Hell is other browsers - *Sartre*

W3C Widgets – the basics

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The mobile web

Four problems with making a website work well on a phone:

- Small memory
- Small display
- Flaky browsers
- Flaky connections

The mobile web

Four problems with making a website phone-compatible:

- Small memory
- Small display
- Flaky browsers
- Flaky connections

Flaky connections

If the guy next to you is downloading a few movies
your network connection will slow down regardless of how good it's supposed to be.

I don't see this problem disappearing any time soon.

Flaky connections

This is a serious problem for the mobile web,
especially when your site uses 200K of custom JavaScript plus a few libraries.

They have to be downloaded every time the user visits your site
and caching isn't always reliable.

Flaky connections

Solution:
Put the core files on your mobile phone

so that you only need to download the data.

Flaky connections

W3C Widgets offer this solution:
- Local applications
- HTML/CSS/JavaScript
- Run in a browser (any browser)
- Can handle Ajax requests

W3C Widgets

Eventually, I'll be able to share a
widget with a friend via Bluetooth,
even if I use an Android
and he uses a Nokia S60
or a HTC Windows Mobile
or a Blackberry

and It Just Works

W3C Widgets

Wouldn't that be
totally
astoundingly
absolutely
inconceivably
interoperable?

W3C Widgets

And hundreds of thousands of web developers *already know* how to create widgets.

It's just HTML/CSS/JavaScript, after all.

W3C Widgets

It Just Works

in the Vodafone Widget Manager for S60 phones.

W3C Widgets

It Just Works
S60

in the Opera/T-Mobile Widget Manager for (probably) Windows Mobile phones.

W3C Widgets

It Just Works
S60
Windows Mobile

in the Nokia Widget Runtime on S60
(as long as you add an info.plist file)

W3C Widgets

It Just Works
S60 (2x)
Windows Mobile

Otherwise, though, there's no support.

Yet.
(I asked Google nicely, though.)

W3C Widgets

We need:

- a browser (preferably a good one such as Opera Mobile, Android WebKit, or Safari)
- a way of associating .wgt files with this browser OR an installation mechanism
- JavaScript device APIs

JavaScript Device APIs

are APIs that grant access to phone functionality

- camera
- contact list
- text messages
- etc.

JavaScript Device APIs

are necessary for a true mobile experience.

W3C widgets should be able to tie into phone functionality.

JavaScript Device APIs

- BONDI specification
  (not yet implemented)
- Phonegap library
  (Android, Blackberry, iPhone)
- Opera/T-Mobile widget manager
  (Windows Mobile)
- Adobe Air

JavaScript Device APIs
Security

If I receive a widget from someone
and it uses device APIs
how do I know it's not going to try to
steal my contact list?

JavaScript Device APIs
Security

This problem will probably be solved by signed widgets and security levels.

On the lowest security levels, phone users will be prompted for every device API call the widget wants to perform. Higher levels do it automatically.

JavaScript Device APIs
Security

Unfortunately both JavaScript über-guru Douglas Crockford and Dojo library creator Alex Russell don't believe in this solution.

More research is necessary.

W3C Widgets
Security

JavaScript's same-source policy is not implemented in widgets,
because they have to be able to request data from any source.

This, too, requires more thought.

Practicalities

Before we continue
this is totally new, untried technology.

So don't take anyone's word for anything, especially when it concerns design and interface.

Practicalities

All the speakers here could be totally wrong,

and it might be YOU who figures out exactly why, how, and when to use W3C widgets.

Practicalities

- Create 1 HTML page with the CSS, JavaScript, and images you need.
- Add an icon and a config.xml
- Zip the lot
- Change extension to .wgt
- It Just Works.

Practicalities

widget object

The widget object contains some special methods and properties for widgets.

http://www.quirksmode.org/m/widgets.html

Practicalities

widget object

widget.identifier
038274281938473835 3

What does this number mean?

I have no idea, either.

Practicalities

widget object

widget.setPreferenceForKey(value,key)
sets a preference that can be retrieved by preferenceForKey(key)

The *value,key* order is totally absurd

And yes, you could also use cookies.

Practicalities

widget object

widget.getAttention()
lights up the screen

Useful for applications that require the user to stare at them for a long time without taking action.

Practicalities

widget object

widgetmodechange event
fires when the user docks or undocks the widget.

```
widget.addEventListener
    ('widgetmodechange',yourFunction,false)
```

Practicalities

widget object

widget.widgetMode
- application: running on a phone
- widget: running on a desktop
- docked: docked/minimised

Practicalities

config.xml

```
<widget id="http://quirksmode.org/widget" dockable="true">
  <widgetname>Test widget</widgetname>
  <icon>pix/myIcon.gif</icon>
  <width>200</width>
  <height>200</height>
  <security>
    <access>
      <host>quirksmode.org</host>
    </access>
  </security>
</widget>
```

Practicalities

config.xml

```
<widget id="http://quirksmode.org/widget" dockable="true">
```

Widget needs unique ID for updating purposes.

The dockable attribute says the widget may continue to run scripts in docked mode.

Practicalities

config.xml

```
<widgetname>Test widget</widgetname>
<icon>pix/myIcon.gif</icon>
```

Set name and (local) icon of widget.

Advise: keep name short, you've only got 60px of space.

Practicalities

config.xml

```
<width>200</width>
<height>200</height>
```

Set maximum width and height of widget. May not become larger than display, though.

Practicalities

config.xml

```
<security>
 <access>
  <host>quirksmode.org</host>
 </access>
</security>
```

The widget is allowed to download files from this/these host(s).
Warning: changed in Opera 10.

Practicalities

Writing and debugging

While creating a widget you can test in any browser.

It's just HTML/CSS/JavaScript, after all.

Practicalities

Writing and debugging

When you've zipped the widget and changed the extension to .wgt you can test in Opera.

(Ignore Opera 10 right now because of security changes.)

Practicalities

Writing and debugging

Finally, upload to mobile phone and test there.

This is a *necessary* step; unfortunately it's not possible to test widgets without a mobile phone.
Desktop just isn't the same.

Practicalities

Writing and debugging

Use the SDK for the tricky bits.

You'll hear more about that later.

More information

Mobile research:
http://quirksmode.org/m/

Yahoo! and Google presentations via
http://quirksmode.org/blog/

Thank you
for your attention

Questions?

Ask away.

Or ask me on Twitter
http://twitter.com/**ppk**
or on my site
http://quirksmode.org