



Multi-device true native development

RAD Studio XE5 產品 技術發表會

王者再臨 - 移動與桌面開發的真正王者

Agenda

- 歡迎和簡介
- 真正的多平台, 多設備, 原生App開發工具
- 全新登場! Android快速App 開發工具
- 中場休息
- 一份程式碼同時開發移動和桌面應用程式
- 開發結合資料和服務的新世代Apps
- 結論和 Q&A

歡迎和簡介

Embarcadero Technologies

A dark blue world map with city lights glowing in yellow and white. Several colored dots (yellow, red, and blue) are scattered across the map, representing global locations. The text is overlaid on the map.

Founded 1993

3.2 Million Customers


500+ Employees in 29 Countries

5 R&D Centers of Excellence

World Wide Sales & Support





3 Million Delphi/C++ Developers Coding ...







- 9.7 Billion lines of code per year
- 100,000 Windows Apps
- 80% less code required - effective \$1.60 per line of code
- \$62 Billion in annual developer 

Embarcadero Products






Application Development

-  RAD Studio
-  C++Builder
-  Delphi
-  HTML5 Builder

Data Architecture and Modeling

-  ER/Studio Data Architect
-  ER/Studio Portal
-  ER/Studio Business Architect
-  ER/Studio Software Architect

Database Development, Administration and Performance Optimization

-  DB Power Studio
-  DBArtisan
-  Rapid SQL
-  DB Optimizer
-  DB Change Manager

Embedded and Workgroup Databases

-  InterBase

Product and Industry Awards

- Embarcadero products have received numerous awards for product innovation – *here are just a few...*

DeveloperWeek
Conference & Festival 2013

- AWARDED TO -
Embarcadero
Technologies
RAD Studio



DeveloperWeek 2013 Top Innovator
for Developer Tools – RAD Studio



2011 Members
Choice Winner
DELPHI Programming
Languages



2011 Jolt Productivity Award
DB Change Manager XE
Change and Configuration
Management Tools



SD Times 100 2012
Database & Data Tools



Software 500
Embarcadero
Technologies
2002-2007



SQL Server Magazine's 2011 Editors' Best Awards
DBArtisan XE2 - Silver in Database Management
Rapid SQL XE - Bronze in Database Development



JBuilder 2004



Delphi VCL
Best Library or
Framework 2008



FireMonkey FM Component Platform

- The multi-device, true native app platform
- Your fastest path to Android, iOS, Windows and Mac



FireMonkey Architecture

Language	 
Framework	
3D API	  
Platform	    Desktop Mobile

我們正生活於多重設備的世界...

2013: The Client Revolution

1 Billion



Windows

65 Million



Mac

1 Billion+



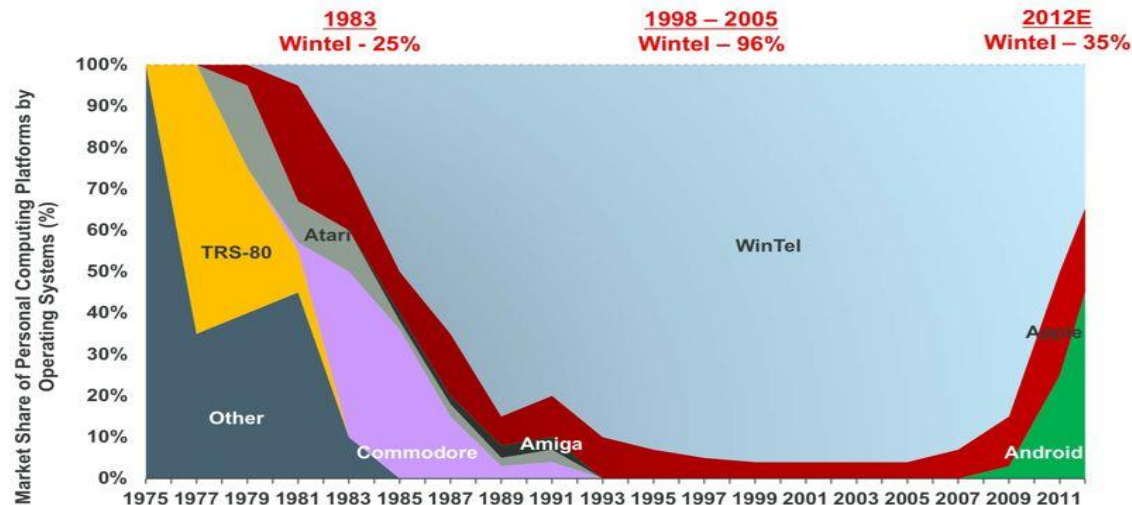
Mobile

Today's Unprecedented Multi-Device Landscape

The Client Revolution

Re-Imagination of Computing Operating Systems -
iOS + Android = 45% Share vs. 35% for Windows

Global Market Share of Personal Computing Platforms by Operating System Shipments, 1975 – 2012E



KPCB

Source: Asymco.com (as of 2011), Public Filings, Morgan Stanley Research, Gartner for 2012E data, 2012E data as of Q3:12.

24

An Unprecedented Multi-Device Landscape



2013+

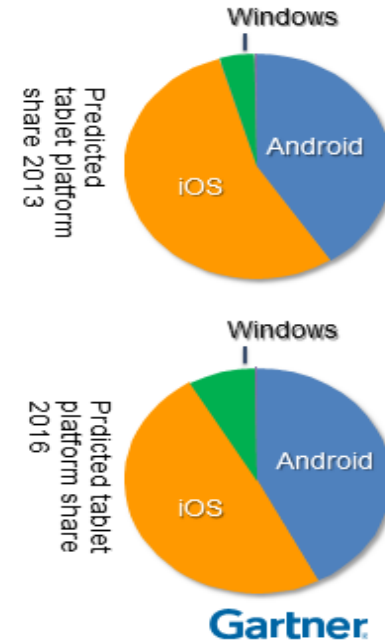
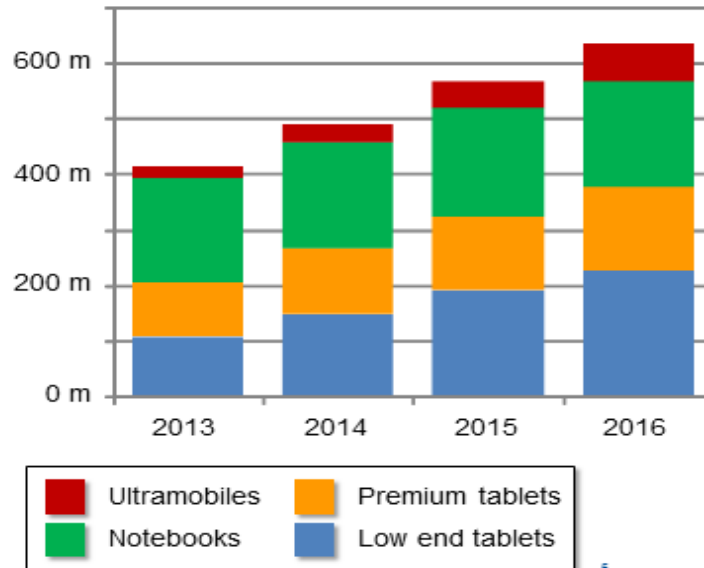


Client Device Diversity Will Continue to Expand

Global mobile and PC tablet shipments

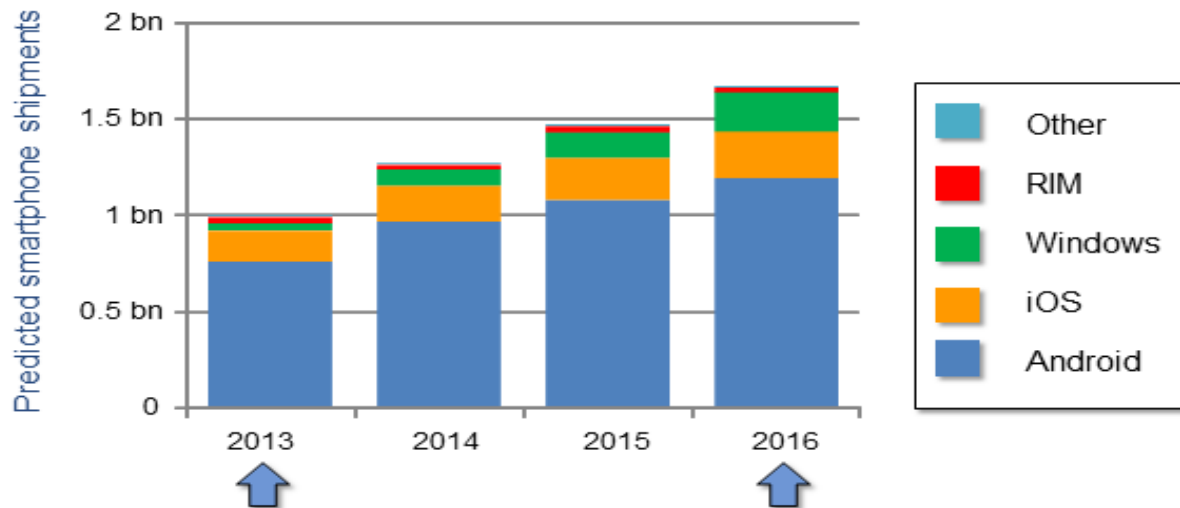
Mobile PC and tablet shipments

Predicted mobile PC and tablet shipments 2013 to 2016
Gartner predictions published Q4 2012.



Global smartphone shipments

Smartphones Will Dominate Handsets



The rise of smartphones

Smartphones will be 52% total global handset shipments

Smartphones will be 78% total global handset shipments

Gartner

Tablet OS, shipments and market share Q2 2013

*Top Tablet Operating Systems, Shipments, and Market Share, Second Quarter 2013
(Shipments in Millions)*

Vendor	2Q13 Unit Shipments	2Q13 Market Share	2Q12 Unit Shipments	2Q12 Market Share	Year-over-Year Growth
<i>1. Android</i>	<i>28.2</i>	<i>62.6%</i>	<i>10.7</i>	<i>38.0%</i>	<i>162.9%</i>
<i>2. iOS</i>	<i>14.6</i>	<i>32.5%</i>	<i>17.0</i>	<i>60.3%</i>	<i>-14.1%</i>
<i>3. Windows</i>	<i>1.8</i>	<i>4.0%</i>	<i>0.3</i>	<i>1.0%</i>	<i>527.0%</i>
<i>4. Windows RT</i>	<i>0.2</i>	<i>0.5%</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
<i>5. BlackBerry OS</i>	<i>0.1</i>	<i>0.3%</i>	<i>0.2</i>	<i>0.7%</i>	<i>-32.8%</i>
<i>Others</i>	<i>0.1</i>	<i>0.2%</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
Total	45.1	100.0%	28.3	100.0%	59.6%

Source: IDC Worldwide Tablet Tracker, August 5, 2013

Change.. It's constantly all over the media



Acer to downplay Windows in favor of Android, Chrome OS

Preparing for 'the day after tomorrow'

By Neil McAllister, 8th August 2013 [Follow](#) 299 followers



Android rockets and iOS gains, while Windows dips

Summary: Android device shipments leap, but there's yet more bad news for PC makers as the market continues to slide, despite their experiments with new form factors.

HOME PAGE TODAY'S PAPER VIDEO MOST POPULAR U.S. Edition ▾

The New York Times Business Day
Technology

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH SPORTS

Dell's Profit Declines 72% on Sluggish Sales of PCs

VB what's hot? CLOUDBEAT 2013 · APPLE · GOOGLE · FACI

/BUSINESS HP posts revenue decline as PC sales weaken further

BBC Sign in

NEWS BUSINESS

Facebook shares soar 18% on strong mobile ad earnings



仍然在多個桌面環境中掙扎?!

What does all this CHANGE mean to YOU?

- You
- Your team
- Your business

These changes and... You

- Your career choices either...
 - Expand hugely
 - Continually get smaller, so cling to the job you have
- Your project participation
 - Drive the best new projects
 - Have the opportunity to be the developer “hero” to the business
 - Innovate in ways you had not imagined
- OR
 - Work more and more on legacy only projects

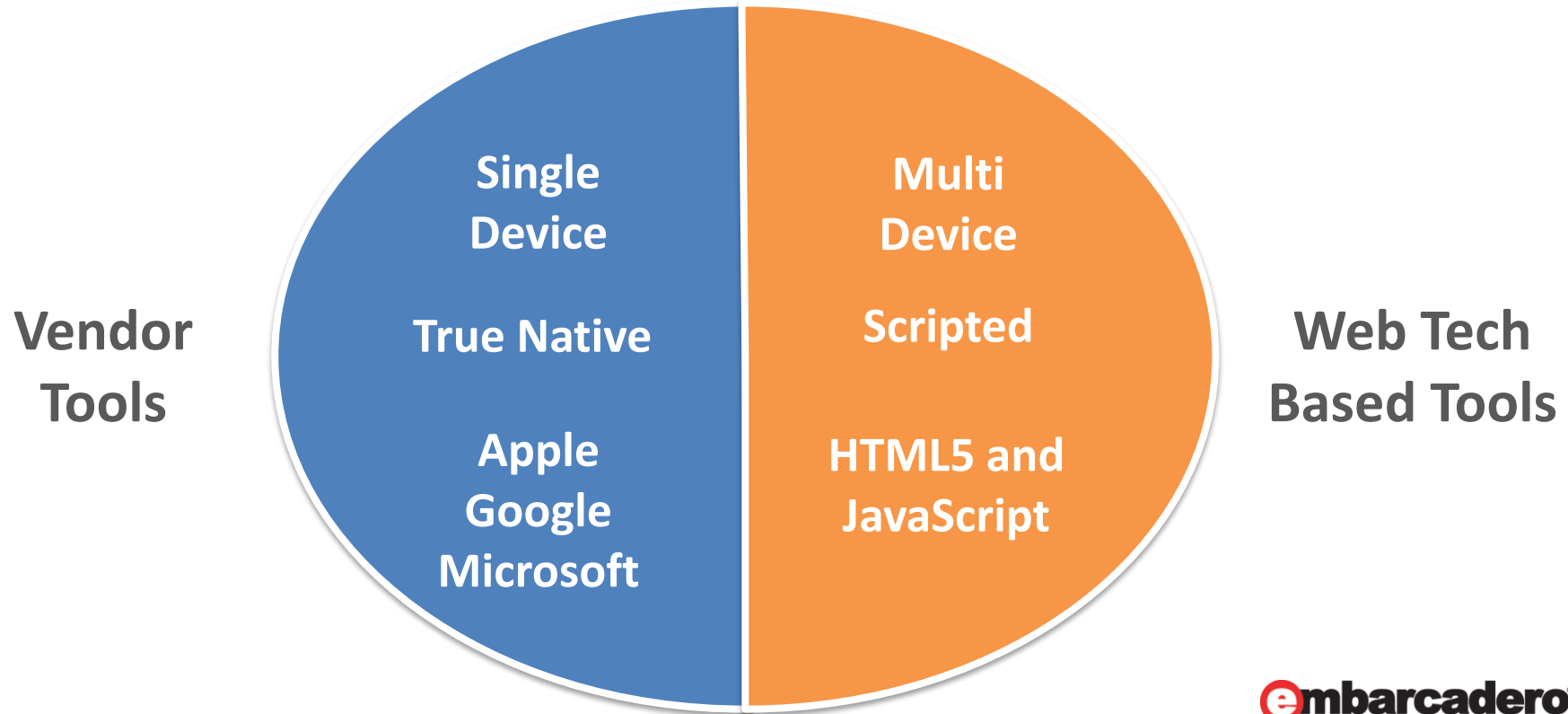
These changes and... Your Team

- All of the same criteria as “You”
- Be split in as many ways as there are platforms
 - Currently that would be three to four groups (Win, Android, iOS, OS X)
 - How would you manage that without
 - 3x/4x budget and 3x/4x developers
 - Demotivated team members would leave for better projects and prospects

These changes and...Your Business

- Customers that expect you to always be there
 - 24/7, in-their-hand interaction to your business is now demanded of businesses of all sizes
 - Those that are WIN, those that aren't LOSE
- Costing...
 - Transactional cost and impulse buy
 - Customer retention and loyalty
 - Complete loss of opportunity within market time windows
 - Be totally excluded from large customer demographics

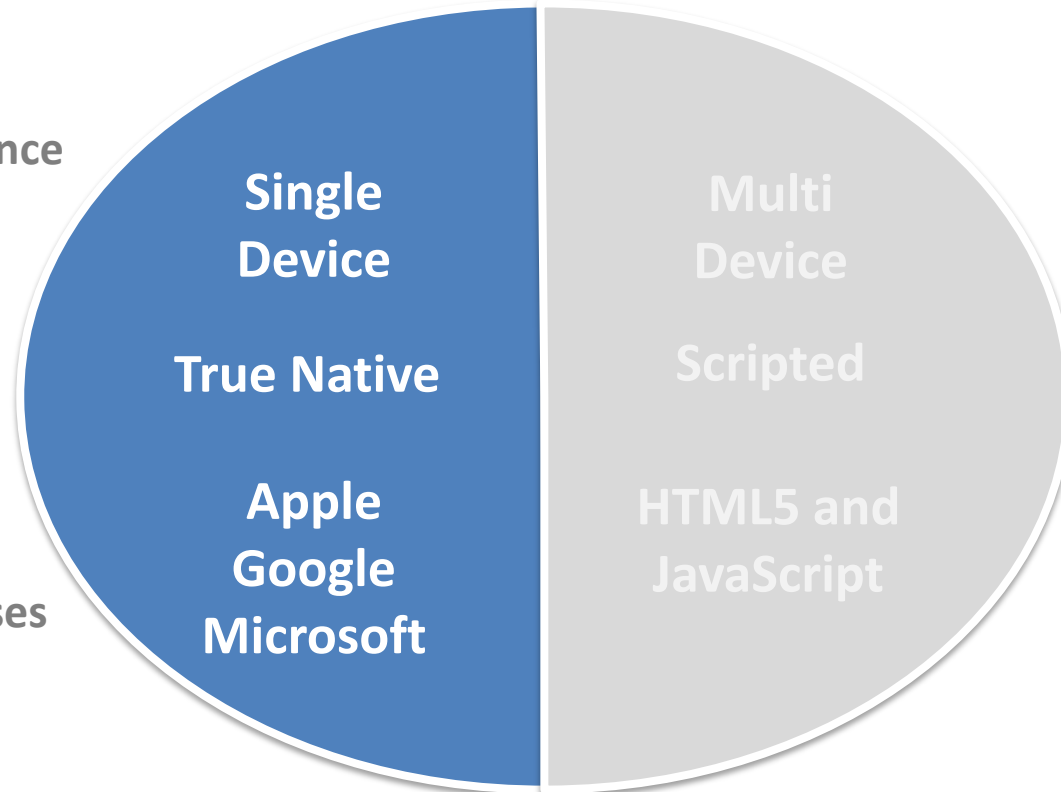
Current Tools Choices



Pros & Cons for Multi-Device – Vendor Tools vs Web Tech Tools

Pros

- Native UX
- Native performance
- Secure



Cons

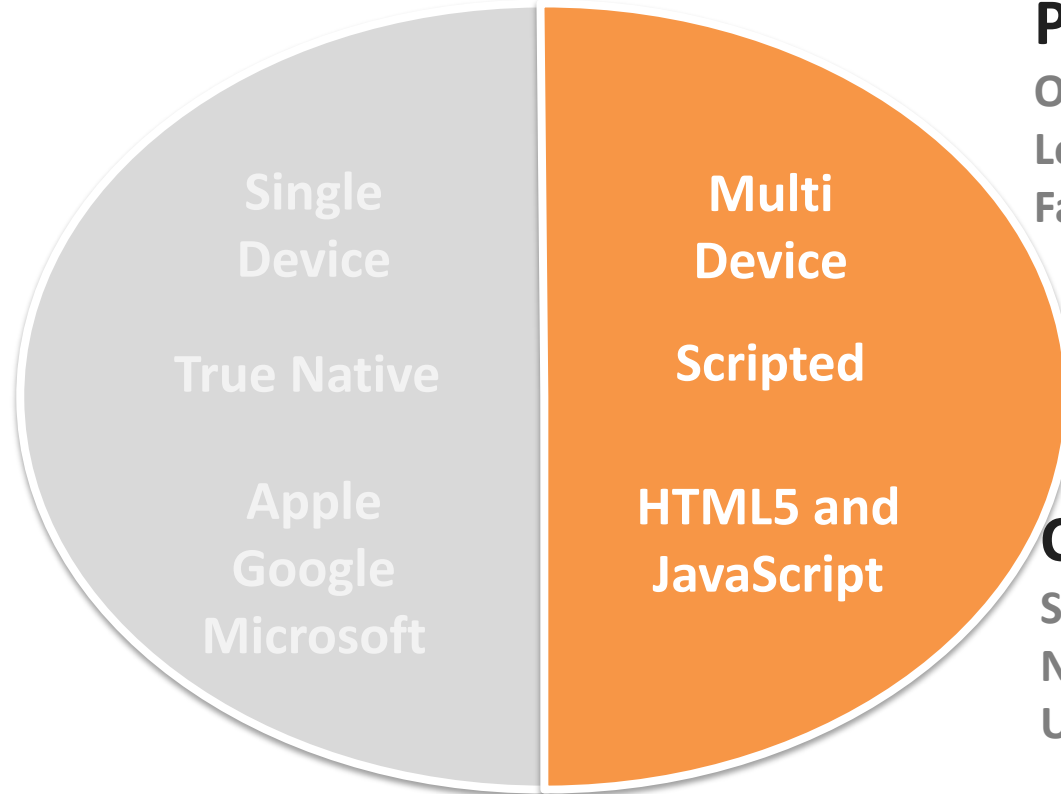
- Multiple code bases
- Multiple teams
- Higher dev cost

Vendor Tool Approach for Targeting Multiple Devices



multiple languages, multiple codebases

Pros & Cons for Multi-Device – Web Tech Based Tools



Pros

- One team
- Lower dev costs
- Fast time to market

Cons

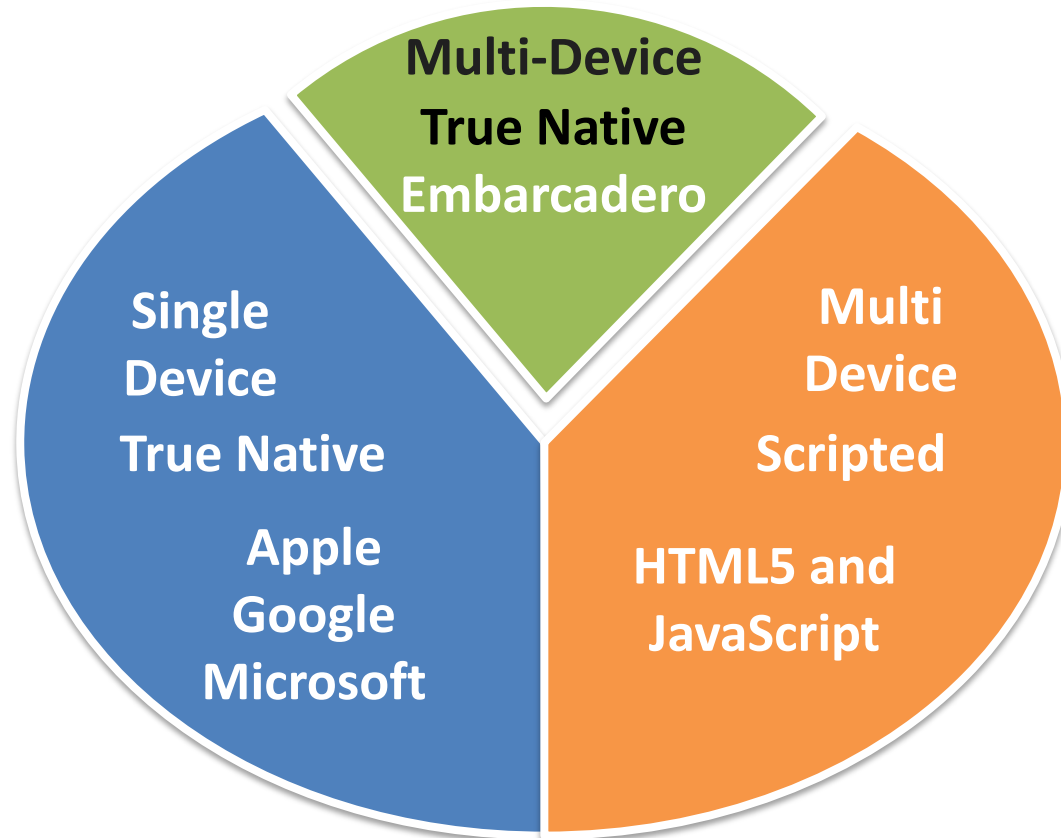
- Script Performance
- Non-Native UX
- Unsecure

Virtual Code Mobile Solutions



one language, multiple codebases

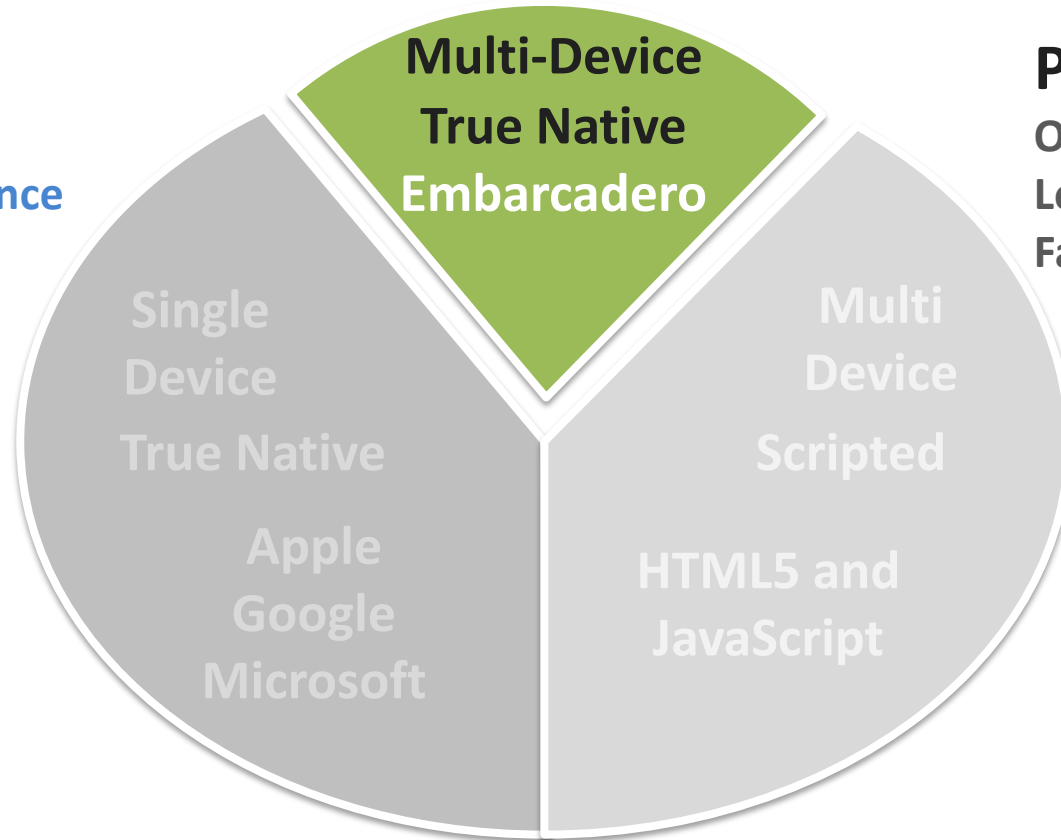
Multi-Device True Native



Multi-Device True Native

Pros

Native UX
Native performance
Secure



Pros

One team
Lower dev costs
Fast time to market

New!

全新登場! ANDROID快速APP 開發工具

已上架AppStore的XE4 iOS App

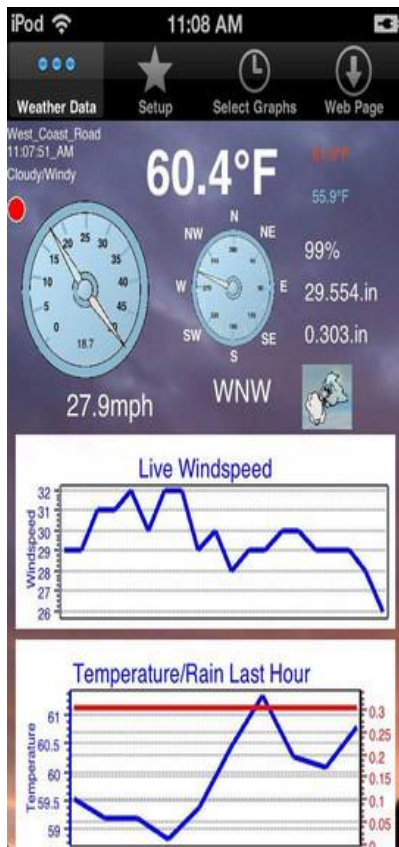
iPhone Apps

 Anders' Analog Clock Utilities <input type="button" value="Download"/>	 MathViz Utilities <input type="button" value="Download"/>	 ITTT - TicTacToe Games <input type="button" value="Downloaded"/>	 Einkommensteuer (EkSt) Finance <input type="button" value="Free"/>	 iTaxCalc Business <input type="button" value="Free"/>
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iPad Apps

 Anders' Analog Clock Utilities <input type="button" value="Download"/>	 MathViz Utilities <input type="button" value="Download"/>	 iTaxCalc Business <input type="button" value="Free"/>	 Pflege Finance <input type="button" value="Free"/>
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已上架AppStore的XE4 iOS App



The BMI Calculator

Measurement System

Metric

Standard ✓

Your Weight & Height

Weight (in pounds) 198

Height (in inches) 75

Calculate my BMI

Your BMI is : 24.75

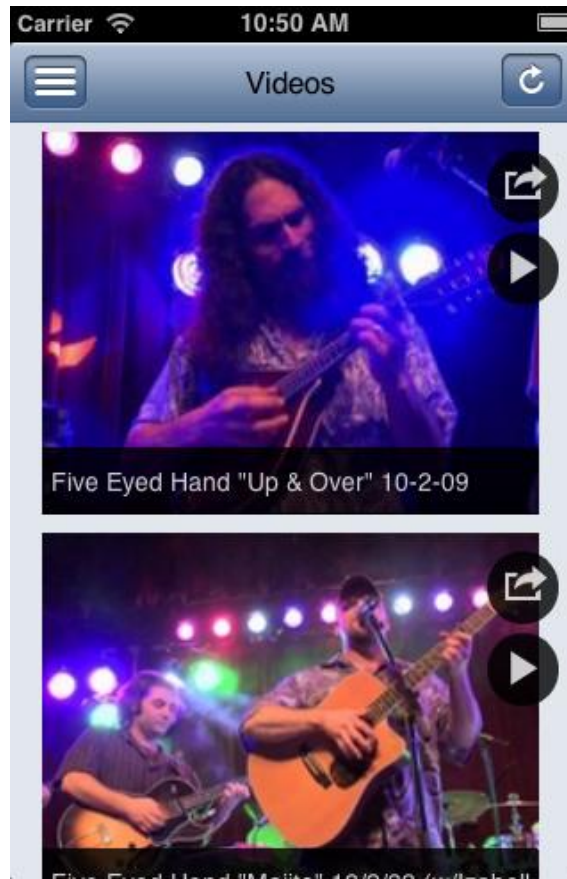
Your Weight Range : Normal

BMI Weight Ranges

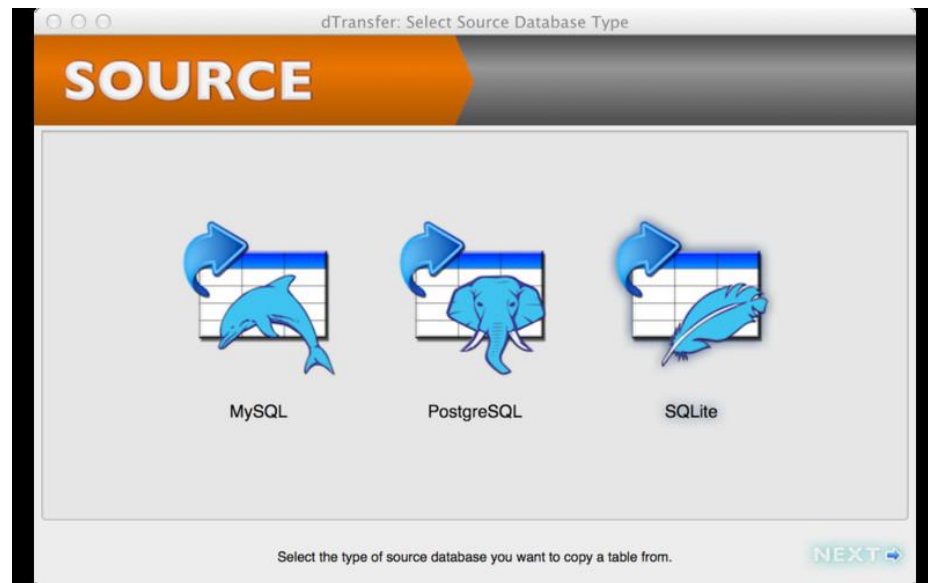
Copyrights © 2013 Dareen Software Solutions. About



已上架AppStore的XE4 iOS App

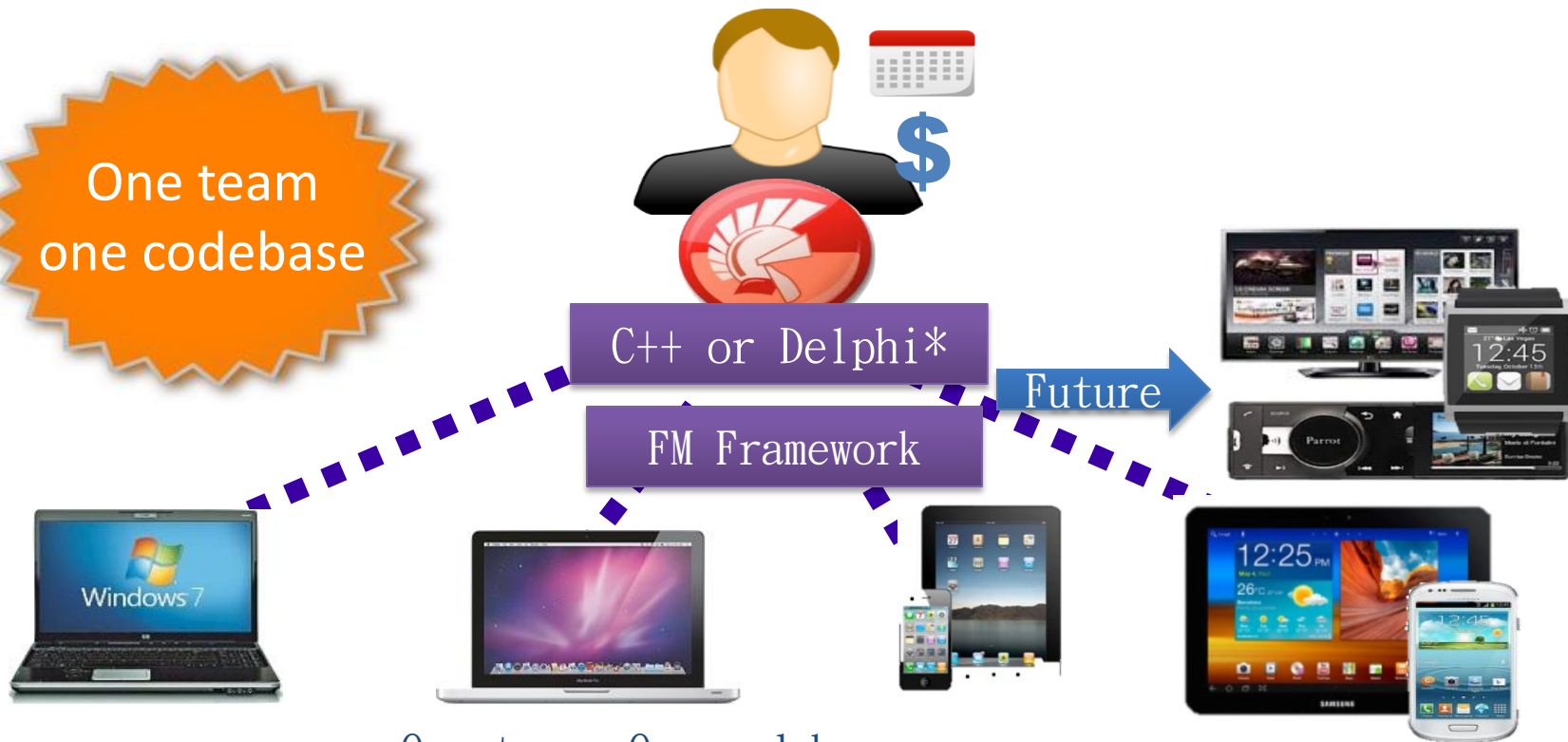


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Multi-Device

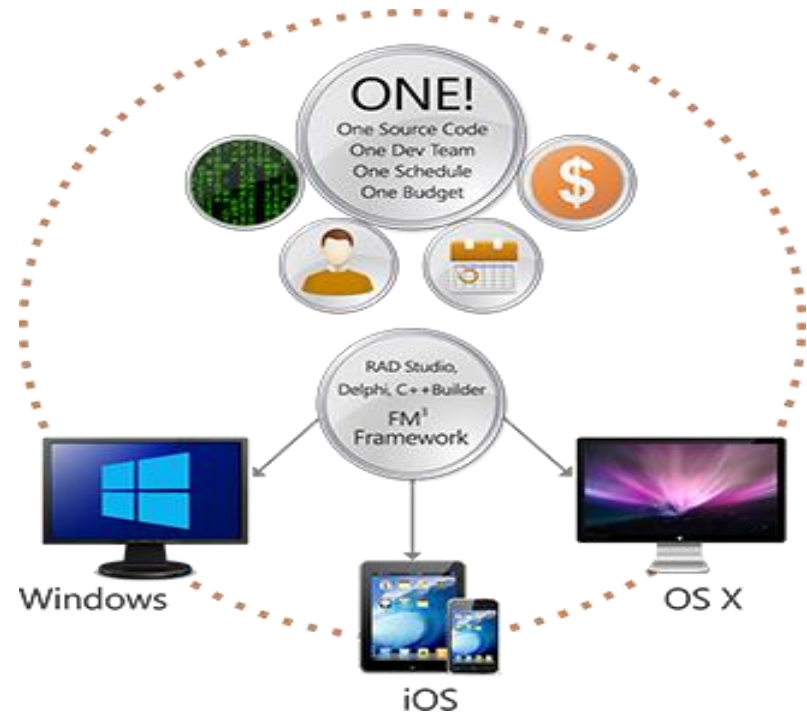
One team
one codebase



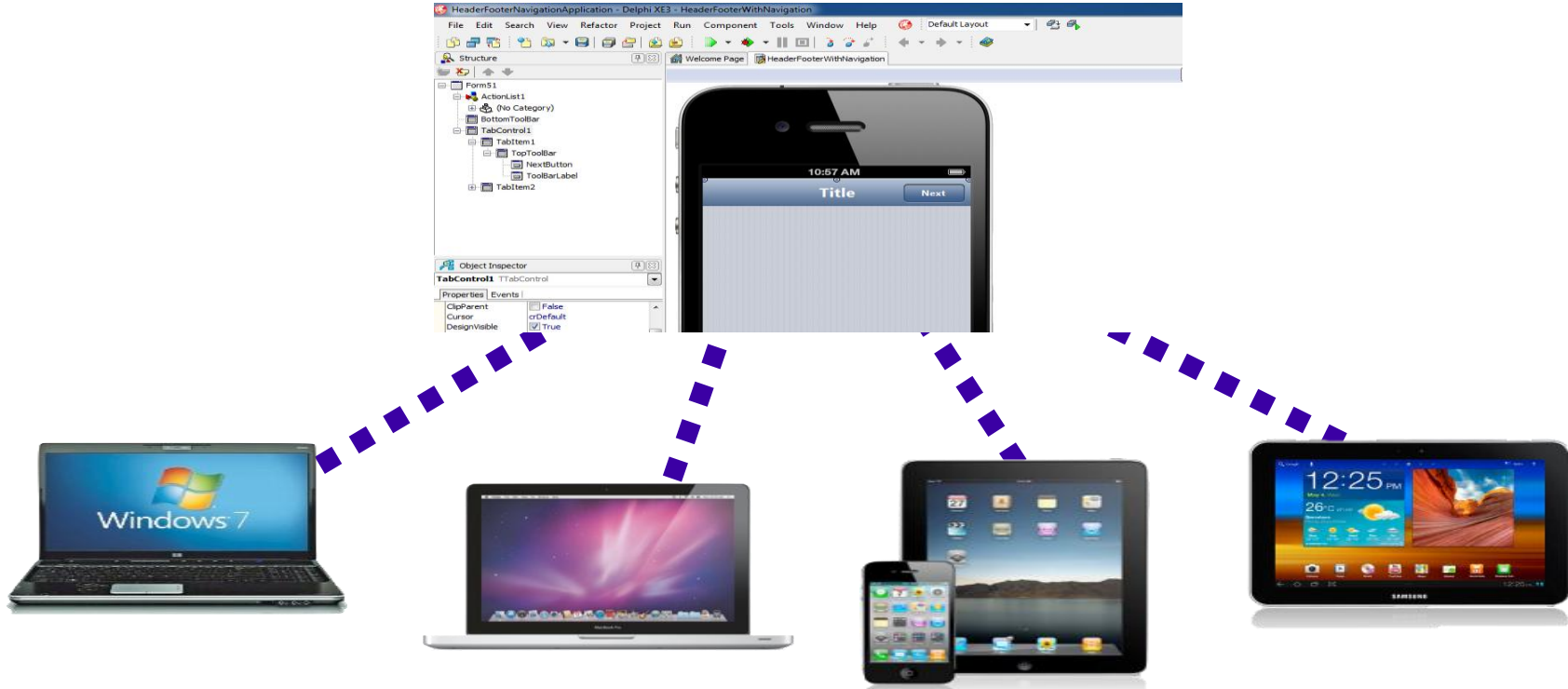
One team, One codebase

One Codebase, One Team

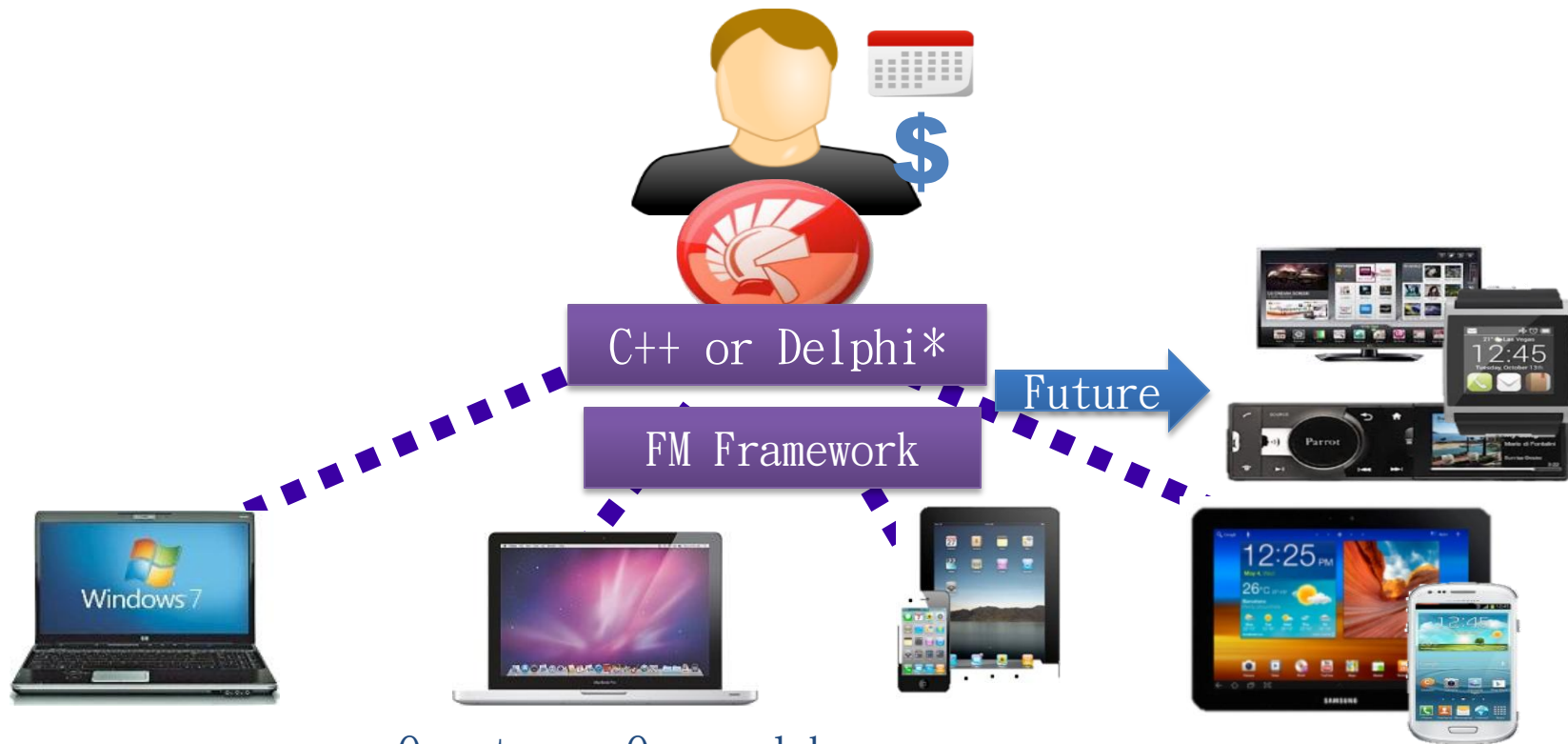
- One set of development resources to create apps for multiple platforms
 - one codebase
 - one team
 - one schedule
- Reduced budgets and complexity



Rapid Prototyping



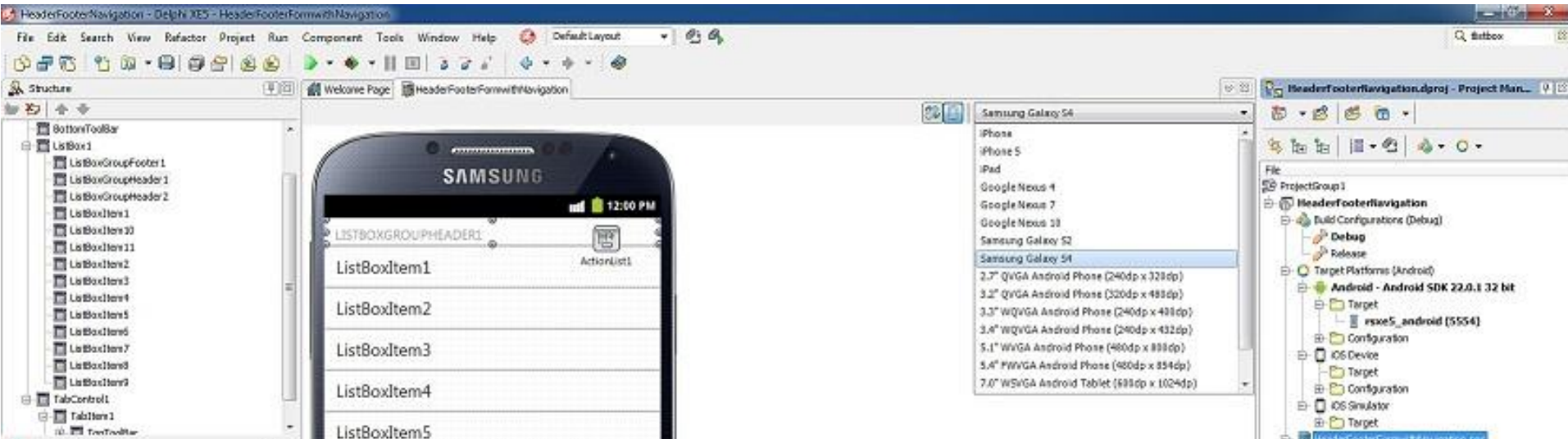
RAD Studio XE5



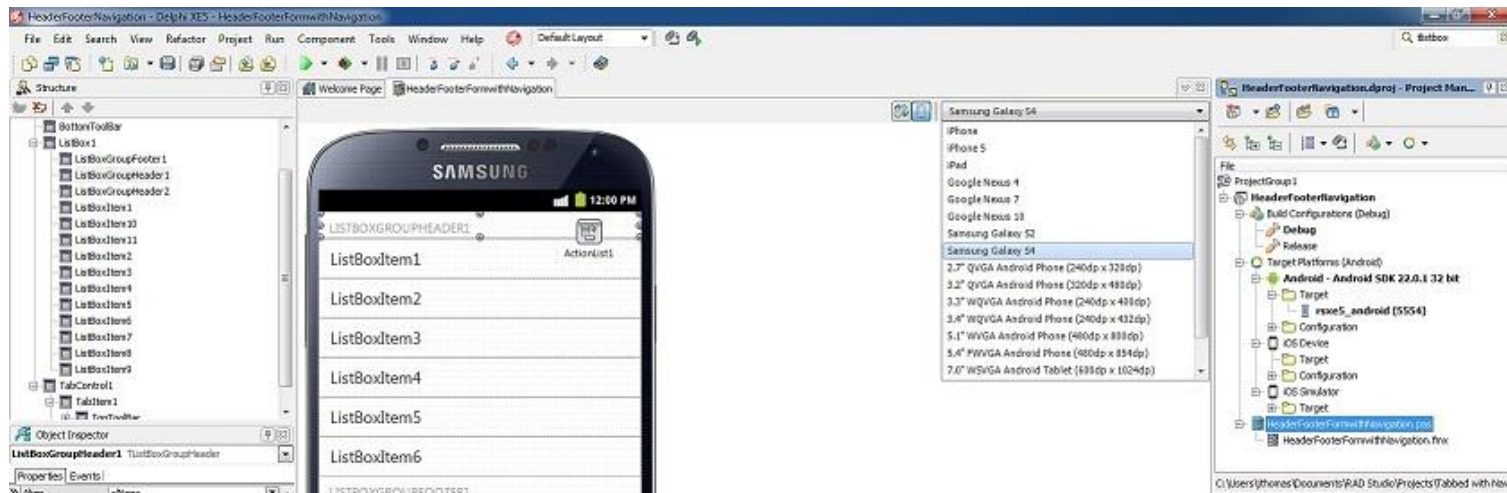
One team, One codebase

Delphi FireMonkey on Android and iOS

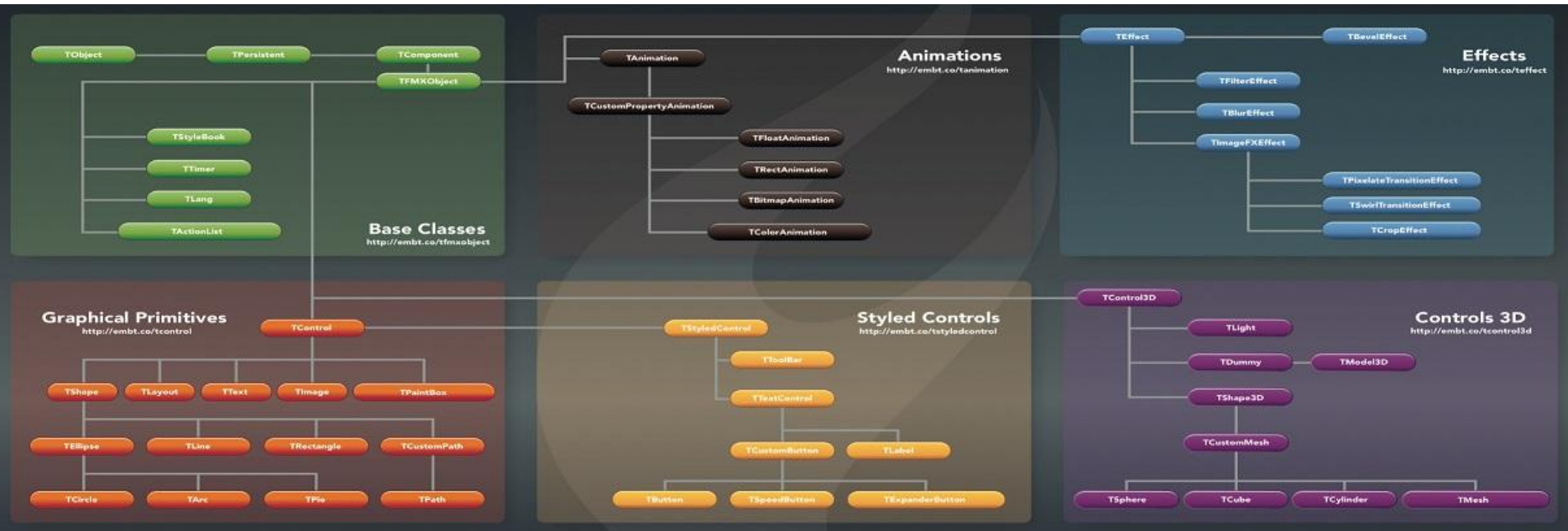
- “Native” and Custom Styles
- True Native Apps
- Delphi components and development model



Visual Development

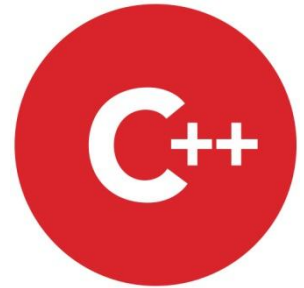


Component-Based Framework

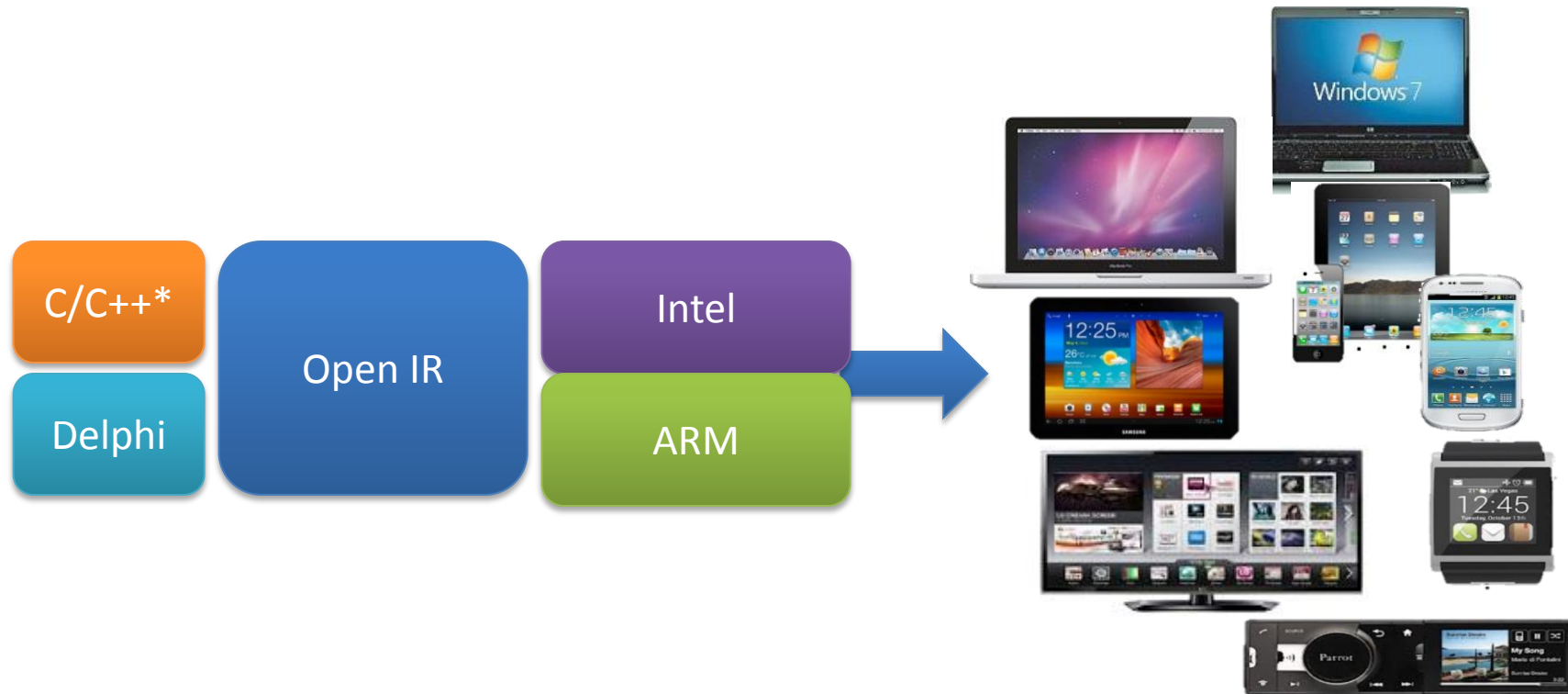


Modern Language Features

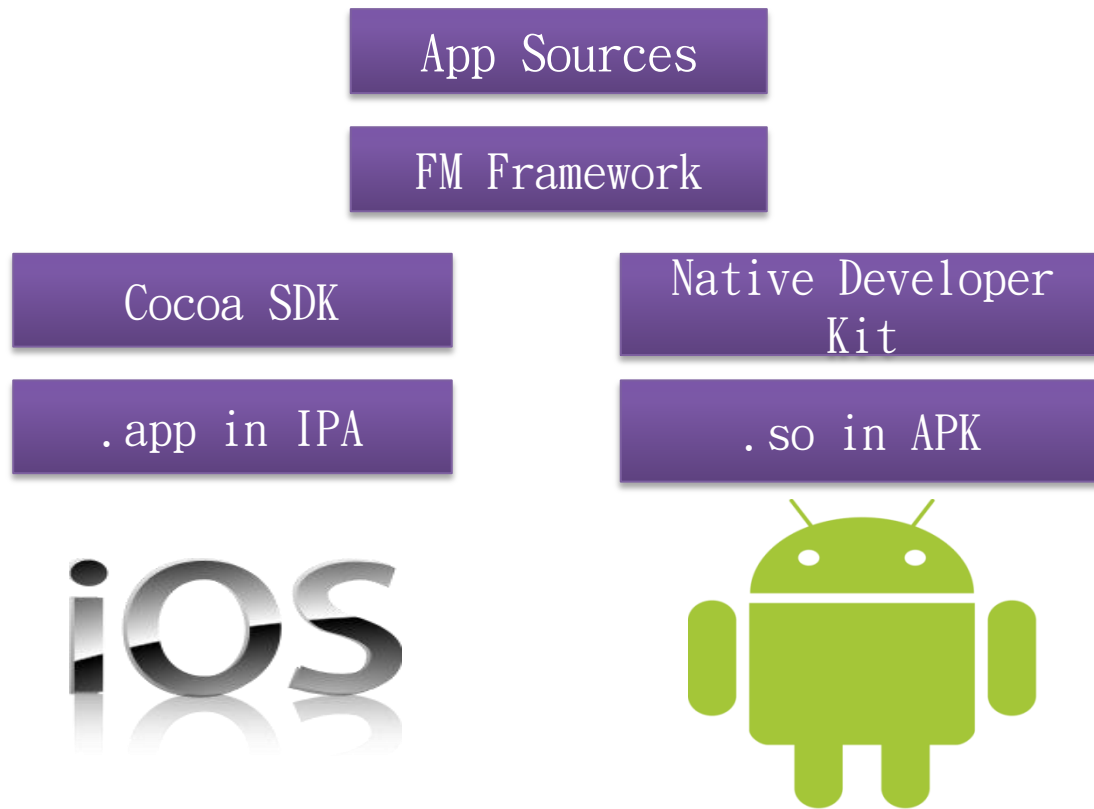
- Property-Method-Event
- Automatic Reference Counting
- Interfaces
- Attributes
- Generics/Collections
- Anonymous Methods (Lambda functions/closures)
- Rich RTTI (introspection/reflection)



Common Compiler Architecture



Cross compilation and Packaging



範例

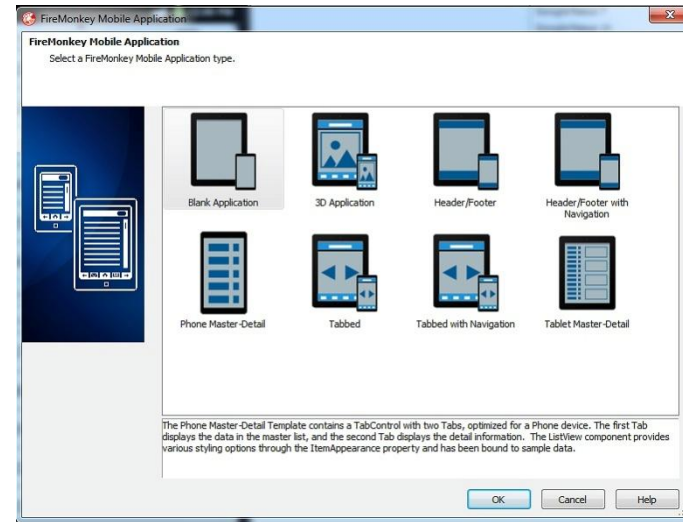
- Hello World For iOS和Android
- 從iOS快速移植到Android

Building

一份程式碼同時開發移動和桌面應用 程式

Built-in Mobile Application Wizard

- Start with a blank HD or 3D FireMonkey application
- Choose from Tabbed Application, Header/Footer and Master/Detail Templates



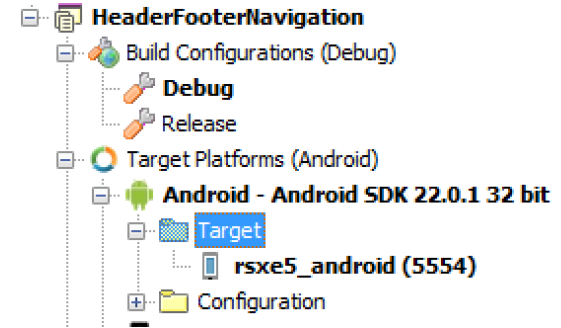
IDE deployment options for Android

Deploy Android apps to the Emulator

- Any AVD device

Deploy Android apps to the Device

- Debug
 - debug/deploy to device
- Ad-hoc
 - distribute APK anywhere
- App Store
 - deploy to an Android app store like Play or Amazon



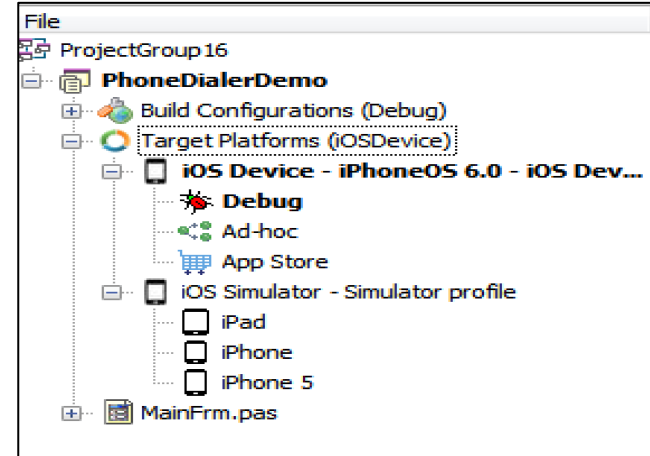
IDE deployment options for iOS

Deploy iOS apps to the Simulator

- iPhone (Retina/non-Retina)
- iPhone 5 (Retina/non-Retina)
- iPad (Retina/non-Retina)

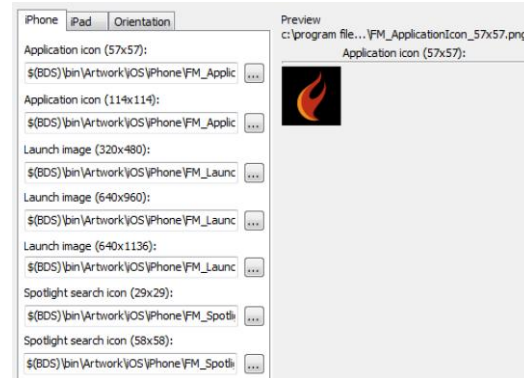
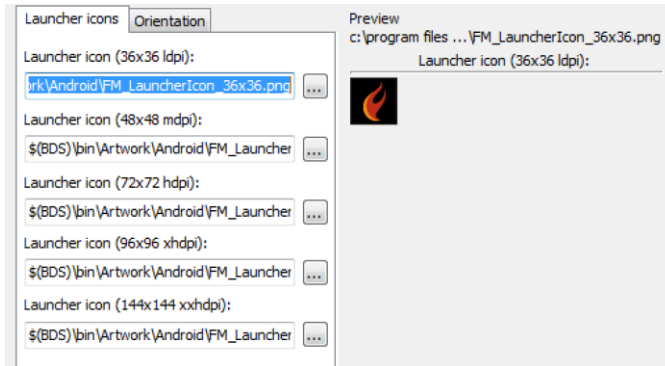
Deploy iOS apps to the Device

- Debug (debug/deploy to device)
- Ad-hoc (distribute within own enterprise)
- App Store (deploy to the App Store)

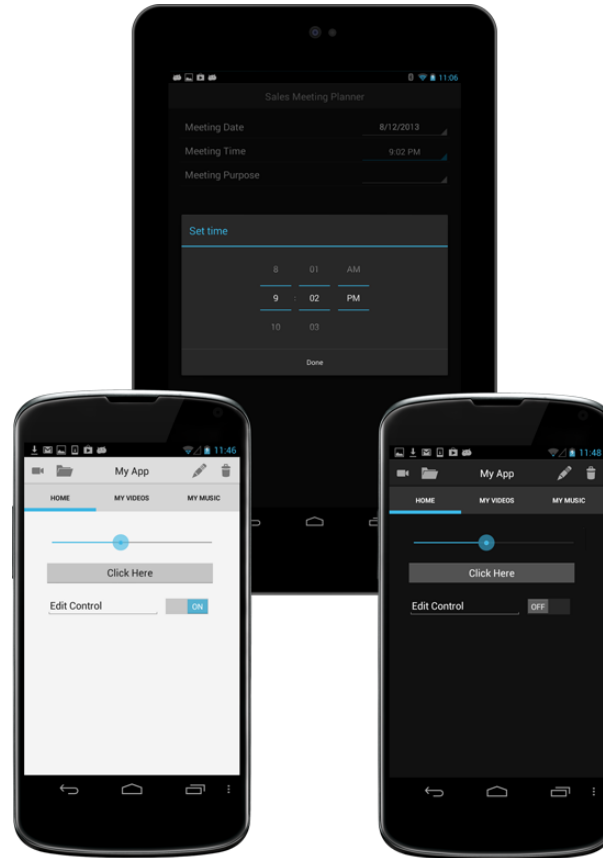
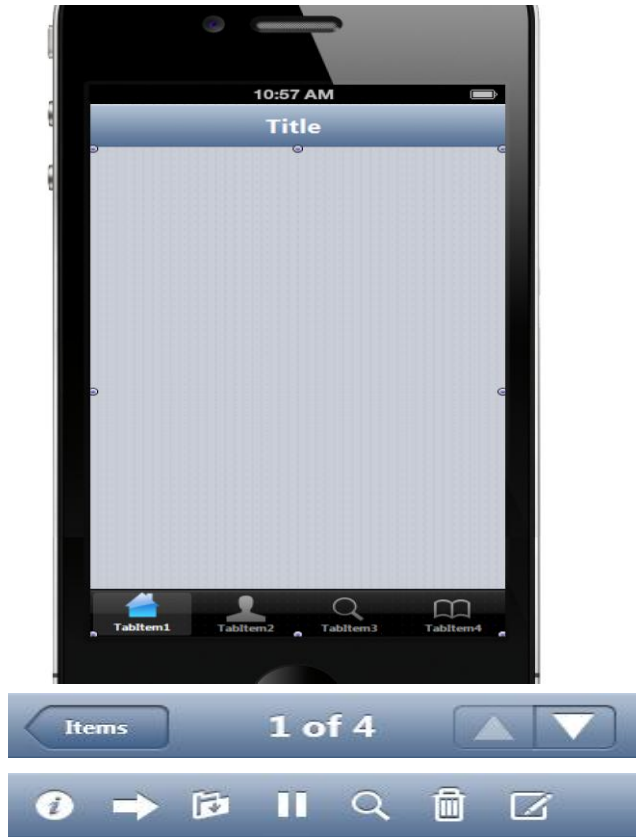


Defining Application Settings

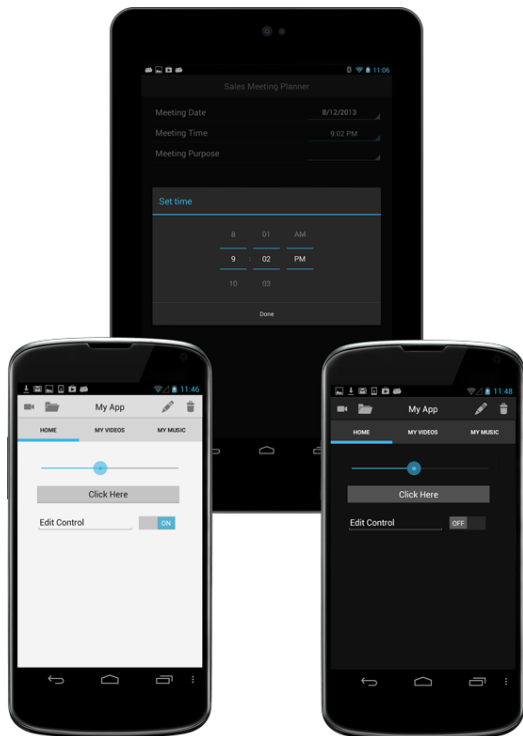
- Define device support in Project->Options
- Select app icons for app stores (for multiple resolutions) in Project-> Options



Native Styling



Android Styles



- Holo Light (default Android style)
- Holo Dark (custom Android style)
- Both styles include built-in support for all resolutions supported on Android (1x – 3x)

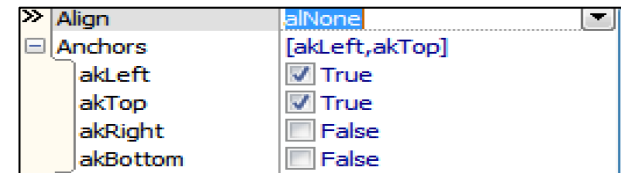
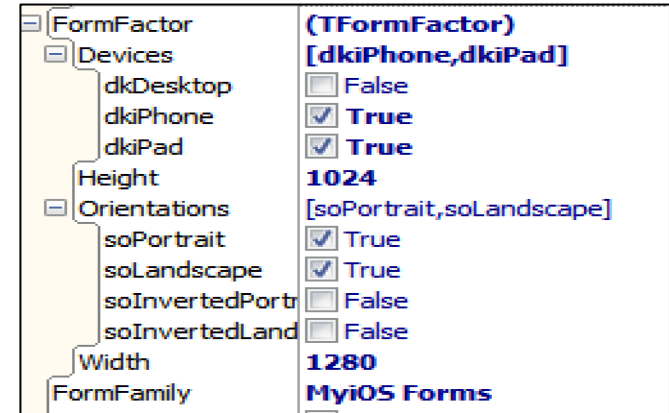
Native controls

- Message alerts
- Custom Picker
- Date Picker
- Phone Dialer
- iOS Keyboards
- Text Editing for TMemo and TEdit
 - Cut/Copy/Paste/Zoom



Layout Management

- Alignment
- Anchors
- Form Family for loading the correct form depending on the target device when developing different forms for phones vs tablets and Landscape vs Portrait



Gestures

- Swipe
- Tap
- Pinch & Zoom
- Tap & Hold
- Double-Tap



Media Library Actions



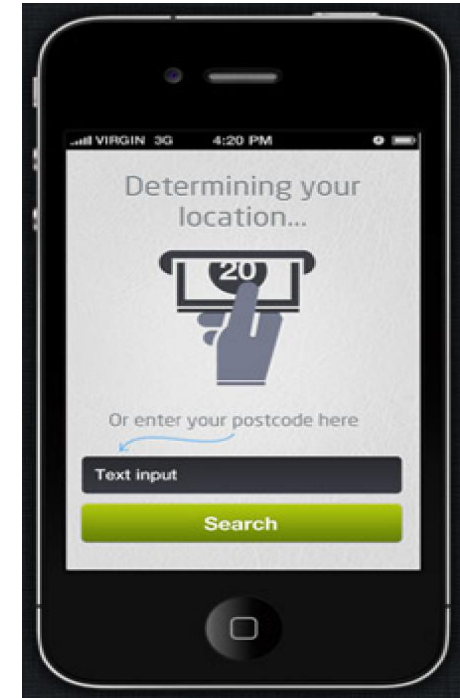
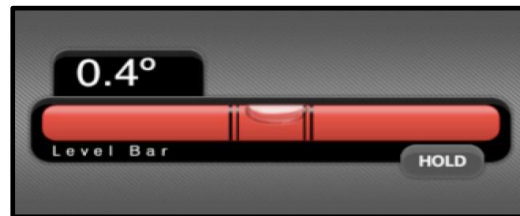
- Accessing the Camera App
- Accessing the Camera Roll
- Sharing content i.e. photos via Message (SMS), Mail, Facebook, Twitter etc.
- Slide Transitions for Tabs



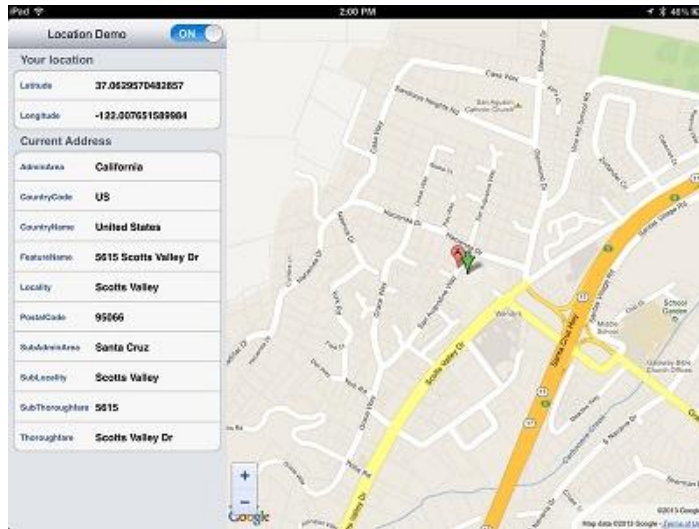
(No Category)	▶	
Edit	▶	
Window	▶	
File	▶	
Tab	▶	
View	▶	
Media Library	▶	TTakePhotoFromLibraryAction
LiveBindings	▶	TTakePhotoFromCameraAction
		TShowShareSheetAction

Sensor Components

- Location Sensor (GPS)
- Motion Sensor (Accelerometer)
- Orientation Sensor (Gyroscope)



Location Sensor



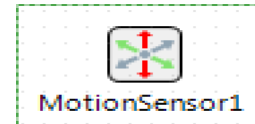
Commonly used in applications that require location awareness

- Get location of your iOS device using latitude and longitude
- Use Reverse Geocoding to convert location data to a readable address
- Works across Win/Mac/iOS
- Can be used with the WebBrowser component to display a location on the map

Motion Sensor (Accelerometer)

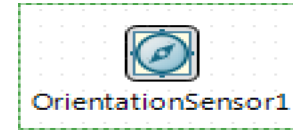
Used to detect motion in your application as you move your device

- Get Acceleration Values and Angle Acceleration Values (X, Y, Z)
- Determine Speed
- Determine Motion



Orientation Sensor (Gyroscope/Compass)

- Get X,Y,Z tilt values
- Get X, Y, Z distance values



Mobile Services

- Notification Center
- ... and more



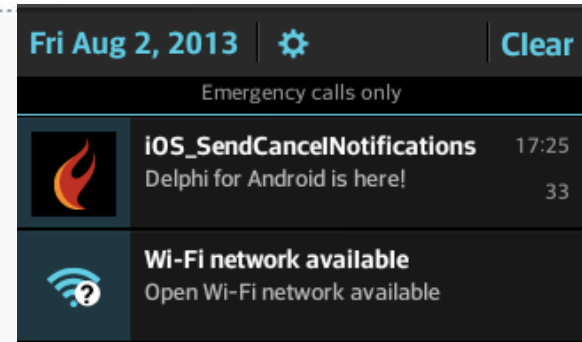
Notification Center

- New FireMonkey Component in XE5
- Supports various notification types on iOS, Android and Mac OS X

```

procedure TForm1.ScheduleNotification;
var
  MyNotification: TNotification;
begin
  MyNotification := NotificationCenter1.CreateNotification;
  try
    MyNotification.Name := 'MyNotification';
    MyNotification.AlertBody := 'Delphi for your mobile device is here!';
    // Fired in 10 seconds
    MyNotification.FireDate := Now + EncodeTime(0, 0, 10, 0);
    // Send notification to Notification Center
    NotificationCenter1.ScheduleNotification(MyNotification);
  finally
    MyNotification.DisposeOf;
  end;
end;

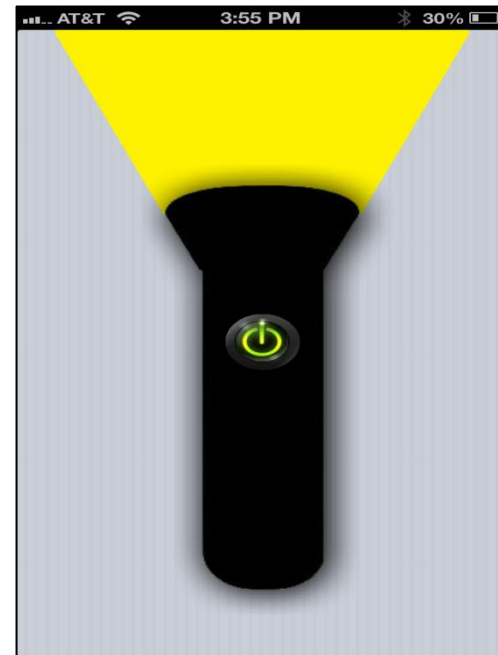
```



Camera

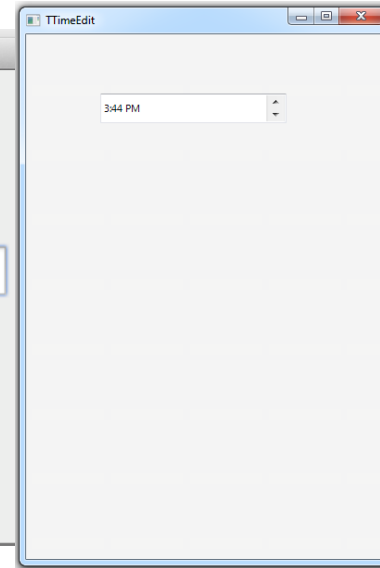
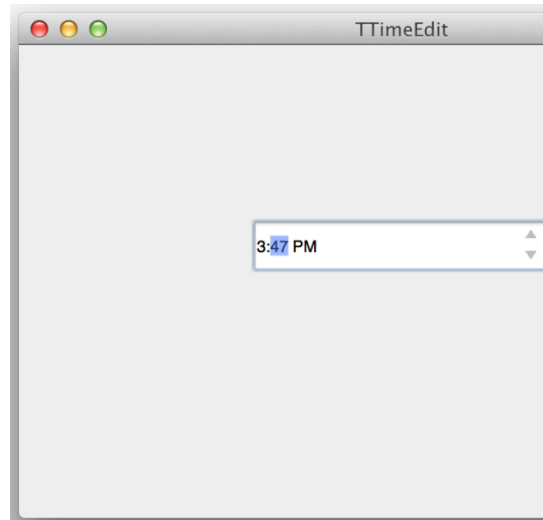
Provides access to camera sensors:

- activate flash
- get sensor position etc.
- access front/back camera
- take pictures



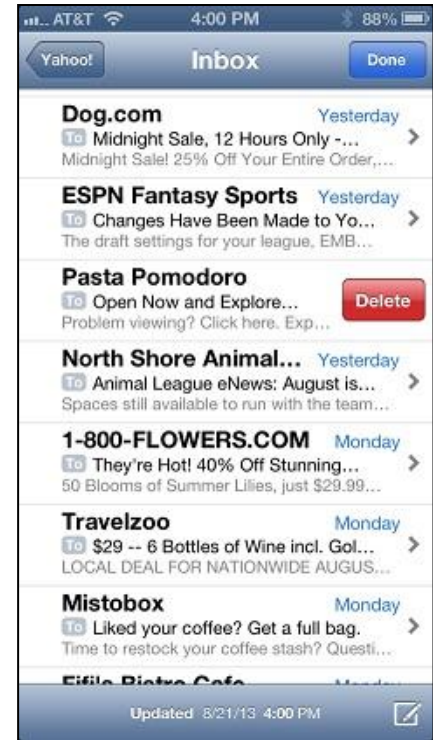
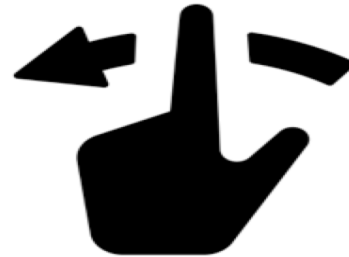
TTimeEdit

- New FireMonkey Component in XE5
- Supported on Windows, Mac, iOS and Android
 - Native pickers on iOS and Android



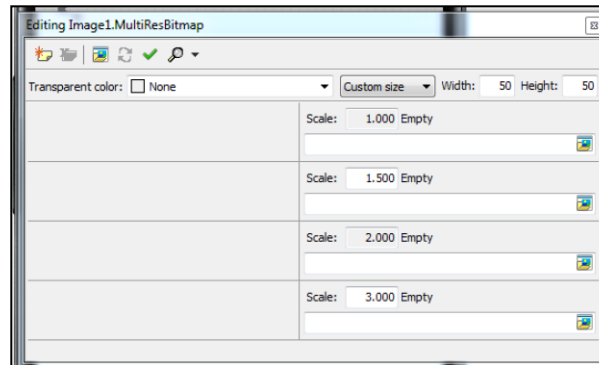
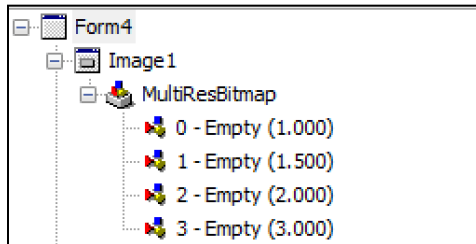
TListView Features in XE5

- Swipe to Delete functionality built-in
- Multiple Display and Edit Modes
- Various List Accessory Styles
- Edit Mode Animations
- Search filtering enabled
- LiveBindings enabled



Multi-Resolution Image Support

- TImage has been updated
- MultiResBitmap property has been added
- 1x and 2x options are shown by default
- Users can easily add their own resolutions, i.e. 1.5x, 3x etc.



Creating

開發結合資料和服務的新世代**APPS**

Database and Cloud Connectivity



Multiple Devices

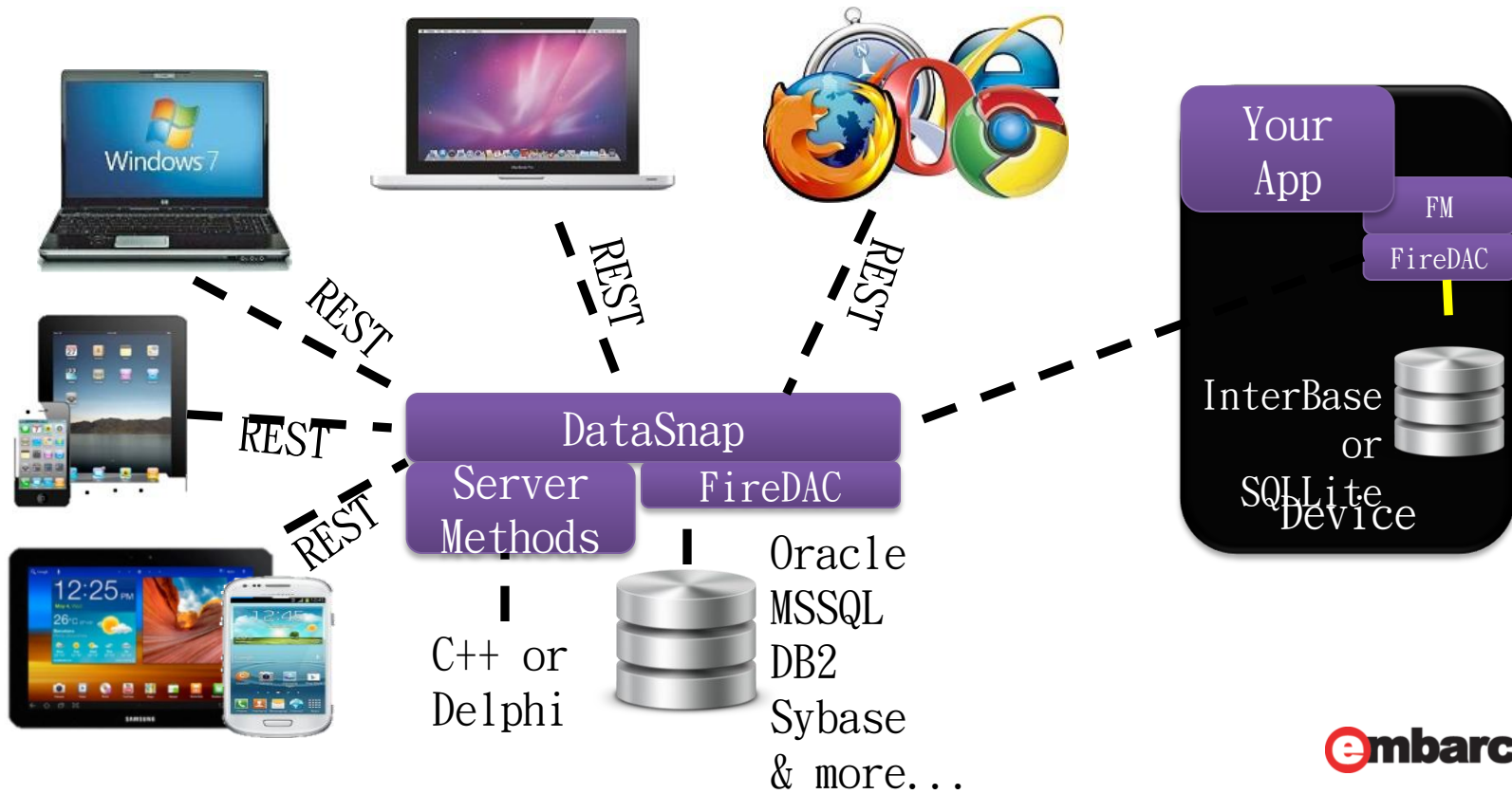


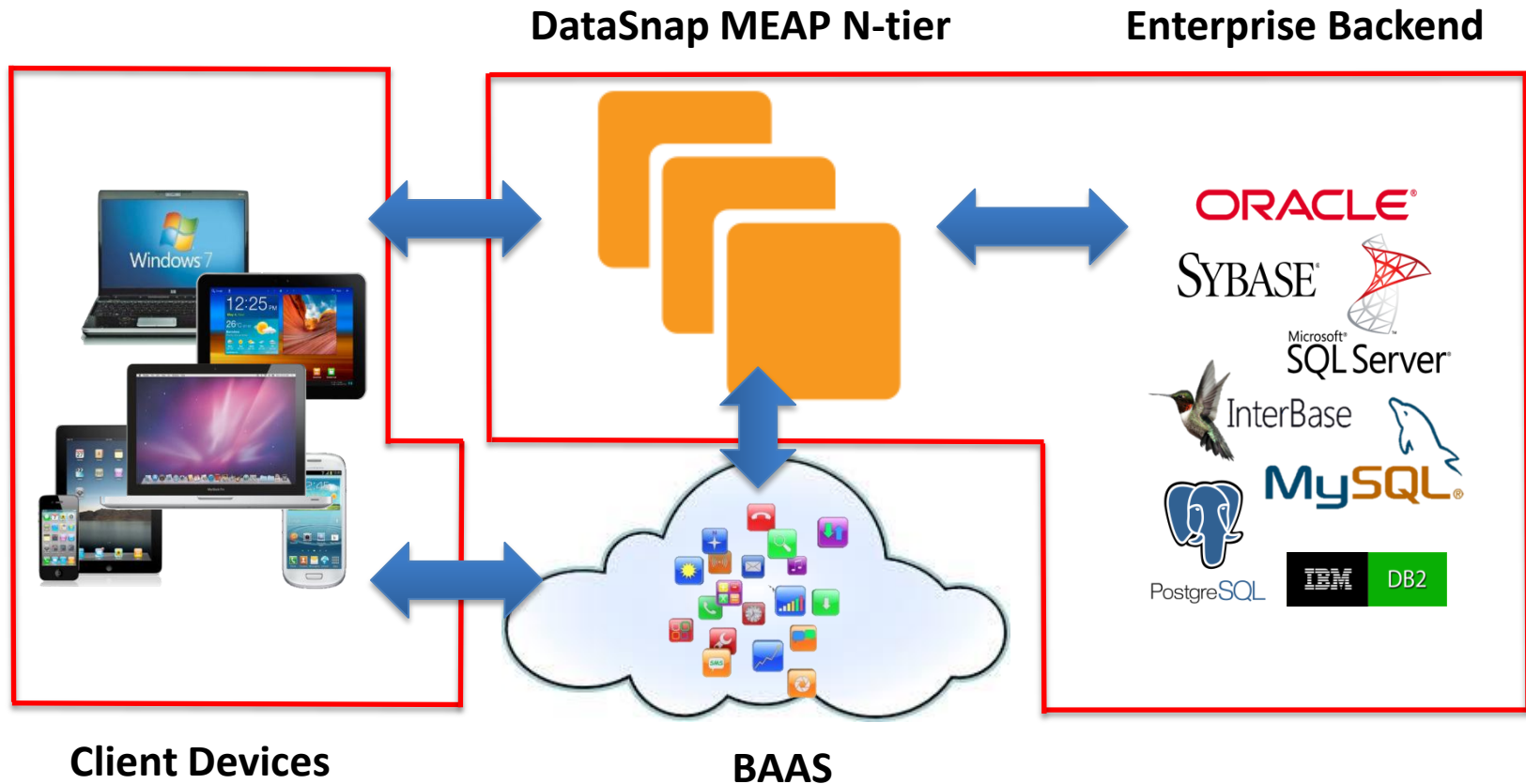
Multiple Data Sources

More mobile Components

- **TWebBrowser** for embedded web browsing
- **TMagnifier** used with text editing, but can be used with other components as well
- **TCamera** - access front/back camera, flash etc.
- **TListBox** for short lists with no or minimal scrolling, header/footer/group/search styling
- **TListView** for long, scrollable, data-bound lists
- **TSwitch** for on/off selections
- **TProgressBar** for flexible progress control visualization
- **TSpeedButton** with variety of iOS-like icon options
- ... and more!

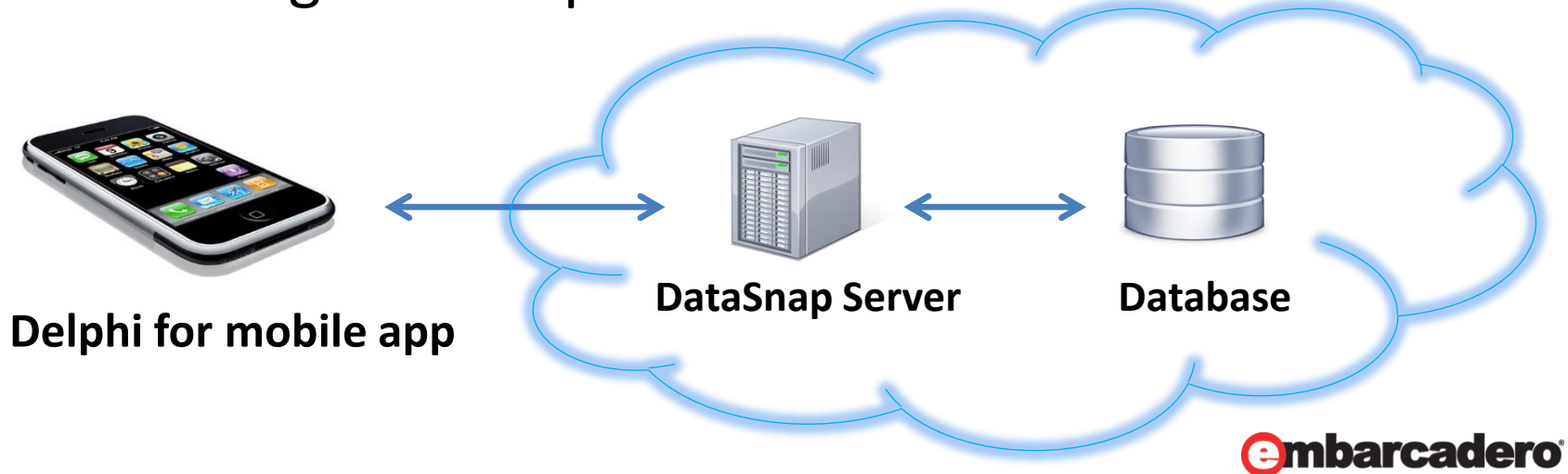
Enterprise Ready





Multitier with DataSnap

- Accessing remote on-premise or cloud-hosted services via REST/JSON or SOAP
- Connecting to Enterprise data from a mobile device



FireDAC

- A set of Universal Data Access Components
 - for developing any database application
 - for Delphi and C++Builder
- High-performance, easy-to-use, enterprise connectivity
- Universal Data Access
 - But with many database specific features

Local Databases

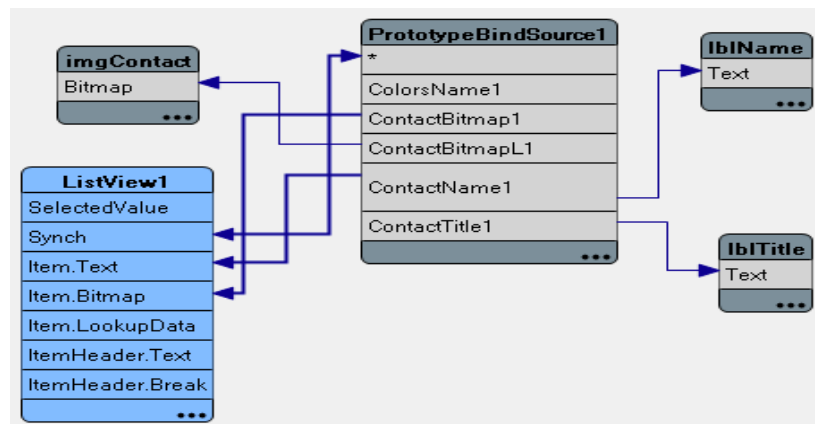
SQLite	IBLite	InterBase ToGo
Free	Free	Commercial
Feature light	Feature light	Fully featured
No security	No security	Secure Encryption
Simple Data Storage	Full SQL-92 RDBMS	Full SQL-92 RDBMS
Single read/write	Fast multi read/write	Fast multi read/write



Visual LiveBindings



- Bind controls to data
- Rapid Prototyping

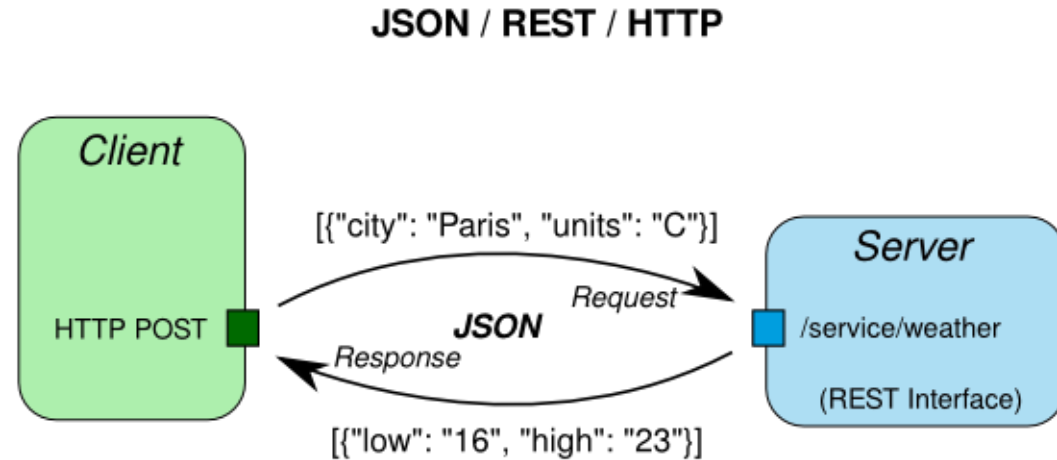


XE5 Rest Client Stack

- REST components
 - For developing REST client application
- RESTDemos.exe
 - Uses REST components to access a few different providers
- RESTDebugger.exe
 - Uses REST components to execute ad hoc requests

REST component features

- Comprehensive HTTP client
 - Asynchronous execution
 - Proxy connection
 - HTTPS
- Authentication
 - Basic, OAuth1, OAuth2
- JSON
 - Parsing, Formatting
 - JSON to TObject, TObject to JSON
- Rapid Prototyping
 - LiveBindings
 - Design time execution



範例

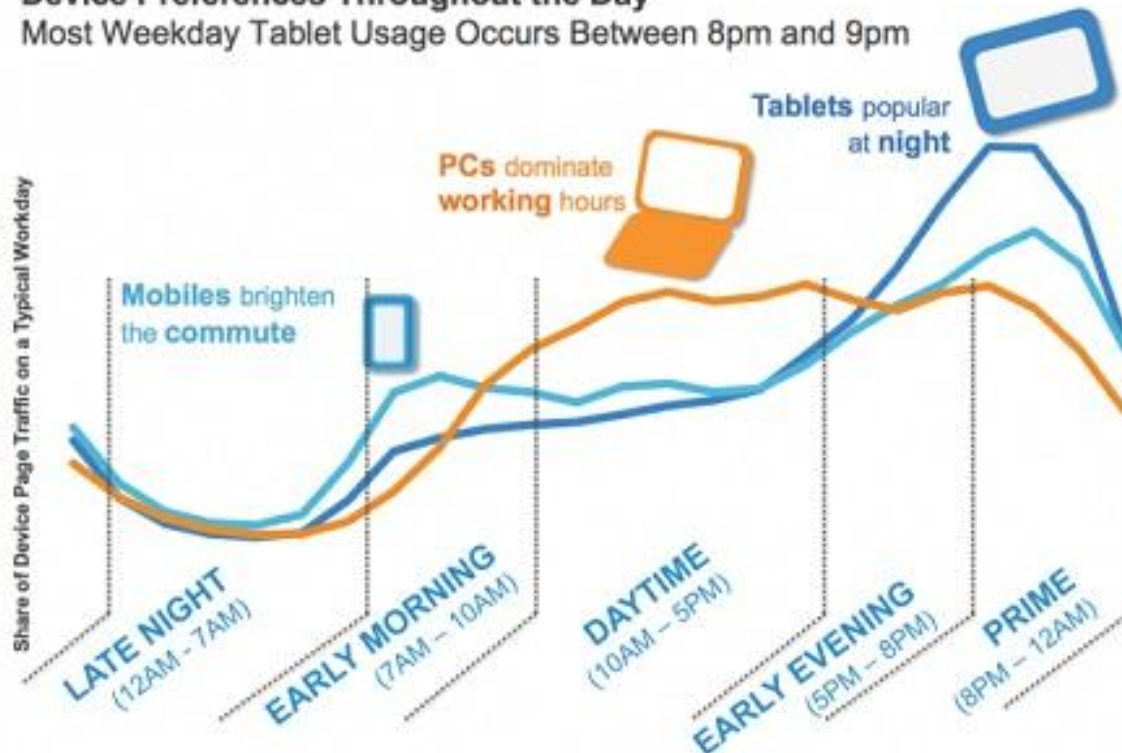
- Android資料App
- REST功能範例
 - REST Demo
 - REST Debugger
 - REST Components

Apps for every device



Device Preferences Throughout the Day

Most Weekday Tablet Usage Occurs Between 8pm and 9pm



More Information

- <http://www.embarcadero.com>
- <http://edn.embarcadero.com>



結論

- 新登場! Android平台的快速App開發功能!
- FireMonkey 允許您更快速的開發更多的應用設備
- 強大的元件框架
- 在設備上即可開發快速雛型
- 一份程式碼, 一個團隊, 一次開發預算
- 開發您的手機和桌面應用程式最快捷的工具



謝謝您的參加!

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