Opera Software
The best browsing experience on any device

Web Standards for the Future – Bruce Lawson, Opera.com

- Web Evangelist, Opera
- Tech lead, Law Society & Solicitors Regulation Authority (2004-8)
- Author 2 books on Web Standards, edited 2
- Committee member for British Standards Institution (BSI) for the new standard for accessible websites
- Member of Web Standards Project: Accessibility Task Force
- Member of W3C Mobile Best Practices Working Group

Web Standards for the Future – Bruce Lawson, Opera.com

B.A., Honours English Literature and Language with Drama

Theresa is blind

But she can use the Web if made with standards

The big picture

WWW

The big picture

~~Western~~

~~Western~~

~~Web~~

A web (pre)history

- 1989 TBL proposes a project
- 1992 <img> in Mosaic beta. Now 99.57% (MAMA)
- 1994 W3C started at MIT
- 1996 The Browser Wars
- 1999 WAP, Web Content Accessibility Guidelines (WCAG)
- 2000 Flash

Modern web history

- 2000-ish .com Crash - Time to grow up...
- 2002 Opera Mobile with Small Screen Rendering
- 2005 WHAT-WG founded, W3C Mobile Web Initiative starts
- 2007 W3C adopts WHAT-WG spec as basis for HTML 5
- January 22, 2008 First public working draft of HTML 5

Standards at Opera

- 25 employees work on standards
- Mostly at W3C - a big player
- Working on many standards
- Bringing new work to W3C
- Implementing Standards properly (us and you!)

(Web Standards Curriculum www.opera.com/wsc)

Why standards?

The Web works everywhere - The Web is the platform

- Good standards help developers: validate; separate content and presentation - means specialisation and maintainability.
- Good standards help site owners: more maintainability; smaller pages; better SEO
- Good standards help site end-users: light-weight; findable; interoperable; more likely accessible

How?

It's easy!

- Use the right tools for the job – HTML for information, CSS for style, JavaScript for behaviour
- Write semantic code – use <h1>for top headings, <ul> and <ol> for lists and menus, etc
- Make sure the code is valid: use validator.w3c.org, or developer tools in Opera

Search engine optimisation

Google's webmaster guidelines say

- Don't use images to display important names, content, or links.
- use TITLE tags and ALT attributes
- Make a site with a clear hierarchy and text links
- Always specify an encoding for your document
- Valid pages are likely to render correctly on more mobile devices
- Write your page using valid HTML and CSS, and then test it in as many browsers as possible

Bad SEO

```
<title>Untitled Document</title>
<font size=6 color="red"><b>Indonesia</b></
  font><br><br>
Indonesia is a beautiful country, with many
  natural wonders and welcoming people.
<br><br>
<font size=4 color="blue"><b>Indonesian
  hotels</b></font><br><br>
To find out more about Indonesian hotels,
  <a href="hotels.html">click here</a>
```

Good SEO

Define your languages (computer AND human)

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML
  1.0 Transitional//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-
  transitional.dtd">
<html lang="en"  xml:lang="en"
  xmlns="http://www.w3.org/1999/xhtml">
```

Good SEO

Use a title, and headings

```
<title>About Indonesia</title>
 <h1>Indonesia</h1>
<p>Indonesia is a beautiful country,
 with many natural wonders and welcoming
 people.</p>
<h2>Indonesian hotels</h2>
<p>Find out more about <a
 href="hotels.html">Indonesian
 hotels</a>.</p>
```

Good SEO

Use good link text

```
<p>Find out more about <a
  href="hotels.html">Indonesian
  hotels</a>.</p>
<h2>Indonesian culture</h2>
<p>Find out more about <a
  href="culture.html">Indonesian
  culture</a>.</p>
```

Good SEO

Use CSS (Cascading Style Sheets)

```
h1 {color:red;font-size:x-large;}
h2 {color:blue;font-size:large;}
p {color: black; font-size:small;}
a {color:green;}
```

Business benefits of Standards

Legal and General's accessible redesign

- A 30% increase in natural search-engine traffic
- "significant improvement" in Google rankings "for all target keywords"
- Time to manage content "reduced from average of five days to 0.5 days per job"
- Savings of $350K annually on site maintenance
- 90% increase in Life insurance sales online
- 100% return on investment in less than 12 months

www.brucelawson.co.uk/pas78

Which standards?

Web standards (W3C etc):

X/HTML, SVG, ECMAScript, CSS, etc

Internet Standards (IETF etc)

HTTP, SMTP

de facto standards

XMLHttpRequest, Widget spec

Ajax

XMLHttpRequest (the "X" in Ajax)

Data request within a page

- 10 years old, from IE (!)
- No standard until now
- Anne van Kesteren, editor
- In final phases now...
- ...so we started on level 2

Widgets

Little web technology applications that blur the distinction between web and desktop

- Installed to the machine (desktop, phone)
- Use the browser as an engine
- Work offline or online
- W3C Standard 1.0 finishing
- File system access (Opera demo version)
- System functions (Camera, SMS ...)

Win $5000 with the X-widgets challenge –
see my.opera.com/widgets/

Big standards of the future

- HTML 5
- CSS 3
- SVG

Scalable Vector Graphics (SVG)

- XML format from W3C
- 7 years old in plugins
- Common in Phones
- (400+ million phones...)
- Now in Web Browers too (except IE)
- Mixes with XHTML
- Can be handwritten (even by dummies) or generated (Inkscape, Adobe products)

Inside some SVG

```
<g id="m">
 <line stroke-width="4"
   y2="95" stroke="red" opacity=".9" />

   <animateTransform type="rotate"
     attributeName="transform"
     repeatCount="indefinite"
     dur="60min" by="360" />

 <circle r="6" fill="red"/>
 </g>
```

HTML 5 - why?

- HTML 4 great for documents ..
- .. not suited for web apps
- real-world elements (article, footer, aside)
- Better forms: autofocus, required, autocheck data types (e.g. email, date, url, pattern)
- Offline storage
- Drag and drop
- <video>
- <canvas>

HTML 5 - <canvas>

- "Immediate" Vector Graphics
- (You can't manipulate them)
- First made by Apple
- Now in most browsers (except IE)
- It's a part of HTML 5
- Faster than SVG, but harder to write

HTML 5 - forms

- Do what people really need to do
- Degrade well in old browsers

- `<input type=date>`
- `<input name="range" type="range" min=0 max=11>`
- Datalist

CSS 3

Mostly "under-the-hood" improvements; great for developers and further separates content and style.

Before...

```
tr.odd {background-color:green;}
<tr>…</tr>
<tr class="odd">…</tr>
```

now..

```
tr.nth-child(odd) {background-color:green;}
<tr>…</tr>
<tr>…</tr>
```

CSS 3 – text shadow

It is very easy to set text shadows using CSS 3.

Before you had to use an image, which is not easily
   maintainable and loses information (not machine readable)

```
p {
  text-shadow: #777 2px 2px 2px;
}
```

```
text-shadow: #f00 0px 0px 30px;
```

CSS 3 – opacity

Opacity used to require JavaScript to achieve, but now it can be achieved using a single CSS property. Nice!

```
p, img {opacity: 0.25;}
```

What is the mobile web?

- It's not a separate www! There is only one web
- You can make your sites work cross device using the web standards you already know
- But mobile is not as simple as desktop
- It's VITAL that the web isn't broken up!

One web vision

- 1bn phones worldwide
- In China 73m people (29% of all internet users) use only phones
- ... grew by 45% in the six months to June
- The number of web pages viewed in June by Opera users was 3 billion, a 300% increase on a year earlier.
- Biggest growth in Russia, Indonesia, India and South Africa.
- Grameen Foundation, MW4D
- Opera's *State of the Mobile Web* reports
- MW4D, The Economist: *The meek shall inherit the web*

The playing field is not level on mobile/alternative devices

Desktop is fairly easy these days, but mobile browsers still differ a great deal in capabilities:

- "The full web" - eg Opera Mobile and iPhone WebKit
- Constrained browsers - ie they support WAP (eg WinWap), a limited subset of standards (such as Netfront) or other proprietary markup (eg iMode - cHTML)
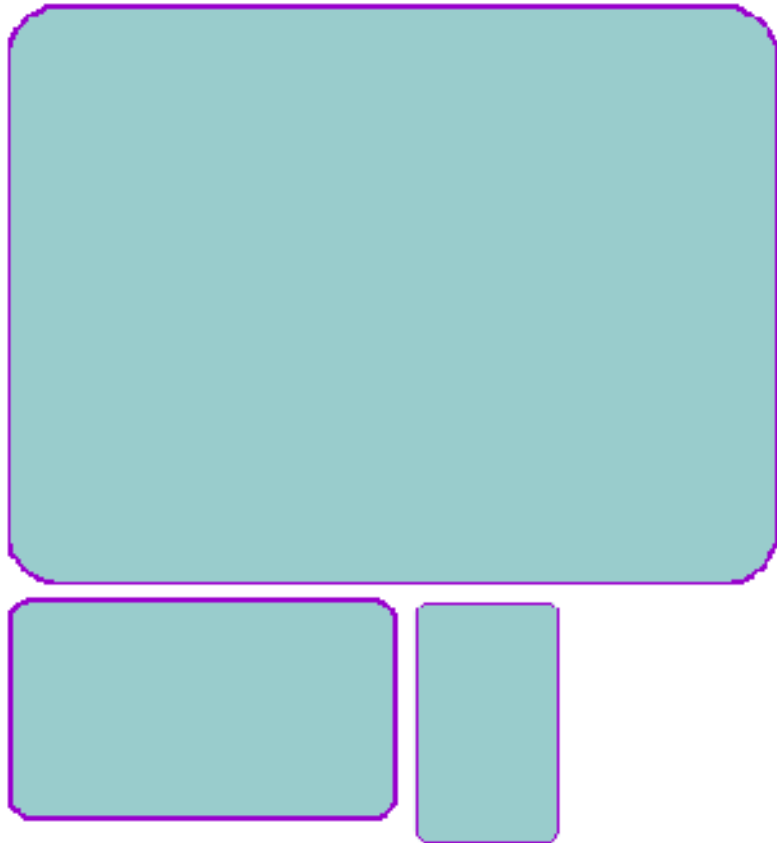- Proxy-based browsers, eg Opera Mini
- Other devices such as games consoles

Mobile device constraints

- Limited/varying controls
- Limited typography and colour palette
- Limited memory and bandwidth

Is size important?

- Screen size variance - how usable will your 1024 x 768 design look on a 240 x 320 screen?
- zoom mode can help
- make your designs simple and fluid
- Or use mechanisms such as media queries and capability detection to tailor content

Device advantages to exploit

update a web service such as Yahoo Fire Eagle with your
location, and share it with applications Or you could use a
homegrown system to plot your travels, using the Geo μF, or
Geotagging, or GPX...

```
<span class="geo">
  <span class="latitude">0.000000</span>
  <span class="longitude">0.000000</span>
</span>
```

the `tel:` protocol:

```
<a href="tel:12345678">Call me at 12345678</a>
```

Three approaches to mobile development

- Do nothing except follow web standards
- Create a completely separate mobile site
- Create one site, but optimize it depending on the device/browser looking at it

But ALWAYS
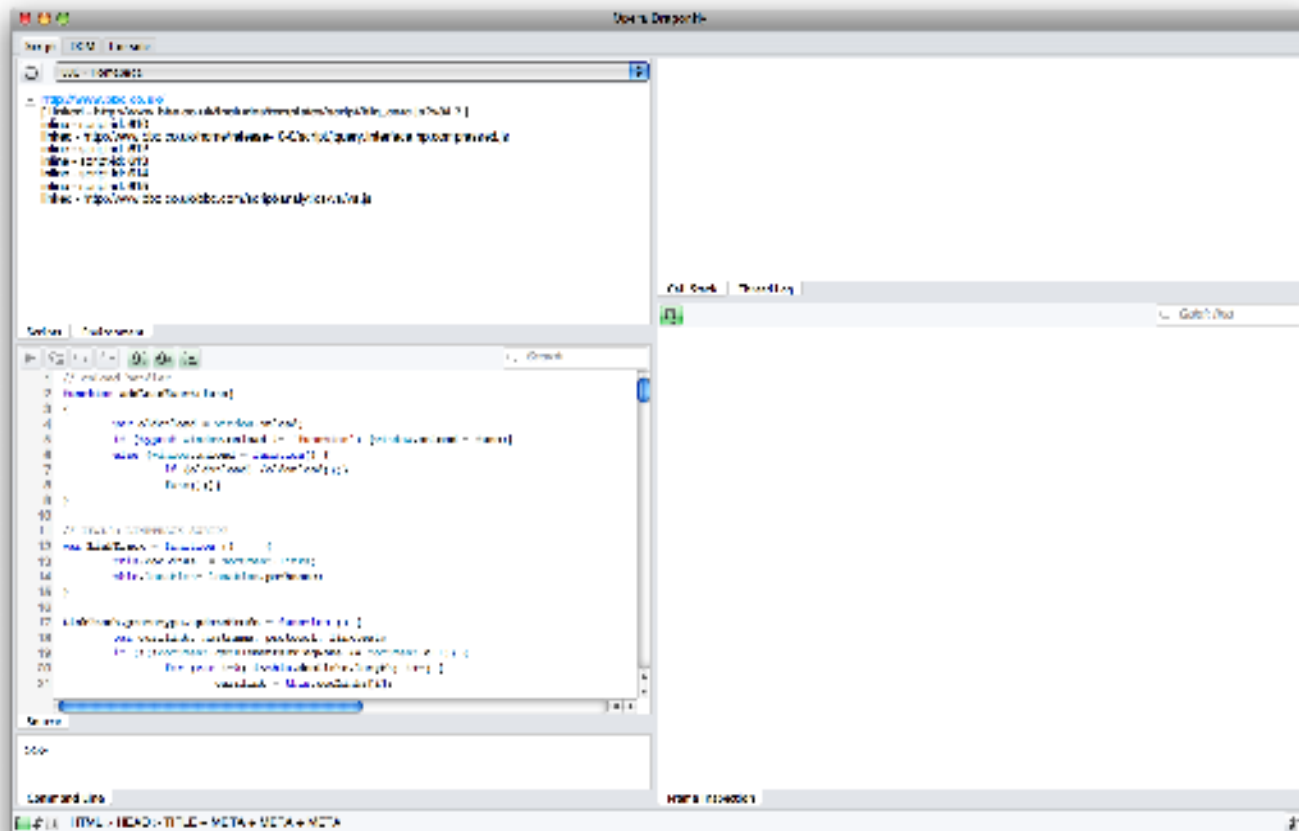- Consider the user
- Test test test

CSS 3 - media queries

Allow you to apply CSS selectively, depending on attributes such as viewport width.

```
@media all and (max-device-width: 480px) {

  #big-wide-banner {display:none;}
  #narrow-banner {display:block;}
}
```

Opera Dragonfly

- It's a web application
- Has a live update
- Open source, BSD-style license
- API still being stabilised
- …but will be published
- Currently alpha 3
- www.opera.com/dragonfly
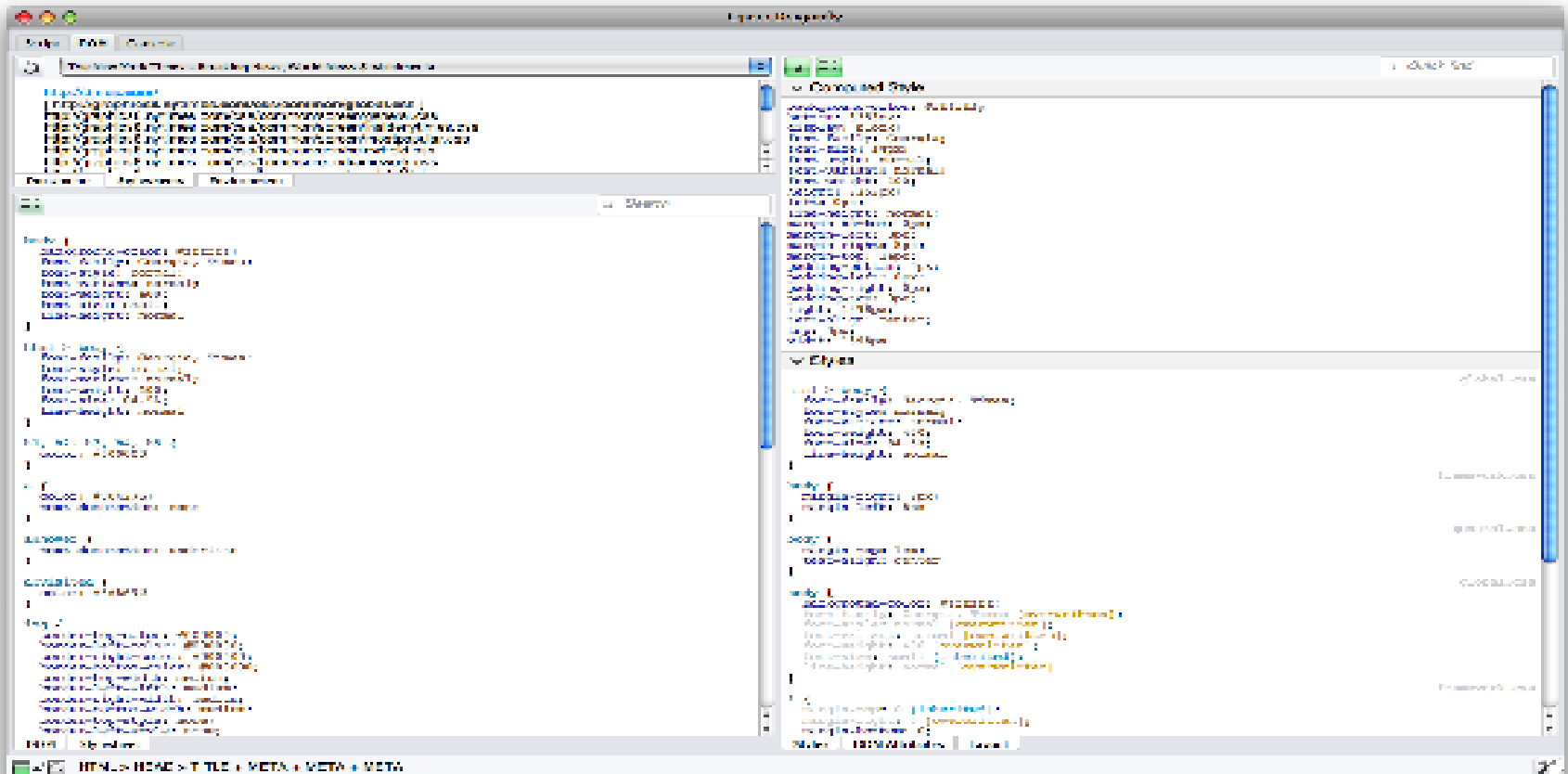- try it in Opera 9.5 + Tools -> Advanced -> Developer Tools

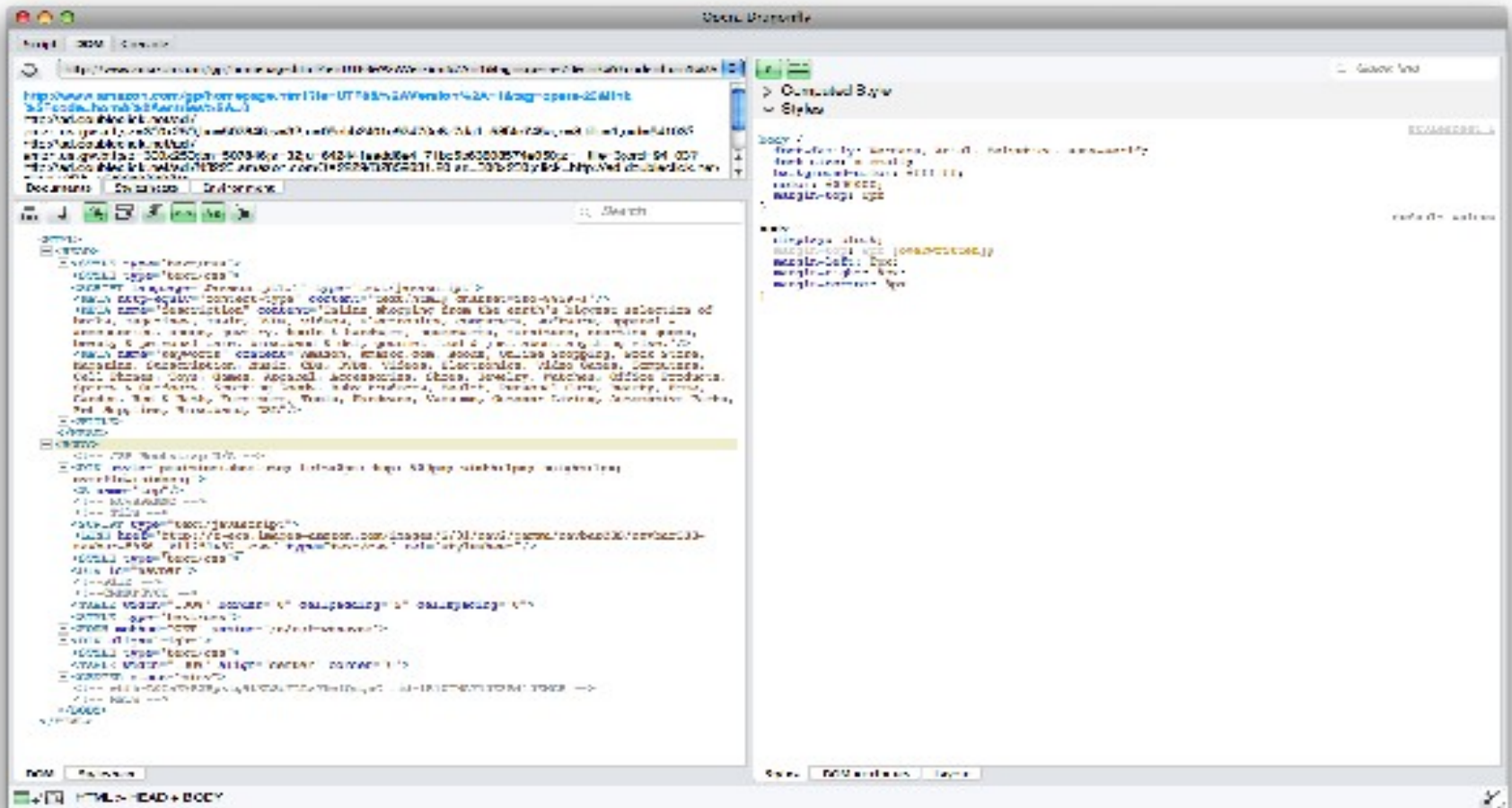# Opera Dragonfly

Debug JavaScript

OPERA
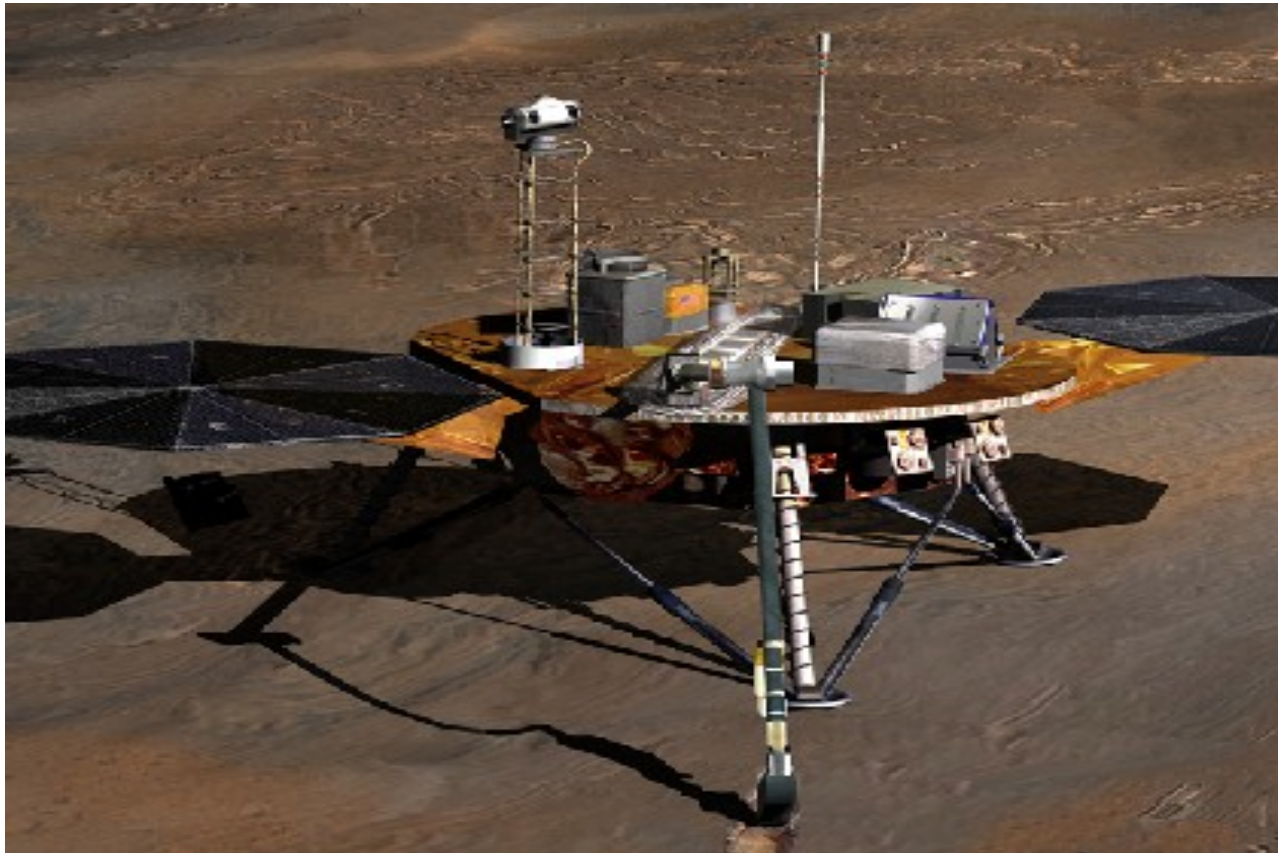software

Opera Dragonfly

Debug CSS

Opera Dragonfly

Debug the DOM

Opera Dragonfly

In a hostile environment, work remotely

HTML new stuff

Demonstrations that need an Opera experimental build.
To learn more read "All together now: Video, 3D, File access"
http://labs.opera.com/news/2008/07/18/

Download:

- Opera 9.52 preview for Linux/UNIX
- Opera 9.52 preview for Windows (MSI installer)
- Opera 9.52 preview for Windows (Classic installer)
- Opera 9.52 preview for Mac

Video (currently)

```
<object width="425" height="344">
<param name="movie"
  value="http://www.youtube.com/v/LtfQg4KkR88&hl=en
  &fs=1"></param>
<param name="allowFullScreen" value="true"></param>
<embed
  src="http://www.youtube.com/v/LtfQg4KkR88&hl=en&f
  s=1" type="application/x-shockwave-flash"
allowfullscreen="true" width="425"
  height="344"></embed>
</object>
```

Video (future)

```
<video src="video.ogv"
  controls
  autoplay
  poster="poster.jpg"
  width="320" height="240">
    <a href="video.ogv">Download movie</a>
</video>
```

Let's check some out!

Learn these standards now

- And start using them in 2009
- Indonesian mobile browsing is growing so fast that **all** professional sites need to be cross-browser, cross-operating system and cross-device (computer, mobile, gaming console etc)
- Save work for yourself (and money for your company) by building just one site that works anywhere
- Get something good on **your** C.V. to get **your** advantage in the job market

Please, remember Theresa

Make Indonesia a great example for S.E. Asia and the world

WWW

Terima Kasih, Indonesia

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http://my.opera.com/odin/ - our team blog

www.brucelawson.co.uk - Bruce's personal site

Follow us around Indonesia, Norway and England!

www.twitter.com/brucel,www.twitter.com/zibin

http://opera.com/mobile_report - the mobile industry

http://opera.com/education, education@opera.com

www.opera.com/wsc - free Web Standards course

Useful resources

www.opera.com/wsc - free course

www.css3.info - check your browser's CSS 3 quality

www.quirksmode.org to check your browser's JavaScript quality

www.whatwg.org to find out all about HTML 5

www.alistapart.com has a good article "An introduction to HTML 5" by Lachlan Hunt

www.positioniseverything.net to see CSS bugs