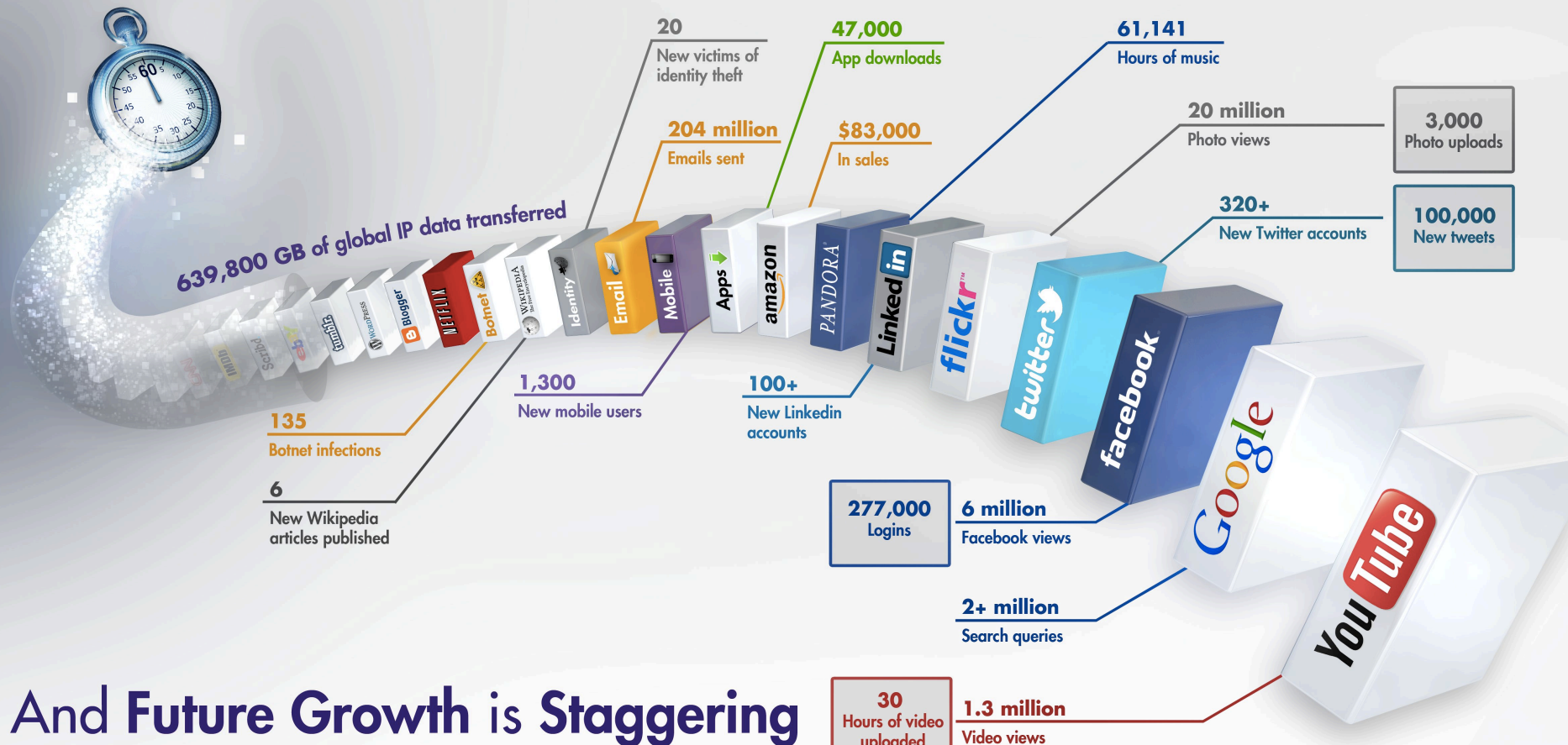
# Web 2.0

- The major Web 2.0 themes include:
  - social networking,
  - social bookmarking,
  - media sharing (social media),
  - folksonomies,
  - lightweight collaboration (e.g., wikis),
  - mash-ups, ...

# Web 1.0 vs. Web 2.0

<b>Web 1.0</b>	<b>Web 2.0</b>
Mostly read only Web	Widely read-write Web
Focused on companies	Focused on communities
Home pages	Blogs
CMS	Wiki
Owning content	Sharing content
Portals	RSS feeds
Directories (taxonomy)	Tagging (folksonomy)
Britannica Online	Wikipedia
Advertising	Word of mouth

# What Happens in an Internet Minute?



## And Future Growth is Staggering



# Web 2.0

- The emerging questions:
  - What to do with this massive amount of data that the Web made available?
    - How to integrate and interpret it?
    - How to make meaningful use of it?
  - Will we still directly surf the Web or will machines do that and provide us with direct answers/reports/offers?
  - Will the Web look the same for me as it does for everyone else? (personalization)
  - What technology will become commonplace? Obsolete?

# Web 3.0

- A phrase coined by John Markoff of the New York Times in 2006
- Refers to the 3<sup>rd</sup> generation of Internet-based services that collectively comprise what might be called the **Intelligent Web**
- Addresses the problem of **abundance of data and scarcity of meaning**

# Web 3.0

- The major determinants:
  - Widespread use of AI-based technologies
    - Natural language processing,
    - Machine learning,
    - Rules-based inferences,
    - Personal agents,
    - Web mining,
    - ...
  - Web of Data – more effective use of the data on the Web
  - Personalized Web

# Web 3.0

WWW

=

World Wide Web

ili

Web Wide World

Nova Spivack

# Web 2.0 vs. Web 3.0

## Web 2.0

Widely read-write web

Focused on communities

Blogs

Sharing content

XML

Web applications

Relational databases

Tagging (folksonomy)

## Web 3.0

Portable personal web

Focused on individual

Activity Streams

Integrating dynamic content

JSON, RDF

Widgets, drag & drop mash-ups

NoSQL databases

User behavior ( 'me-onomy' )

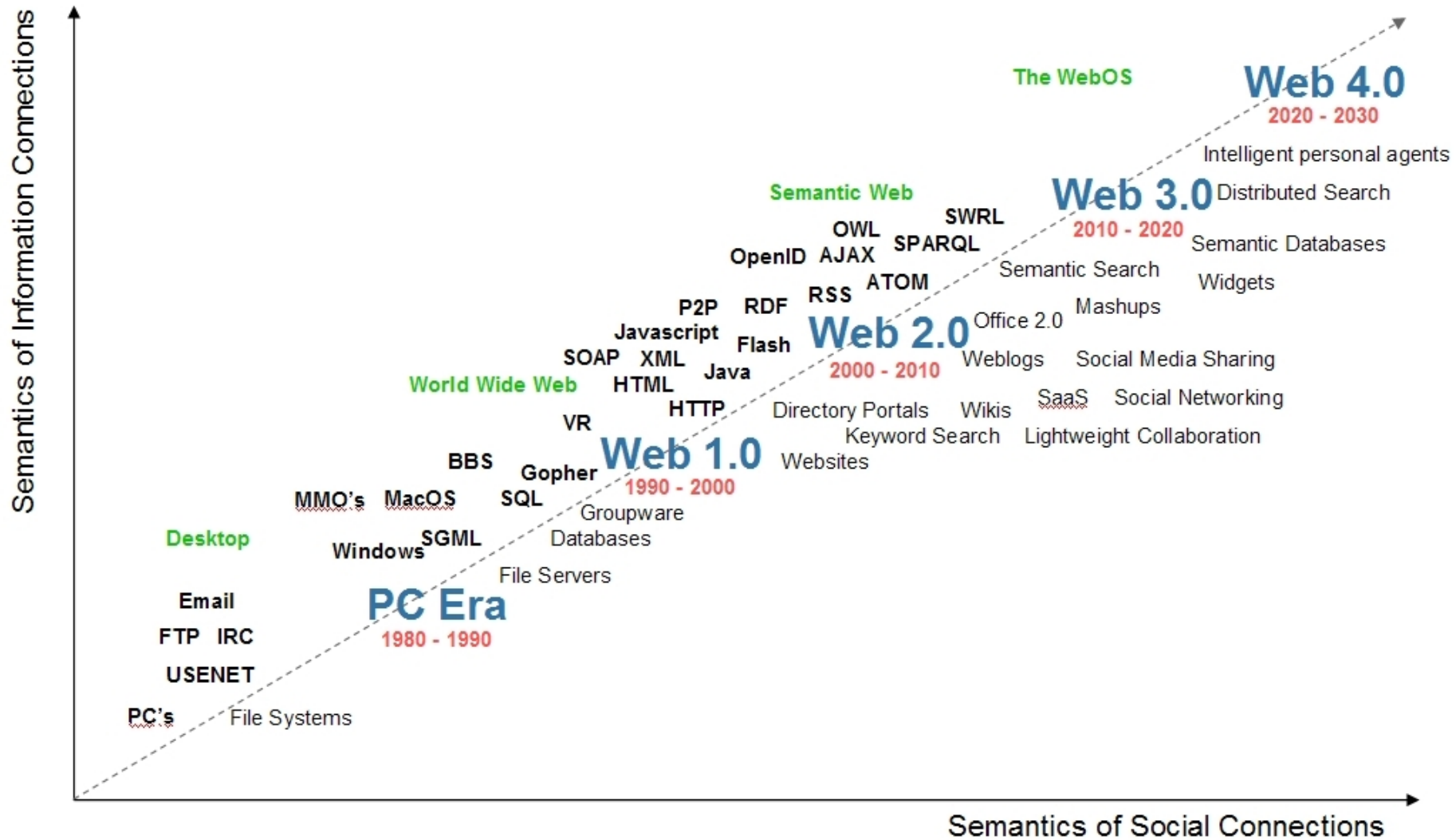


# Web 2.0 vs. Web 3.0

- Web 2.0 has been primarily focused on the advancement of the Web's *front-end* and the users' experience
- Web 3.0 is primarily focused on (significant) improvement of the Web's *backend*

Recommendation: [YouTube video](#) in which Google's Eric Schmidt talks about Web 2.0 and Web 3.0

# Evolution of the Web (by Nova Spivack)



Source: Radar Networks & Nova Spivack, 2007 – [www.radarnetworks.com](http://www.radarnetworks.com)

Source: <http://novaspivack.typepad.com/RadarNetworksTowardsAWebOS.jpg>



SOME RIGHTS RESERVED

# WWW timeline by PewResearch Internet Project

MARCH 11, 2014



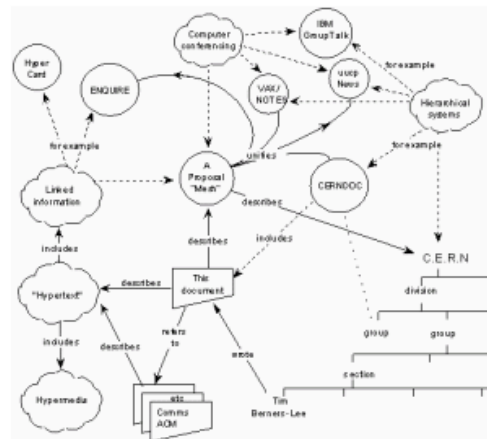
## World Wide Web Timeline

Since its founding in 1989, the World Wide Web has touched the lives of billions of people around the world and fundamentally changed how we connect with others, the nature of our work, how we discover and share news and new ideas, how we entertain ourselves and how communities form and function.

The timeline below is the beginning of an effort to capture both the major milestones and small moments that have shaped the Web since 1989. It is a living document that we will update with your contributions. To suggest an item to add to the timeline, please [message us](#).

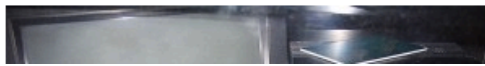
### 1989

- The World Wide Web **begins** as a CERN (European Organization for Nuclear Research) project called ENQUIRE, initiated by British scientist **Tim Berners-Lee**. Other names **considered for the project** include “The Information Mesh” and “The Mine of Information.”
- AOL **launches its Instant Messenger chat service** and begins welcoming users with the iconic greeting “You’ve got mail!”



### 1990

- 42% of American adults have used a computer.



PART OF A SERIES

## The Web at 25

TABLE OF CONTENTS

1989

1990

1991

1992

1993

1994

1995

1996

1997

1998

1999

2000

2001

2002

2003

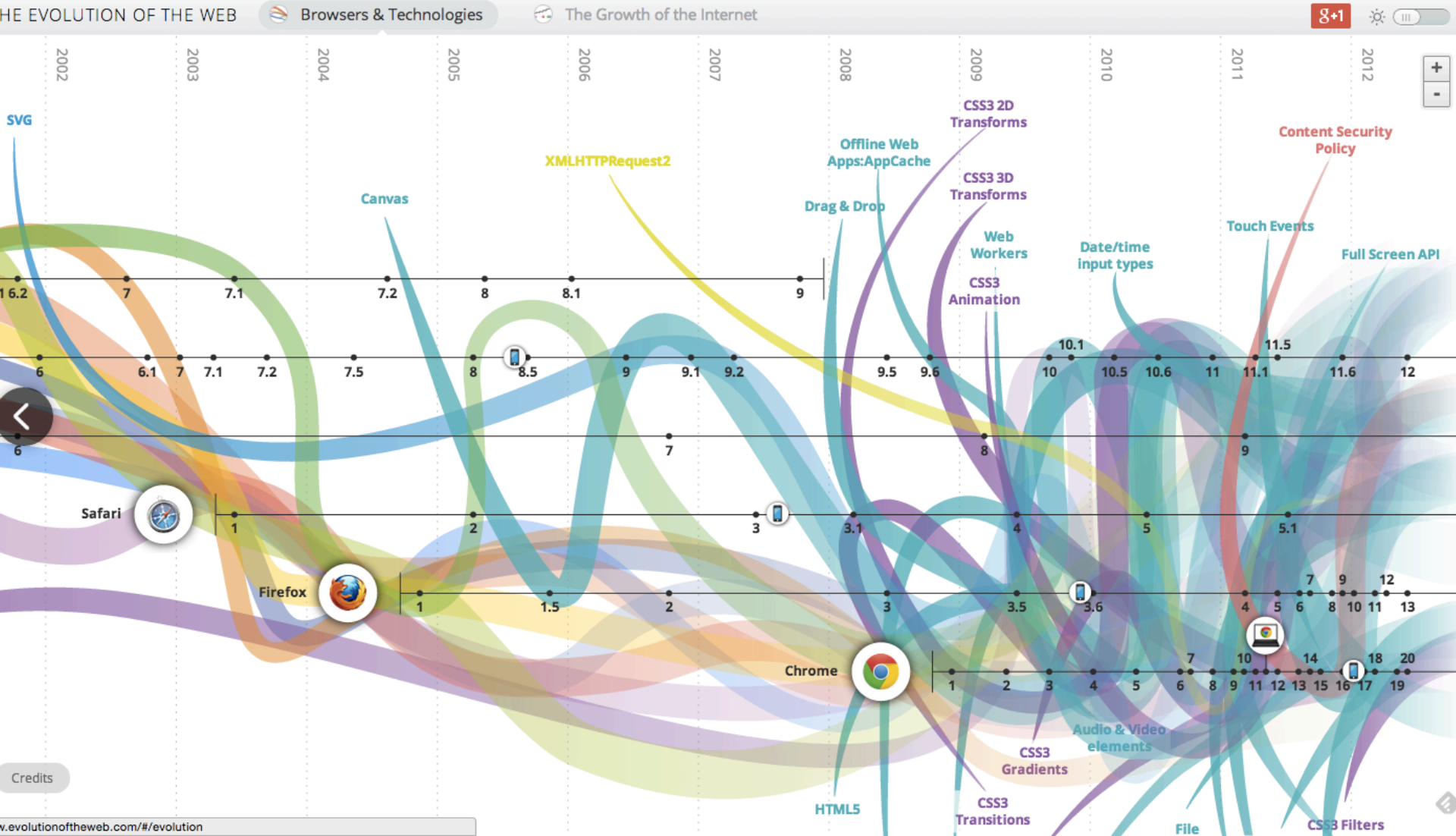
2004

2005

2006

2007

# Timeline view of Web technologies



Source: <http://www.evolutionoftheweb.com/>