

10 – Web 2.0 (part 3)

Web 2.0 Use Case 1: Podcasting

- Web2.0 paradigms: *data* is valuable, provide ways to easily *publish and aggregate* it, satisfy the *long tail* of users
- Exploits RSS, the same technology made available for blogs
 - Podcast are nothing more than RSS feeds distributing audio (or video => vodcast, screencast) files with/instead of text! (check [here](#) and [here](#))

```
<enclosure url="http://www.mysite.com/podcast/mypodcast.mp3"  
          length="10306438" type="audio/mpeg" />
```

- Podcasting *clients*:
 - Allow users to subscribe to a podcast feed
 - Periodically check the feed for updates
 - If updates are available, they download the new files
 - Possibly, they provide the possibility to *play* audio too
- How is this related to *video* files?

Web 2.0 Use Case 2: Wiki Farms

- Web 2.0 paradigms: exploit *user participation*, harness the power of very competent and specific *communities of practice*
- One wiki alone can be used to keep any kind of information
- ... What about the community? Is it able to handle this?
 - Often, wiki communities split into smaller groups to follow specific topics (i.e. Wikipedia projects)
 - ... but this works with systems as big as Wikipedia (what about small groups of people?)
- Wiki farms (i.e. **Wikia**) aim at replicating the same wiki system on demand, creating *ad-hoc* wikis for smaller communities
 - Every wiki is managed by its own community
 - Contents tend to be very specific
 - Great place to find *communities of practice*

Web 2.0 Use Case 3: Crowdsourcing

- Web 2.0 paradigms: exploit *human intelligence* to solve problems which would be otherwise too complex for machines
- Also called *artificial artificial intelligence*: human participation becomes a part of some kind of algorithm
- Examples: Amazon's **Mechanical Turk**, **Innocentive**, **Hypios**

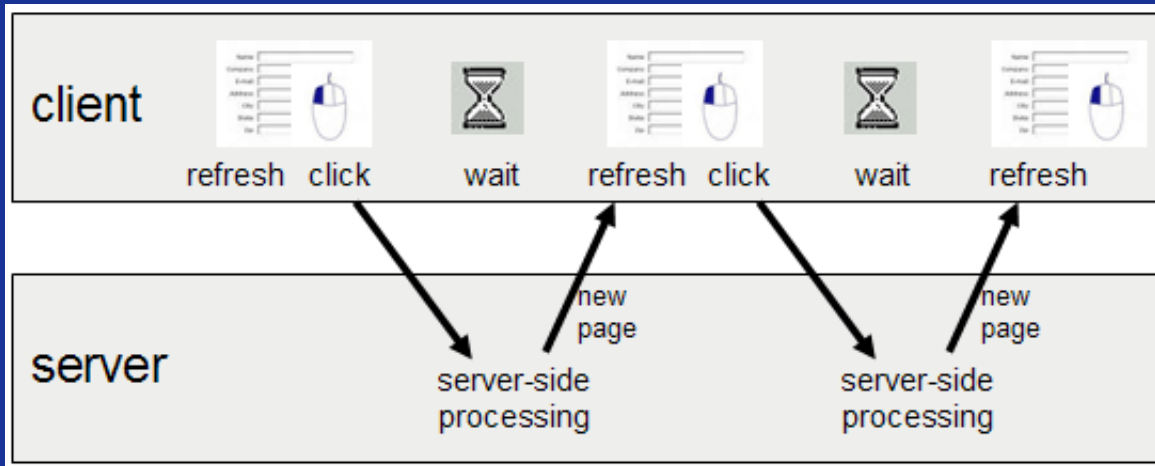


- Asynchronous Javascript + XML (term coined in 2005 by Jesse James Garrett)
- Ajax relies heavily on JavaScript and XML being accurately and efficiently handled by the browser
 - We need a standard...
 - ... and we need browsers to comply to it!
- Javascript *frameworks* such as YUI, JQuery, JavascriptMVC, ...
 - Multi-browser
 - Abstraction from the basic operations
 - Implement patterns such as MVC
- Alternatives? Flash, for example (but Flash is **dead**...)

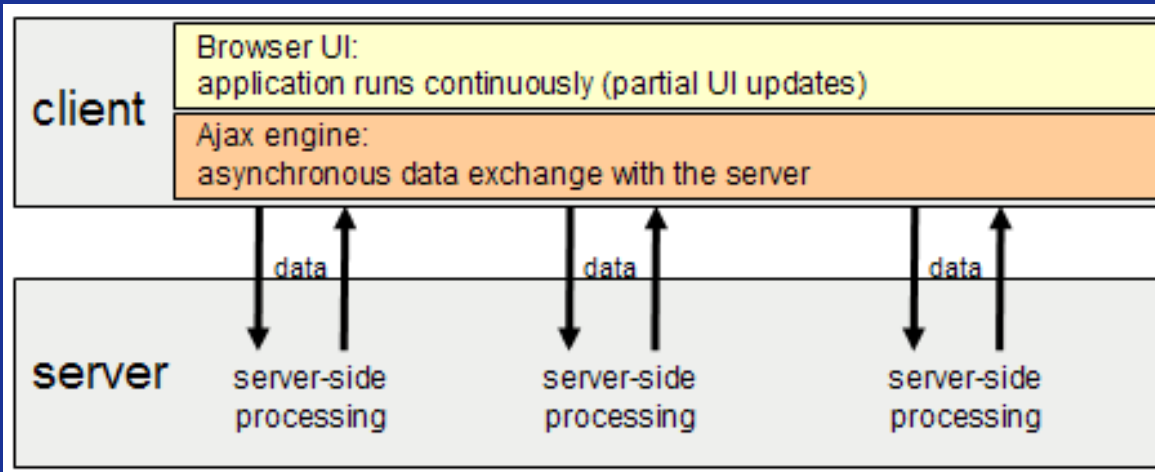
Plain HTML vs AJAX

- Images courtesy of <http://www.openajax.org>

HTML



AJAX



AJAX-related technologies

- HTML/XHTML + CSS (standards, at last!)
- **DOM** (Document Object Model)
 - object-based standard for HTML, XHTML, XML description
 - cross-platform and language independent
 - a way of dynamically controlling the *elements* that build up a document
- XML and **JSON** (Javascript Object Notation)
 - data interchange and manipulation)
- **XMLHttpRequest**
 - asynchronous data retrieval from the server
 - Not only XML, not only HTTP, and not only Requests!
- ... and of course Javascript!

- How do the *servers* provide their information to an AJAX-powered client?
- It's all about *nouns* and *verbs*:
 - REST (Representational State Transfer) uses a small number of verbs (i.e. GET, POST, PUT, and DELETE) with a large number of nouns
 - SOAP (originally Simple Object Access Protocol) encourages each application designer to use their own vocabulary for nouns and verbs

- Applications can run on different *platforms*:
 - Operating systems (Linux, MacOSX, Windows, ...)
 - The Web?
- When applications are built to run *on the Web* then we witness the *Web as a platform* paradigm
 - Web applications are OS independent, running within a browser
 - No need to update software
 - No need for particular hardware resources
- Some consequences
 - decoupling between data and appearance
 - computation can be shared between client and server
 - ...

■ Pre-conditions:

- interest towards data
- wide availability...
- ... in a form which is decoupled from appearance

=> Emergence of "light semantics"

■ Mashups

- first experiments were "union like": aggregation from different RDF feeds
- evolution more "join like": mix information from different sources, such as in **Ispecies** or **HousingMaps**

■ Microformats

■ Bibliography:

- Paul Anderson: “[What is Web 2.0?](#) Ideas, technologies and implications for education” (TechWatch report)

■ Some Web references:

- <http://computer.howstuffworks.com/web-20.htm/printable> (for a good collection of web2.0 related links)