Architecting & Developing for Windows Phone

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Session Outline

- WP7 Basics
- Design Patterns
- Unit Tests
- Application Lifecycle
- Localization
- Coming up: Mango!
WP7 Basics
# Hardware Foundation

## Capacitive touch
- 4 or more contact points

## Sensors
- A-GPS, Accelerometer, Compass, Light, Proximity, **Gyro**

## Camera
- 5 mega pixels or more

## Multimedia
- Common detailed specs, Codec acceleration

## Memory
- 256MB RAM or more, 8GB Flash or more

## GPU
- DirectX 9 acceleration

## CPU
- Qualcomm **MSM7x30**, MSM8x55 800Mhz or higher

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**Hardware buttons | Back, Start, Search**
Development Platforms

Apps
- Silverlight 3.x
- XAML UI Framework
- .NET
- Metro Design
- Rapid Application Development

Games
- Performance for 2D & 3D games
- Mature technology for PC & XBOX 360
Design Patterns
Why use design patterns?

- Separation of concerns
- Collaboration
- Blendability
- Lookless view logic
- No duplicated code to update views
- Testability
MVVM – Model View ViewModel

- It’s just pattern!
- Build into Silverlight & WPF
- Can be extended with frameworks & helpers
MVVM pattern
MVVM communication

View

ViewModel

Model

DataBinding
Commands
Messages
MVVM communication

- View
- ViewModel
- Messages + callback

- View
- ViewModel
- Messages

- View
- ViewModel
MVVM commands

- “Point of entry” for a method
- Can be data bound
- ICommand interface
  - Execute method
  - CanExecute method
  - CanExecuteChanged event
MVVM messaging

- Communication between ViewModels and Views $\rightarrow$ loose coupling
- Should be simple by default
- Possible to open filtered channels
  - To a target Type (or an Interface)
  - With a Token
Demo
Unit Tests
Demo
Application Lifecycle
Activation Event - User completes the launcher/chooser or presses the back button.

Deactivation Event - User completes the launcher/chooser or presses the back button.

Event - Application Lifecycle - Tombstoning

Event:
- User launches your application
- Launching Event
- Running
- Back Button
- Closing Event
- or
- Launcher, chooser, start button or lock screen
- Deactivated Event
- Activated Event
- User completes the launcher/chooser or presses the back button
Coming up: Mango!
New Features
Multitasking

XNA Silverlight Integration

Marketplace Services

Integration with the phone

Enhanced Phone Framework

Complete the push notification and Tile experience

Sockets

Performance

Database Access
Multitasking Themes

- **Fast Application Resume**
  - Ability to resume applications that the user has recently used
  - Apps stay in memory unless memory is needed for other apps
  - *Every* app should do this

- **Background Agents**
  - Ability to run your code in the background
  - Audio, Timed or on Idle

- **Notifications**
  - Ability to create alarms and reminders
  - UX and behavior is the same as the phone Alarms and Calendar items

- **Background Transfer Service**
  - Application can queue up transfers in the background
**Integrating with the Phone**

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<th>Camera</th>
<th>Sensors</th>
<th>Networking</th>
<th>Data</th>
<th>Launchers &amp; Choosers</th>
<th>Controls</th>
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<tr>
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<td>Sockets</td>
<td>SQL CE</td>
<td>Bing Maps</td>
<td>Frame and Page Navigation improvements</td>
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<tr>
<td>No need to capture the image to flash</td>
<td>Accelerometer</td>
<td>Connection Manager control</td>
<td>Phone Contacts</td>
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<td>Performance</td>
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<td>Phone Calendar</td>
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<td>Gyro</td>
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<td>Address Chooser</td>
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<td></td>
<td>Spatial Framework</td>
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- **Controls**
  - Open Source on CodePlex
## Expanding the Phone Framework

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<td>Signature user experience for Windows Phone</td>
<td>Deep Toast</td>
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<td>Complete Framework</td>
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<td>Music</td>
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<td>Multiple Tiles</td>
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<td>Photos</td>
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## Silverlight Investments

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<th>Performance</th>
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<td>Memory Management</td>
<td>Reading/Writing of all Mango Languages</td>
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<td>Implicit Styles</td>
<td>Input on Render Thread</td>
<td>Big deal if you are writing an app for Asia</td>
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<td>Clipboard API</td>
<td>Profiler Instrumentation</td>
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XNA & Silverlight

In the same app...

Using XNA Shared Graphics
Better Tooling
Tools Investments

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<th>.NET</th>
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<td>Profiler</td>
<td>SIMD – Vector</td>
<td>Ingestion Tool</td>
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<td>Profiler</td>
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Greater Reach
Creation & Commerce

Now supporting 16 more languages

Hallo, verden

Hallo mensen

Hej verden

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안녕하세요

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Всем привет

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Cześć ludzie

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Creation & Commerce
More countries for app creation...from 30 to 38
Creation & Commerce

More countries for app commerce…from 16 to 35
Let’s stay in touch!

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