



Yahoo! Blueprint Platform

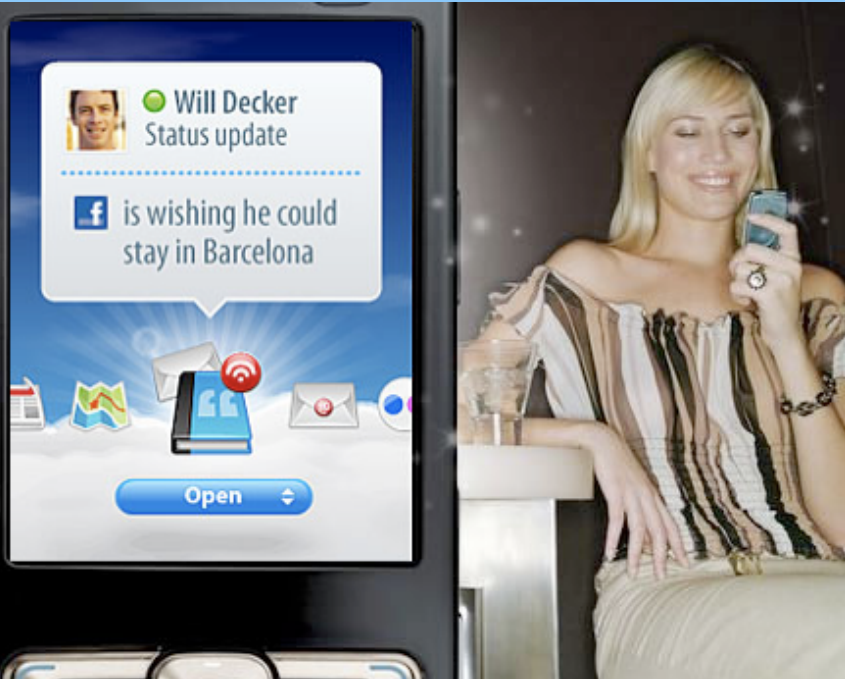
Yahoo! **Open Hack Day 2008**

Markus Spiering

Agenda

- ❖ Introduction
- ❖ Widgets development process
- ❖ Blueprint Language – deeper dive
- ❖ Step-by-Step tutorial

The Mobile Opportunity



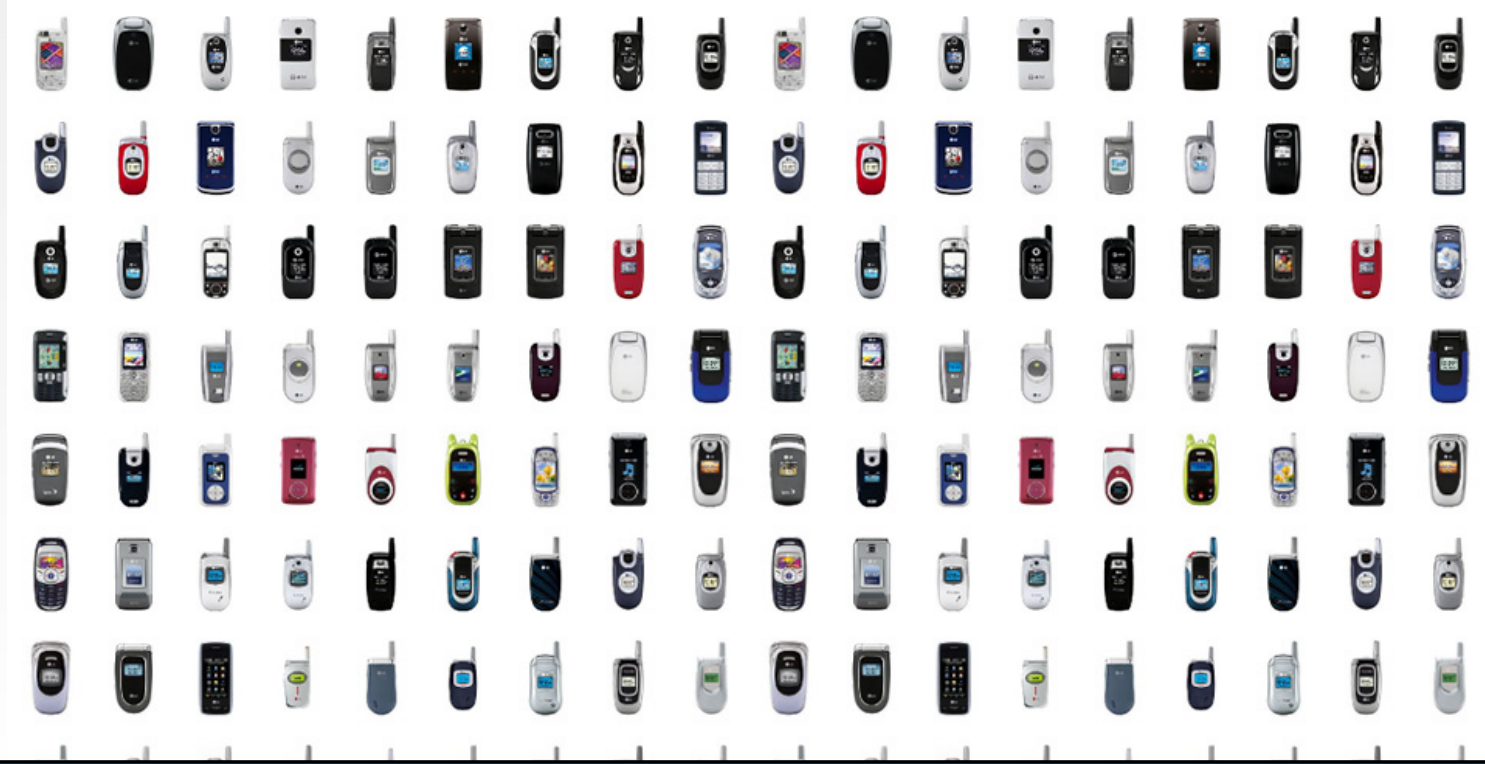
Always with the user

Location awareness

Communication device

Truly Personal & Mass Market

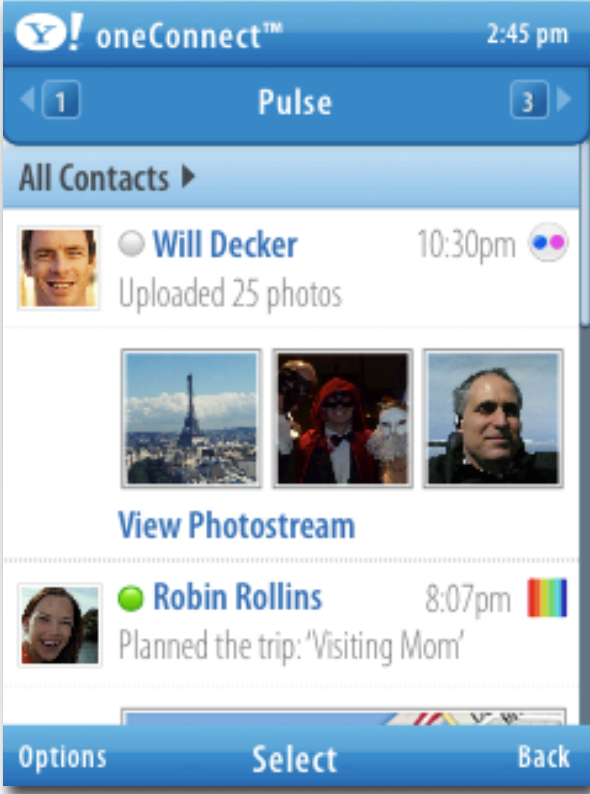
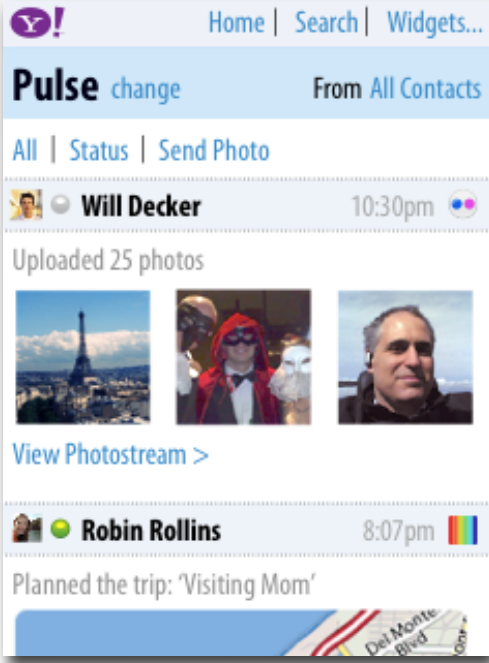
The Problem



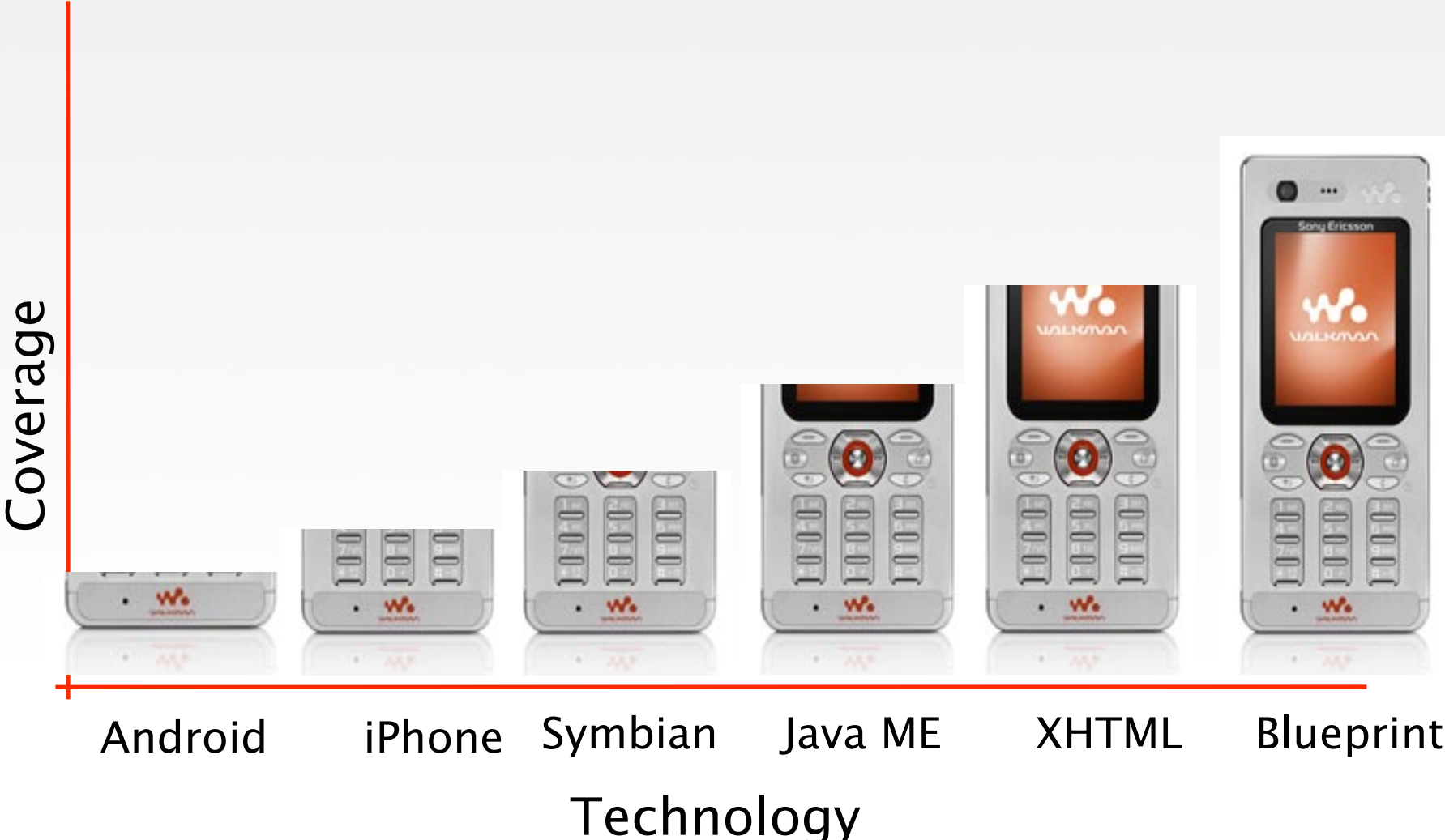
Different memory capabilities



Blueprint on different devices



Blueprint coverage

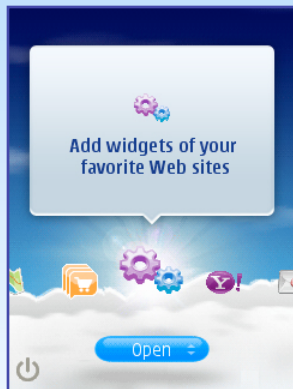


Yahoo! Blueprint Platform

Mobile Widgets

❖ Mobile Widgets

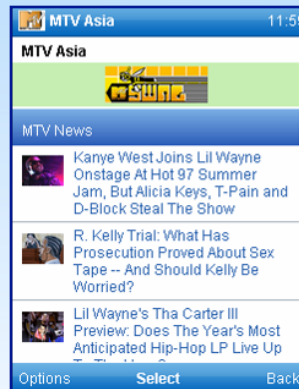
Mobile Widgets are mini-applications designed to deliver the ideal Internet experience for your phone.



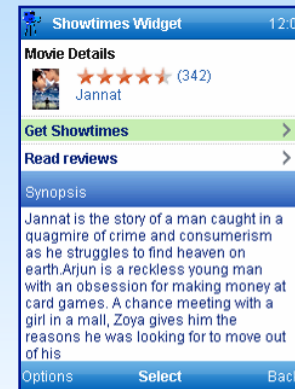
Widget Gallery



Editor Picks



MTV



Movies

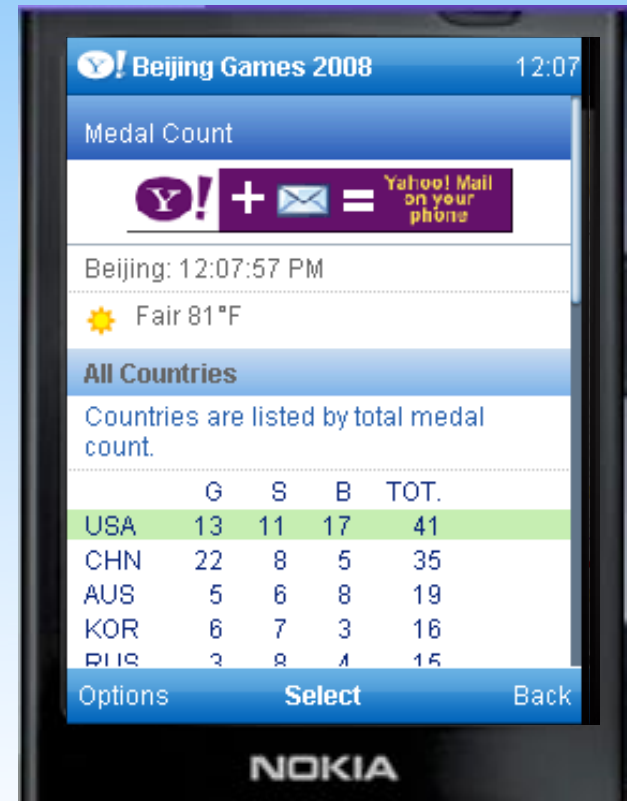


Yahoo! Sports

Yahoo! Blueprint Platform

Blueprint

- ❖ Is an XML markup set based partly on XForms
- ❖ Is a purely declarative language – includes no scripting or procedural code
- ❖ Enforces a strict, highly abstracted user-interface model
- ❖ Incorporates cutting edge features like
 - location-based services
 - maps
 - SSL
 - tables



The MySpace Mobile Widget built on Yahoo!

Blueprint Mobile Platform



Open Platform

Easy to Mobilize

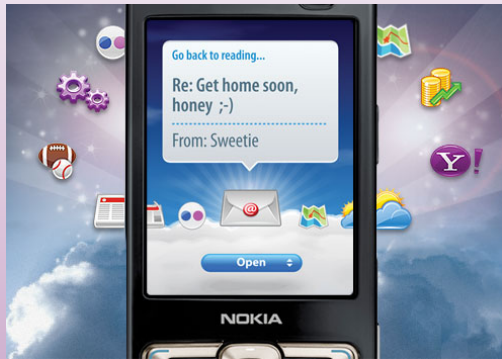
Maximum Reach

Free!

Write once, run it across multiple devices, platforms and operating systems

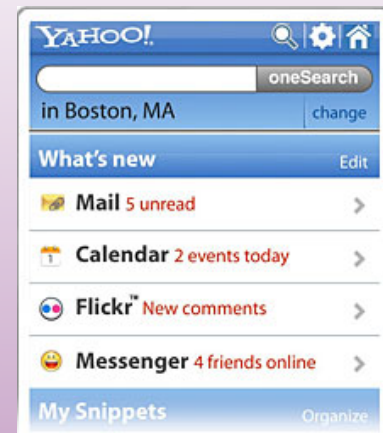
2 ways for user to access your widget

Yahoo! Go 3.0 Downloadable Java app



Covers 280+ phone models

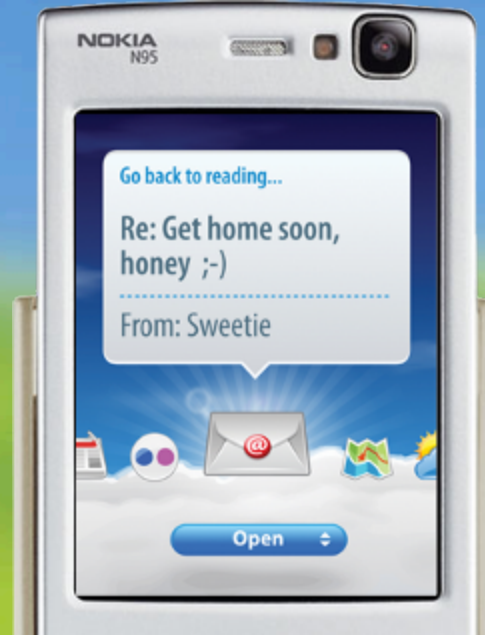
Yahoo! Mobile Homepage <http://beta.m.yahoo.com>



Customized rendering for iPhone, HTML and xHTML browsers

Available Now

- Yahoo! Go 3 and Yahoo's new beta Frontpage is available globally
- 70+ Live Widgets including eBay, MySpace, Dopplr, MTV
- Yahoo! Mobile services based on Blueprint



Building Mobile Widgets

What Do I Need?

Any web-server

Use any scripting language

Use any existing publishing tools

Return Blueprint!





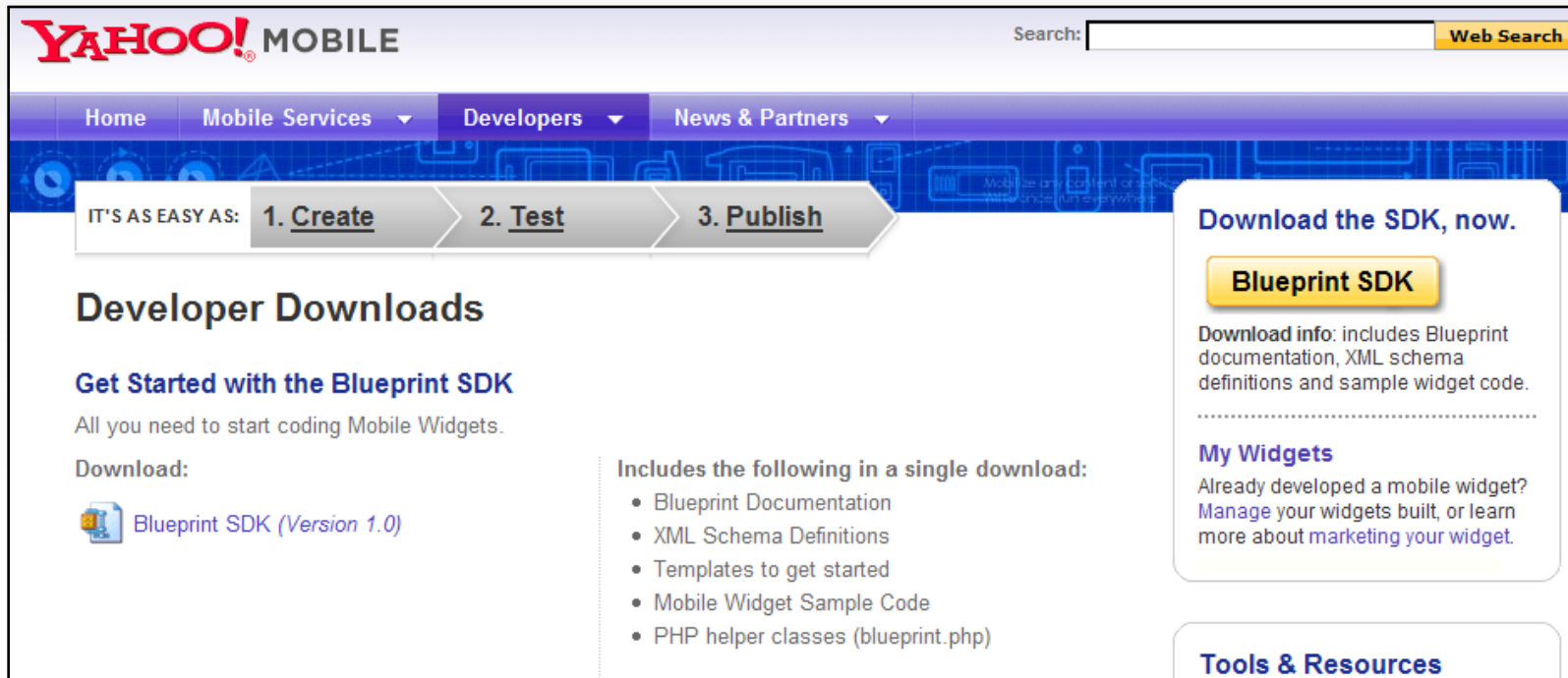
Widgets Development Process

Building Mobile Widget

1

Download the Blueprint SDK

❖ <http://mobile.yahoo.com/developers>



The screenshot shows the Yahoo! Mobile Developers page. At the top, there is a search bar and navigation links for Home, Mobile Services, Developers, and News & Partners. A central banner reads "IT'S AS EASY AS: 1. Create 2. Test 3. Publish". The main content area is titled "Developer Downloads" and features a section for "Get Started with the Blueprint SDK". This section includes a "Download:" link with a document icon and the text "Blueprint SDK (Version 1.0)". To the right, a list of included items is provided: Blueprint Documentation, XML Schema Definitions, Templates to get started, Mobile Widget Sample Code, and PHP helper classes (blueprint.php). On the right side of the page, a yellow button labeled "Blueprint SDK" is prominent, with a "Download info:" section below it stating it includes documentation, XML schema definitions, and sample code. Further down, there are sections for "My Widgets" and "Tools & Resources".

YAHOO! MOBILE Search: **Web Search**

Home Mobile Services ▾ **Developers** ▾ News & Partners ▾


IT'S AS EASY AS: 1. Create 2. Test 3. Publish

Developer Downloads

Get Started with the Blueprint SDK

All you need to start coding Mobile Widgets.

Download:

 [Blueprint SDK \(Version 1.0\)](#)

Includes the following in a single download:

- Blueprint Documentation
- XML Schema Definitions
- Templates to get started
- Mobile Widget Sample Code
- PHP helper classes (blueprint.php)

Download the SDK, now.

Blueprint SDK

Download info: includes Blueprint documentation, XML schema definitions and sample widget code.

.....

My Widgets

Already developed a mobile widget? [Manage your widgets built](#), or learn more about [marketing your widget](#).

Tools & Resources

Building Mobile Widget

1

Download the Blueprint SDK

Blueprint SDK includes

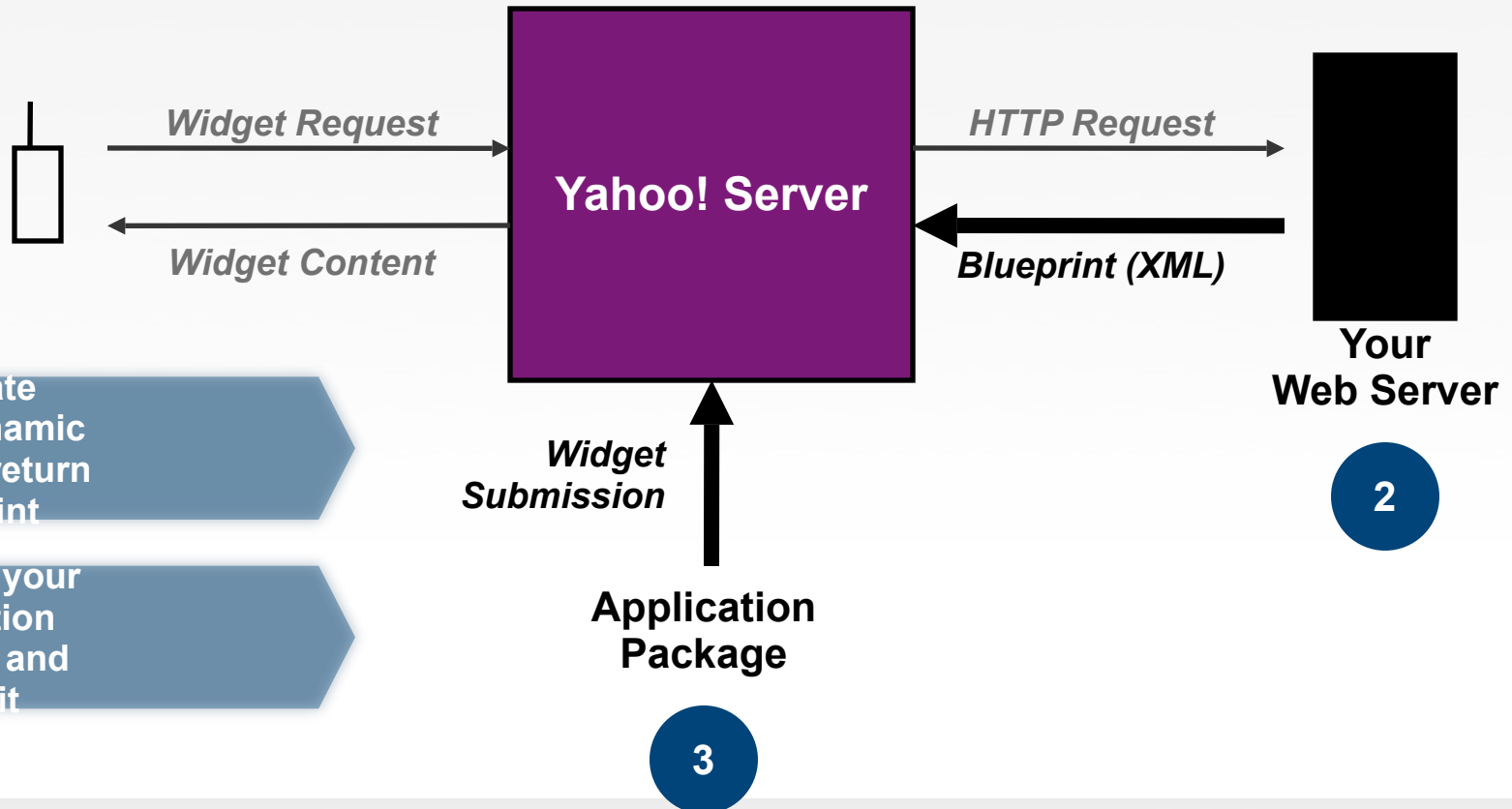
- ❖ Blueprint Documentation
- ❖ XML Schema definitions
- ❖ Templates to get started
- ❖ Mobile Widget Sample Code
- ❖ PHP helper class (blueprint.php)



Building Mobile Widget

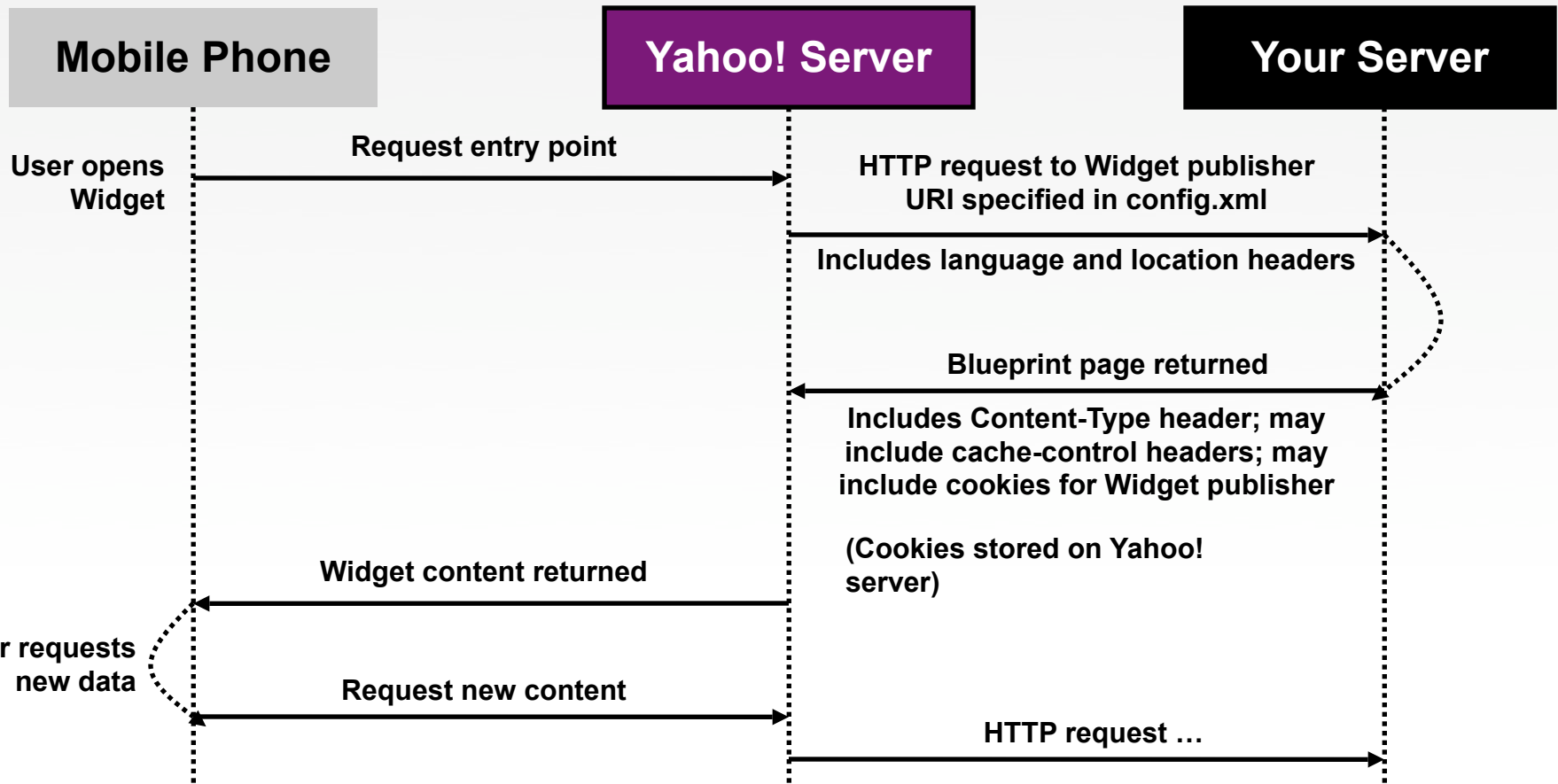
2

Develop your widget



Building Mobile Widget

Data flow



Building Mobile Widget

Interfacing with Yahoo! Servers

Content Types:

Content-Type: application/x-ywidget+xml

Content-Type: application/x-ysnippet+xml

Use only the UTF-8 character set.

Using Cookies:

Your server can set/retrieve cookies exactly as if you are serving HTML instead of Blueprint markup.

The cookies are stored on Yahoo! servers

Cache Control:

Wherever possible, Blueprint pages are cached on the user's device. To control caching, use the following standard HTTP headers when serving pages: Cache-Control, ETag, and If-None-Match. Only these headers affect caching

Building Mobile Widget

Interfacing with Yahoo! Servers

Internationalization and Localization:

When Yahoo! Mobile application server sends a page request, the request may contain several HTTP headers, including:

Accept-Language

RFC 4646/4647 language code
(Example: Accept-Language: en-US)

Geo-Country

ISO 3166 country or UN M.49 region code
(Example: Geo-Country: CA)

You can use the information in the headers to decide what content to return.

Building Mobile Widget

3

Package your widget

Application Package is a zip file containing

❖ **config.xml**

→ Application metadata, including the URL for your web server

❖ **gallery.xml**

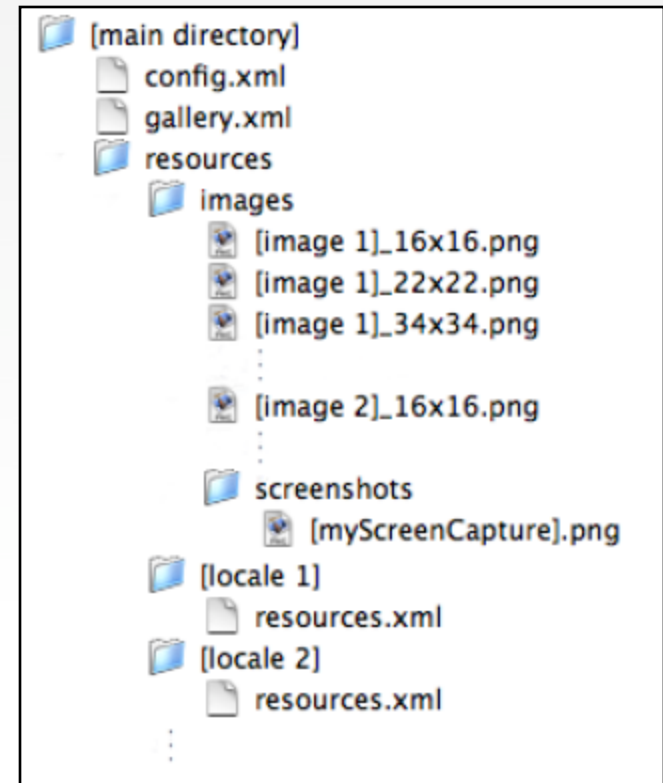
→ Information for the widget gallery

❖ **Image Files**

→ Includes icons and screen shots (for the gallery)

❖ **locale-specific resources**

→ Menu items for launching widget (Optional)

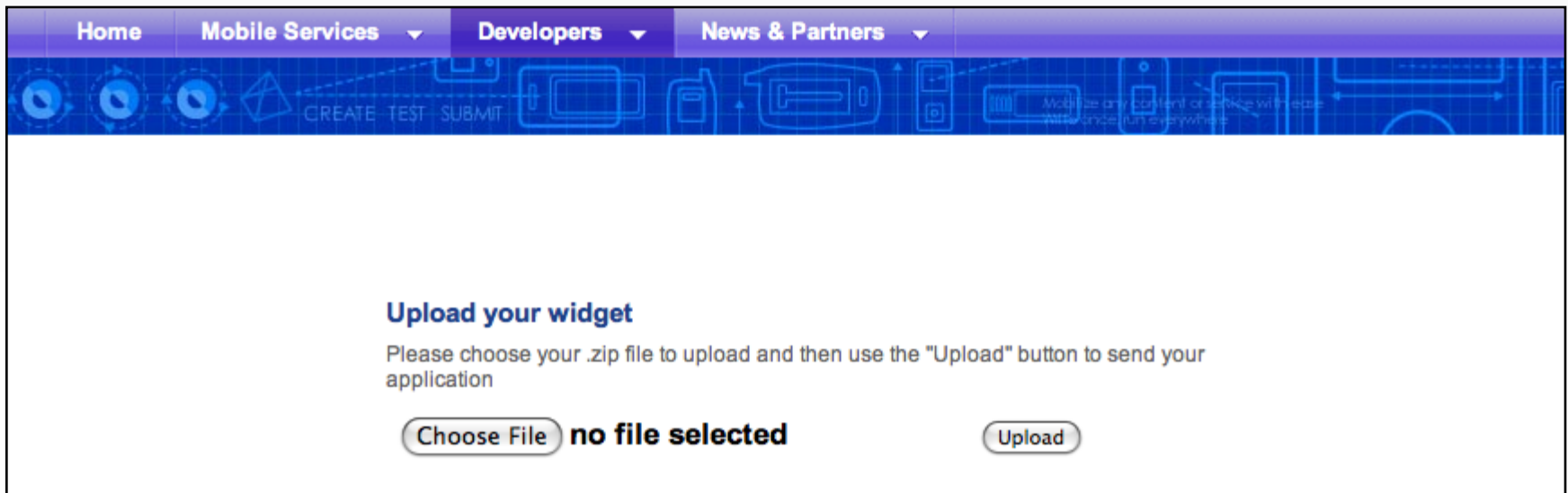


Building Mobile Widget

4

Upload your mobile widget

- ❖ <http://mobile.yahoo.com/developers/test/upload>
 - Package the widget files into a zip archive
 - Upload the .zip file



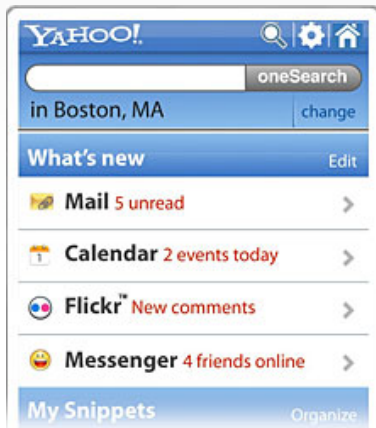
Building Mobile Widget

5

Test your mobile widget

1. Yahoo! Go Emulator: <http://mobile.yahoo.com/go/tryit>

(Note: External links won't work)



2. Yahoo! Mobile Front-page <http://beta.m.yahoo.com>

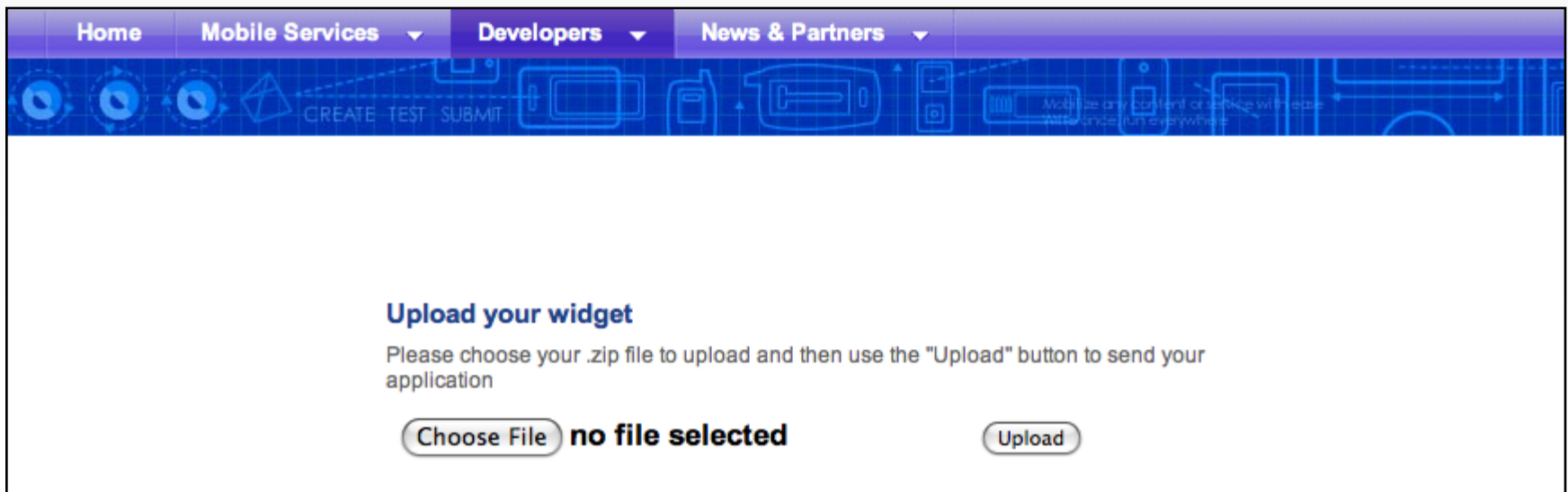
(Note: GPS and cell-ID won't work on desktop browser)

Building Mobile Widget

6

Publish your mobile widget

- ❖ <http://mobile.yahoo.com/developers/submit/upload>
 - Please test your widget before publishing
 - It may take 1 week for the approval process



The screenshot shows the 'Upload your widget' page on the Yahoo! Mobile Developers site. The navigation bar at the top includes 'Home', 'Mobile Services', 'Developers', and 'News & Partners'. Below the navigation bar is a blue banner with icons for 'CREATE', 'TEST', and 'SUBMIT', along with a mobile phone icon and a warning icon. The main content area is white and contains the following text:

Upload your widget
Please choose your .zip file to upload and then use the "Upload" button to send your application

Below the text are two buttons: 'Choose File' and 'Upload'. The 'Choose File' button is currently disabled and shows the text 'no file selected'.

Widgets development process

Summary

1 Download the Blueprint SDK

2 Develop your widget

3 Package your widget

4 Upload your mobile widget

5 Test your mobile widget

6 Publish your mobile widget



Blueprint Language

Overview of the Blueprint Language

UI Elements

Containers

Containers are Grouping elements. They contain containers as well as controls and inline elements

Controls

Controls presents content to the user and allow data input. They contain other controls as well as inline elements

Inline elements

Inline elements contain text, references, or simple presentation constructs.

Non UI Elements includes

Form-support components

Events

Actions

Overview of the Blueprint Language

UI Elements: Containers

page	A single screen in a widget. Includes a content element, which contains at least one module
content	A wrapper for the display elements within a Widget page. Contains modules
module	Contains blocks, controls and nested modules
block	Contains inline data (text, images, spans)

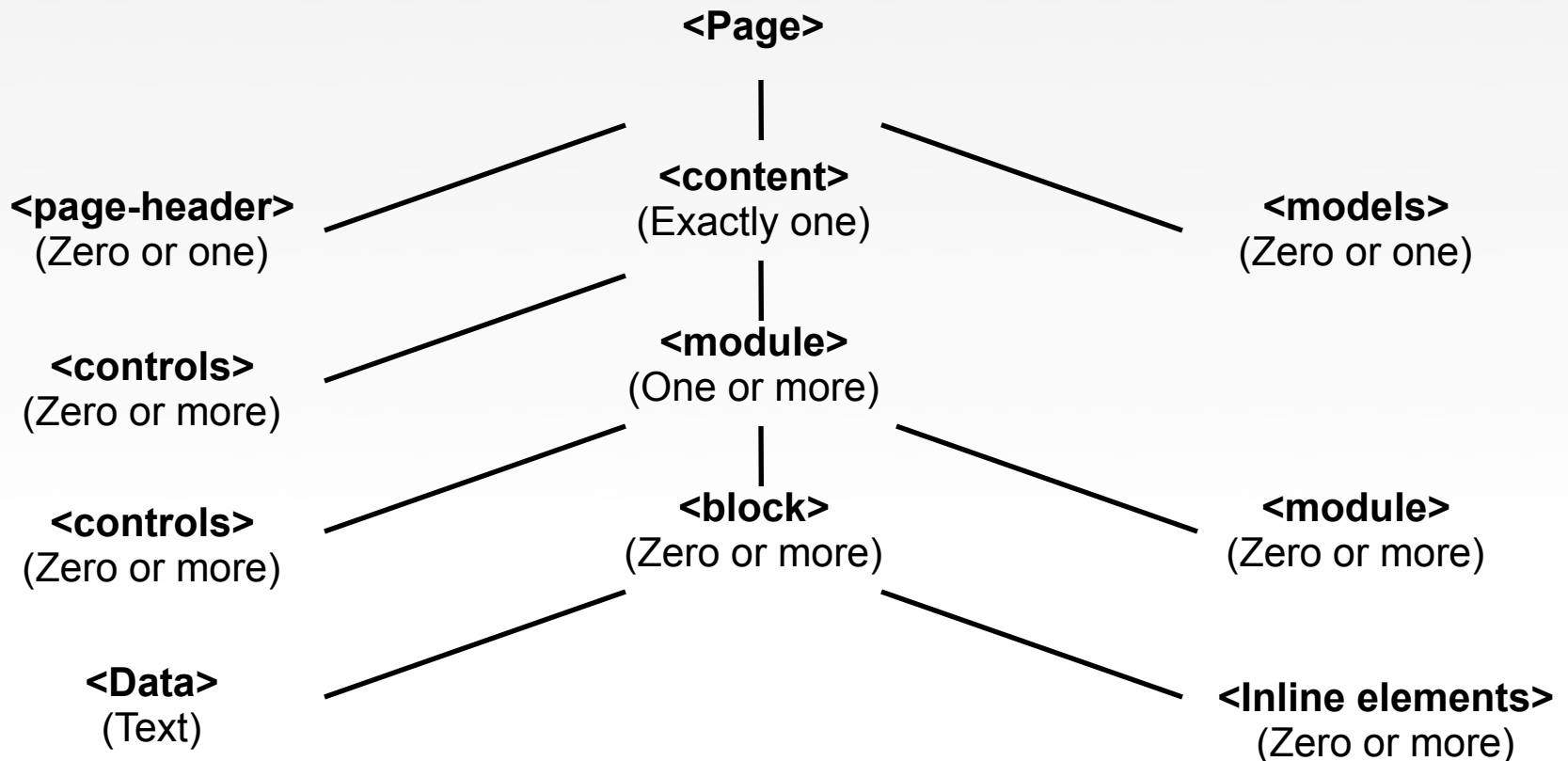
Note: Please check Blueprint documentation to know about all the other constructs

```
<page>
<content>
<module>
  <header layout="simple">
    <layout-items>
      <block>Greeting</block>
    </layout-items>
  </header>
  <block>Hello World!</block>
</module>
</content>
</page>
```

Hello World! Widget Example

Overview of the Blueprint Language

Widget Structure



Overview of the Blueprint Language

UI Elements: Controls

page-header

A title (with an optional icon) for a page

```
<page>
  <page-header>
    <masthead layout="simple">
      <layout-items>
        <block>My Widget</block>
      </layout-items>
    </masthead>
  </page-header>
  <content>
    <module>
      <header layout="simple">
        <layout-items>
          <block>Greeting</block>
        </layout-items>
      </header>
      <block>Hello World!</block>
    </module>
  </content>
</page>
```



} Page Header

Blueprint (XML)

Overview of the Blueprint Language

UI Elements: Controls

header

A title (with an optional icon) for a module

```
<page>
  <page-header>
    <masthead layout="simple">
      <layout-items>
        <block>My Widget</block>
      </layout-items>
    </masthead>
  </page-header>
  <content>
    <module>
      <header layout="simple">
        <layout-items>
          <block>Greeting</block>
        </layout-items>
      </header>
      <block>Hello World!</block>
    </module>
  </content>
</page>
```



Header for module

Blueprint (XML)

Overview of the Blueprint Language

UI Elements: Controls

placard

Provides flexible predefined layouts using blocks and images

```
<page>
...
<content>
...
<module>
  <placard layout="card">
    <layout-items>
      <block class="title">Capricorn</block>
      <block class="description">Dec 22 - Jan 19</block>
      <image size="medium" resource="http://.../c.jpg"/>
    </layout-items>
    <load event="activate" resource="h?t=d&amp;ss=c"/>
  </placard>
</module>
...
</content>
</page>
```



*Placard with image,
text and sub-text*

Blueprint (XML)

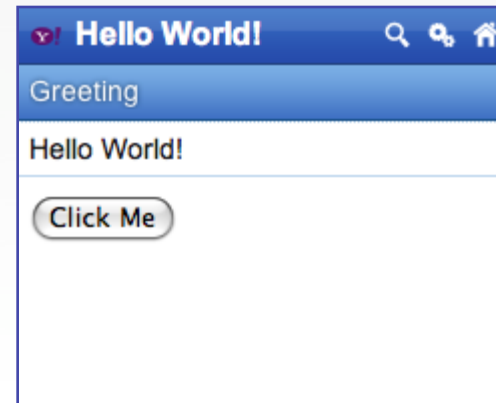
Overview of the Blueprint Language

UI Elements: Controls

trigger

A button or clickable label

```
<page>
<content>
<module>
<header layout="simple">
<layout-items>
<block>Greeting</block>
</layout-items>
</header>
<block>Hello World!</block>
<trigger appearance="button">
<label>Click Me</label>
<load event="activate" resource="http://../c.html"/>
</trigger>
</module>
</content>
</page>
```



Use Trigger or Submit to create a button

Blueprint (XML)

Overview of the Blueprint Language

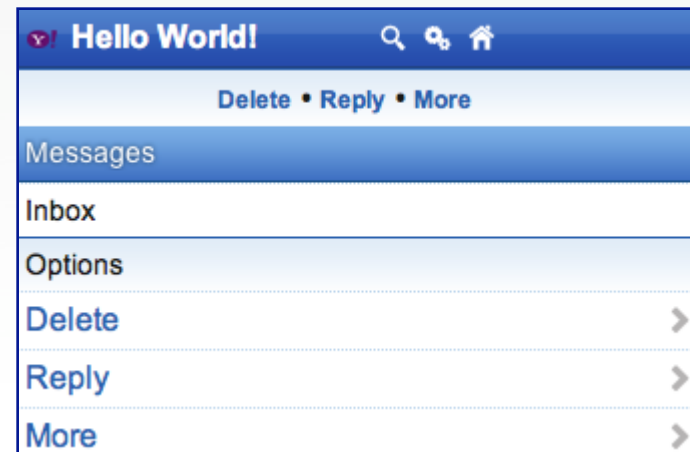
UI Elements: Controls

Option

A choosable item that usually appears on a main menu

```
<<page>
<content>
  <options>
    <option>
      <label>Delete</label>
      <load-page event="activate" page="delete.bp"/>
    </option>
    <option>
      <label>Reply</label>
      <load-page event="activate" page="reply.bp"/>
    </option>
    <option>
      <label>More</label>
      <load-page event="activate" page="more.bp"/>
    </option>
  </options>
</module>
...
</module>
</content>
</page>
```

Blueprint (XML)



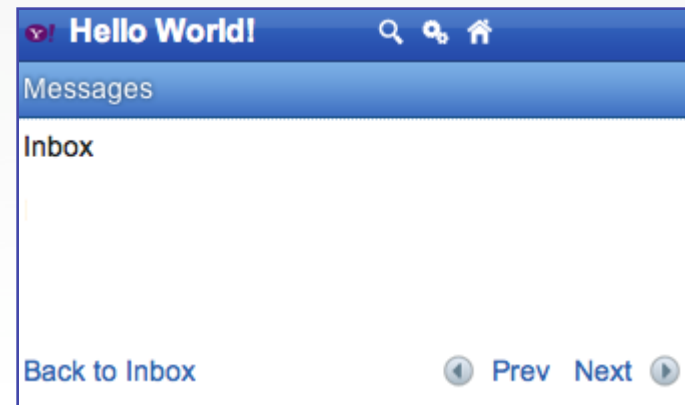
Overview of the Blueprint Language

UI Elements: Controls

navigation-bar

A navigation bar with next/back buttons

```
<page>
<content>
<module>
...
<navigation-bar>
<back>
  <label>Back to Inbox</label>
  <load event="activate" resource="back.php"/>
</back>
<prev>
  <label>Prev</label>
  <load event="activate" resource="prev.php"/>
</prev>
<next>
  <label>Next</label>
  <load event="activate" resource="next.php"/>
</next>
</navigation-bar>
</module>
</content>
</page>
```



Blueprint (XML)

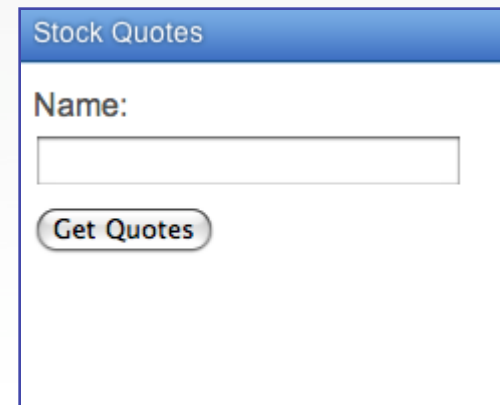
Overview of the Blueprint Language

Forms, Events and Actions

Input

A single line edit box for data entry

```
<page>
<models>
  <model>
    <instance>
      <data xmlns="">
        <name/>
      </data>
    </instance>
    <submission resource="q.php" method="urlencoded-post"/>
  </model>
</models>
<content>
  ...
  <module>
    ...
    <input ref="name">
      <label>Name:</label>
    </input>
    <submit appearance="button">
      <label>Get Quotes</label>
    </submit>
  </module>
</content>
</page>
```



} *Input*



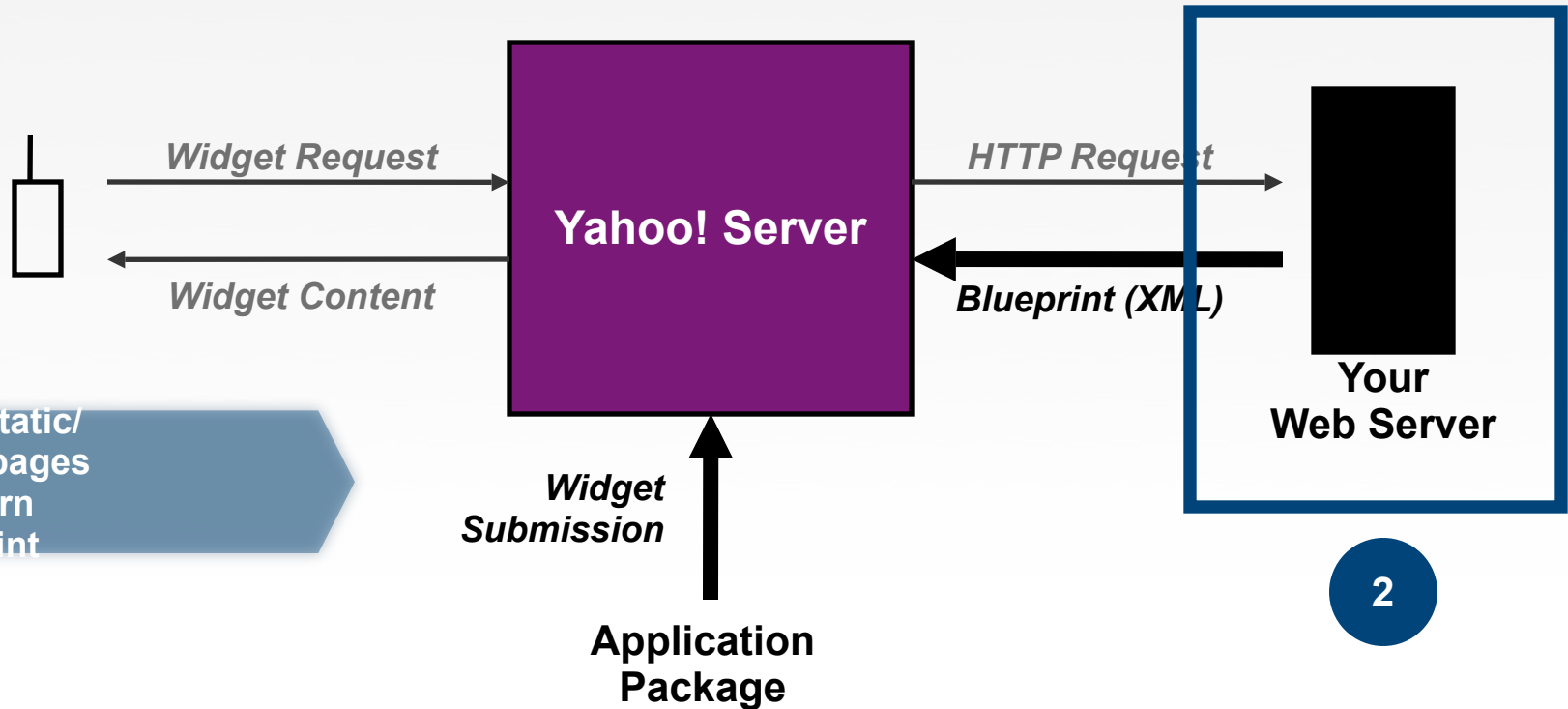
Step by Step Tutorial

Building a “Hello World” widget

Building a “Hello World” widget

2

Develop your widget

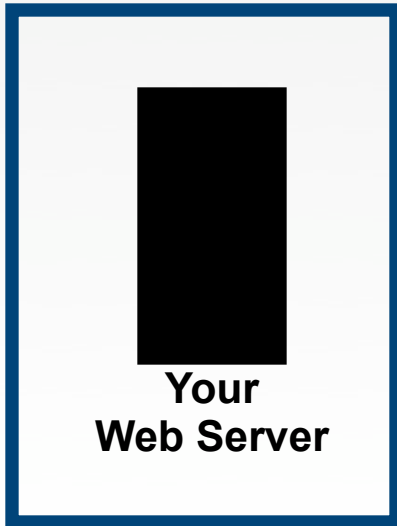


2. Write static/
dynamic pages
to return
Blueprint

2

Building a “Hello World” widget

Server (Using PHP 5.2 and above)



2

```
<?php
header( "Content-Type: application/x-ywidget+xml" );
header( "Cache-Control: no-cache" );
require_once( "lib/blueprint.php" );
blueprintSetErrorHandler();

$writer = new XMLWriter();
$writer->openMemory();
$writer->setIndent( true );

// Create Page and Section nodes
$page = new Blueprint_Page();
$module = new Blueprint_Module();
$page->addContent( $module );

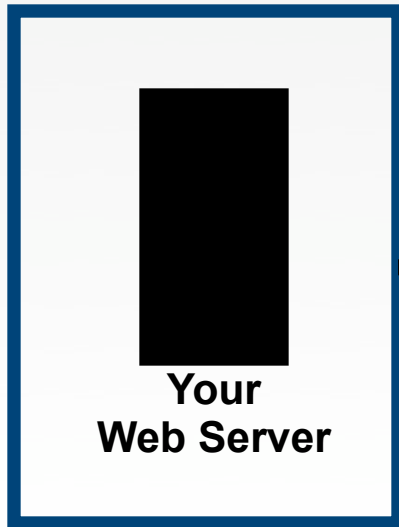
// Add main content block
$module->addContent( new Blueprint_Block( "Hello World!" ) );
$module->setHeader ( "Greeting" );

// Write everything to memory buffer
$page->Emit( $writer );

// Return buffer & flush
print( $writer->outputMemory() );
?>
```

Building a “Hello World” widget

Server (Using PHP 5.2 and above)



Blueprint (XML)

```
<page>
<content>
  <module>
    <header layout="simple">
      <layout-items>
        <block>Greeting</block>
      </layout-items>
    </header>
    <block>Hello World!</block>
  </module>
</content>
</page>
```

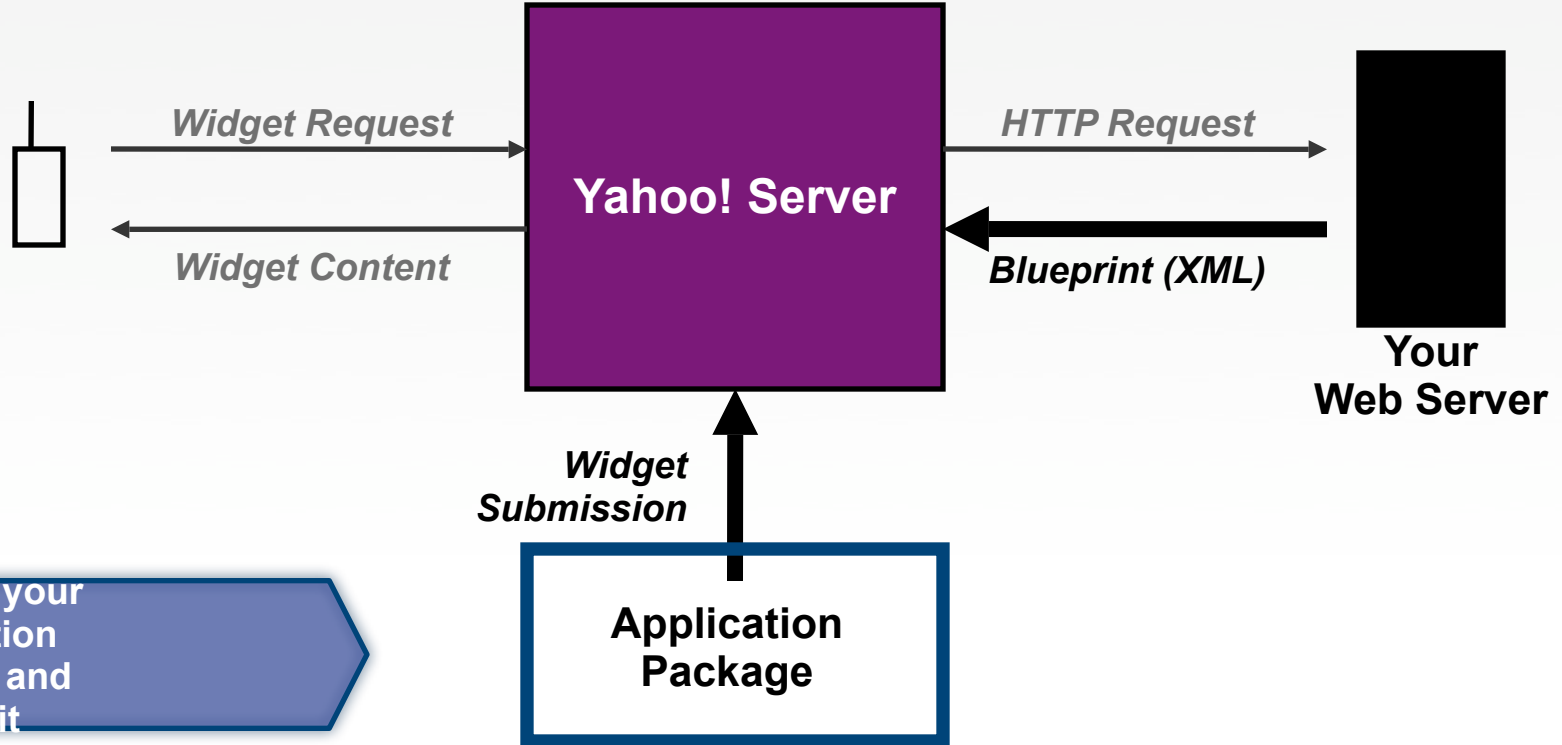
Blueprint (XML)

2

Building a “Hello World” widget

3

Package your application

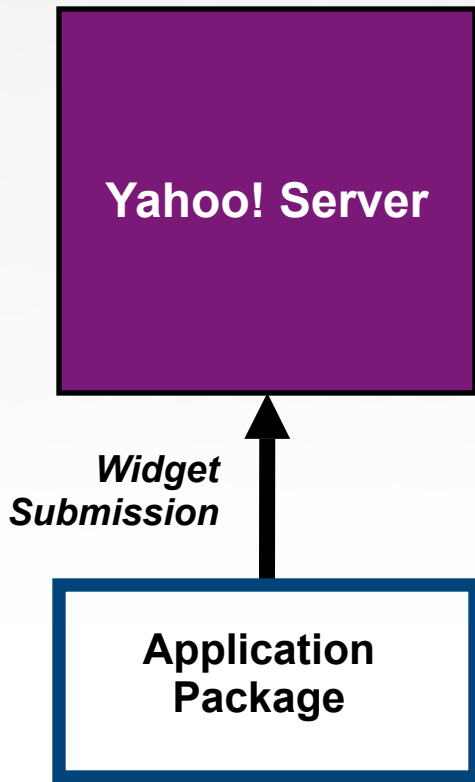


3. Create your application package and submit

3

Building a “Hello World” widget

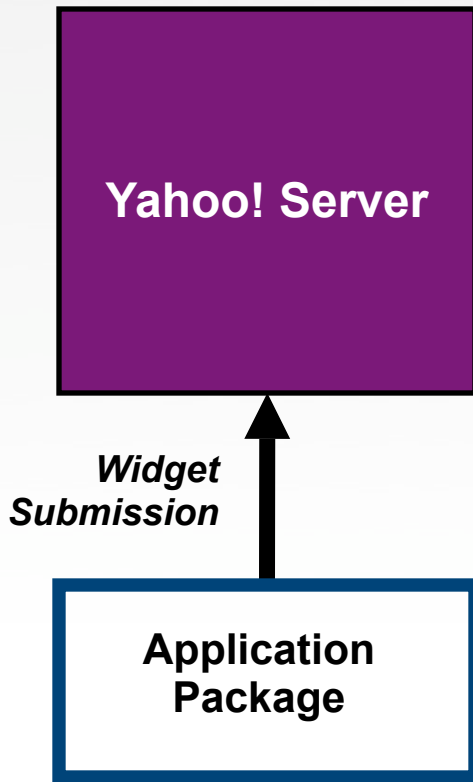
Application Package (config.xml)



```
<?xml version="1.0" encoding="UTF-8"?>
<config xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://
mobile.yahoo.com/widgets/schema/1.0/config/" xsi:schemaLocation="...">
  <title>Hello World!</title>
  <version>1.0</version>
  <identifier>hello-world-1</identifier>
  <description>My Hello World! Widget</description>
  <icon>ybang</icon>
  <author organization="Yahoo! Inc" href="http://www.yahoo.com"
    email="pkirtane@yahoo-inc.com">
    Prashant Kirtane
  </author>
  <!-- change this widget base to your server url -->
  <widget base="http://yourserver.com/HelloWorld/">
    <preview>
      <icon>ybang</icon>
      <label>Hello World!</label>
    </preview>
    <shortcuts>
      <item default="true">
        <label>Y! Mobile</label>
        <href>test.php</href>
      </item>
    </shortcuts>
  </widget>
</config>
```

Building a “Hello World” widget

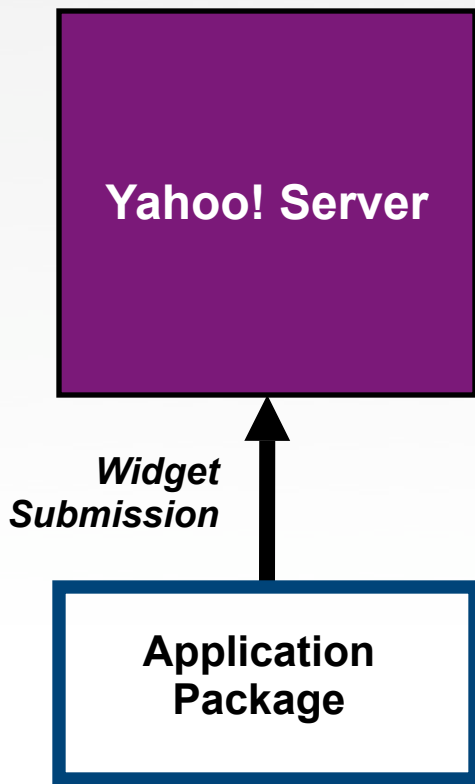
Application Package (gallery.xml)






```
<?xml version="1.0" encoding="UTF-8"?>
<gallery xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://
mobile.yahoo.com/widgets/schema/1.0/gallery/" xsi:schemaLocation="...">
  <description lang="en">
    Hello World! Widget
  </description>
  <tags> <!-- Use tags which identify your widget to other users -->
    <tag>Yahoo!</tag>
    <tag>Mobile</tag>
    <tag>widget</tag>
    <tag>development</tag>
  </tags>
  <languages> <!-- Use languages your widget supports -->
    <lang>en-US</lang>
    <lang>en-UK</lang>
  </languages>
</gallery>
```

Building a “Hello World” widget

Application Package (HelloWorld/resources/images)



3

Name ▲	Size	Type
 ybang_16x16.png	1 KB	PNG Image
 ybang_34x34.png	2 KB	PNG Image
 ybang_52x52.png	2 KB	PNG Image

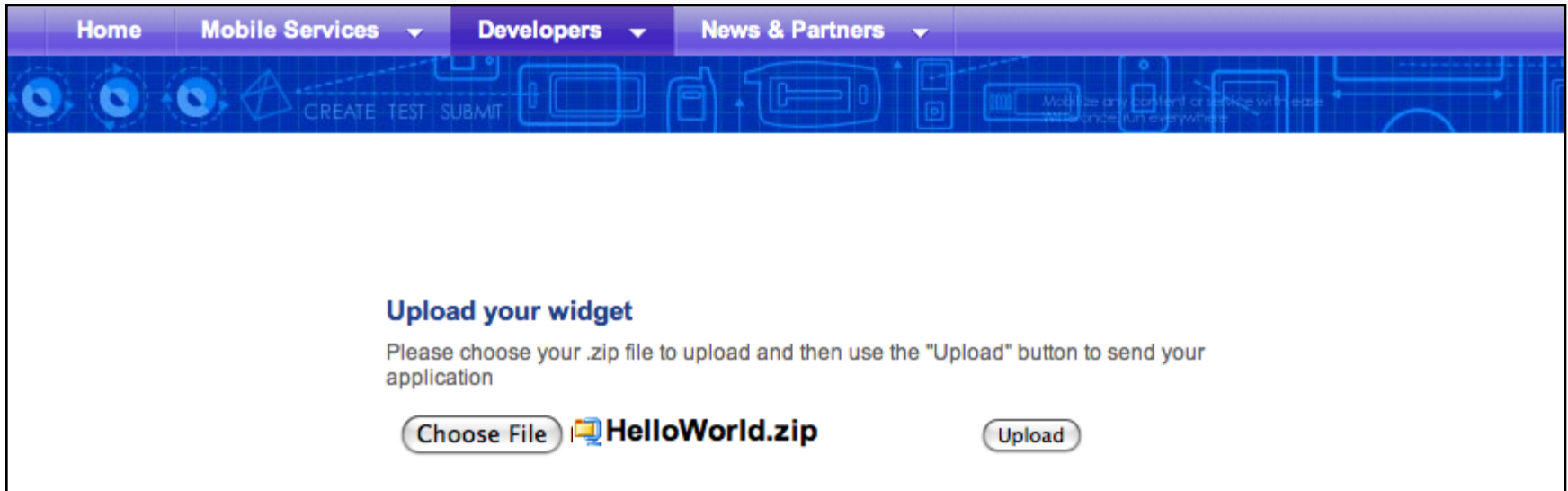
Building a “Hello World” widget

4

Upload your mobile widget “HelloWorld.zip”


❖ <http://mobile.yahoo.com/developers/test/upload>

- Package the widget files into a zip archive
- Upload the .zip file



The screenshot shows the 'Upload your widget' page on the Yahoo! Mobile Developers site. The page has a purple header with navigation links: Home, Mobile Services, Developers, and News & Partners. Below the header is a blue banner with icons for mobile devices and the text 'CREATE TEST SUBMIT'. The main content area is white and contains the following text and buttons:

Upload your widget
Please choose your .zip file to upload and then use the "Upload" button to send your application

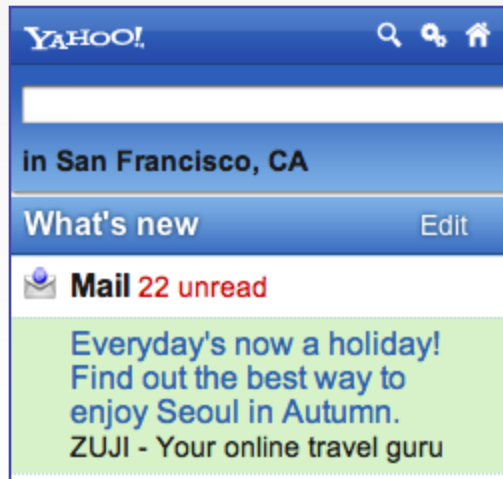
 **HelloWorld.zip**

Building a “Hello World” widget

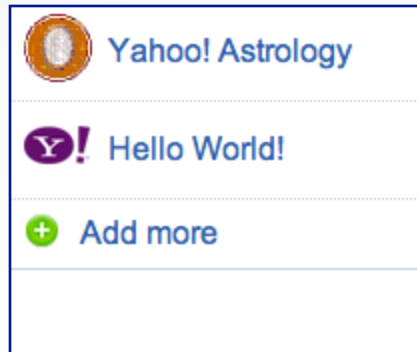
5

Test your mobile “HelloWorld” widget

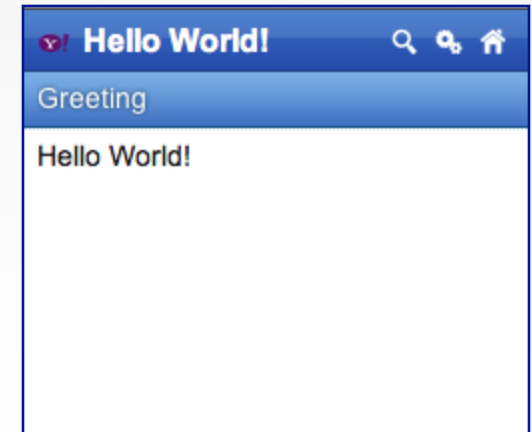
Yahoo! Mobile Front-page <http://beta.m.yahoo.com>



<http://beta.m.yahoo.com>



My Widget page



Hello World! Widget

Links & Support

Get the SDK

❖ Download the SDK

<http://mobile.yahoo.com/developers/download>

Get Help!

❖ Yahoo! Tech Group

<http://tech.groups.yahoo.com/group/yhoomobiledevelopers>

❖ Blueprint Hack Day Support

blueprint-hack-support@yahoo-inc.com