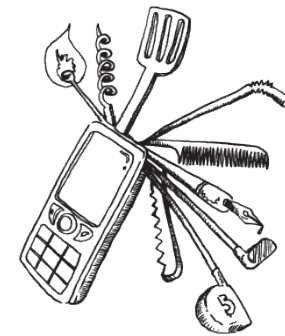


# Tools for Mobile Web Eclipse Day 2010

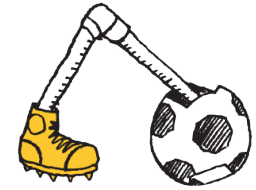


Paul Beusterien  
Symbian Foundation  
August 26, 2010

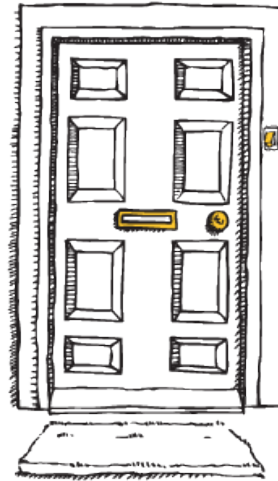


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# Tools for Mobile Web Agenda



- ❑ Why TMW?
- ❑ What does TMW do?
- ❑ How is TMW made?
- ❑ Demo
- ❑ Future Directions



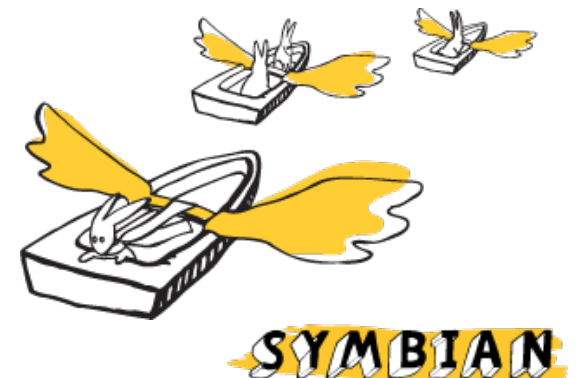
# Web Development Trends



- There are an order or two of magnitude more web developers (using JavaScript, HTML and CSS) than C++ developers
- Increasingly more powerful and complex Web applications :
  - JavaScript evolution
    - More powerful (and complex) libraries : JQuery, YUI, Dojo, etc.
    - More robust with tools like [jslint](#)
  - HTML5
    - Offline storage, canvas, media, etc.

# Mobile Development and cross-platform

- ❑ Major mobile platforms creating differentiated programming environments – Objective C, Java, C++, etc.
- ❑ Tension between device creators and developers
  - ❑ Walled gardens versus standards
  - ❑ But - all platforms are using WebKit and moving to HTML5
- ❑ Web is likely to be the first place where cross-platform application development emerges
- ❑ Convergence – mobile, web, desktop
  - ❑ Advertising, analytics, payments easiest



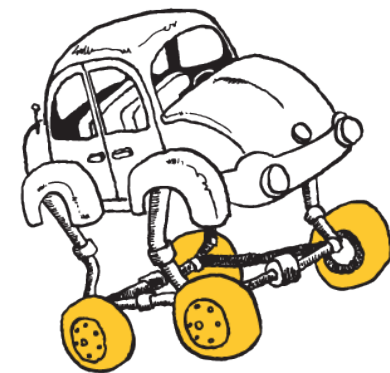
# Mobile Web Development Challenges

- Accessing mobile features
  - Geo Location
  - Vibration
  - Accelerometer
  - Contacts
  - SMS
  - Telephony
- Deployment
- Distribution
- Security



# Tools for Mobile Web Feature Summary

- ❑ Address the needs for:
  - ❑ Scaling web apps
  - ❑ Particular requirements of mobile device programming
  - ❑ Accessibility and usability
  - ❑ Open source solution
- ❑ Enable Web programmers to create mobile apps
- ❑ Access to sensor/device capabilities
- ❑ Streamlined Eclipse-based tooling
- ❑ Provide common grounds for cooperation and innovation



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# Tools for Mobile Web

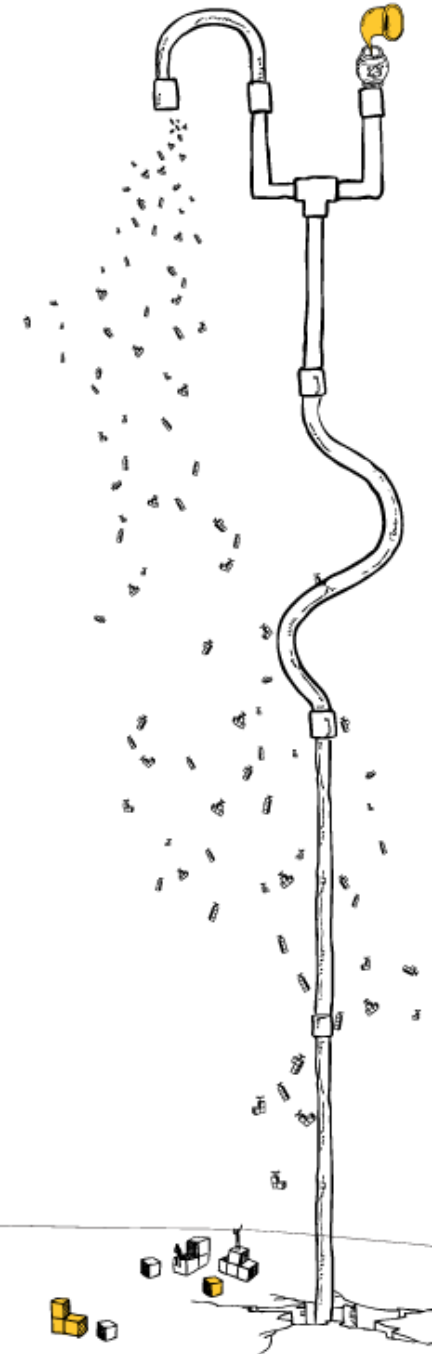
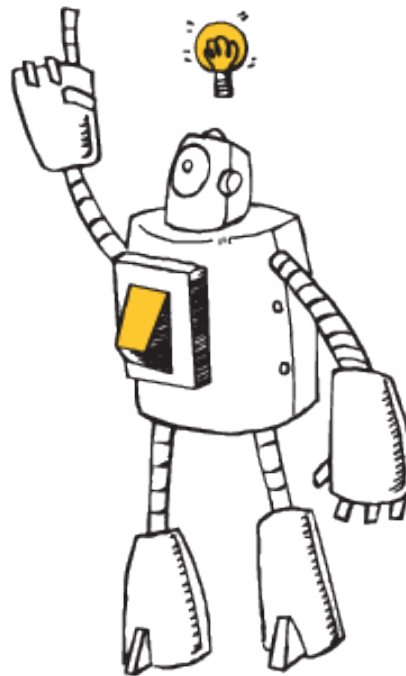


- ❑ Eclipse project to provide tools for web developers creating applications for mobile devices
- ❑ Initial contributors from Symbian Foundation and Aplex (BONDI SDK)
- ❑ Feedback and interest from SonyEricsson, IBM, RIMM, Nokia and Nitobi
- ❑ Enable differentiation on runtimes or mobile devices versus putting resources on copying others inadequate tools
- ❑ See <http://www.eclipse.org/proposals/tmw/>



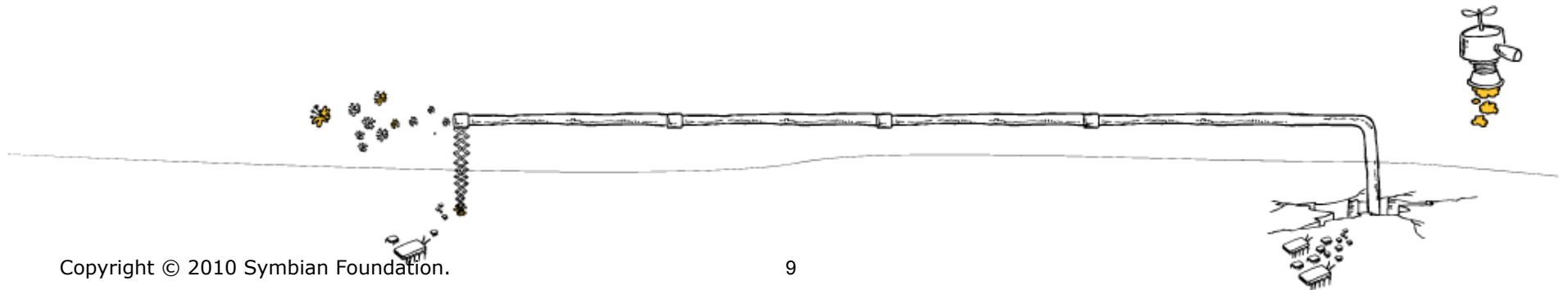
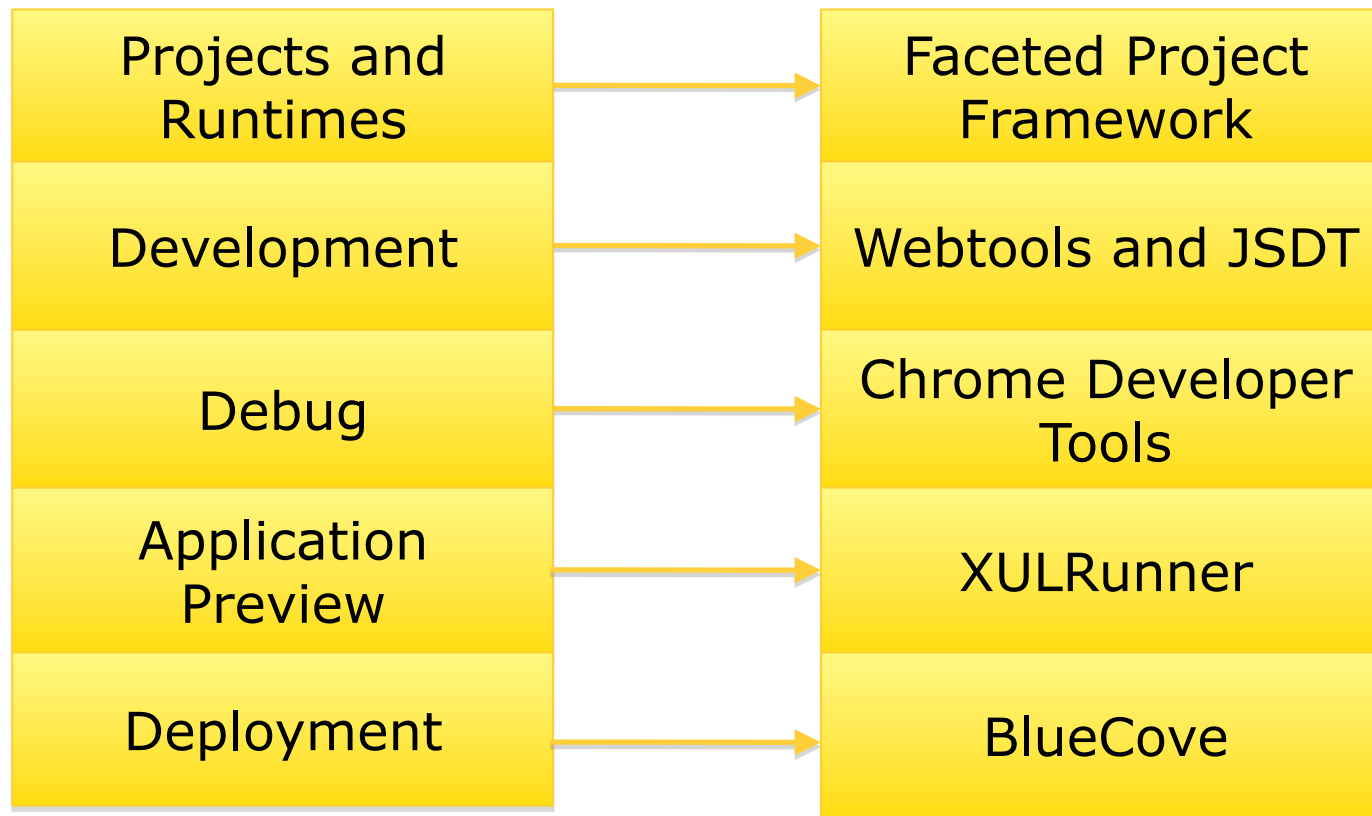
# Tools for Mobile Web Components

- ❑ A fully integrated experience to create Mobile Web Applications
  - ❑ Project management
  - ❑ Source editing
  - ❑ Library support
    - ❑ WRTKit
    - ❑ PhoneGap
  - ❑ Previewing
  - ❑ Debugging
  - ❑ Packaging
  - ❑ Deployment





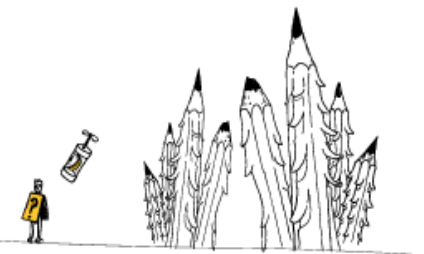
# Tools for Mobile Web Components



# Based on Eclipse Platform

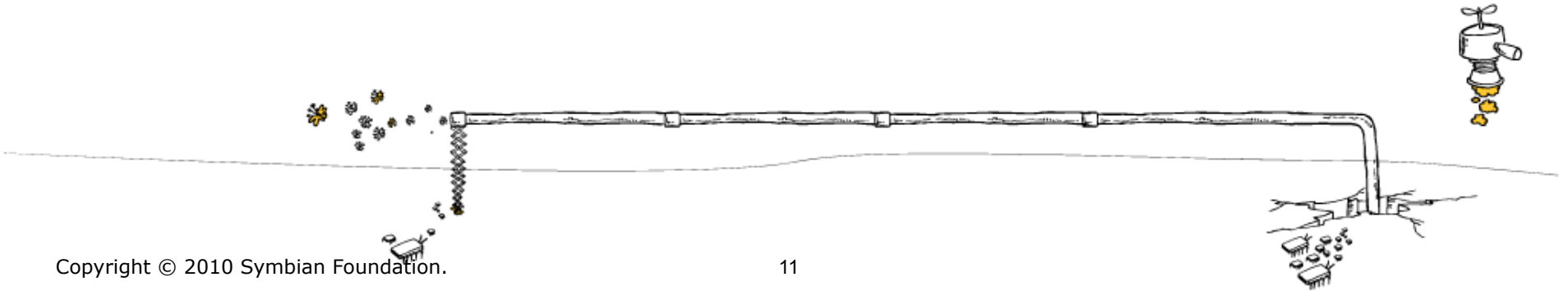


- ❑ Unified project model fosters cross-IDE interoperability and community development
- ❑ Extends and leverages existing Eclipse projects
  - ❑ Eclipse UI for consistent user experience
  - ❑ Web Tools project as a basis for source editing support
  - ❑ JSDT editors with extensions for mobile API support
- ❑ **BUT, streamlined and focused on mobile web development!**



# Chrome Debugger Protocol

- ❑ From <http://code.google.com/p/chromedevtools/>
- ❑ Will be in every WebKit-based browser (desktop or mobile)
- ❑ Becoming De-facto standard for cross-device debugging
  - ❑ BONDI
  - ❑ Nokia
  - ❑ No browser plug-in needed
  - ❑ No native code needed for IDE support



# Demo

The screenshot displays the TMW Mobile Web IDE interface. The main window is titled "TMW - PhoneGapDemo/main.js - Mobile Web IDE". The interface includes a menu bar (File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, Help), a toolbar, and several panels:

- Projects:** Shows a tree view of the "PhoneGapDemo" project with files like assets, phonegap, resources, Icon.png, index.html, Info.plist, Licence.txt, main.js, and Release\_Notes.txt.
- Code Editor:** Displays the JavaScript code for "main.js". The code includes functions for displaying contacts, toggling location tracking, and updating location data. A tooltip is visible over the `clearWatch` function, listing its parameters and return value.
- Snippets:** A "Snippets" panel is open, showing "Symbian Web Runtime" and "PhoneGap" categories with various callback snippets like "Accelerometer callback", "Contacts callback", "Location callback", and "Orientation callback".
- Simulation:** A mobile device simulation is shown on the right, displaying the "PhoneGapDemo" application. The app has a menu with options: Acceleration, Contacts, Location, Location Tracking (with an OFF toggle), Latitude, SMS, Sound, and Storage.

```
on displayContacts(contacts) {
  r cl = false;
  r output = "";
  r ( var i = 0; i < contacts.length; i++) {
    var phone = getNonEmptyNumber(contacts[i]);
    output += "<tr" + (cl ? cl : "") + "><td>" + contacts[i].name.formatted
      + "</td><td>" + phone.number + "</td></tr>";

    if (cl) {
      cl = false;
    } else {
      cl = " class=\"odd\"";
    }
  }

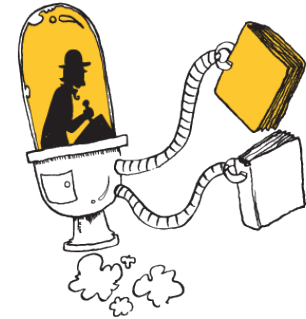
  cument.getElementById('contacts_list').innerHTML = output;
}

on toggleLocation() {
  (locationWatch) {
    navigator.geolocation.
      updateLocation( {
        coords : {
          latitude : "",
          longitude : "",
          altitude : "",
          heading : "",
          speed : ""
        }
      });
    locationWatch = false;
  } else {
    var options = new Object;
    options.frequency = 50;
    timeout = setInterval(
      locationWatch = navigator.
        function() {
          }, options);
  }
}

on updateLocation(position) {
  clearTimeout(timeout);
  pt.latitude, pt.longitude, pt.altitude, pt.accuracy, pt.heading, pt.speed
  r pt = position.coords;
  cument.getElementById('latitude').innerHTML = pt.latitude;
  cument.getElementById('longitude').innerHTML = pt.longitude;
  cument.getElementById('altitude').innerHTML = pt.altitude;
  cument.getElementById('heading').innerHTML = pt.heading;
  cument.getElementById('speed').innerHTML = pt.speed;
}
```

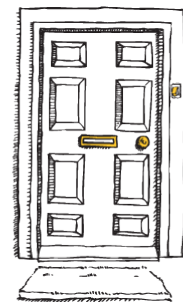
# Web Tools Future Directions

- ❑ On-device debugging
- ❑ More standardized web runtime API support
  - ❑ BONDI
  - ❑ JIL
- ❑ Grow the community
  - ❑ More runtimes
  - ❑ More web libraries like jQuery (with jQTouch), YUI, XUI
  - ❑ More plug-ins
- ❑ Continue to lower the barrier to entry
- ❑ **Join us!**



# Tools for Mobile Web Useful Links

- ❑ Download from [http://builds.symbian.org/sf\\_builds/wrt\\_ide/](http://builds.symbian.org/sf_builds/wrt_ide/)
- ❑ <http://www.phonegap.com>
- ❑ TMW proposal at <http://www.eclipse.org/proposals/tmw/>
- ❑ Sources at <http://developer.symbian.org/main/source/packages/package/index.php?pk=263>
- ❑ Paul's blog is at <http://paulbsymbian.wordpress.com/>
- ❑ Eugene's blog at <http://eclipseblog.ostroukhovs.com/>
- ❑ Follow me on twitter at paulbeusterien
- ❑ Email paulb@symbian.org



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# Back-Up Slides

# Open-Source Stack



Eclipse Platform		Chromium	XULRunner
Webtools	Chrome Developer Tools		
Tools for Mobile Web			
Symbian WRT IDE	Symbian CWRT IDE	Bondi IDE	Another IDE





# PhoneGap Integration

- ❑ Project template and code snippets for smoother learning curve
- ❑ Simulator with PhoneGap events support
- ❑ PhoneGap-aware JavaScript editor
- ❑ Package and deploy PhoneGap application to mobile device

