

# Use of RSS feeds for Content Adaptation in Mobile Web Browsing

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# The presentation

- Introduction
- Content Adaptation and Mobile Devices
- RSS Feeds
- Design principles for Mobile Applications
- Our system
- Conclusions and future work

# Introduction

- Mobile devices
  - specially designed for communication with a data or voice network while the user is on the move
- Limitations
  - Screen size and resolution, number of supported colors, entering text method, computation power, memory size, rate of data transfer and energy required
- Information any time any where

# Content Adaptation & Mobile Devices

Four general approaches:

- Device-specific authoring
- Multi-device authoring
  - *High cost, collaboration of the authors*
- Client-side navigation
  - *Computational and bandwidth needs*
- Automatic re-authoring

*Our approach:*  
Automatic re-authoring + RSS Feeds

# RSS Feeds (1)

- Family of XML file formats which summarizes web site information
- Three versions:
  - 0.91
  - 1.0
  - 2.0
- Sites using RSS Feeds

# RSS Feeds (2)

RSS structure:

- Rss: *Start RSS information*
- Item: *Chunks of summarized information*
  - Ttl: *Amount of time for which information is considered valid*
  - Title: *The title of the information chunk*
  - Description: *A small description of the information*
  - Link: *A link to the actual information in the web site*

# RSS feed (3)

## Example:

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
<?xml-stylesheet title="XSL_formatting" type="text/xsl" href="/shared/bsp/xsl/rss/nolsol.xsl"?>
<rss version="2.0">
  <channel>
    <item>
      <title>Ahmadinejad sends letter to Bush</title>
      <description>Iran's President Mah...</description>
      <link>http://news.bbc.co.uk/go/rss/-/2/hi/middle_east/4983868.stm</link>
      <category>Middle East</category>
    </item>

    <item>
      <title>S Africa's Zuma cleared of rape</title>
      <description>South Africa's former D...</description>
      <link>http://news.bbc.co.uk/go/rss/-/2/hi/africa/4750731.stm</link>
      <category>Africa</category>
    </item>
  </channel>
</rss>
```

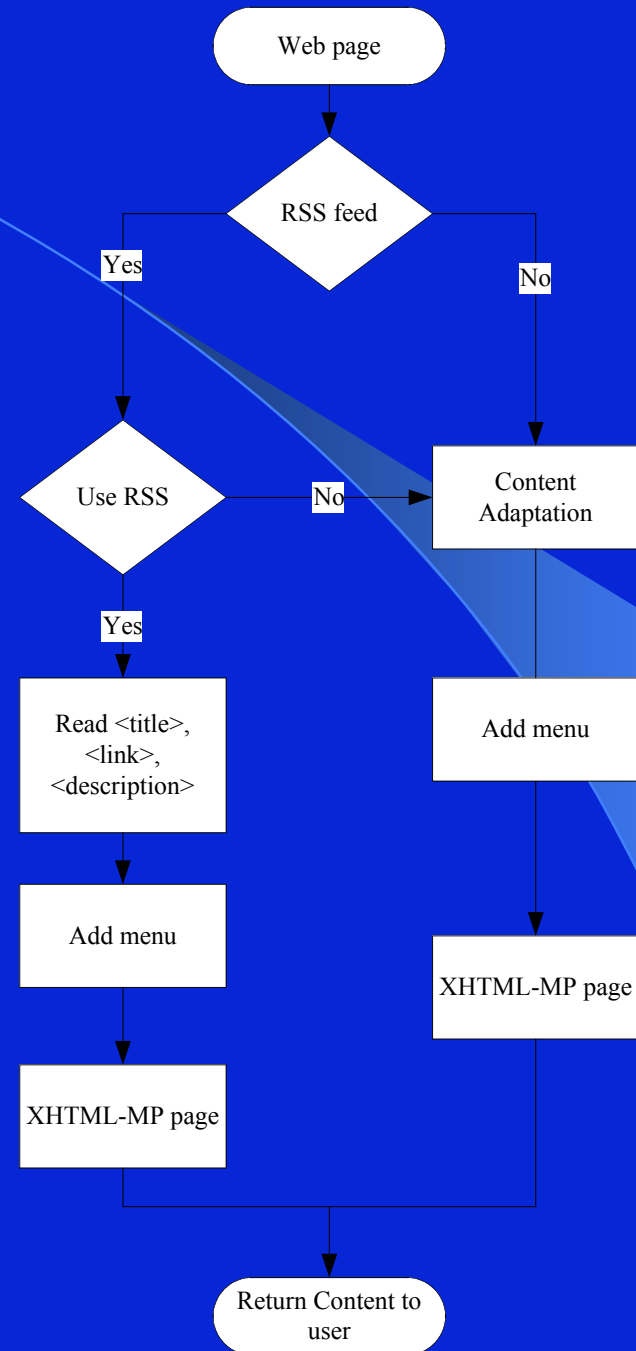
# Design principles for Mobile Applications

Limitations of mobile devices → certain guidelines

- Interface of the application
- Text inputting
- Navigation hierarchy
- Grouping the hyperlinks
- Most important content on the top
- Colors
- Images

# Our system (1)

- Proxy based system (PHP)
- No installation needed
- XHTML – MP browser



# Our system (2)

- Application's main page
- The only page that requires text inputting

The screenshot shows a web browser window titled "Strip the Web ver 1.0". The browser's address bar contains the text "Enter URL". Below the address bar is a text input field. Underneath the input field is a blue button labeled "GO". Below the "GO" button is a blue, underlined link labeled "Help". At the bottom of the browser window, there are two buttons: "Favourites" and "Menu".

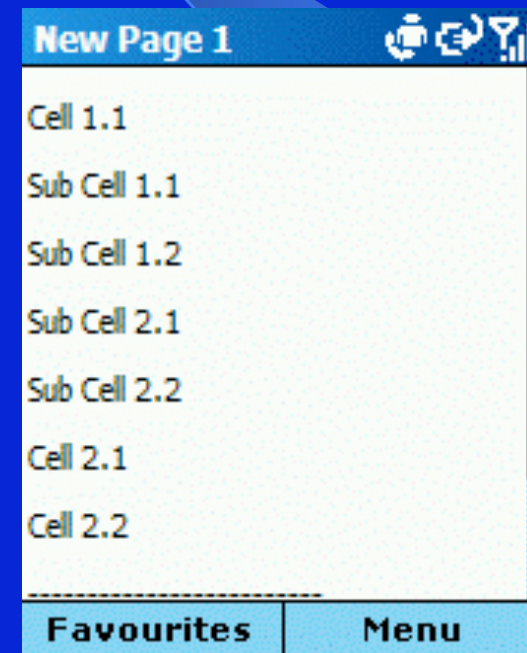
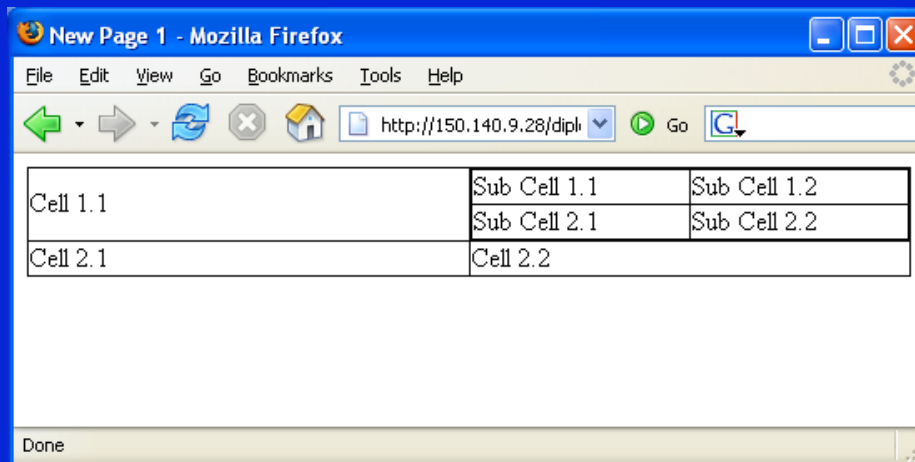
## Our system (3)

If the page does not have RSS feeds

- Remove: *script, noscript, style, link, iframe, object and embed*
- Remove html comments
- Remove forms
  - The purpose of the system is focused on cost effective browsing and testing the idea of RSS

# Our system (4)

## Table handling



# Our system (5)

## Links manipulation

- We need further information about the structure (DOM)
- Img nested tags
- Auto redirection to the proxy server
  - e.g. *http://www.acm.org* is replaced with *http://proxy\_address/main.php?url=http://www.acm.org*

# Our system (6)

- Page splitting (default at 10 KB)
- Application's menu
  - Next/previous page
  - Main page
  - Show links only
  - Show text only

# Our system (7)

## *RSS Support (1)*

- If a page has RSS feeds, the system recommends the user to browse the site through the information that the RSS feed contains.
- The system detects the RSS feeds from the link html tag (before its removal)
- We can detect multiple RSS Feeds
- Every page with RSS results has the same basic application's functions (links only/text only)

# Our system (8)

## RSS Support (2)

### CNN main Page

**RSS Found**

RSS feed(s) found. Do you want to view RSS (recomended) or normal page?

[Normal Page](#)

[RSS: CNN - Top Stories \[RSS\]](#)

[RSS: CNN - Recent Stories \[RSS\]](#)

**Favourites** | **Menu**



**RSS Content**

[Unrest spreads to nine French towns](#): Read full story for latest details.

[Australian leader warns of new terror threat](#): Prime Minister John Howard has ramped up pressure to pass tough new anti-terror laws in Australia by warning he had received intelligence about a specific terror threat to the country.

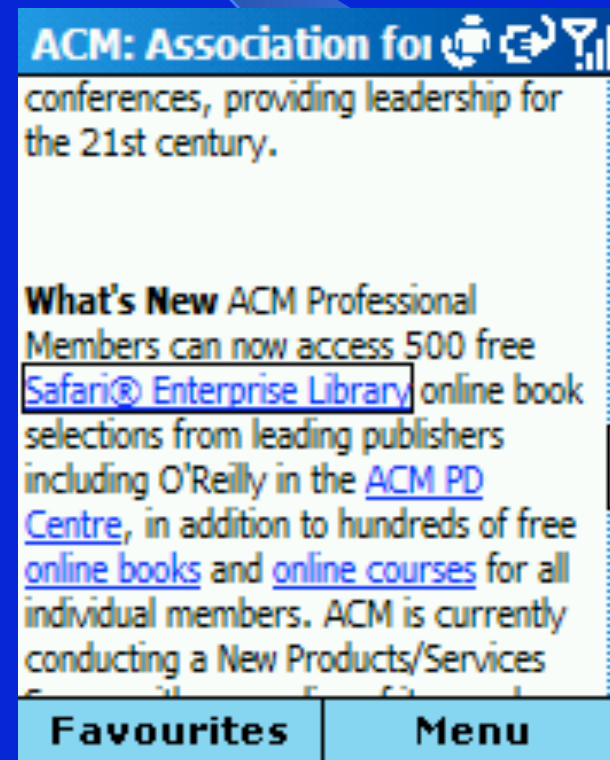
[Pentagon official: Top al Qaeda operative escaped](#): Read full story for latest details.

**Favourites** | **Menu**

# Our system (9)

## Pages without RSS feeds

ACM Main site



# Conclusions

We presented a method that allows:

- cost-effective web browsing for users of mobile devices.
- exploits mainly the existence of RSS feeds
- existence of RSS feeds improves significantly the content presented to the mobile user decreasing at the same time the size and access cost

# Further work

- Evaluation of the system
- Forms support
- Images support
- Research for further use of the information from the RSS feeds

End of presentation

Thank you!