

EntwicklerCamp 2012

Mobile Development - An Overview

Matthias Schneider

Leading Technical Sales Professional - IBM Social Business and Collaboration Solutions
IBM Deutschland GmbH

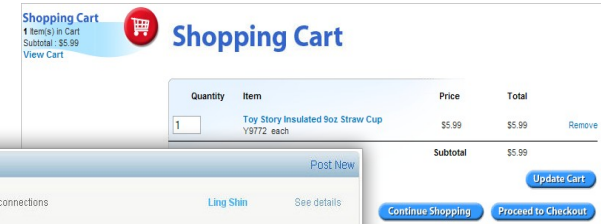
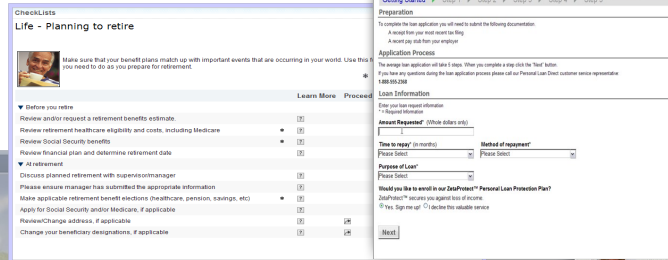
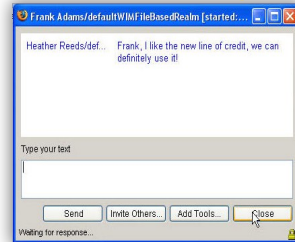
Business Perspective

Exceptional Web Experiences Often Require A Range Of Capabilities, Integrated Seamlessly



Email

Instant Messaging



Shopping Cart

Workflow

Forms

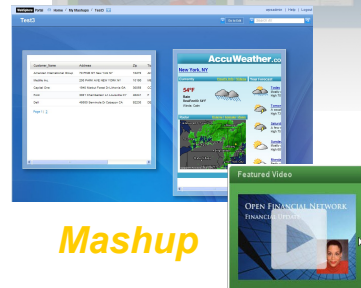
User Ratings

Blogs

Dashboards

Authoring

Task List

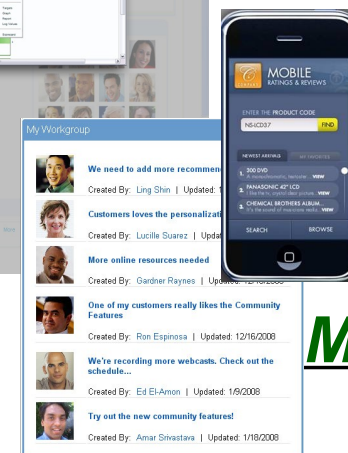
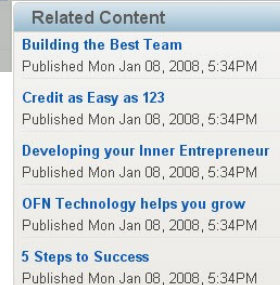


Mashup

Video

Experts

Personalized Content



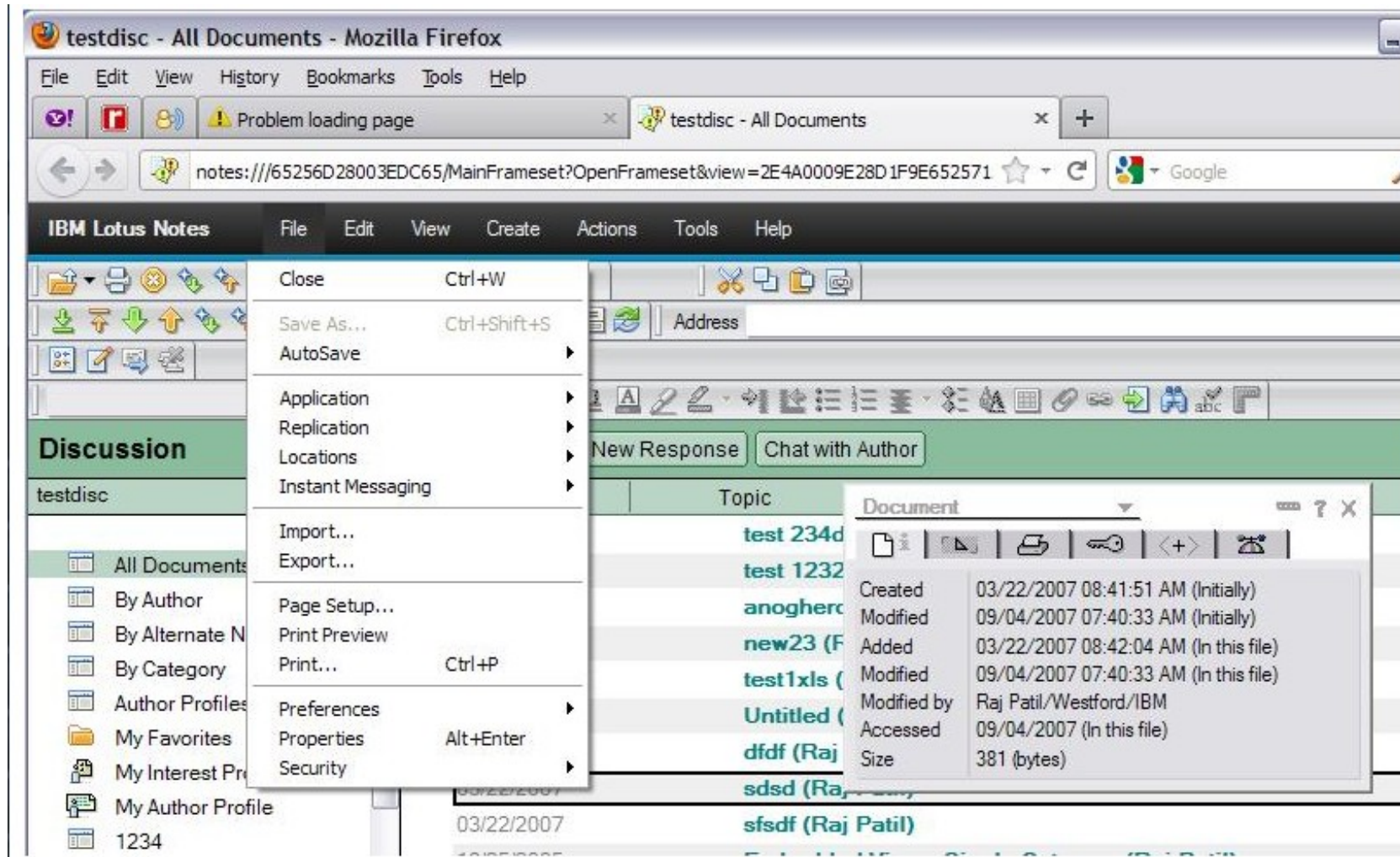
Communities

Mobile



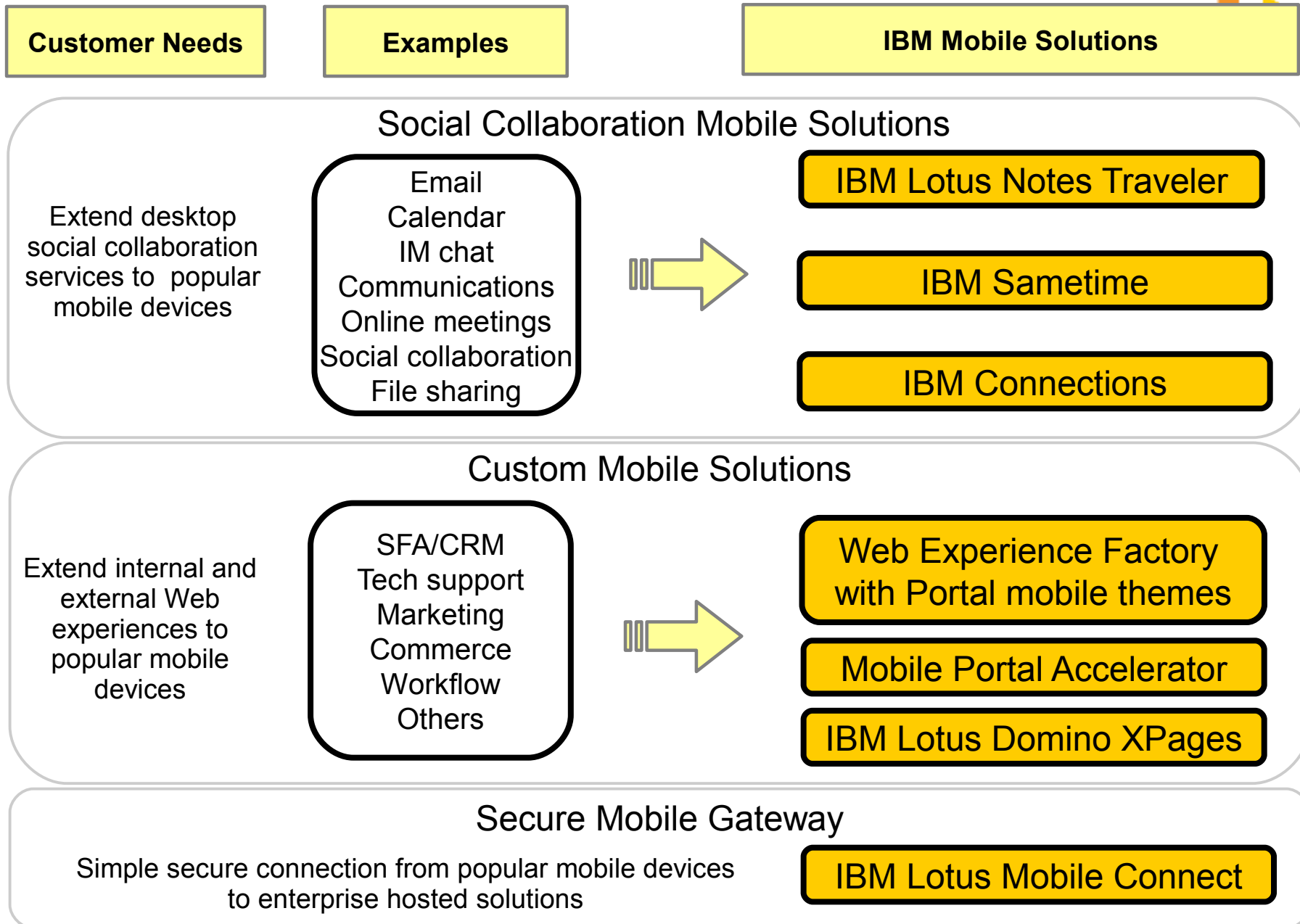
BTW: THIS is not integrated by default!

(but cool anyway...)





IBM Mobile Solutions for Social Business





Manage the Risk → Mobile Device Management

Potential Risks

Malware & Viruses

Device Lockdown

Identity and Passwords

Protect your
Company's
Data

**Jump the
Firewall**

Device lost

Solution

Policy Management

Threat Management

Encryption

Partial/Remote Wipe

Secure Connectivity

Device Inventory

BYOD – With Tivoli Endpoint Manager

- **Endpoint Manager**

- Scalable MDM Solution
 - Supports iOS, Android, Symbian, Windows Phone and traditional Devices
 - Safeguard Enterprise Data
 - Selective Wipe, Configure & force Passcode Policies, Encryption, VPN, etc.
 - Stay compliant
 - Identify non-compliant devices automatically and initiate appropriate actions, e.g. deny e-mail access
- Integrates with **Traveler** (Mail, Calendar, etc.)
 - Integrates with **Mobile Connect** (VPN, etc.)



Lotus Traveler Device Security Settings - Configuration

Windows Mobile		Nokia		Apple		Android	
Device Security						Violation Action	
<input type="checkbox"/> Require device password						Enforce	
<input type="checkbox"/> Prohibit ascending, descending and repeating sequences							
<input type="checkbox"/> Require alphanumeric value							
Minimum password length:						4	
Minimum number of complex characters:						0	
Auto lock period (maximum):						30 minutes	
Password expiration period:						90 days	
Password history count:						0	
<input type="checkbox"/> Wrong passwords before wiping device						7	
<input type="checkbox"/> Prohibit unencrypted devices							
<input type="checkbox"/> Prohibit camera						Enforce	
<input type="checkbox"/> Prohibit devices incapable of security enablement						Enforce	



Introducing Lotus Notes Traveler 8.5.3

- iOS partial (Traveler only) wipe – also in 8.5.2.3
- Group name lookup
- Domino Mail-in db returned with Name Lookup
- Select which applications are allowed to sync for Apple devices
- Reply and Forward indicators from Apple devices
- Device approval policy
- Android:
 - Enhanced Installation
 - Home Page Widgets for mail and calendar
 - Invite creation, quick switch days/weeks, week view hints
 - Android Tap-to-dial for calendar entries
 - Mail enhancements - Copy/paste & Send button in compose
 - Multi-line signature
 - Android OS 3.x Support
- Nokia Symbian^3 support

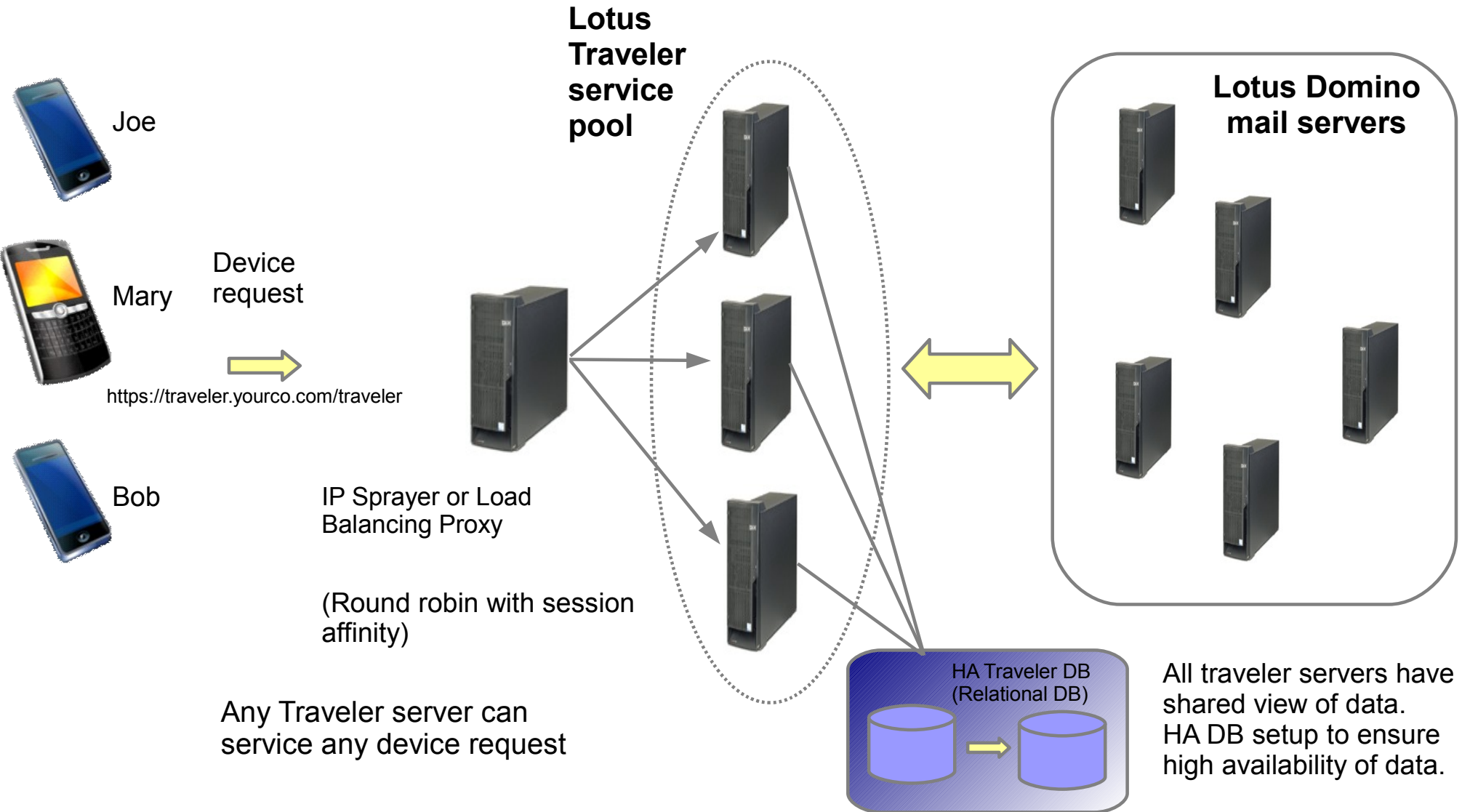


Lotus Notes Traveler 8.5.3 FP1 & FP2

- Support Soft keys in Symbian Belle Operating System
 - Mail Launcher for Symbian S^3 Devices
 - Support Folder Management Features on Apple iOS 5 and later Devices
 - Support for Follow Up Flags on Apple Devices
 - Confirm External Recipients on Android Devices
 - Allow Scheduling of Database Defragmentation for Enhanced Performance (Improved in 8531)
 - APAR Fixes
-
- 8.5.3.2: APAR Fixes only



Roadmap - High Availability, Load Balancing and Single URL





Lotus Traveler 2012: Microsoft Windows Phone Support

- IBM plans to support Microsoft Windows Phone for IBM Lotus Notes Traveler (Email, Calendar and Contacts)
- Nokia Lumia and other Smartphones
- Beta starts in Q2 2012





IBM Lotus Traveler Roadmap



Lotus Notes Traveler 8.5.3 (Oct 2011)

- Nokia enhancements
 - Symbian^3; encryption enforcement, HTML support
- iOS currency, iOS partial (Traveler-only) wipe
- Android enhancements
 - calendar week view (hints), tap to dial, calendar invites, mail/cal widgets, copy/paste, multi-line signature, enhanced install
- Corp Groupname Lookup
- Device approval policy
- Interlock with LLN

Lotus Notes Traveler 8.5.2.2 (Mar 2011)

- Android 3.0 support, battery efficiencies Android encrypted email support

Lotus Notes Traveler 8.5.2.3 (June 2011)

- iOS Partial (Traveler only) wipe

Lotus Notes Traveler 8.5.3 IFR (Nov 2011)

- Notification on external emails (McKinsey)

Lotus Notes Traveler (Tentative Plan for 2013)

- Android:
 - Enhanced Attachments dialog (deny save/detach)
 - Application level password
- iOS
 - Enhanced attachment filtering (allow/deny)
- Support Notes dblinks/doclinks
- Support client certificates
- Interlock with Lotuslive Notes

2013

Lotus Notes Traveler NEXT (2012):

- High Availability/clustering
- Android 3.x Tablet UI exploitation
- Android Calendar month view
- iOSx currency
- Role based administration access
- ToDo and Journal sync: iOS and Android
- Windows Phone 7
- Interlock with Lotuslive Notes

2012

2011

Note:

Companion App for iOS (iTunes)

- Read Domino encrypted mail (1Q2010)
- Compose encrypted mail (1Q2011)
- Password caching (2Q2011)



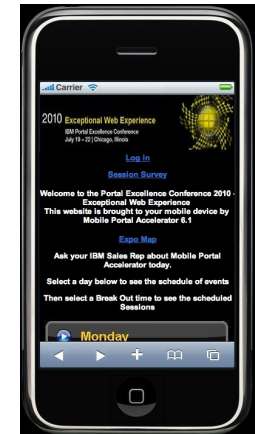
What about Applications?

– “Doing nothing” might work for you

- ...at least for your Web Applications!
- Use the Desktop prepared site directly on your Mobile Browser
- Single source solution
- Least effort
- Very possible, not very optimal
- Testing and dev tweaks required
 - Hover, iframes, zoom handling, lightbox sizing

Mobile Development Challenges

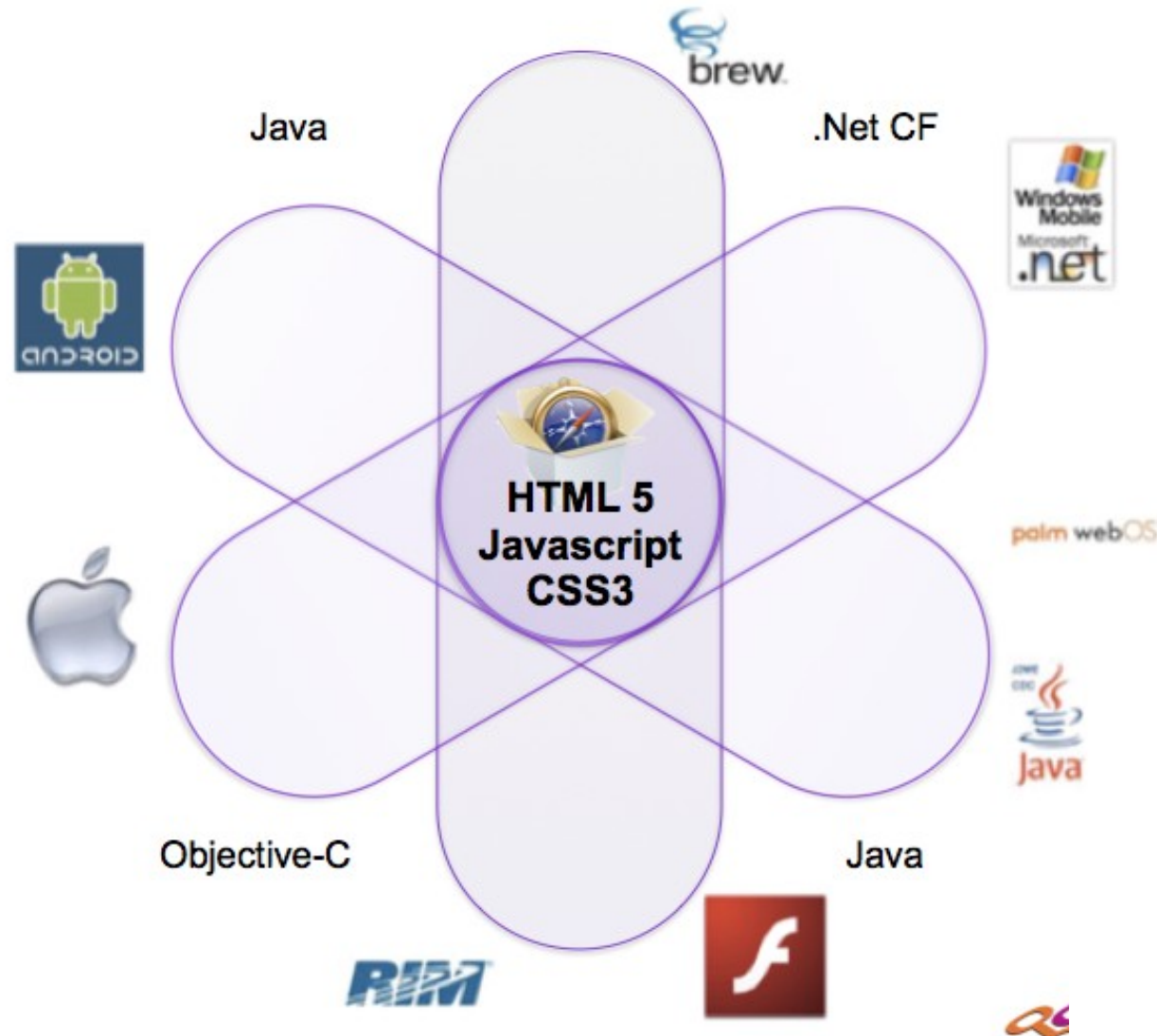
- Devices
 - Wide range of devices and capabilities
 - Screen size/resolution
 - Limited memory
 - Limited caching – file size limit
 - Input mechanism limits (hover on a touch screen)
 - Browser function compatibility
- Network
 - Lower throughput
 - Higher latency





Mobile Development Challenges

- Native Programming Languages



Desktop



Mobile



Spectrum of mobile Development Approaches

Multi-channel
Experiences

Unique Mobile
Applications

Characteristics

Mobile sites

Web Mobile
Applications

Runs in browser

Hybrid Mobile
Applications

Native Mobile
Applications

Runs on device, App download

Multiple web apps
• Shared auth/security
• Content management
• Personalization

Standalone web
apps

Standalone on-
device apps

Traveler
Sametime
Connections
Lotuslive Meetings
Symphony



Mobile Apps Vision : Build, Deploy, Manage

Mobile Web sites

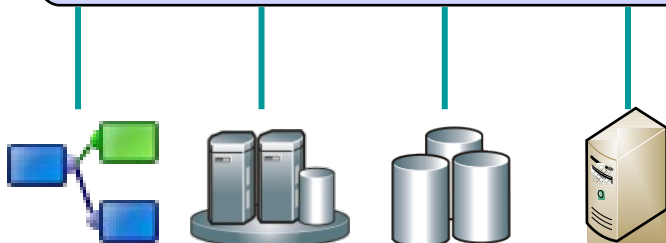


Mobile Web
Browser

Domino XPages
Mobile

WebSphere
Portal Mobile

Application Servers
Domino, WebSphere etc



Mobile Apps



Web, Hybrid and Native Apps

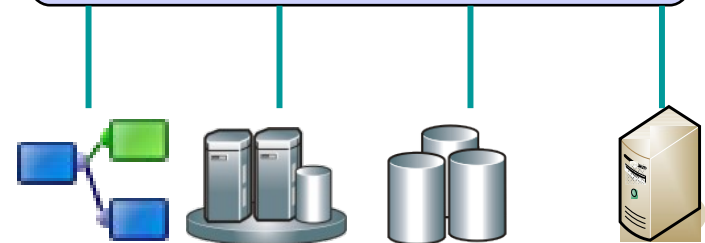


Mobile Platform

Domino XPages
Mobile

WebSphere
Portal Mobile

Application Servers
Domino, WebSphere





Mobile applications solutions

Rapidly create customized multi-channel applications and Web experiences for mobile devices for internal or external facing mobile solutions.



For IBM WebSphere Portal sites

IBM Web Experience Factory + Portal
Mobile Webkit Themes or IBM Mobile
Portal Accelerator

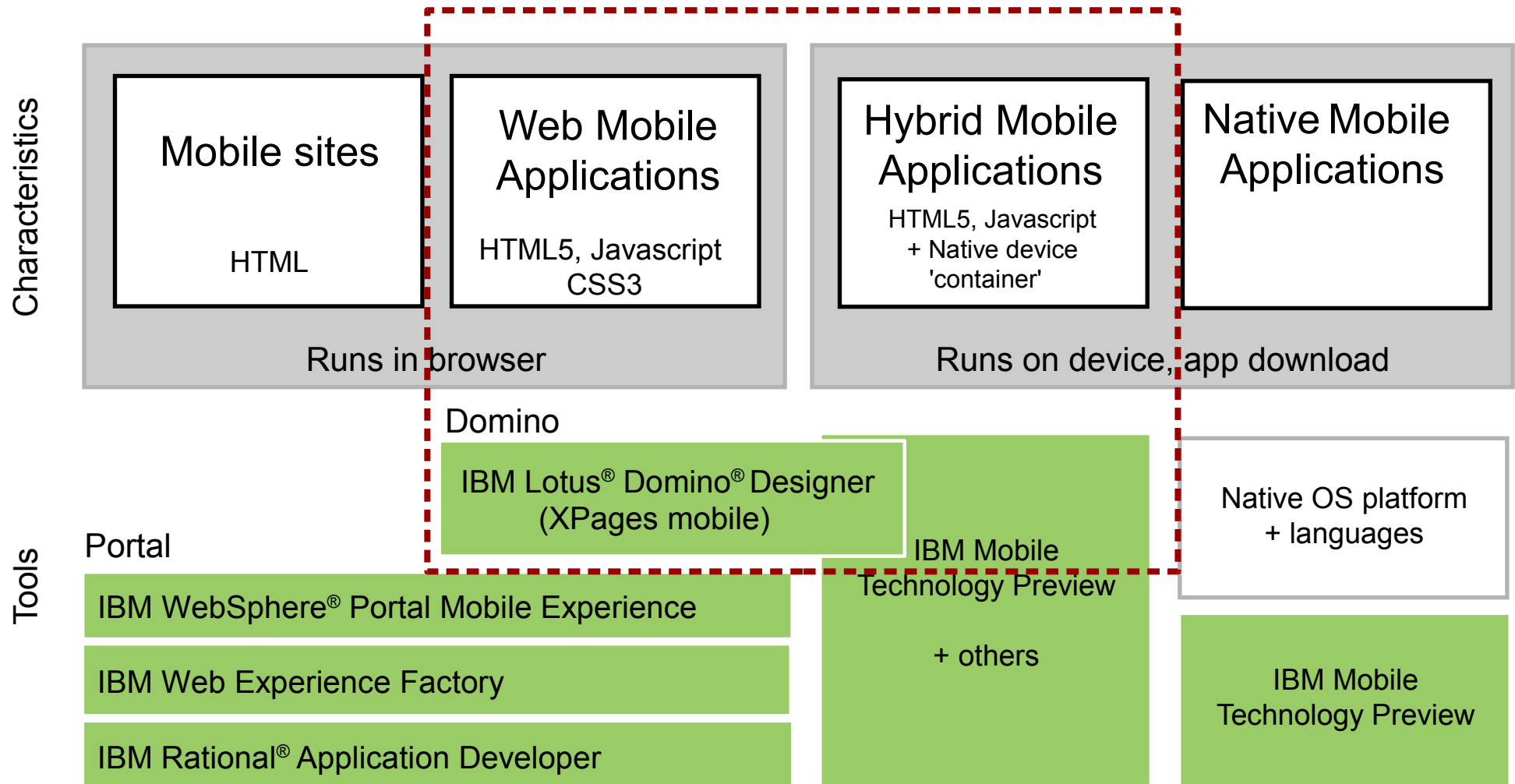


For IBM Lotus Domino web applications

Domino XPages + mobile controls



IBM Tools for Mobile Application Development





Native Device Application

- Most feature rich
- Can exploit all device capabilities
- Presence in the App Store/Marketplace
- Most effort
 - Distinct effort per device OS
- Best for existing customers, who will download your app
 - Does not address those who discover you via a web search, GoogleAd, marketing literature, etc
 - May need to pass a review cycle when updates are required and requires user updating



Native Application Approaches

- Full native application, talking directly to backend services
 - Simplifies development for a single use case
- Full native, communicating via REST
 - Preserve single source of provisioning and administration



Hybrid Application

- Native Application
 - Deployable to the Application Store
 - Access to native phone capabilities
 - UI is just a web component, basically a web browser
- Tooling allows enablement of this approach
 - PhoneGap/Cordova, and similar libraries provide JavaScript access to native capabilities
 - UI libraries, such as dojox.mobile.app or JQTouch provide native look and feel UI components



Hybrid Application – PhoneGap (Apache Cordova)

- “Write once, deploy natively everywhere”
- Open source framework for developing cross-platform, hybrid mobile apps with web technologies
- Provides JavaScript interfaces to phone's native features
- Builds small native wrapper around the app
- Uses platform's browser
- i.e. In Android, wraps WebView
- Since native, deployable to phone or app store
- Android, iOS, Blackberry, Palm, Symbian and WebOS





Mobile Browser Capabilities

- HTML5
- CSS3
- Touch Events
- App icon
- Viewport



HTML5

- Application cache
 - Offline support, but useful even online
 - Minimizes server round-trips
 - Text file served as text/cache-manifest
 - First line must contain 'CACHE MANIFEST'
 - Following lines contain URLs for static resources
 - NETWORK: section contains Whitelist of resources required when online
 - Details on <http://www.html5rocks.com/en/tutorials/appcache/beginner/>
- LocalStorage
 - Store runtime information locally to avoid server roundtrips



CSS3

- Gradients, shadows and reflections
- Animation
- Media queries



CSS3 Gradients

- Why?

- More flexible than background images
- Saves HTTP request to load the background image

```
-webkit-gradient(<type>, <point> [,<radius>]?,<point> [,<radius>]? [, <stop>]*)
```

```
-webkit-box-shadow: <horizontal> <vertical> <blur> <color>
```

```
-webkit-border-radius: <radius>
```

```
-webkit-box-reflect: <direction> <offset> <mask-box-image>
```

Example across different browsers:

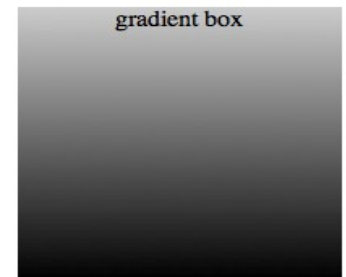
```
background: #999; /* for non-css3 browsers */
```

```
filter:
```

```
progid:DXImageTransform.Microsoft.gradient(startColorstr='#cccccc', endColorstr='#000000'); /* for IE */
```

```
background: -webkit-gradient(linear, left top, left bottom, from(#ccc), to(#000)); /* for webkit browsers */
```

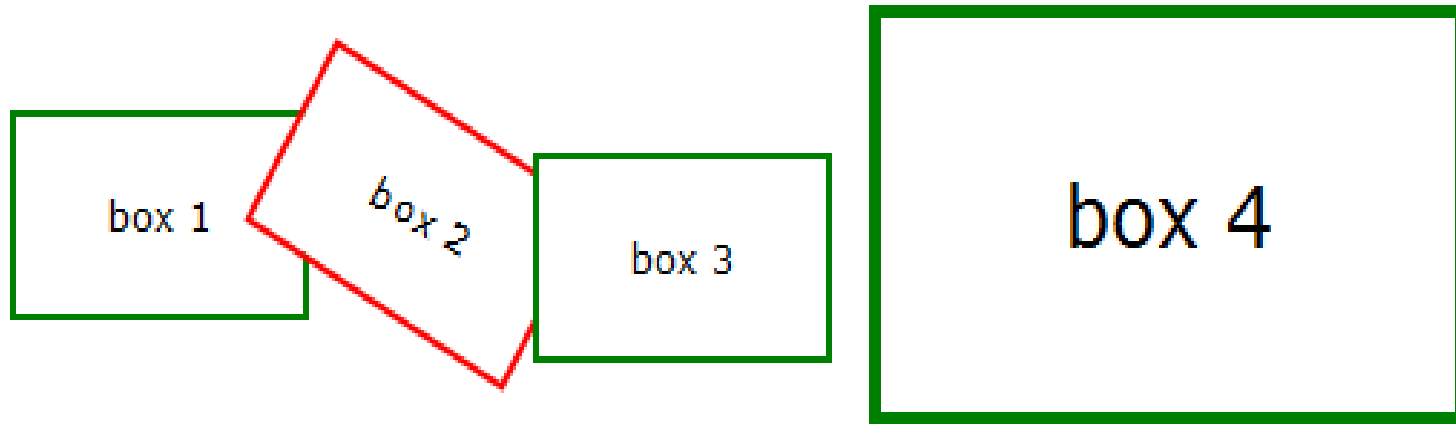
```
background: -moz-linear-gradient(top, #ccc, #000); /* for firefox 3.6+ */
```





CSS3 Animations

- `-webkit-transform: rotateY(180deg) scale(factor) translate(X, Y);`
- `-webkit-transition-duration: 2s, 4s;`
- `-webkit-transition: -webkit-transform 3s ease-in;`



Examples:

- box 1 Translated to the right: `-webkit-transform: translate(3em,0);`
- box 2 Rotated 30 degrees with the clock: `-webkit-transform: rotate(30deg);`
- box 3 Translated to the left and down slightly: `-webkit-transform: translate(-3em,1em);`
- box 4 Scaled to twice it's original size: `-webkit-transform: scale(2);`



CSS3 Media Queries

- Target CSS to the device
- Either load a separate stylesheet, or use @media to provide alternate styles within a stylesheet

```
<link media="only screen and (max-device-width: 480px)"  
href="small-device.css" type= "text/css" rel="stylesheet">
```

```
@media screen and (min-device-width: 481px) { ... }
```

- Code example of Responsive web design using CSS3 Media Queries :
 - https://www.ibm.com/developerworks/mydeveloperworks/blogs/bobleah/entry/code_example_of_responsive_web_design_using_css3_media_queries13?lang=en



Eventing

- Touch Events
 - touchstart
 - touchmove
 - touchend
 - Support drag and drop
- `event.preventDefault()` - disables builtin behavior, e.g. disable browser zoom
- Orientation changes
 - `onorientationchange` event
- Reference:
 - <http://developer.apple.com/safari/library/codinghowtos/mobile/userexperience/index.html>



App Icon

- iPhone, Android, and Blackberry all support

```
<link rel="apple-touch-icon" href="/my_custom_icon.png"/>
```

- Size should be at least 57 x 57, but for higher resolution screens, 119 x 119
- iPhone will automatically add the rounded corners and reflections for you





Device Width

- Use viewport meta tag to specify viewport width and initial scale

```
<meta name = "viewport" content = "width = device-width">
```



Device Differences

- iPhone, Android, and Blackberry 6 devices all have Webkit browsers
- But some quirks, even in rendering
- Physical device properties
 - Screen size and resolution
 - Touch screen
 - Hardware buttons
- Multi-touch support
 - Limited on non-iOS devices, it only supports one touch at a time. More coding required to interpret



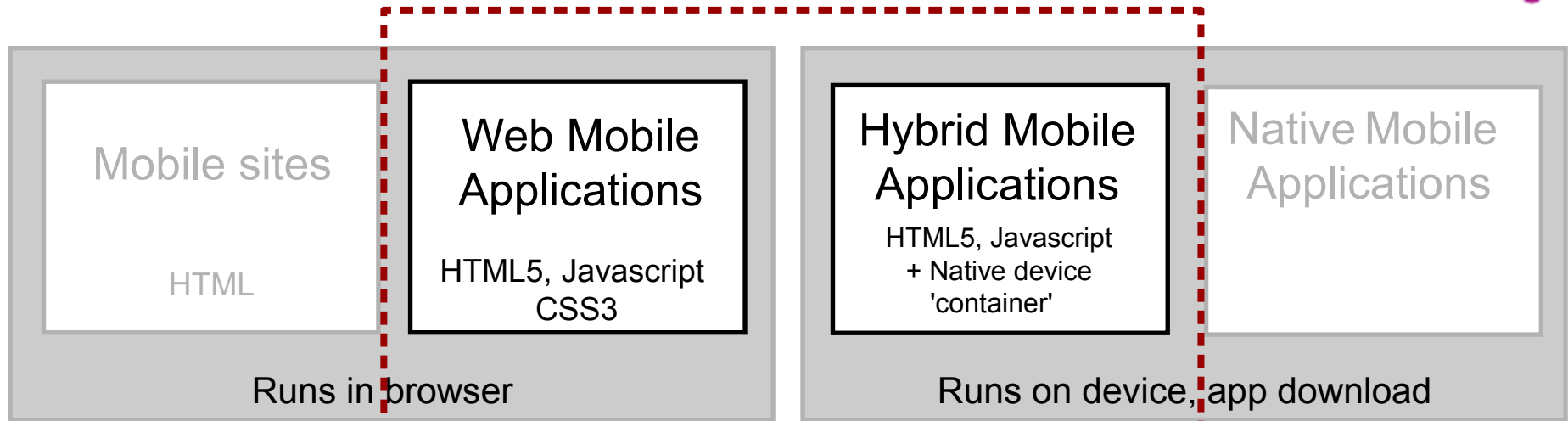
Verify Browser Compatibility

- Useful web sites to verify support for CSS, HTML5, Dojo, etc.
 - <http://caniuse.com/>
 - <http://www.quirksmode.org/mobile/>
 - <http://www.quirksmode.org/compatibility.html>
 - <http://html5rocks.com>
 - <http://docs.dojocampus.org/quickstart/Animation>
 - <http://developer.apple.com/safari/library/documentation/internetweb/conceptual/safarivisualeffectsprogguide>

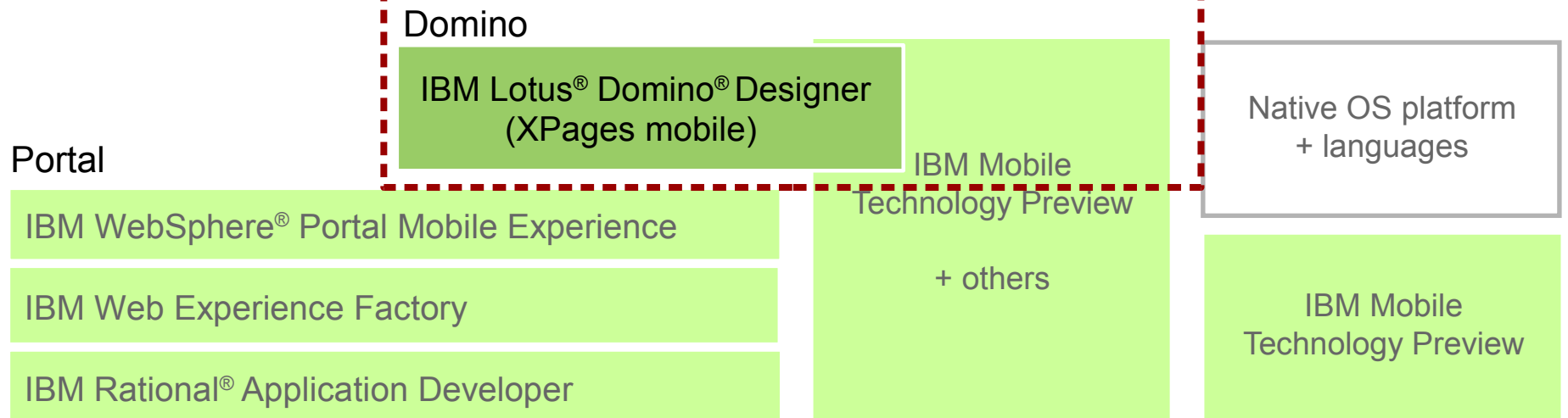


IBM Tools for Mobile Application Development

Characteristics



Tools





Application Development - 2011

- Themes

- Improve ability to extend the reach of your Notes applications to the web & mobile devices
- Modernize your existing applications to improve usability, performance & scalability
- Improve developer productivity and facilitate team development
- Set the stage for delivery of new capabilities
- Re-energize our IBM Business Partner ecosystem by providing a competitive application development platform

- Releases

- Product releases: Domino Designer, Domino, XWork Server & Notes
 - Oct 2011: 8.5.3
 - Dec 2011: 8.5.3 Upgrade Pack 1
- OpenNTF releases
 - 91 IBM releases

2011 - The XPages Year

Niklas Heidloff | 07:17:47 AM December 21 2011

What a year for XPages, XPages developers and the community. Here is a quick

New XPages feature: [Access to relational databases](#)

New XPages feature: [Social enabler](#)

New XPages feature: [Mobile controls](#)

New XPages feature: [REST services](#)

IBM Lotus Domino 8.5.3 was [released](#).

IBM XWork Server was [released](#).

IBM Lotus Domino 8.5.3 Upgrade Pack 1 was [released](#).

The [first OpenNTF XPages development contest](#) was a huge success.

The [second OpenNTF XPages development contest](#) was a huge success.

After two years of more than 20 percent [growth](#) the OpenNTF download numbers digits. There have been more than 350 new releases in 2011 which is basically

[XSnippets](#) has been built by the community for the community.

[OpenNTF Inc.](#) has been founded and has 28 company members.

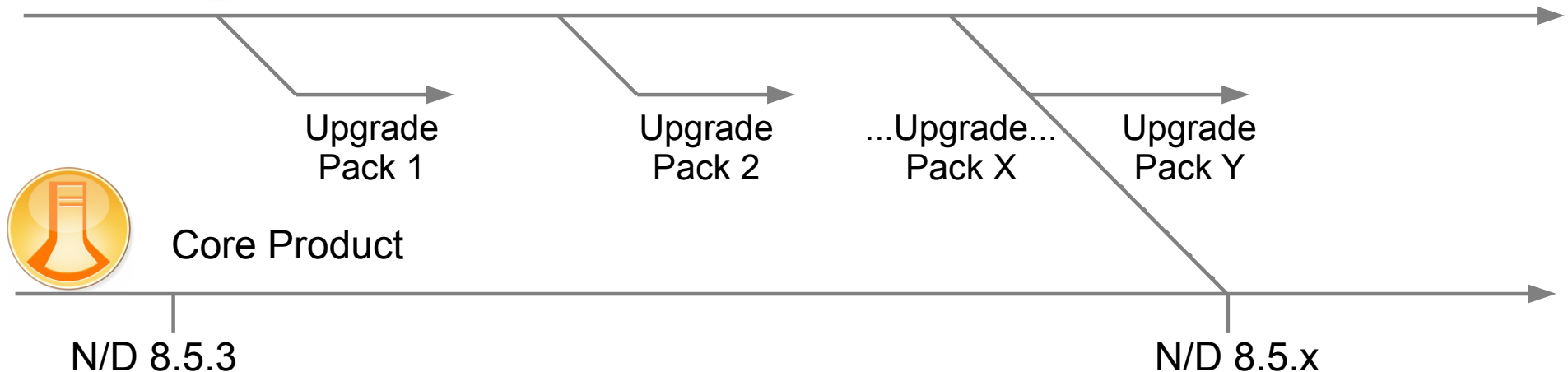


Product, Upgrade Packs and Open Source

- Deliver new functionality through off cycle Upgrade Packs
- The code is first released on OpenNTF
 - Available early and gives full transparency on what is being done
- Pieces from OpenNTF are extracted and delivered as Upgrade Packs, supported by IBM
 - Upgrade packs are delivered on a shorter release cycle than products
- Upgrade Packs are integrated into the next revision of the product



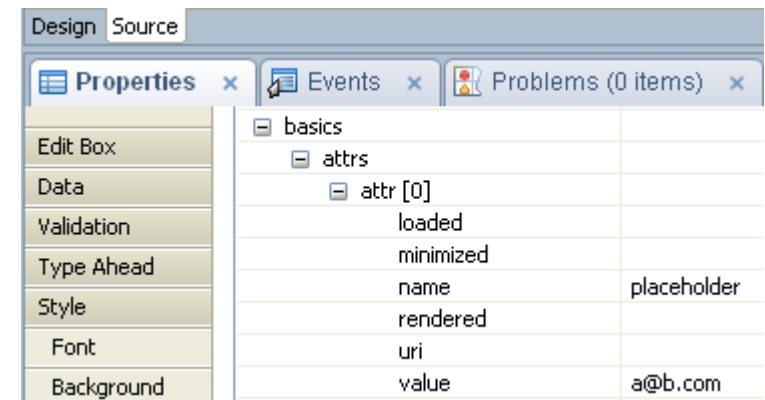
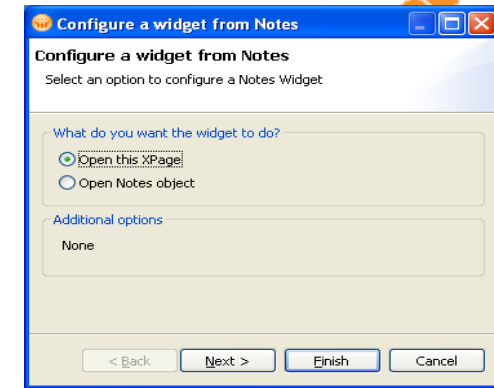
Continuous development released as open source





XPages – Miscellaneous Updates

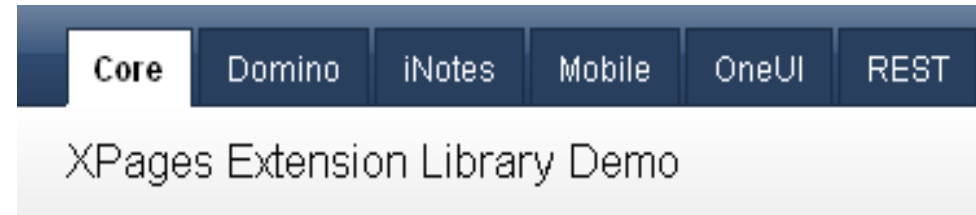
- XPages as widgets
 - Any XPage can now be configured as a widget
 - Widget catalog in 8.5.3 is an XPages application
- Enhanced HTML 5 Support
 - new "attr" properties for controls
 - enables support for 'placeholder', 'autofocus' attrs, and <article> tag
 - Take XPages offline!
- Bug Fixes / Featurelets
 - new property to set the <!DOCTYPE> tag
 - important for validation, mobile dev, etc.
 - rendering XPages as XHTML
 - show read-only controls as disabled
 - Tabbed Panel enhancements: partial refresh, improved submit behavior
 - ~200 fixes in total across the runtime





The Extension Library

- What's in Extension Library Upgrade Pack 1?
 - Over **100** new tags !!!
 - UI controls | Data Access Objects | Simple actions | Other assets ...
 - Dojo wrappers
 - iNotes controls
 - REST services
 - **Mobile library**
 - New @Functions
 - Predefined Managed Beans
 - Application Layout
- Get Started with XPagesExt.nsf
 - Sample application available on OpenNTF.org
 - Provides intuitive samples of almost every artifact
- Learn even more from the TeamRoom and Discussion templates
 - Features a new mobile UI





XPages Mobile App Dev Objectives

- Build new and extend the reach of existing applications to smart phones and tablets
 - Provide pervasive access to Notes/Domino data from your mobile device
 - IOS 4 & 5 (iPhone, iPad and iPod Touch)
 - Android 2.3 (phones) and 3.x (tablets)
 - Blackberry (coming in the near future)
 - Improve business process efficiency by allowing decision makers to approve workflows on the go
- Enable templates with mobile access
 - Enable existing applications by refreshing the design
 - Teamroom & Discussion templates
- Extend the XPages framework to support mobile web browsers
 - Make it easy to develop mobile applications with the technology you know
 - One programming model for mobile, desktop browser and rich client

See AD109: Ready, Set, Go! How IBM Lotus Domino XPages Became Mobile



Domino REST services

- Domino Access Services (DAS)
 - Provides secure lightweight HTTP based access to Domino data
 - Data service is in UP1
 - Tied to Domino data model
 - Access to databases, views & folders, documents
 - Create, Read, Update & Delete (CRUD) operations
 - JSON for easy manipulation via JavaScript or Java
- DAS is built on top of OSGi & Wink so it is **extensible**
 - IBM can add new services over multiple releases
 - Customers and business partners can create custom REST services
 - Domino Data Service
 - Mail Service (Planned)
 - Calendar Service (Planned)
 - Custom Services



Adding Social Capabilities to XPages

- Wrap XPages as an OpenSocial gadget
 - Allows XPages to participate in Embedded Apps
- New data sources to access any XML and JSON REST services
 - New Lotus Connections dedicated data sources (Communities, Profiles...)
 - New data source and libraries to deal with the ActivityStreams
- New controls to deal with the public social networks
 - Connect to LotusLive, Dropbox, Facebook, Twitter...
- Seamless handling of authentication/authorization mechanisms
 - Supports single sign-on, OAuth, Basic Authentication...
- XPages Social Enabler available now on OpenNTF
 - The plan is to deliver some of these social features within an Upgrade Pack, targeting UP#2, and then part of a future revision of IBM Lotus Notes®/Domino® product

See AD104 - XPages, Made Social & AD105 - Use IBM Lotus Domino and XPages for Your Social Business



XPages – Explore!

- Provide a mobile UI to your data with XPages – exactly the same way as you code XPages for desktop browser access!
 - Use the Extensions Library / Upgrade Pack features
- Integrate contributions to your process via mobile UI
 - Look into the Workflow for XPages project!
 - It could easily be extended for mobile access
- Build hybrid applications
 - Store GPS coordinates in Domino databases
 - via XPages
 - Camera, access to local documents,...
 - And many more
- We will demonstrate a few samples in our lab tomorrow ;-)

Zurück **Details**

Renovations Customer (Name/ID):
Aaronson Furniture(11289)

Status:
submitted

Renovations Contact:
Matthias Schneider

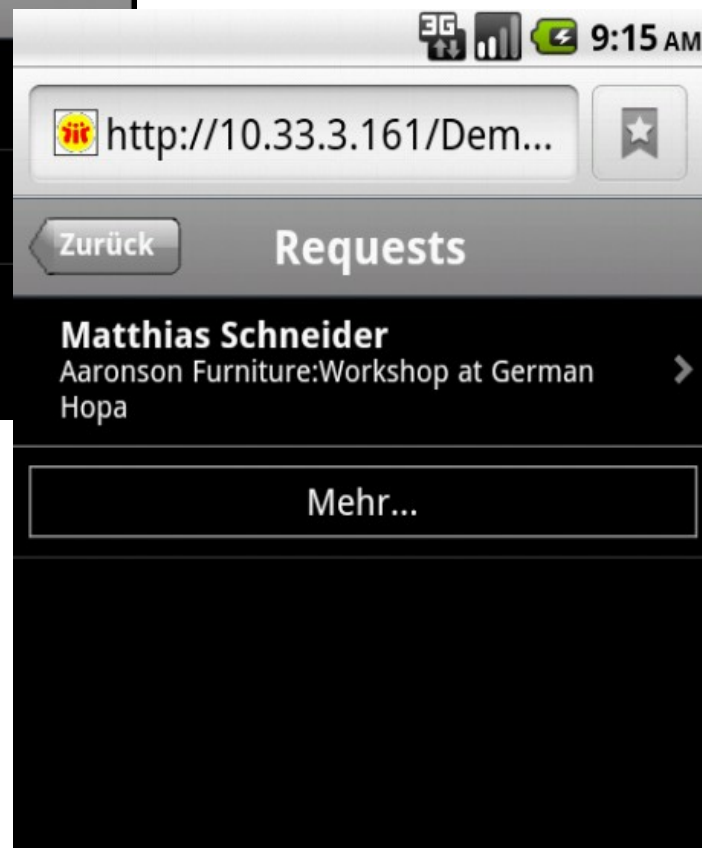
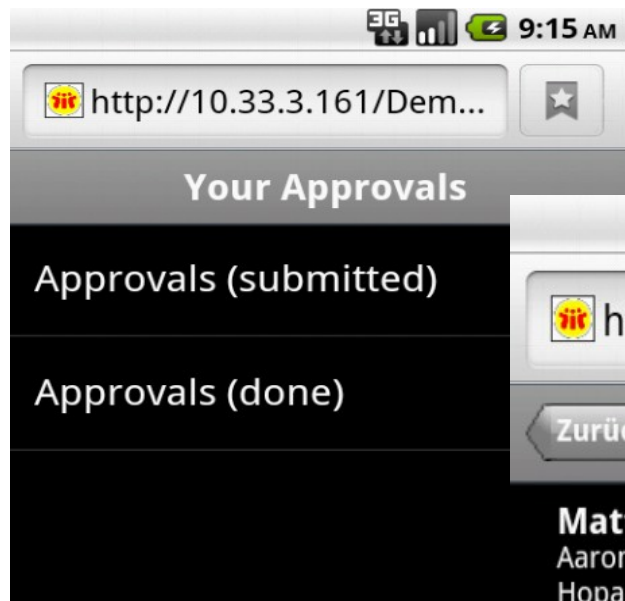
Subject:
Workshop at German Hopa

Body:
Protector "Best Practices" Workshop

Approve

Reject

Mobile XPages





Mobile XPages – Hybrid Applications

XPages via PhoneGap

Your Pictures:

Page1

Last Modified	Message
Mar 5, 2012	Description of your Picture

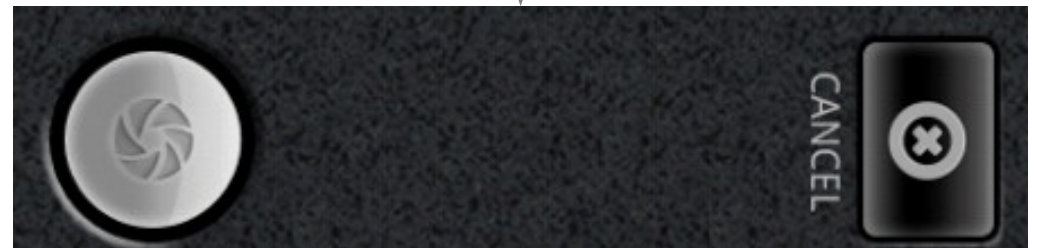
Capture

Upload

Your Message:

Description of your Picture

Web App ↔ Native App





Mobile Application Comparison

	Web	Hybrid	Native
Development cost	Reasonable	Reasonable	Expensive
Development time	Short	Short	Long
Application portability	High	High	None
Performance	Fast	Native speed if needed	Very Fast
Native functionality	No	All	All
Application store distribution	No	Yes	Yes
Extensible	No	Yes	Yes



Mobility Lab - tomorrow!

- Setup the base
 - Android SDK
 - Eclipse tooling
 - PhoneGap / Cordova
- Provide a mobile UI to your data with XPages – exactly the same way as you code XPages for desktop browser access!
 - Use the Extensions Library / Upgrade Pack features
 - ...build your mobile app in 30 minutes!
- Build hybrid applications
 - Leverage Geolocation feature in your native & XPages apps
 - Packaging, ...



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