Wireless Possibilities for CF Programmers

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Agenda
• Quick Intro to Wireless Development
• Looking at it from a CF Point of View
• Getting and Using WAP Emulators
• Developer Resources for Learning More
• Common Challenges for WAP Developers
• Considering Advanced Features
• Industry Trends and Battle Lines

Audience
• Those considering deploying wireless applications (WAP in particular)
  – Should you? Shouldn’t you? Why?
• Those who are cynical about WAP
  – Why you should or shouldn’t be
• All should come away with greater understanding of issues, opportunities

Who Am I?
• Author of monthly Journeyman ColdFusion article in CFDJ
  – Speaker at Macromedia Developers Conference and CFUGs around the country, on all manner of CF and related topics
• Past focus on wireless application development
  – Co-author of, Professional WAP (Wrox Press, 2000)
  – Speaker at:
    • Wrox Press Wireless Developer Conference in Amsterdam
    • Wireless DevCon in San Jose in December
• A trainer by trade, programmer at heart, with nearly 20 years IT experience

What is WAP?
• WAP: Wireless Application Protocol
  – A well-defined and broadly supported standard for sending data to wireless phones and other devices
  – Managed by the wapforum (wapforum.org), supported by hundreds of members:
    • Phone manufacturers
    • Phone service providers
    • Content providers
    • Developers
  – Bottom line: a way to access web content customized for small, mobile devices

Is All Wireless Data Comm. Based on WAP?
• WAP is definitely not the only game
  – Just one of many players in the wireless data communication space
• Others include
  – Palm Computing Platform
  – I-mode (hugely popular in Japan)
  – Java based (J2ME MIDp)
  – Microsoft Mobile Explorer
  – Symbian Epoch
  – And more
• We will focus on WAP, discuss others later
So, How Does WAP Work?

- From Phone.com\(^1\) (maker of up.link server)

What is WML?

- WML: Wireless Markup Language
  - The language of choice for defining layout and appearance of WAP sites
  - Looks and acts very much like HTML
    - Designed for the limited display and keyboard input features of today's phones
    - Generally can only be viewed in phones or "phone emulators"
  - There are significant differences. Not really HTML-like:
    - Differences in tags
    - Differences in how it's coded

WML "Hello World" Code

```xml
<?xml version="1.0"?>
<!DOCTYPE wml PUBLIC "-//WAPFORUM//DTD WML 1.1//EN" "http://www.wapforum.org/DTD/wml_1.1.xml">
<wml>
<card>
<p>Hello World!</p>
</card>
</wml>
```

- Notice: 2 head tags, new non-HTML tags
  - WML tags are entered lowercase, always closed (WML is a subset of XML), text must be within `<p>` tags
  - Might be stored as a "hello.wml"
  - Will show where to learn more about WML

WML "Hello World" Code in CF

```xml
<CFCONTENT TYPE="text/vnd.wap.wml"><?xml version="1.0"?>
<!DOCTYPE wml PUBLIC "-//WAPFORUM//DTD WML 1.1//EN" "http://www.wapforum.org/DTD/wml_1.1.xml">
<wml>
<card>
<p>Hello World!
</p>
</card>
</wml>
```

- Notice: CFCONTENT tag
  - `<xml>` tag on same line
  - Might be stored as a "hello.cfm"

Using WAP in CF Apps

- Can any CF Server serve WML?
  - Certainly. All you need is the CFCONTENT tag and WML content in your template
- Can any browser view WML pages?
  - No, only phones and phone emulators can view output of a page sent as WML
- Can WML do forms? Support URL variables?
  - Yes, all based on HTTP. CF treats it just like regular HTML pages in that respect
  - All capabilities of CF can be used to generate WML just as if generating HTML

Can Your Phone “Do” WAP?

- WAP services enabled by phone and phone service provider
  - Most recently manufactured phones are enabled to do WAP (or older form, HDML)
  - Major wireless service providers (ATT, Sprint, Verizon, etc.) all support
    - Some charge a monthly fee, or charge per minute (or both); some offer services free
Can Any Site be Browsed on Phone?

- Some assert that tools can convert HTML sites to WML on the fly
  - Doesn't work well in real world
- Only sites designed specifically for WAP will render effectively
  - Not difficult to create “wap sites”
  - Coded with WML
  - Targeted for phones and mobile users
    - Easy, drill-down navigation
    - Few keystrokes
    - Remember past visits

Quick Demo

- Let’s visit a major WAP site, Amazon
  - Using a PC-based WAP emulator
  - Allows display of real WAP interface on PC
  - More on emulators in a moment

Getting an emulator

- Several to choose from, all free
  - Mostly provided by phone manufacturers, or “phone browser” vendors
  - Most popular may be that of phone.com
  - Now openwave.com
- Visit developer.openwave.com
  - Download the openwave.sdk, free
    - No longer need to register (except to use advanced features)
  - Easy to install, includes lots of WAP docs

Should Web Developers Get Excited?

- WML Development is very much akin to web development
  - WAP is based on HTTP (architecture of web)
  - WML is similar to HTML (some differences to support smaller devices, different network)
  - Tools like ColdFusion, ASP, JSP, PHP can be used to create dynamic WML pages
- More and more WAP sites coming out
  - People will become more and more comfortable and familiar with idea
  - Companies will seek to WAP-enable their sites
  - Developers can easily provide solutions

Some Major Brand Sites Using WAP Today

- ABCNews.com (abcnews.go.com)
- ESPN (espn.go.com)
- USA Today (usatoday.com)
- Wall Stree Journal (wsj.com)
- Barnes and Noble (mobile.bn.com)
- Weather Channel (weather.com)
- CBS Sportline.com (cbs.sportsline.com)
- Edmunds.com (mobile.edmunds.com)
- Zagat (Zagat.com)
- And more

Some Major Tech Sites Using WAP Today

- AOL (aol.com/anwywhere)
- Yahoo (yahoo.com)
- eBay (ebay.com)
- Expedia.com, travelocity.com
- Mapquest.com
- E*Trade (www.etrade.com), Schwab
- ZDnet (zdnet.com)
- And more
Some Unique Mobile Applications Available

- **biztravel (biztravel.com)**
  - comprehensive travel information for frequent business travelers
- **iQradio (iqradio.com)**
  - interactive nationwide radio station directory
- **NextBus (nextbus.com)**
  - Real-time arrival info for arriving bus or train (in select cities, tracked via satellite)
- **TrafficStation (trafficstation.com)**
  - Personal Traffic Advisor, area reports, personalized, route-specific traffic reports, Personal Traffic Advisor Telewarning System

Is WAP Crap?

- **Explanations for Some Disappointment**
  - Unfortunate over-hype of "web surfing via phone"
  - Evangelists of competing technologies
  - Slow uptake in US
  - Variety of networks
  - Melodramatic bandwidth concerns
  - Varied implementation of features on different phones
  - Tiny interface and keypad on current phones

Not Quite as Bad as All That

- **Great services exist, targeted to phone interface and info needs**
- ** Huge number of phones supporting WAP**
- **Tendency for people to keep phones for nearly 2 years**
  - Better phones are coming
- **G3, very high bandwidth, is coming**
- **Consider your audience and where they are**
- **Easy to develop WAP applications**

Frequent WAP Battle Lines

- **WAP vs HDML**
- **Phone.com vs The World**
- **WAP in US vs WAP in Europe**
- **WAP vs I-mode**
  - More about the network and devices, cHTML
- **WAP vs Java**
- **WAP vs MME (MS Mobile Explorer)**
- **WAP vs Palm**
- **WAP vs AvantGo**
- **WAP vs Bluetooth**

Proceeding with WAP for Now

- **These battles will rage on for a while**
- **We’ve seen that many businesses have made substantial investments in WAP**
- **It’s very easy to get into**
  - Explore it, keeping an eye on mailing lists and magazines
  - Create a simple sample
    - Get over initial humps
  - Try wap-enabling some small part of site
  - Keep in contact with others doing it

Common Developer Challenges

- **No time to discuss in detail.**
  - See any of the portals, books, magazines, and discussion lists for more
- **See my Wireless DevCon presentation at:**
  - www.systemanage.com/presentations/
- **Issues include:**
  - Browser incompatibility issues
  - Browser detection in server-side code
  - Problems using cookies (not always supported)
  - Error handling challenges (returned in HTML)
  - and more
Extended Features Available

- Again, no time to discuss in detail.
  - See those previous resources for more

Issues include:
- Security (WTLS/SSL, and "wap gap")
- Location sensing
- Push/notification
- Using XML/XSLT
- WMLScript
- and more

Learning More

- Books
- Phone, Emulator Documentation
- Wireless Service Providers
- WAP Developer Portals
- Magazines
- Mailing Lists
- Top 10 Usability Guidelines for WAP Applications

Books

- Several Books
  - Professional WAP
  - Beginning WAP: WML and WMLScript
  - WAP Development with WML and WMLScript
  - Programming Applications with the Wireless Application Protocol
  - And more every month
- Most include reference materials, topic discussions, complete apps

Phone Manufacturers’ SDKs and Documentation

- Software Development Kits (SDKs)
  - OpenWave (Phone.com)
  - Nokia (nokia.com)
  - Ericsson (ericsson.com)
- Most contain documentation, developer guidelines, emulators, editors
- Code created (and tools and documentation offered) generally apply to any WML device

Wireless Service Providers

- Several in US/Canada
  - ATT PocketNet (attws.com)
  - Sprint PCS (sprintpcs.com)
  - Verizon (verizonwireless.com)
  - Nextel (nextel.com)
  - And more
- Others in Europe, Asia, elsewhere
- Most also offer developer sites, documentation, and some tools
- Also highlights about current and new WAP content providers

Wireless Developer Portals

- Several rich wireless developer portals
  - Anywhereyougo (avg.com)
  - Wireless Dev Net (wirelessdevnet.com)
  - AllNetDevices (allnetdevices.com)
  - WapUSEek (wapuseek.co.uk)
  - And more
- Usually very rich and deep with:
  - news, market analysis, technical articles, links to other resources and sites, reviews of hardware and software, and lots more
### Magazines
- Many magazines discuss WAP/WML, but these are focused on the industry and technology:
  - Wireless Business and Technology (www.syscon.com)
  - Mbusiness (mbizcentral.com)
  - Certainly are others
- Technical articles, industry analysis, software/architecture/hardware comparisons, and more
- See my 2 articles on WAP in CFDJ, at www.coldfusionjournal.com

### Mailing Lists
- See all the portals, phone manufacturers, and wireless phone service providers
- Also see:
  - Wrox WAP discussion list (p2p.wrox.com)
  - CF Wireless mailing list (http://www.bromby.com/cfwireless/)
  - LearnASP WAP discussion list (learnasp.com)

### Questions
- Evaluation forms?
- Contact: carehart@systemanage.com

### Available for training, mentoring, short-term consulting (1-5 days):
- Wireless development training
- All manner of CF topics, beginner-adv
- Maximizing developer productivity
- Database design, Int/Adv SQL topics
- Testing, Source Code Control, and more