

# Ajax on Mobile Devices

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making mobile web applications ubiquitous

Experiences and Observations  
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**PavingWays**

web applications on (mobile) devices



# Background

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- small team, cooperations
- mostly research
- extensive testing (not just Ajax)
- small prototype apps
- new stuff to come
- approach:  
What can be done right now?



# This will be about...

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1. Context: Ajax on mobile and other devices
  2. Best Practices: Problems and some solutions
  3. Widgets: The mobile web could really take off
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Why should you be interested?

Why are there so few mobile Ajax apps?

How does it make the mobile web ubiquitous?

# 1. Context:

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## Ajax on mobile and other devices



# What is Mobile Ajax ... not ?

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- new
- able to live on its own (toolset)
- making mobile web development easier
- an alternative to Java or Flash

# What is Mobile Ajax?

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- essentially not different from desktop Ajax
- browser technology
- XMLHttpRequest object / ActiveX
- get data -> callback -> show response
- one in a toolset, communication component
- on mobile devices = on constrained browsers
- a potential alternative to Java or Flash

# Which devices can run Ajax?

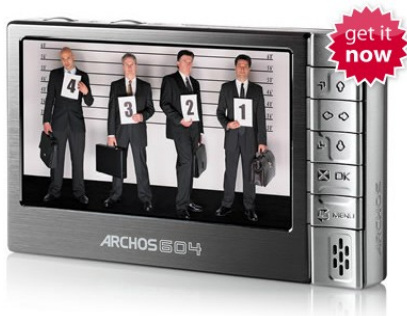
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- real question should be "Which browsers...?"
  - Opera Mobile (not Mini)
  - IE Mobile (Windows Mobile 2003, 5.0)
  - Nokia S60 3rd (WebKit)
  - Netfront ( $\geq 3.4$ )
  - Minimo (Mozilla)
- coming soon
  - Safari Mobile (iPhone)
  - OpenWave ( $\geq$  Mercury)

# Phones are not the only devices

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- ...with browsers
- other (non)mobile devices
  - NDS, Wii, PSP, PS3, Archos, Tranzas etc.





# Why is it important?

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- mobile web grows
- many devices, capable, widget engines
- data plans get cheaper
- bandwidth grows, WiFi
- services that people want become possible

# Which problems does it solve?

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- mobile web experience is bad
  - application-like feeling, better response times
- bandwidth is small / traffic expensive
  - load data, not pages
- typing is hard
  - predictive input suggestions
- same as on desktop, but more valuable
- makes people use mobile web -> ubiquitous

# More in Mobile Ajax FAQ

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- Mobile Ajax FAQ by
  - Ajit Jaokar (Futuretext)
  - Bryan Rieger (Yiibu)
  - Rocco Georgi (PavingWays)
- out soon

## 2. Best Practices:

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# Problems and some solutions



# Main obstacles currently

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- browser support
- hardware constraints
- JavaScript/Ajax libraries focus desktop

# Problem: browser support

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- continuum from crap to awesome
- JavaScript "light", CSS support
- bulletproof, simple, clean, correct markup
- "Hijax" / progressive enhancement
- "graceful degradation" / robustness
- "unobtrusive JavaScript" / layout vs. behavior
- find your lowest common denominator (target)

# Problem: hardware constraints

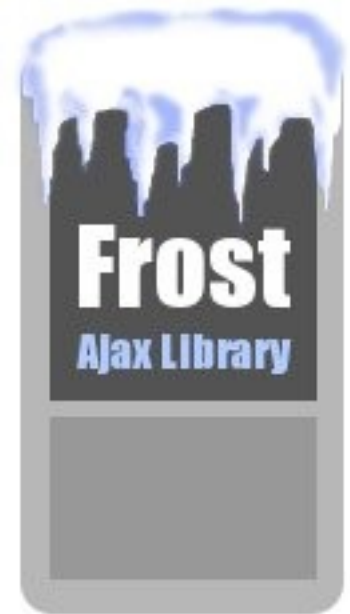
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- CPU, battery, HTTP latency
- "looping" scripts , XML/DOM operations
- JS "on demand"
- AHAH / AXAH and innerHTML
  - Asynchronous HTML and HTTP / XHTML
- trade-off: comfort vs. battery life (IM apps)

# Problem: JavaScript libraries

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- functional and size overhead
- different focus / too demanding
- introducing „Frost“ Ajax library
- focus on browsers on slide 6
- minimalist approach
- debugging support
- it can't do a lot, but it can help





# 3. Widgets:

How the mobile web could really take off



# Widgets

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- as in desktop widgets
  - focussed application
  - web standards and Ajax
  - packaged and stored locally
  - access to device functions
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- NOW WIDGETS GO MOBILE
  - Imagine the possibilities!

# Many Announcements

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- Opera Mobile 9
- S60 3rd. Feature Pack 2
- iPhone
- NetFront browser
- OpenWave MIDAS

**Looks familiar?**

# Ajax and Widgets

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- Ajax is an enabling technology
- well known technology / toolset
- mobile applications from everybody
- mobile web could really take off

# Bottom Line / Outlook...

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- Ajax can help to improve mobile web apps and make the mobile web ubiquitous.
- Widgets will become one of the main mobile application development technologies together with Java and Flash.
- It's about time to get into it, the web goes mobile, so should you! You already know how.

# Thank you for your interest!

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## Q&A

### **Contact data:**

- [rocco@pavingways.com](mailto:rocco@pavingways.com)
- [www.pavingways.com](http://www.pavingways.com)
  - Mobile Ajax FAQ (soon)
  - Frost library (soon)