

Flash vs HTML5



“iPad, a revolutionary device” - Apple



- ✓ Lightweight and portable
- ✓ Sufficient battery life
- ✓ Completely Wireless
- ✓ Convenient multi-touch interface
- ✓ Huge number of apps (some of them are useful)

- ✓ No Flash
- ✓ No Java
- ✓ No Silverlight

Worldwide “Computer” Market, 4Q 2010

Rank	Vendor	Units (millions)
1	HP	17.955
2	Apple *	11.465
3	Dell	11.140
4	Acer	9.755
5	Lenovo	9.551
6	Toshiba	5,347

* Combined unit sales of Macs and iPads

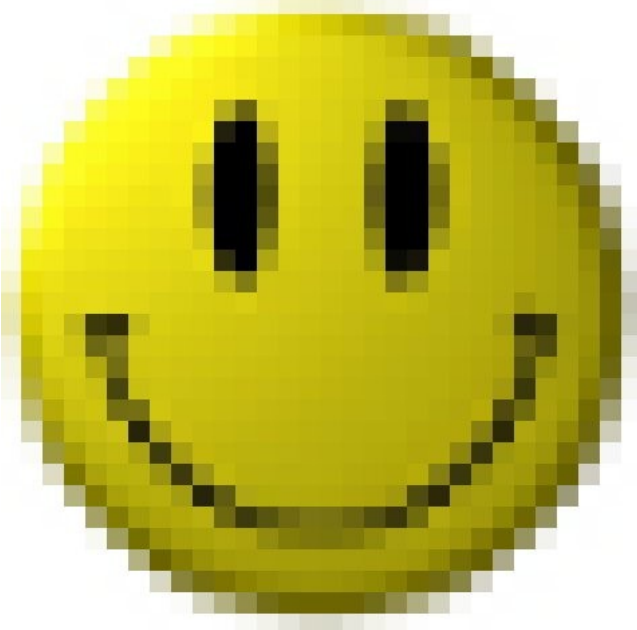
Sources: IDC, Apple, Gartner

HTML stands for
HyperText Markup Language



The SWF file format delivers vector graphics, text, video, and sound over the Internet and is supported by Adobe Flash Player and Adobe AIR software. Flash Player already reaches over 98% of Internet-enabled desktops and more than 800 million handsets and mobile devices.

- from Adobe web site



bitmap

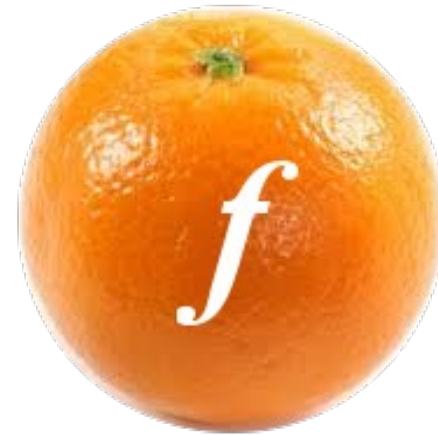


vector

Which one is better – Flash or HTML5?



!=



HTML draws text

Flash plays multimedia
and animations

- Battery life
- Standards
- Openness
- Security
- Touchscreen
- Performance
- Features
- Some quotes

Battery life

Q: Does Flash player consumes more power than HTML?

A: Yes.

Q: Why?

A: They are used for different things:

→ **HTML draws static text**

→ **Flash plays animations and multimedia content**

Q: If HTML would play multimedia and/or animations, would it consume more power?

A: Yes. Current implementations of HTML5 do consume more power than Flash when play multimedia content or animations.

Standards

Q: How widely used HTML5?

A: Some browsers only **partially** support HTML5, other don't support it at all.

HTML5 is **not finalised** standard yet and has different implementations across different browsers.

Current HTML version is 4.01. This version can not play multimedia content like HTML5 or Flash.

Q: Does Flash has any standards?

A: Yes, but they developed and maintained by one company - Adobe corp.

Proprietary license vs Opensource

Q: HTML is open standard, but Flash player is not opensource. How bad is this?

A: Not really awesome. But...

Flash format (SWF) is open. Same as HTML.

- free opensource SDK from Adobe
- other 3d party open source compilers

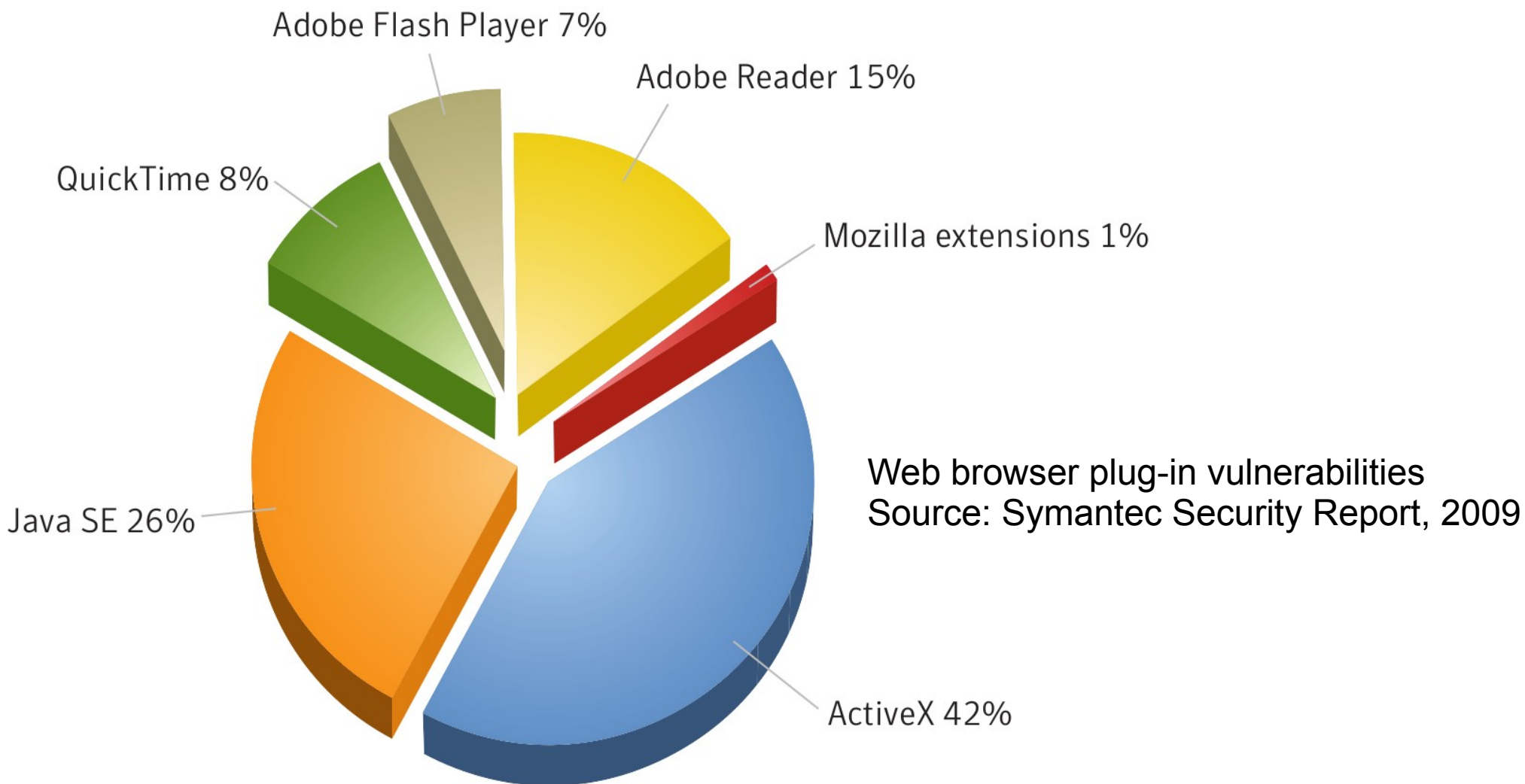
The only proprietary code is actual Flash player. Same as many browsers.

Security problems

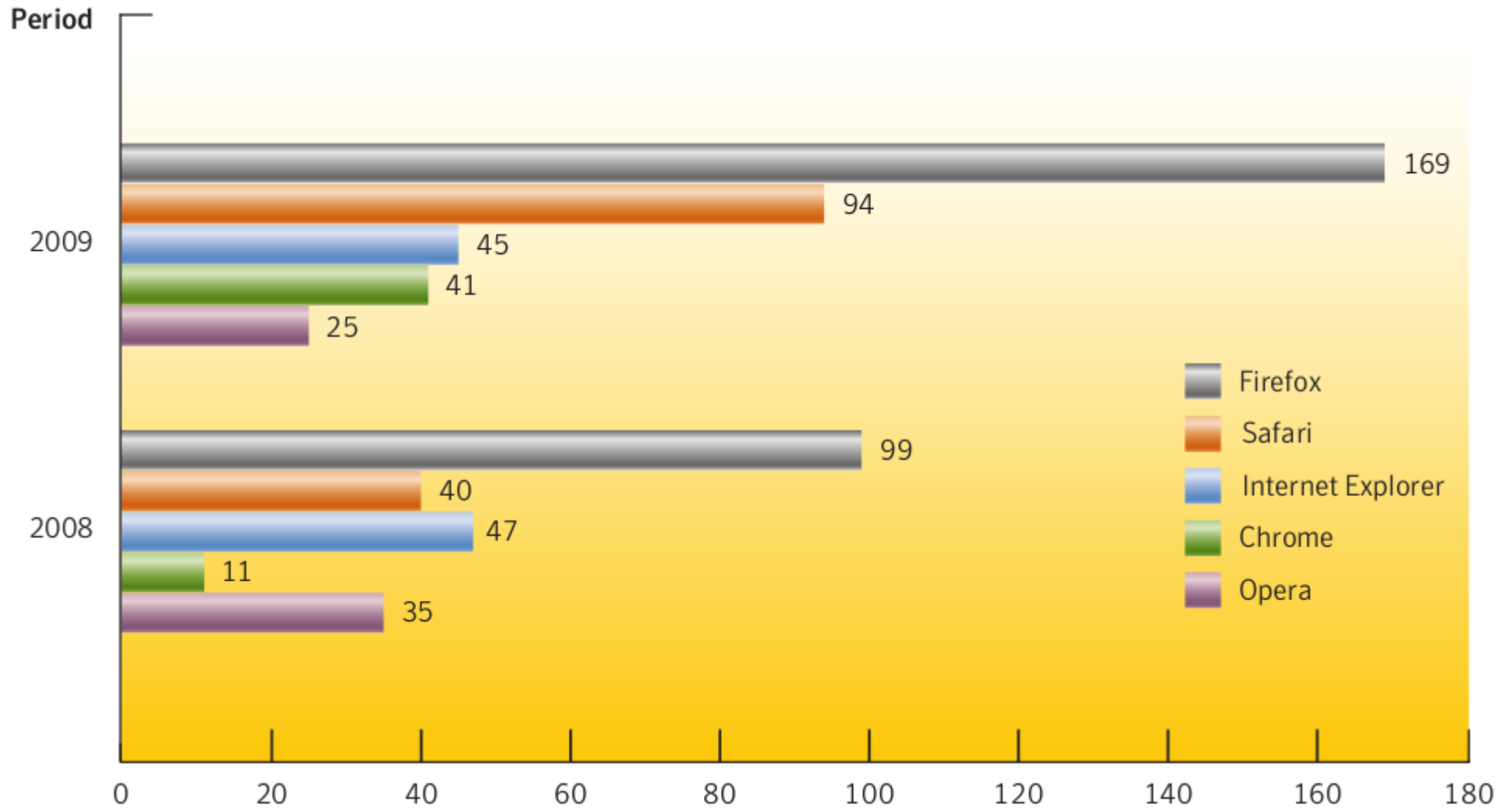
Q: Is Flash player secure enough?

A: It is not totally secure. But...

it is the safest cross-browser plugin.

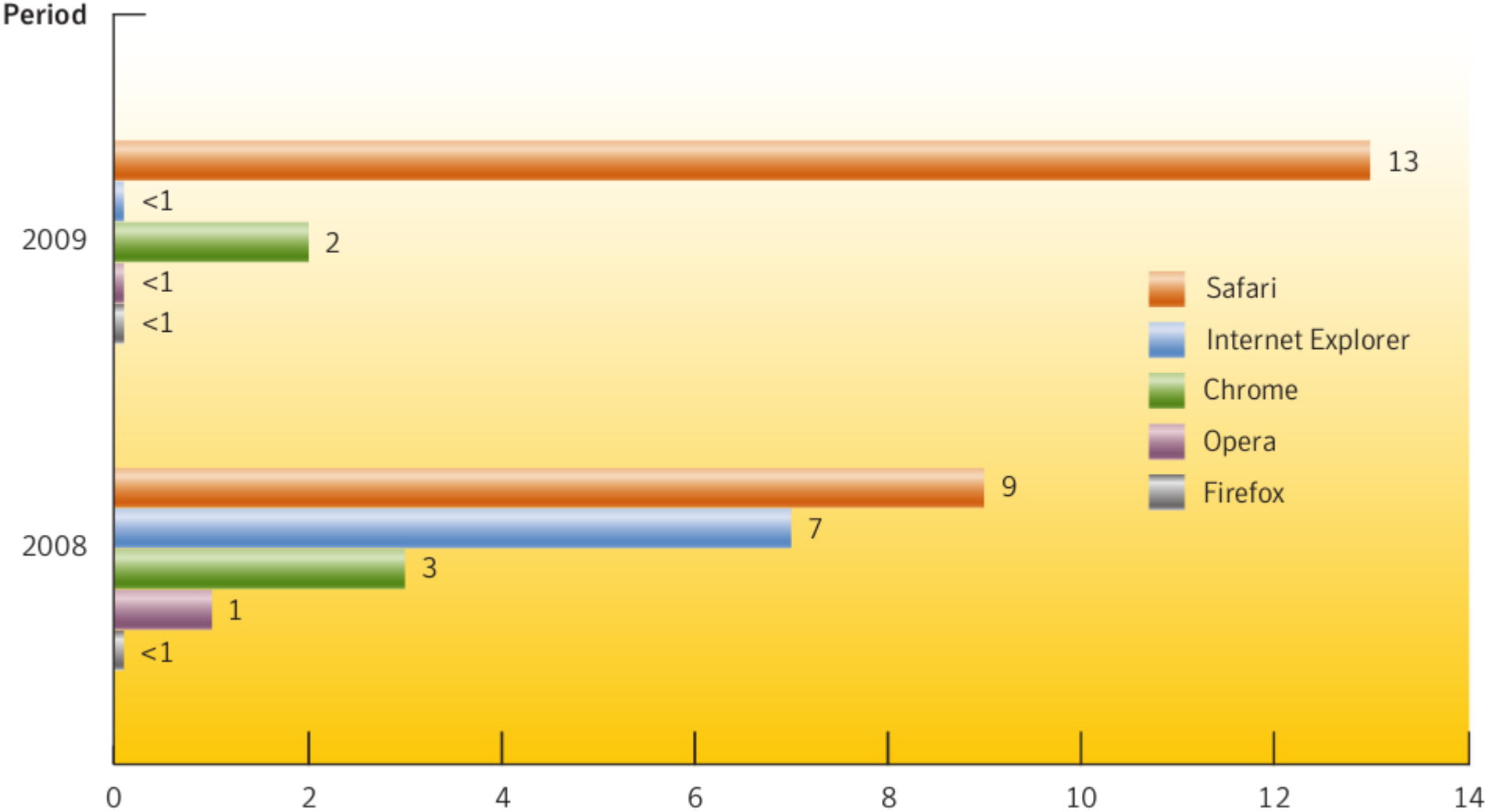


Browser documented vulnerabilities



Source: Symantec Security Report, 2009

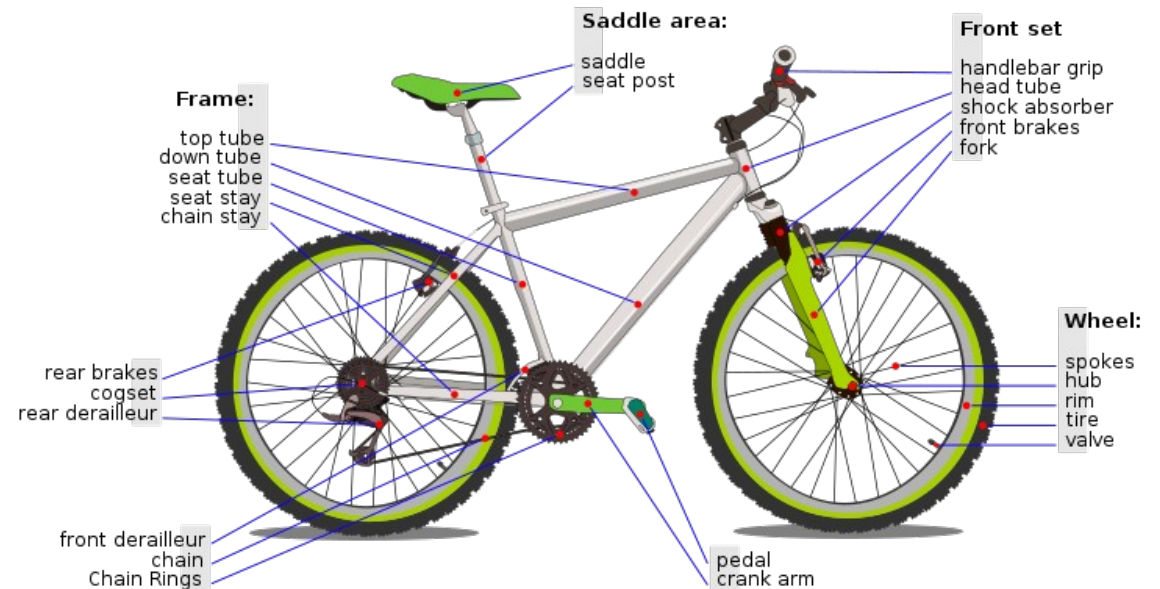
Window of exposure for Web browsers



Touchscreen support

Q: Can Flash player work with touch screens?

A: Yes, absolutely.



Performance

Flash:

- ✓ fast in rendering animations;
- ✓ uses clients GPU for video decoding (means fast too);
- ✓ can use clients GPU for all sorts of computations (also fast);
- ✓ has advanced graphics libraries for animation, user interaction, desktop integration, client-server applications (makes development fast);

HTML:

- ✓ light and fast for a text based content;
- ✓ doesn't need much resources (for text).

Still want to use HTML for multimedia and/or animations

Features	Flash/ ActionScript	HTML/ Javascript	HTML5/ Javascript
Object-Oriented Programming	✓	✓*	✓*
Advanced Graphics and Controls Libraries	✓	-	-
Graphics Smoothing and Interpolation	✓	-	-
Dynamic Graphics Filters and Effects	✓	-	-
Built-in 3D Effects and Transformations	✓	-	-
Bitmap and Binary formats Manipulation	✓	-	✓*
Video and Audio Playback	✓	-	✓**
Dynamic Sound Generation	✓	-	-
GPU Video Decoding	✓	-	-
Dynamic Frame Rate	✓	-	-
Server-to-Client Push Messaging	✓	-	-
Web Camera and Microphone Access	✓	-	✓***

* Very basic support

** Different browsers have different set of video codecs

*** Without advanced API or controls

Some examples

<http://astronomy.swin.edu.au/~mbernyk/site/html5-vs-flash/>

Every system will have different CPU usage depending on hardware, operating system and browser version.

Flash competitors



Source: www.riastats.com

Worldwide Ubiquity of Adobe Flash Player by Version - September 2010

	Flash Player 9 & below	Flash Player 10	Flash Player 10.1
Mature Markets	99.0%	97.9%	73.8%
US/Canada	99.5%	98.1%	75.8%
Europe	99.0%	98.2%	76.2%
Japan	98.7%	97.0%	65.5%
Australia/New Zealand	98.8%	97.7%	69.5%

Source: www.adobe.com

Reasons to use

Category	Flash	Silverlight	Java
Cross-platform	✓	-	✓
Performance	✓	✓	-
Security	✓	-	-
Features and hardware integration	✓	✓	-

Some Flash and HTML RIA examples

HTML	Flash
Gmail	Google street view
Google maps	Warner bros.
Google docs	Hulu
Facebook	NASDAQ
Wolfram Alpha	s2web!

← youtube →

← vimeo →

Other RIA?



+

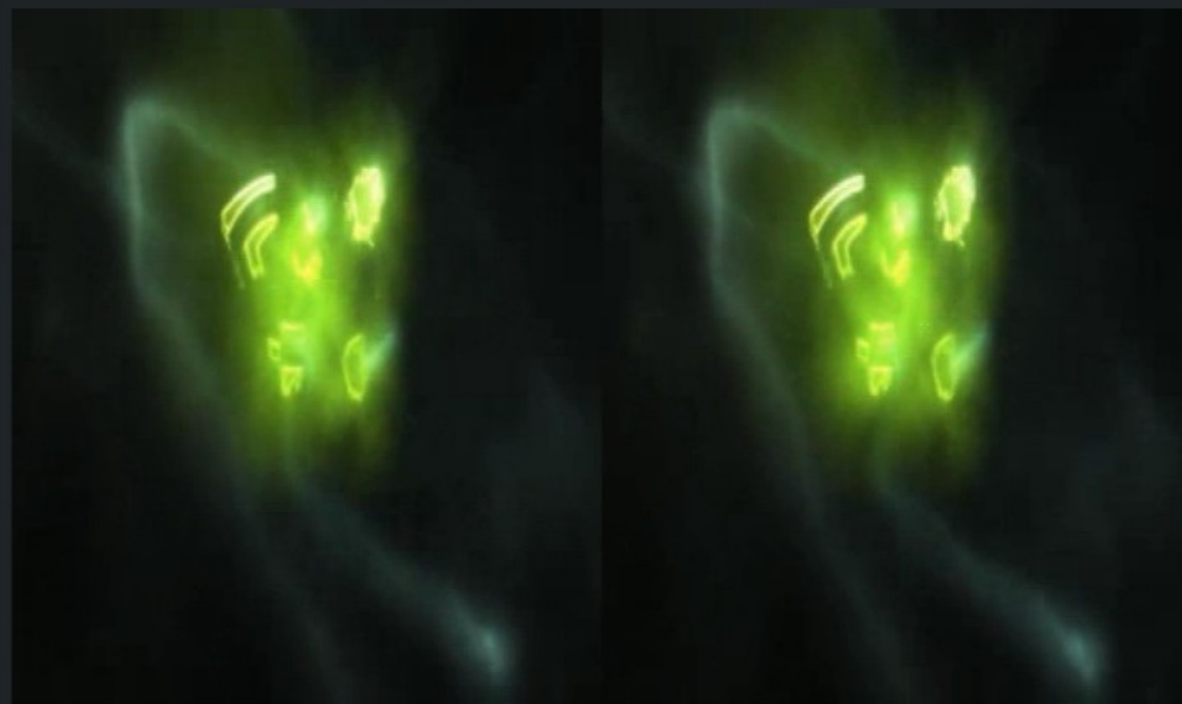


Microsoft®
Silverlight™



3D Vision Live > Video

3D Vision Live (Beta)



TOTAL IMMERSION
NVIDIA® 3D VISION™
TECHNOLOGY

Navigation arrows: < >

- 

Mercedes-Benz
presents
Mercedes-Benz 3D
2010
depths3d.com
- 

Resident Evil Afterlife
ResidentEvilAfterlife.net
- 

We Are The World 25
for Haiti
World25.org
- 

Ultimate Wave Tahiti
ultimatewavetahiti.com
- 

3D Sun
3DSunFilm.com



To submit your own 3D content please contact us at 3DVisionLive@nvidia.com

[System Requirements](#)

POWERED BY:



“Silverlight is not supported by iPhone or iPad and the current limitation is political, not technical. Apple simply does not want Plugin-based RIA applications (Flash, Silverlight) to run on iPhone, for they compete directly with App Store.”

from Microsoft web site

“I wanted to jot down some of our thoughts on Adobe’s Flash products so that customers and critics may better understand why **we do not allow** Flash on iPhones, iPods and iPads...

... openness ... HTML5 ...
... security ... battery life ...
... performance ... touch screen ...

Flash is a cross platform development tool. It is not Adobe’s goal to help developers write the best iPhone, iPod and iPad apps. It is their goal to help developers write cross platform apps.

And Adobe has been painfully slow to adopt enhancements to Apple’s platforms. For example, although Mac OS X has been shipping for almost 10 years now, Adobe just adopted it fully (Cocoa) two weeks ago when they shipped CS5.”

Steve Jobs

“I think Flash is such an important part of the Internet experience. I also believe that the next computers can bridge the past and the future. You want to bring your customers to the future, but you don’t want to make them leap across a chasm. So if the future is a hybrid of a whole lot of different things, that’s fine. But **the present is Flash.**”

Jen-Hsun Huang - Nvidia’s CEO

“Today's internet content is dependant on Flash, if you remove Flash you do not have today's internet.”

Phillip Grønvold - Opera's product analyst

Tegra2: The Mobile Super Chip



The First
Dual-Core



Best Web
Experience



Best Game Content
with GeForce GPU

engadget

NVIDIA Presentation, CES 2011

1. Many thanks to Apple for boosting tablets market.
2. HTML can not compete with Flash in multimedia and animations.
3. Would be nice to have Flash and other runtimes on iOS.

NVIDIA Tegra 2/3, ARM... + Android, MAEMO... + Flash Player

Motorola XOOM



Samsung Galaxy Tab/2



Notion Ink Adam



Blackberry Playbook



NOKIA, ASUS, Dell, HP, Toshiba, IBM, ViewSonic...