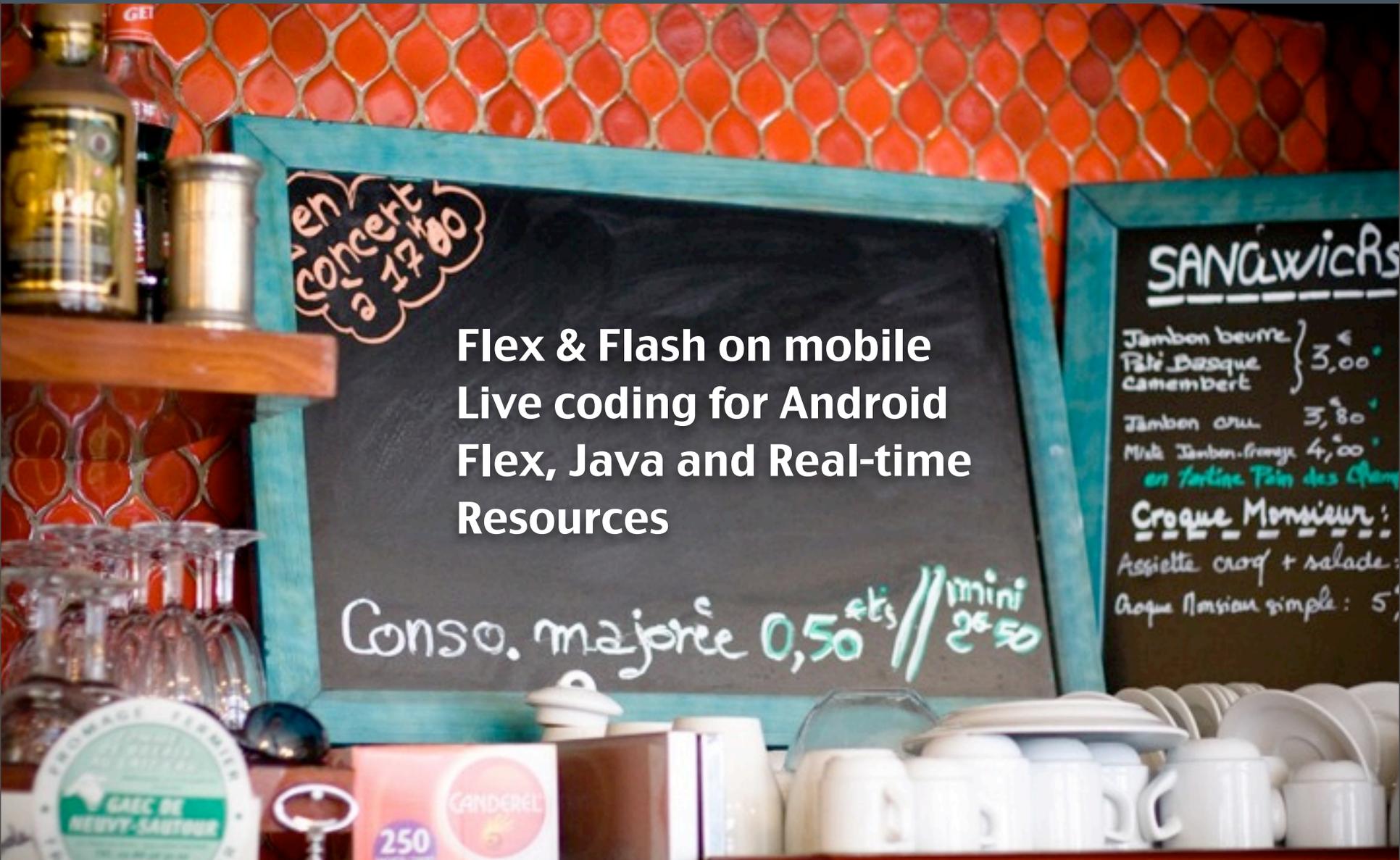




# Building mobile applications with Flex

Michaël Chaize | Flash Platform Evangelist





## Flex & Flash on mobile Live coding for Android Flex, Java and Real-time Resources

Conso. majorée 0,50 € / mini 2€50

**SANDWICHS**

Jambon beurre } 3,00 €  
Pâté Basque  
Camembert

Jambon cru 3,80 €  
Mêlé Jambon-Française 4,00 €  
*en Tartine Pain des Champs*

**Croque Monsieur :**  
Assiette croq + salade :  
Croque Monsieur simple : 5 €

# Two superheros to save mobile applications developers



The Adobe Flex logo consists of a dark gray square with a white gradient, containing the letters 'Fx' in a bold, white, sans-serif font. The background of the slide is a vibrant, abstract design with flowing, curved lines in shades of red, orange, and yellow, creating a sense of motion and energy.

**Fx**



# Adobe Flex basics

## Fx Flash Builder IDE

### Flex SDK

MXML

ActionScript

Flex Class Library

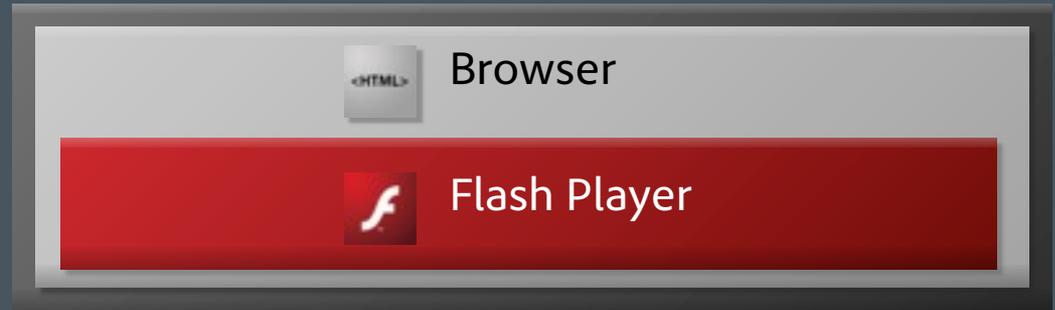
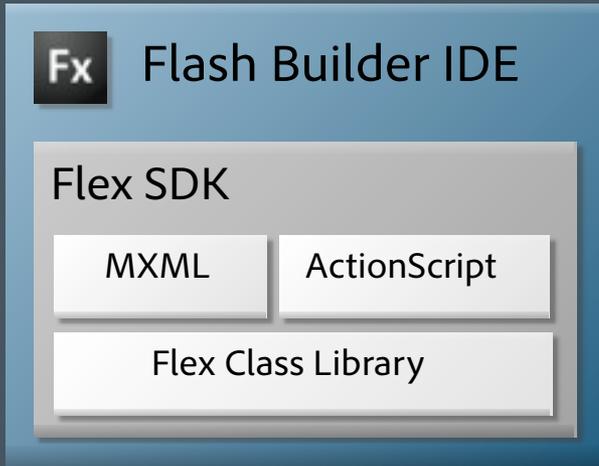
```
<?xml version="1.0" encoding="utf-8"?>
<mx:Application xmlns:mx="http://www.adobe.com/2006/mxml"
  xmlns="*" layout="absolute"
  creationComplete="initApp()" >

  <mx:Script>
    private function initApp():void {
      hs.send();
    }
  </mx:Script>

  <mx:HTTPService id="hs" url="data/catalog.xml" />

  <mx:Panel layout="vertical" top="10" left="10"
    right="10" bottom="10">
    <mx:TileList itemRenderer="Thumb" width="100%" height="100%"
      dataProvider="{hs.lastResult.catalog.product}" />
  </mx:Panel>
</mx:Application>
```

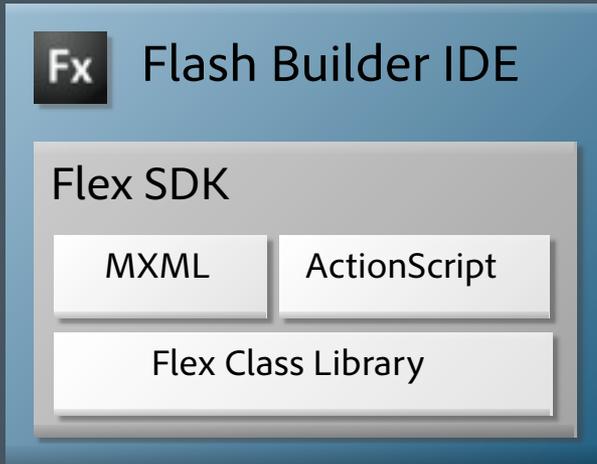
# Adobe Flex basics



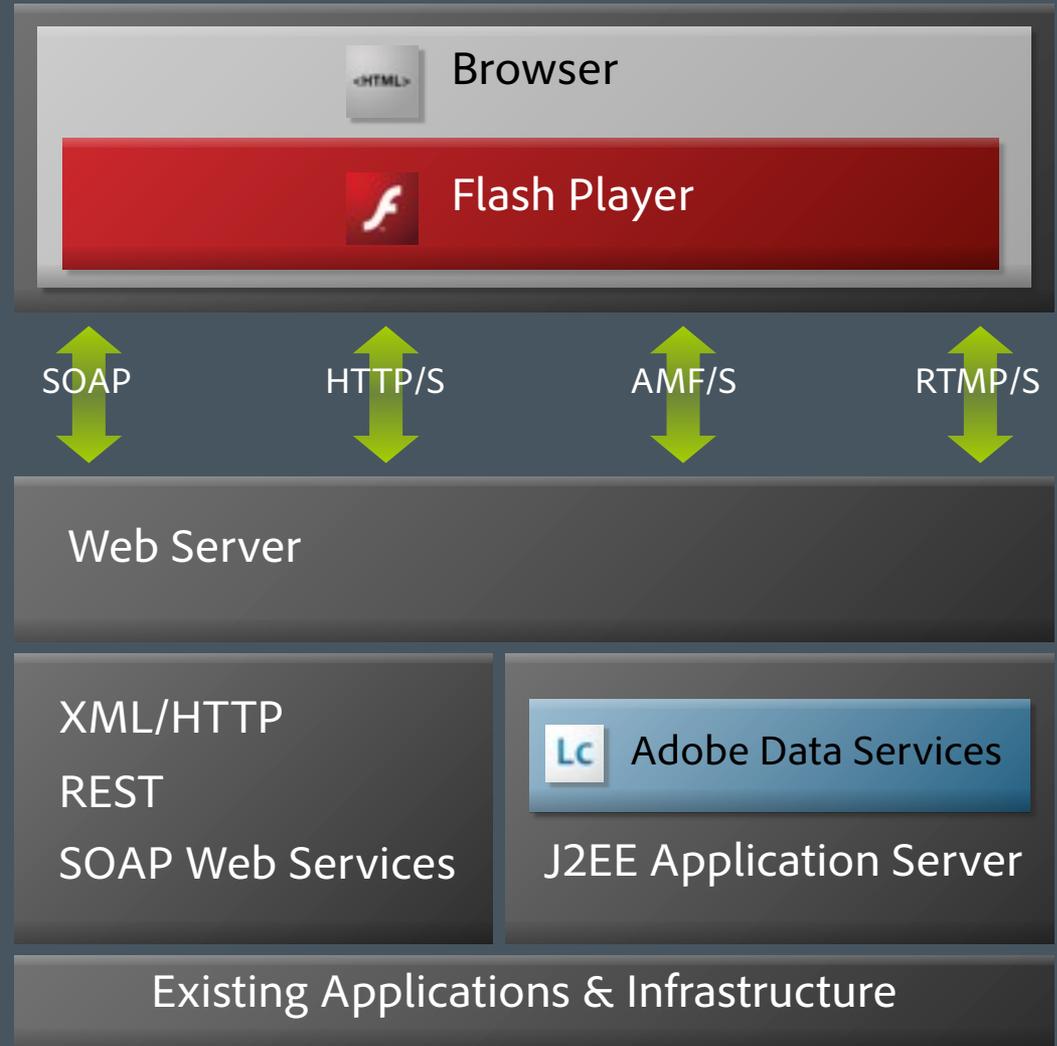
Compile



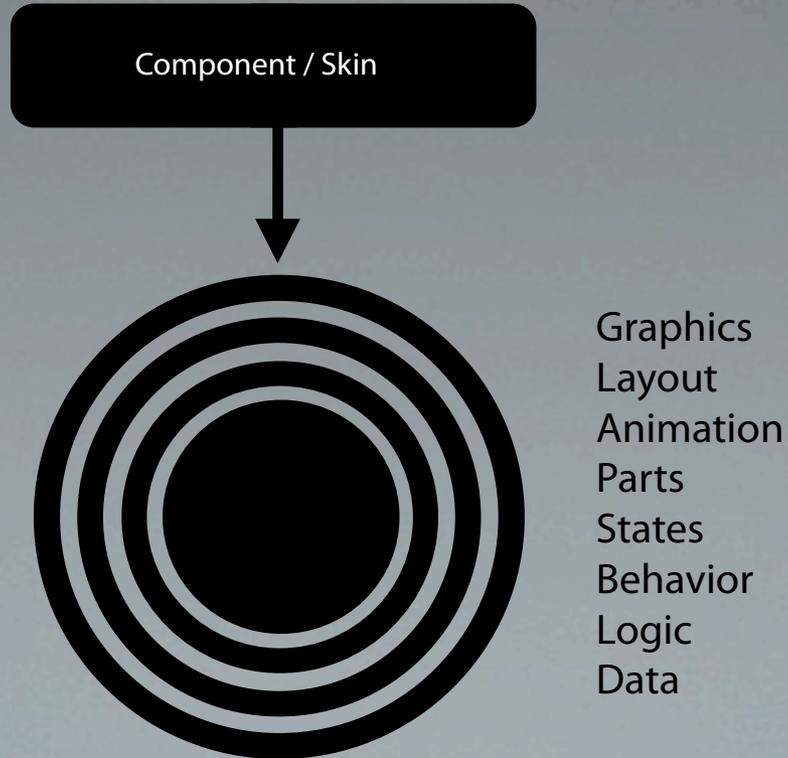
# Adobe Flex basics



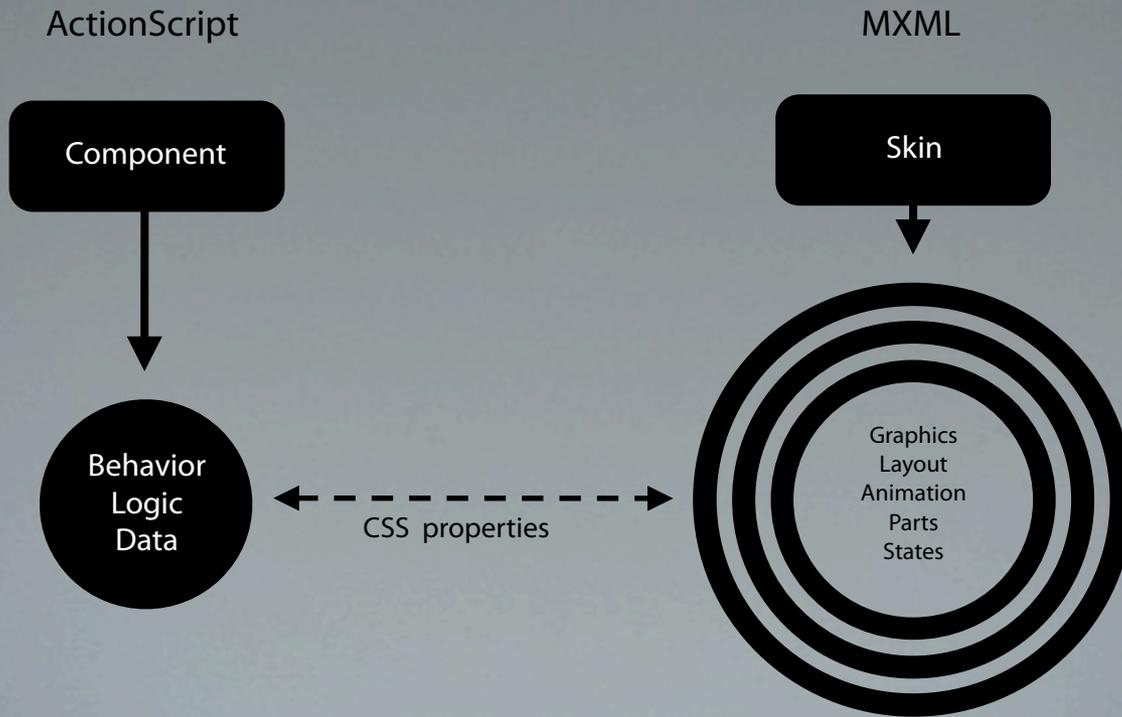
Compile



# OLD COMPONENT MODEL



# SPARK COMPONENT MODEL



# First-class interfaces

The screenshot displays a user-friendly internet banking interface for 'Ac personal bank'. The user is identified as 'Mr Tim Robertson'. The main focus is the 'Current Account 3456780', showing a balance of €2619.42. The interface includes a sidebar with navigation options like 'Accounts', 'Investments', 'Pension', 'Mortgage', and 'Loans'. The main content area features a 'Totals' section with a 3D bar chart showing Income (€2870.15), Outgoings (€890.76), and Average balance (€1880.89). Below this is a transaction table with columns for Date, Details, Authorizer, Category, Paid in, Paid out, and Balance. A photo of a couple is also visible in the 'Actions' section.

**Ac personal bank**

Internetbanking<sup>™</sup>

Mr Tim Robertson  
Profile settings | Log out

Current Account 3456780

Showing 13/10/2007 13/11/2007

**Accounts**

- Current Account Joint Account 3456780 €2619.42
- New Car Savings 9087652 €2721.00
- Children Education Long term savings 9076514 €4958.32

**Actions**

- Pay bills
- Transfer money
- Standing orders
- Direct debits
- Reset PIN
- Stop a cheque
- Apply for overdraft

**Totals**

- Income 2870.15
- Outgoings 890.76
- Average balance 1880.89

**Chart Explorer**

Date	Details	Authorizer	Category	Paid in	Paid out	Balance
17 Nov 07	Apple Store, High Street	Tim Robertson	Savings	€ 13		€2619
16 Nov 07	Electricity Board	Tim Robertson	Entertainment		€ -84	€2703
16 Nov 07	Marks&Spencer, Edinburgh	Tim Robertson	Charity	€ 14		€2689
15 Nov 07	Electricity Board	Tim Robertson	Random	€ 44		€2645
14 Nov 07	Marks&Spencer, Edinburgh	Tim Robertson	Motors	€ 10		€2635
13 Nov 07	Cheque	Tim Robertson	Cash	€ 27		€2608
12 Nov 07	Marks&Spencer, Edinburgh	Tim Robertson	Shopping		€ -97	€2705
12 Nov 07	St Pancras	Tim Robertson	Random		€ -12	€2717
11 Nov 07	Pizza Hut	Kathleen Smith	Entertainment		€ -736	€3453

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Flex on mobile ?



# Open Screen Project

Technologic partners

Content providers

# Open Screen Project

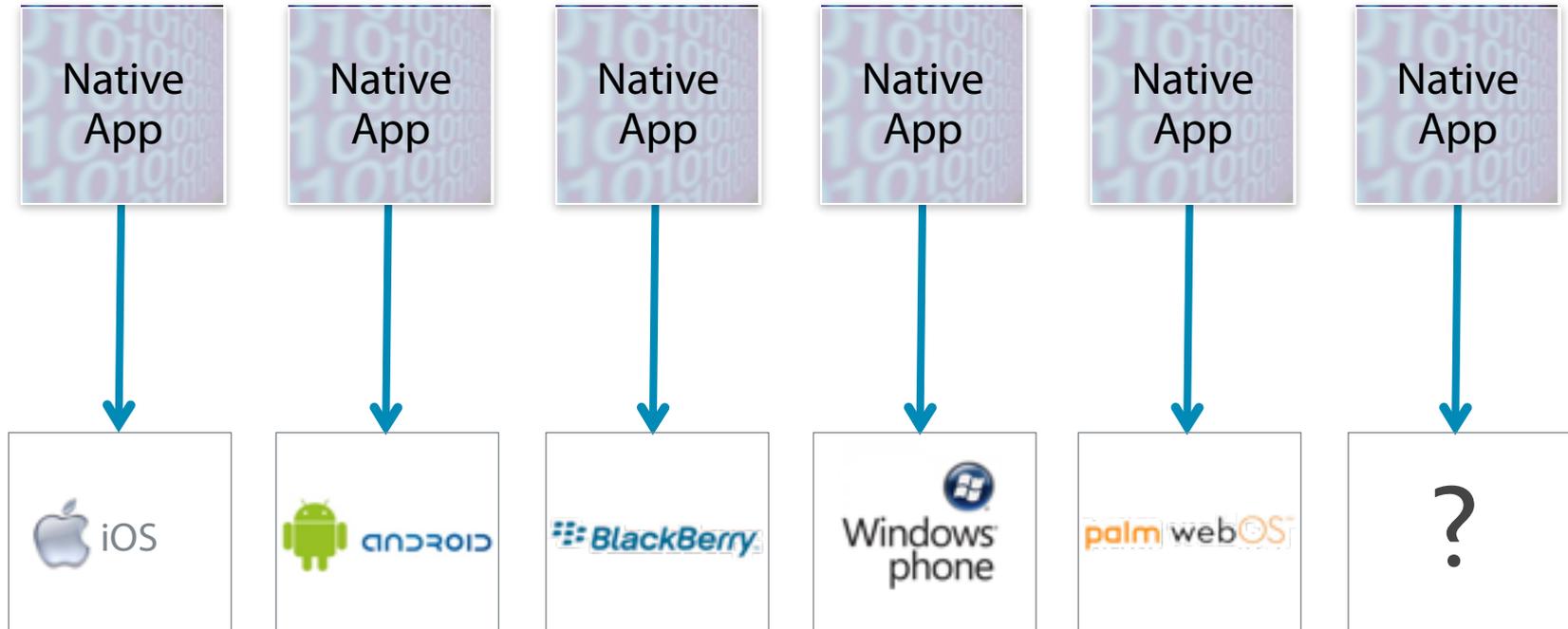
## Technologic partners



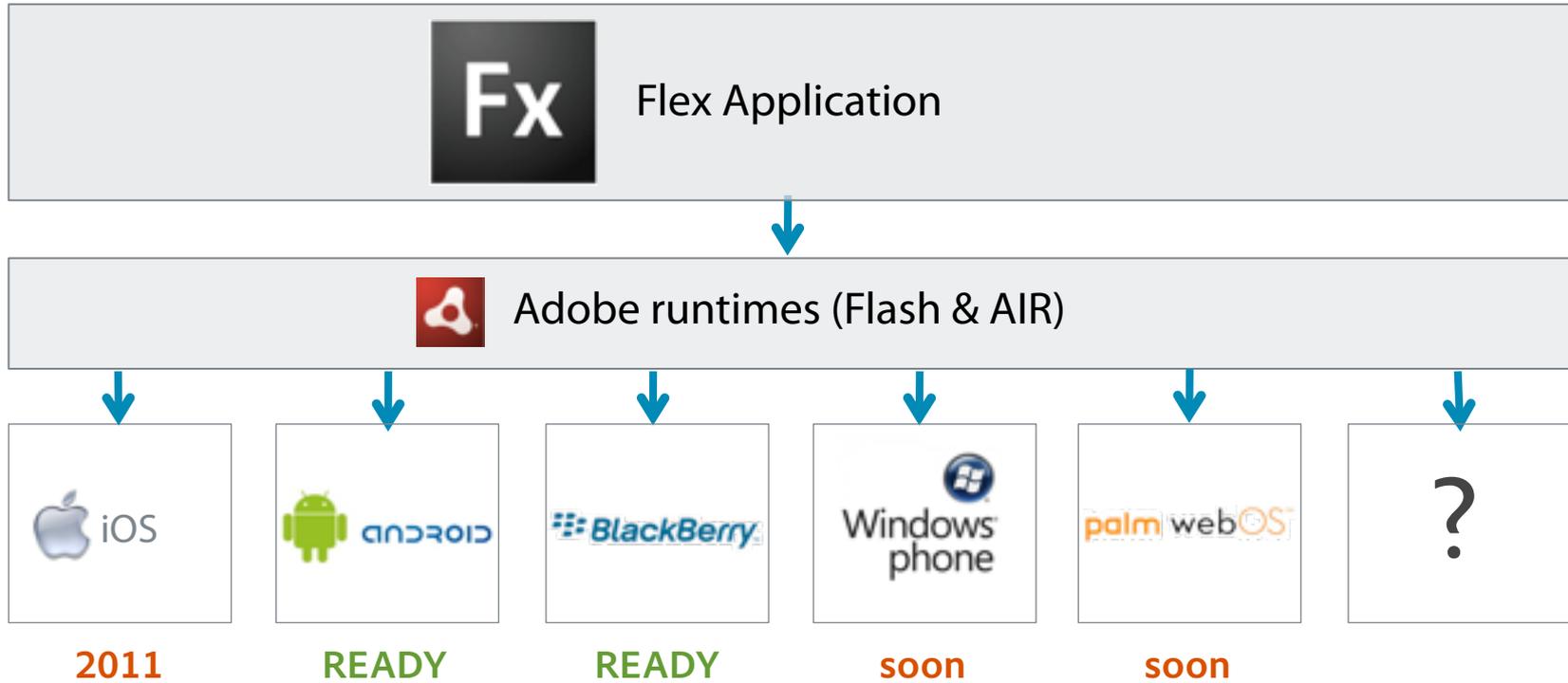
## Content providers



# Native Applications



# Abstraction Layer

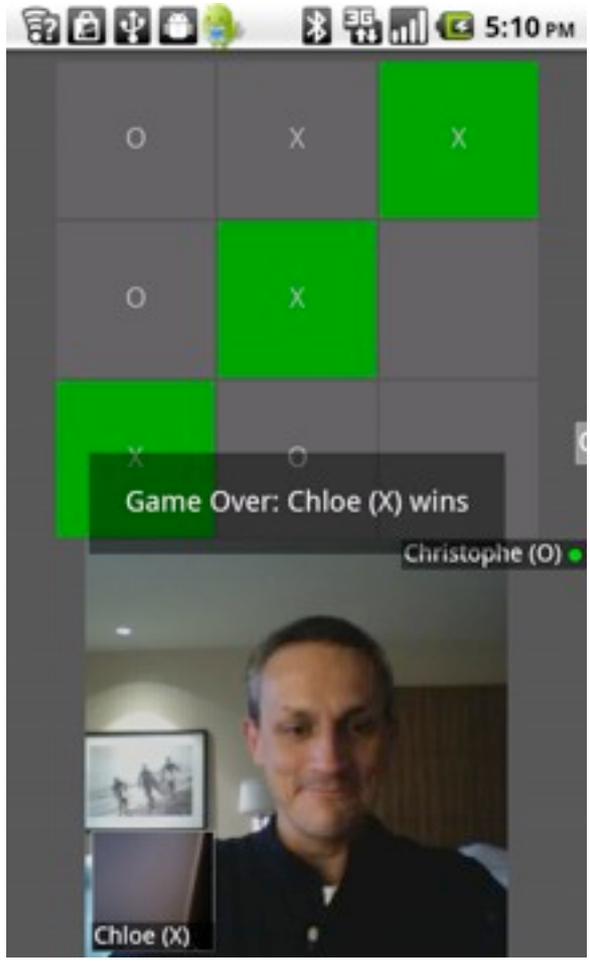


Flex "Hero"



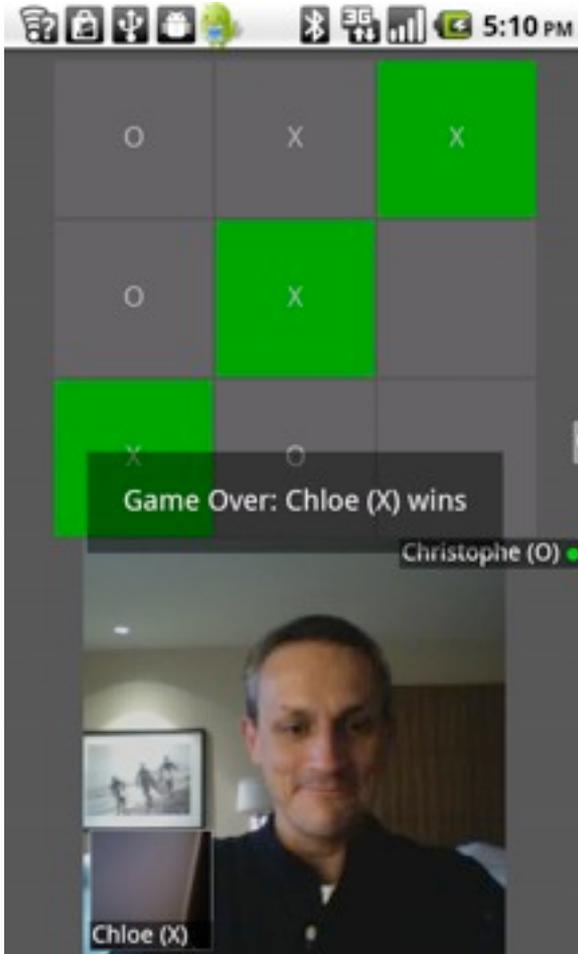
# Mobile Applications in "Hero"

s:Application

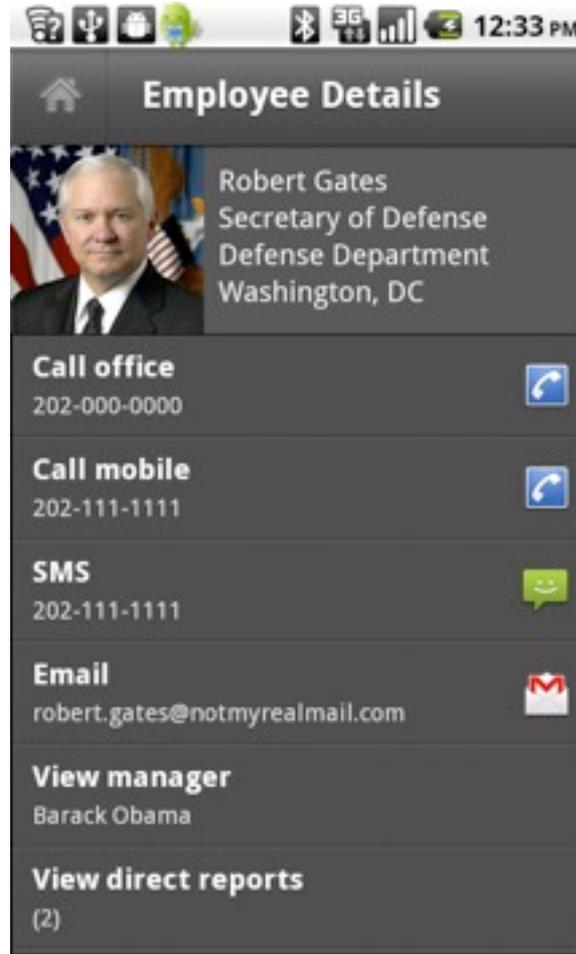


# Mobile Applications in "Hero"

s:Application

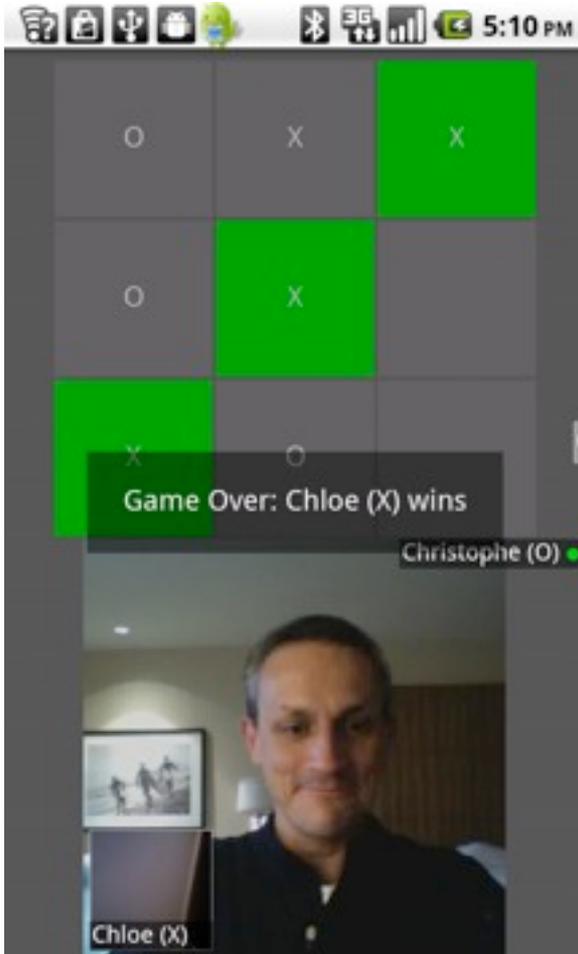


s:MobileApplication

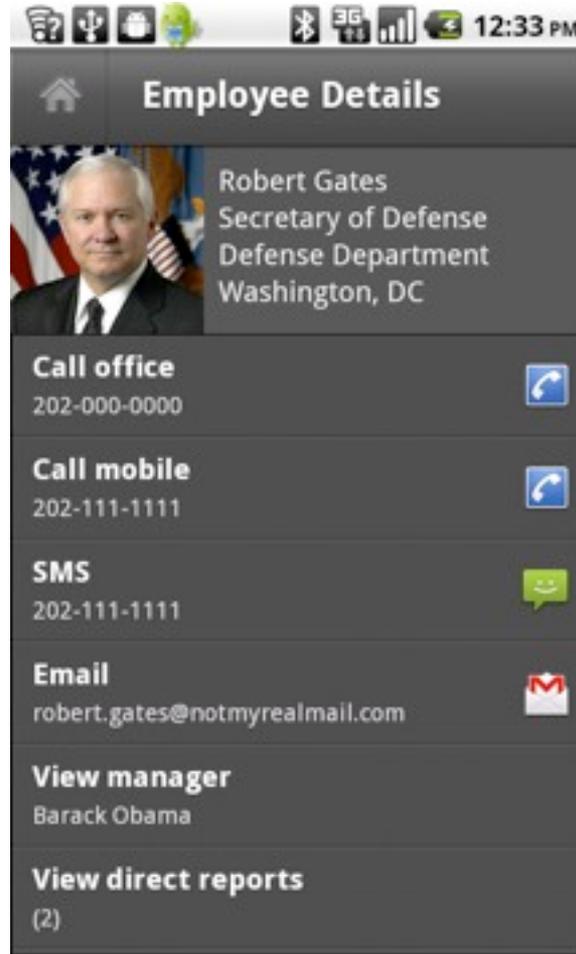


# Mobile Applications in "Hero"

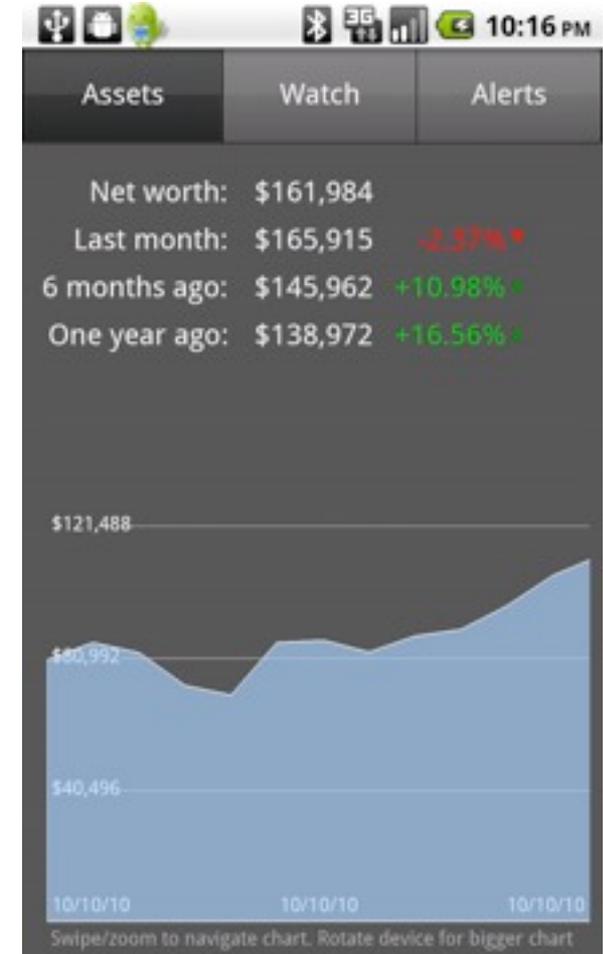
s:Application



s:MobileApplication



s:TabbedMobileApplication



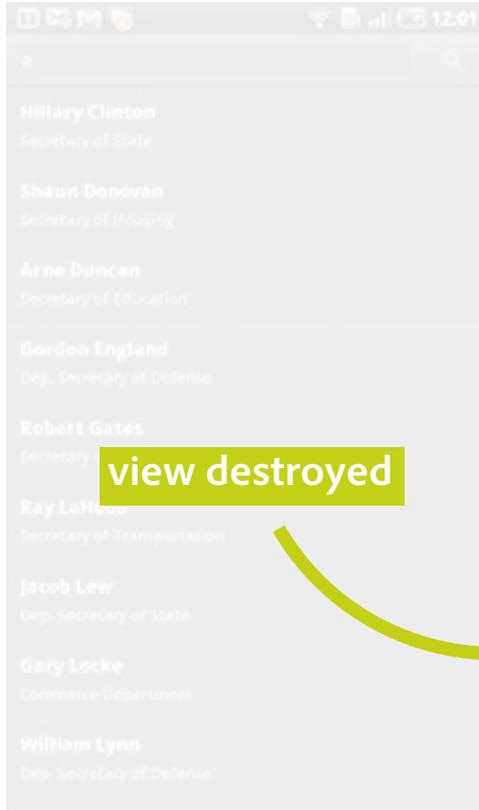
# <s:MobileApplication> life cycle

## views.ListEmployees

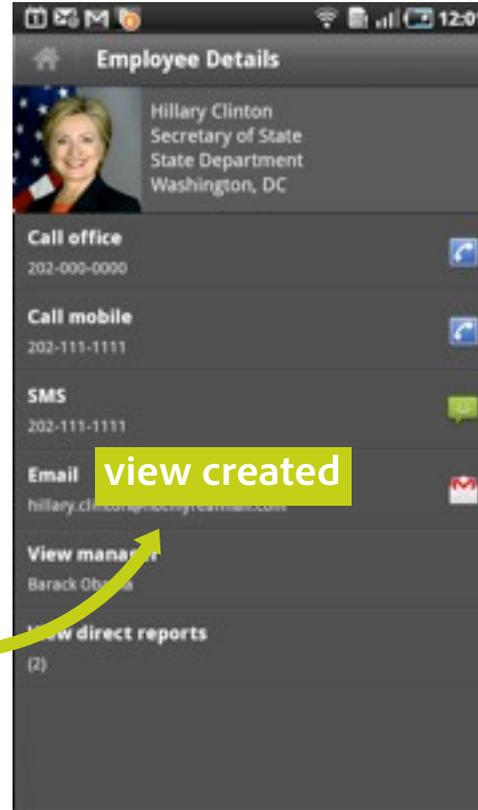


# <s:MobileApplication> life cycle

views.ListEmployees

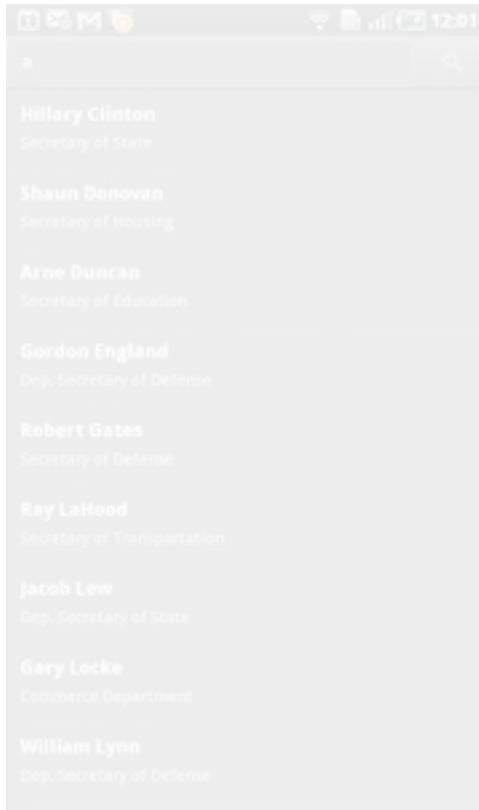


views.DetailsEmployee

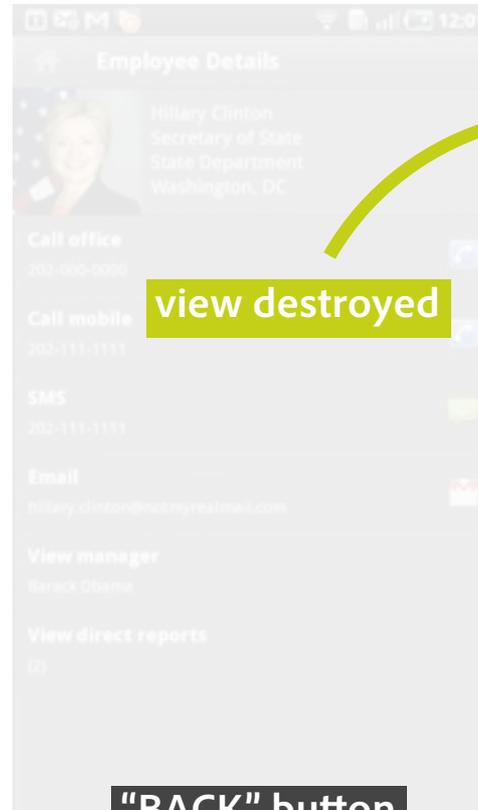


# <s:MobileApplication> life cycle

views.ListEmployees



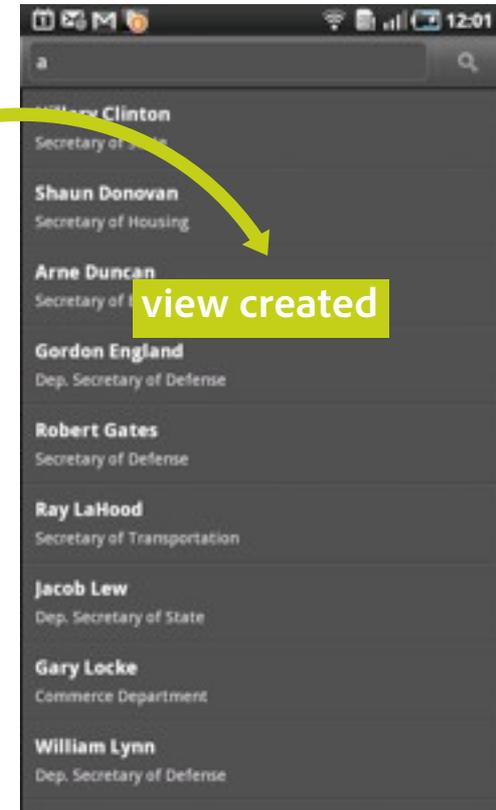
views.DetailsEmployee



view destroyed

"BACK" button

views.ListEmployees



view created





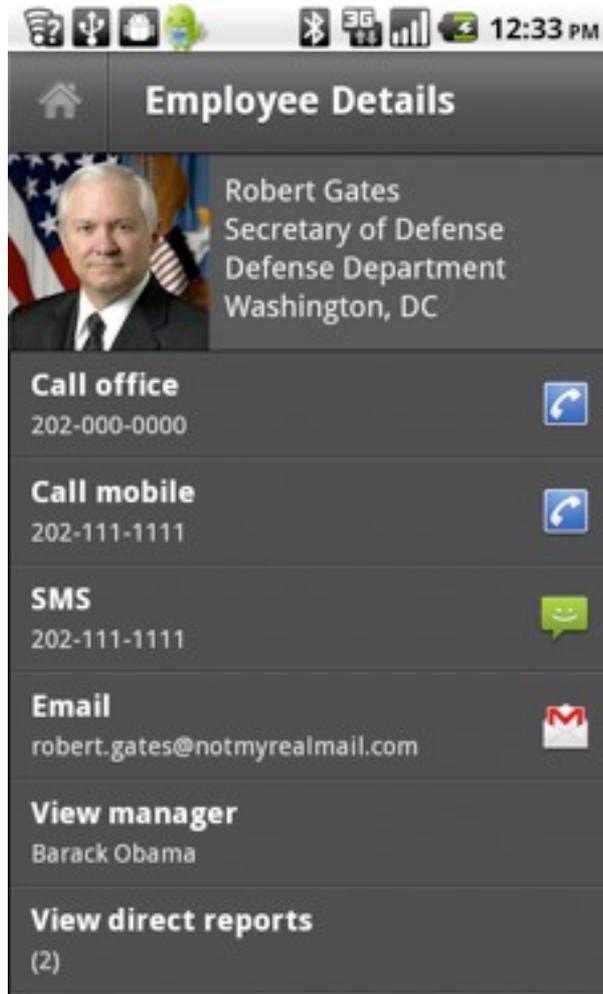
navigationContent

titleContent

actionContent

```
<s:View xmlns:fx=http://ns.adobe.com/mxml/2009 ...  
    title="Expenses">  
  
    <s:navigationContent>  
        <s:Button icon="@Embed('assets/home.png')"/>  
    </s:navigationContent>  
  
    <s:actionContent>  
        <s:Button label="+"/>  
    </s:actionContent>  
</s:View>
```

# Components that have Mobile Skins



- Button
- CheckBox
- DataGroup
- Group/HGroup/VGroup/TileGroup
- Image/BitmapImage
- Label List
- RadioButton/RadioButtonGroup
- Scroller
- TextArea
- TextInput

Mobile applications + JAVA = REAL-TIME



# LiveCycle Collaboration Service

Webcam

Chat

The screenshot displays a user interface for a LiveCycle Collaboration Service. At the top, there are two circular overlays: one for a webcam showing a woman's face and another for a chat window showing a conversation. Below these is a navigation bar with buttons: CONNECT TO AGENT, LEARN MORE NOW, QUOTE, QUOTE, CUSTOM QUOTE, VERIFICATION, FAQ, and HELP. The main content area is titled "Sandie, Please fill in the additional vehicle information." and contains a form with the following fields and options:

- Vehicle selection: Toyota Corolla 2010, Ford Mustang 2009
- Do you house the vehicle at your primary living address? Yes No  Check Here if this applies to all vehicles
- Odometer Reading:
- Excluded Driver on this vehicle:  John Mattos
- Excluded Driver Reason:
- Is this vehicle owned, leased or financed?:
- Entity Type:
- Company Name:
- Company Address 1:
- (optional) Address 2:
- City:
- State:
- Zip:

On the left side of the form, there are buttons for "Driver 1: Sandie Borthwick" and "Vehicle 1: Toyota Corolla 2010", along with a car icon and the text "0 - 2,500". At the bottom, there are navigation buttons: "< BACK" and "CONTINUE >".

Shared Form

## Multi-user collaboration in real time

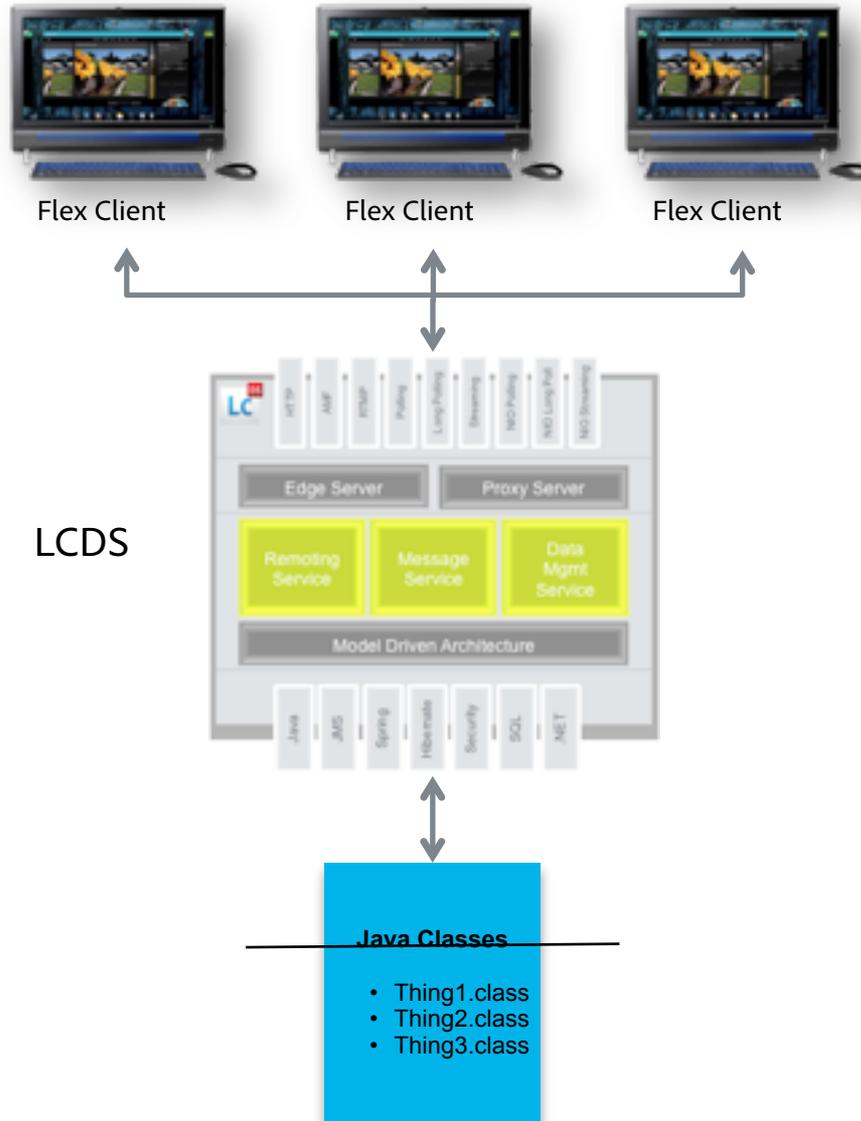
- Engage more effectively through a web presence enhanced with real-time collaboration tools.
- Integrate text chat, whiteboard functionality, webcam video, and audio into any rich Internet application (RIA),



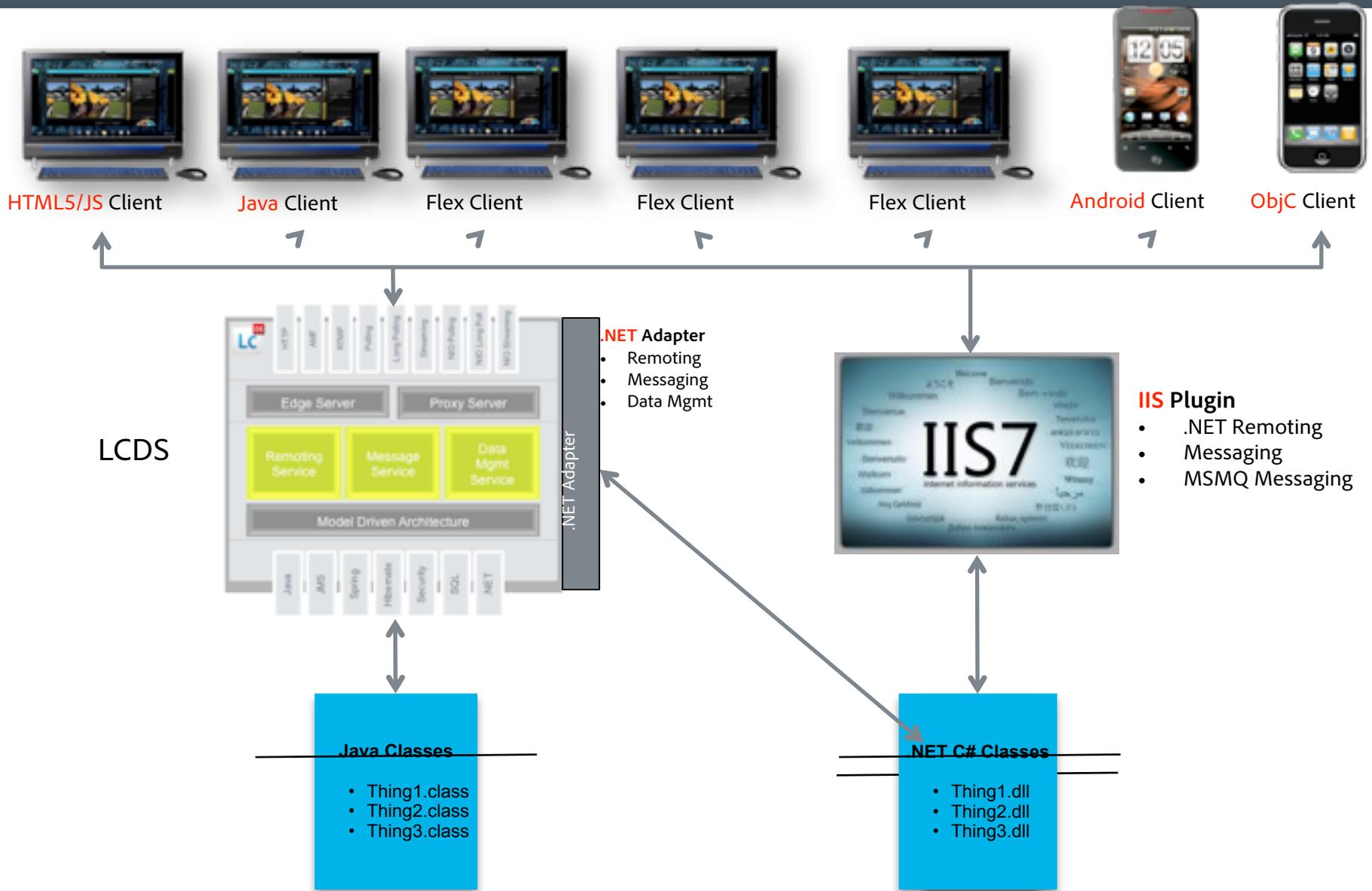
## Major Capabilities

Peer-to-peer (P2P) streaming of data, audio and video	HTTP server-to-server APIs
Private audio/video streaming	Server-side provisioning of services
Large Rooms – via on-demand loading of user presence	Audio/video application multicast
Record and Playback	Screen sharing
JavaScript APIs – integration with a customer's existing websites	

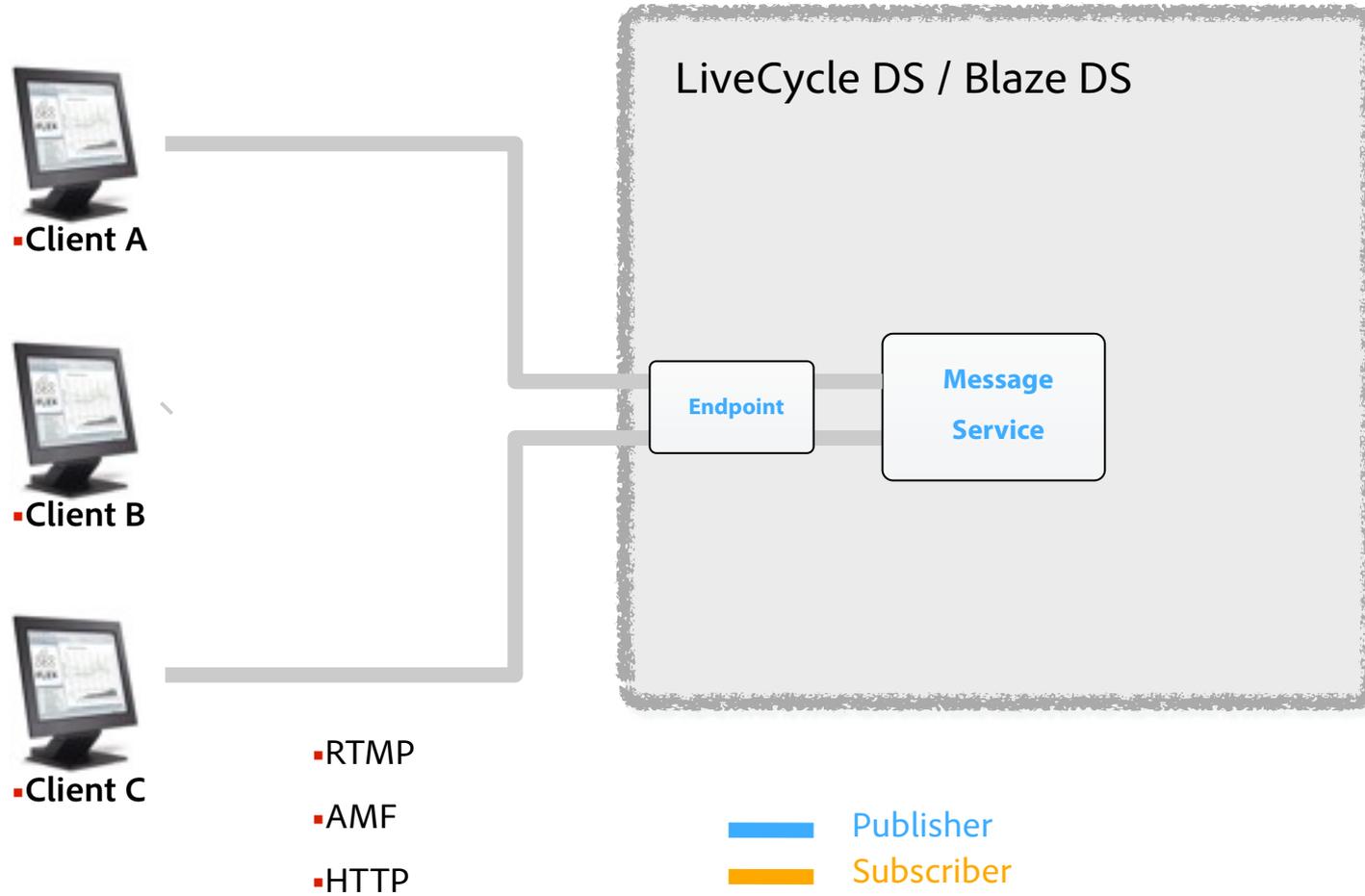
# LiveCycle Data Services today



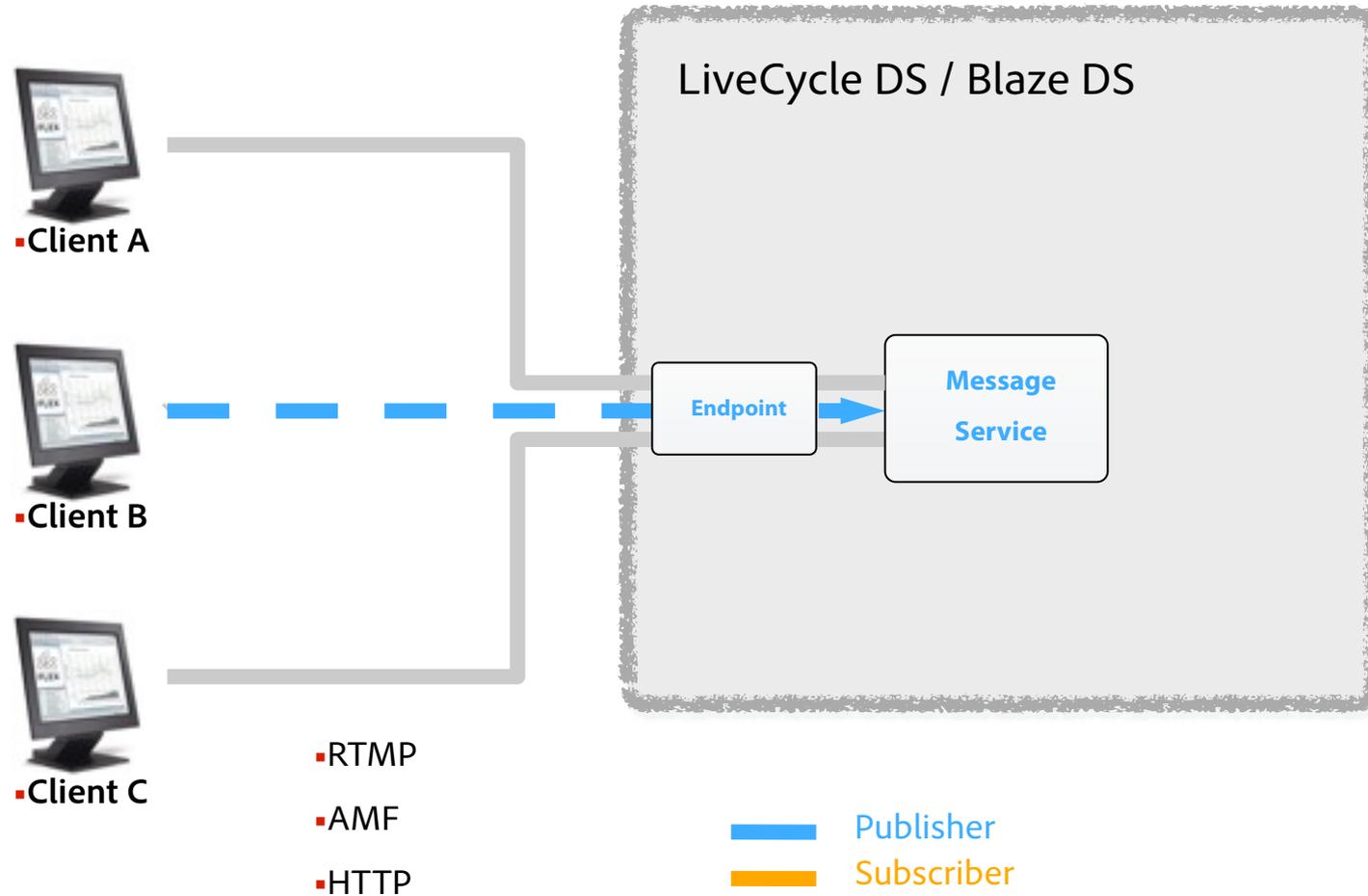
# LiveCycle Data Services in 2011



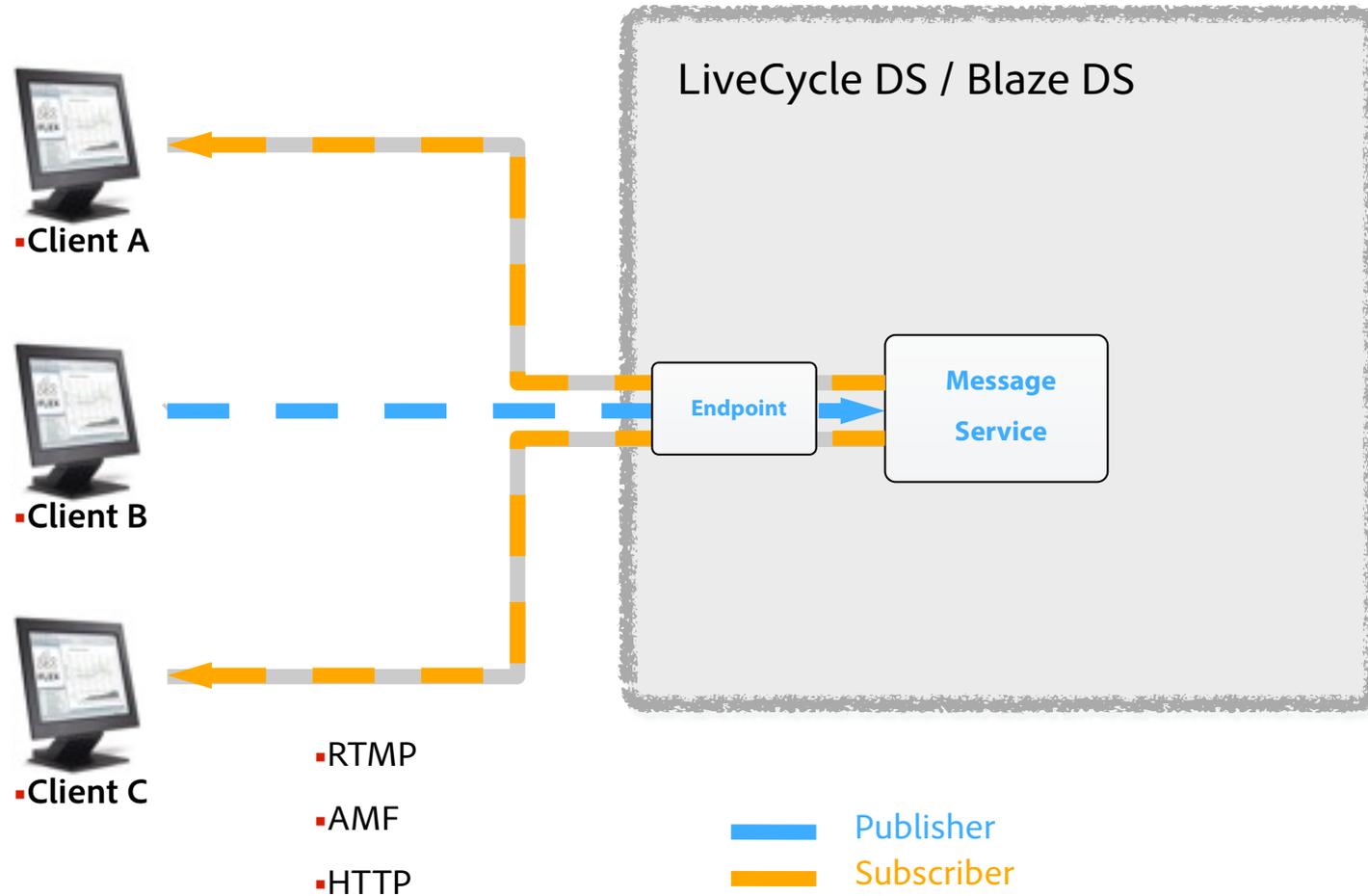
# Publish/Subscribe Messaging



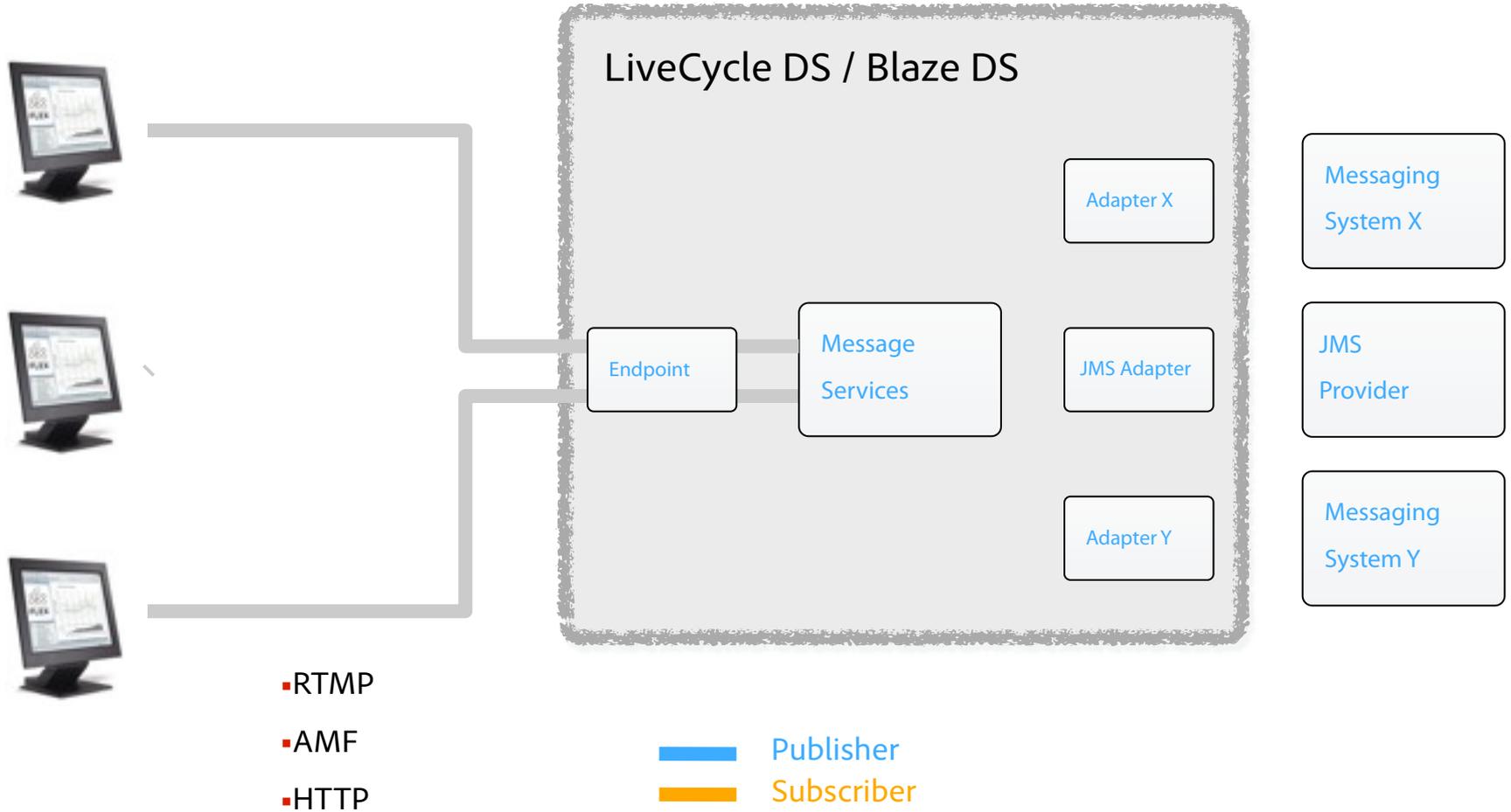
# Publish/Subscribe Messaging



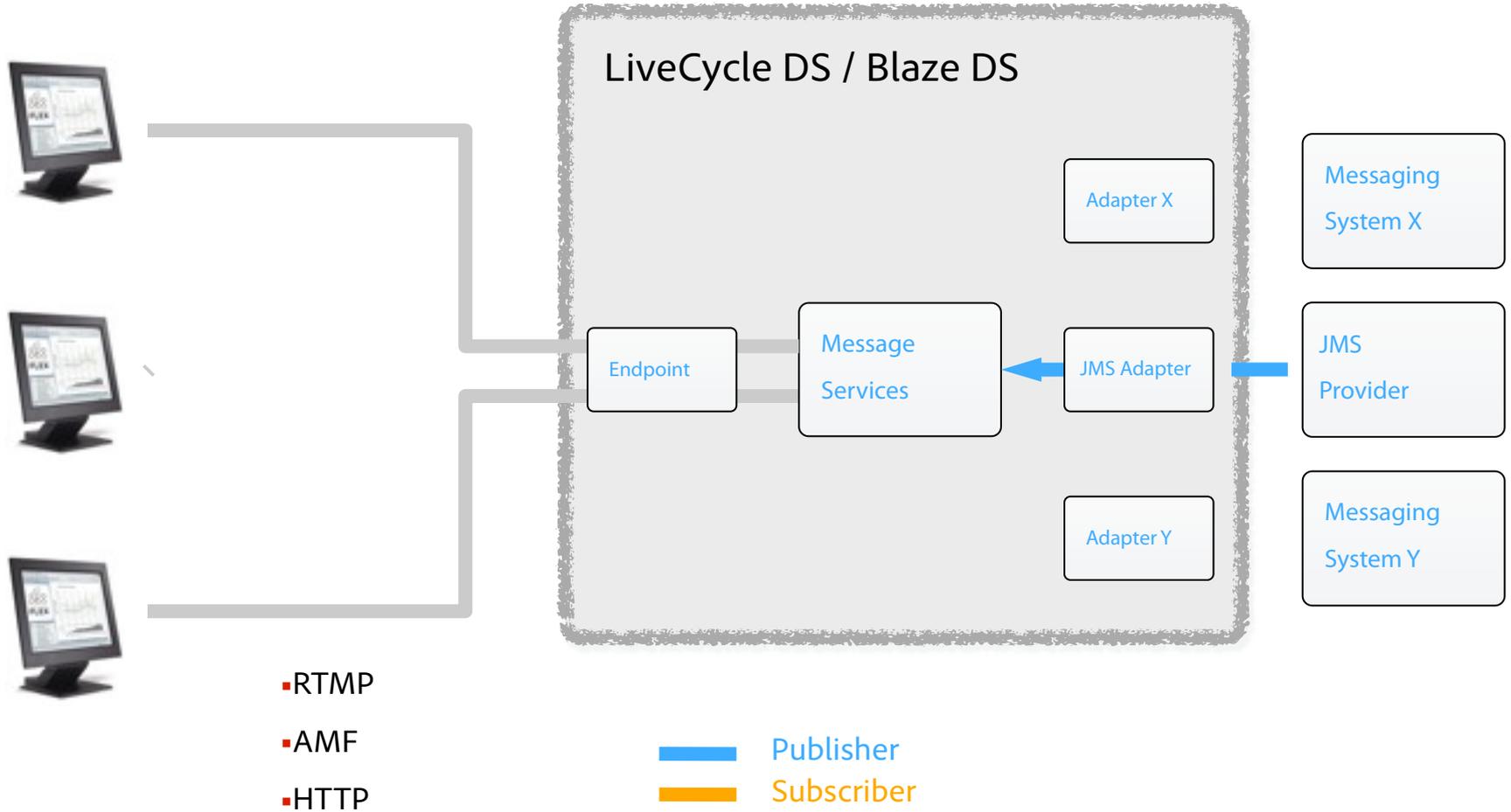
# Publish/Subscribe Messaging



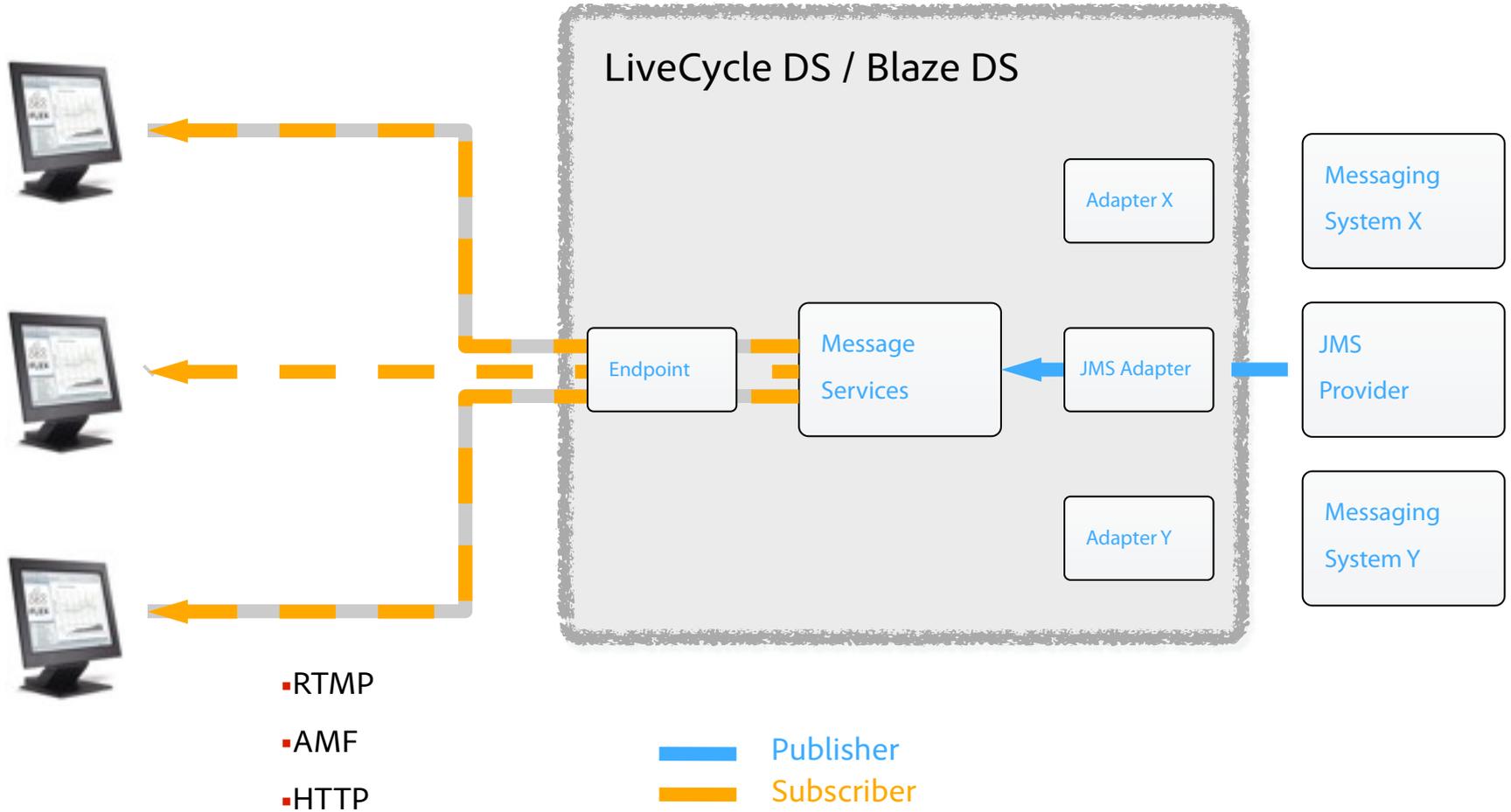
# Data Push - Messaging



# Data Push - Messaging



# Data Push - Messaging



# Data Push - Messaging

```
public static class GPSThread extends Thread {
    public boolean running = true;

    public void run() {
        MessageBroker msgBroker = MessageBroker.getMessageBroker(null);
        String clientID = UUIDUtils.createUUID();

        while (running) {
            double change = gpsService.getCurrentPosition();

            AsyncMessage msg = new AsyncMessage();
            msg.setDestination("feed");
            msg.setClientId(clientID);
            msg.setMessageId(UUIDUtils.createUUID());
            msg.setTimestamp(System.currentTimeMillis());
            msg.setBody(new Double(change));
            msgBroker.routeMessageToService(msg, null);

            try {
                Thread.sleep(300);
            } catch (InterruptedException e) {
            }
        }
    }
}
```

# Two superheros to save mobile applications developers



# Two superheros to save mobile applications developers



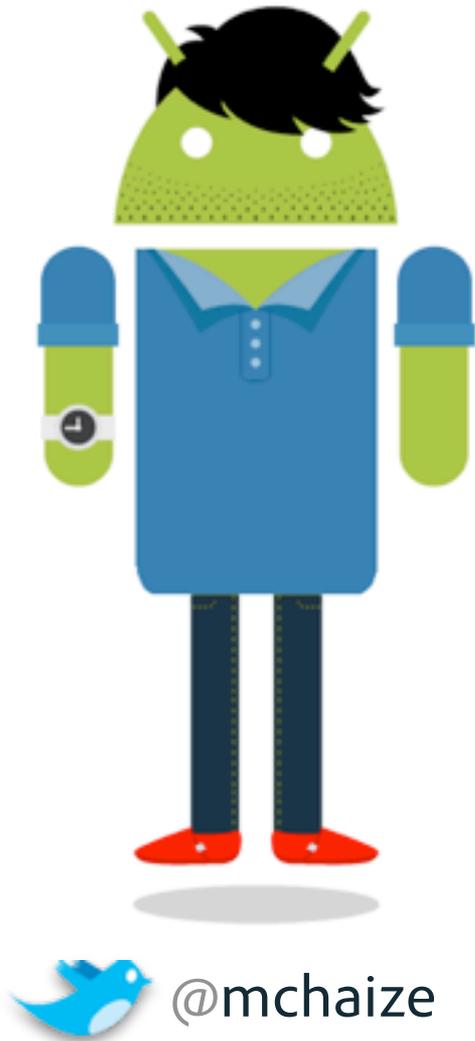
## ADOBE FLASH PLATFORM

Rich interfaces for your web, desktop and mobile apps. Real-time collaboration.

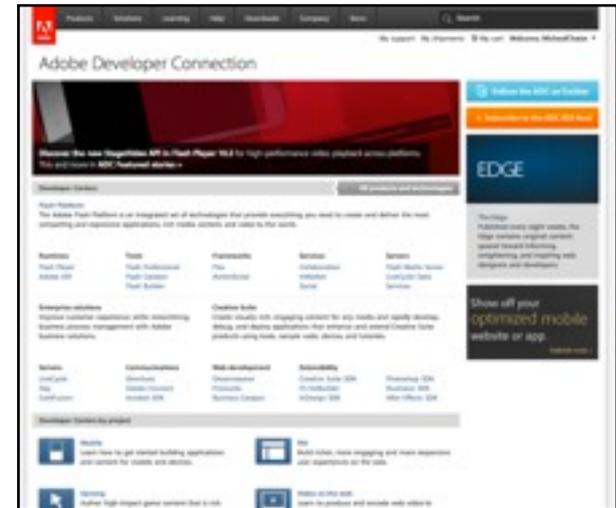


## JAVA SUPER POWER

Expose your data using HTTP, SOAP, Remote AMF. Real-time data push.



RIAGora.com



Flex.org

labs.adobe.com

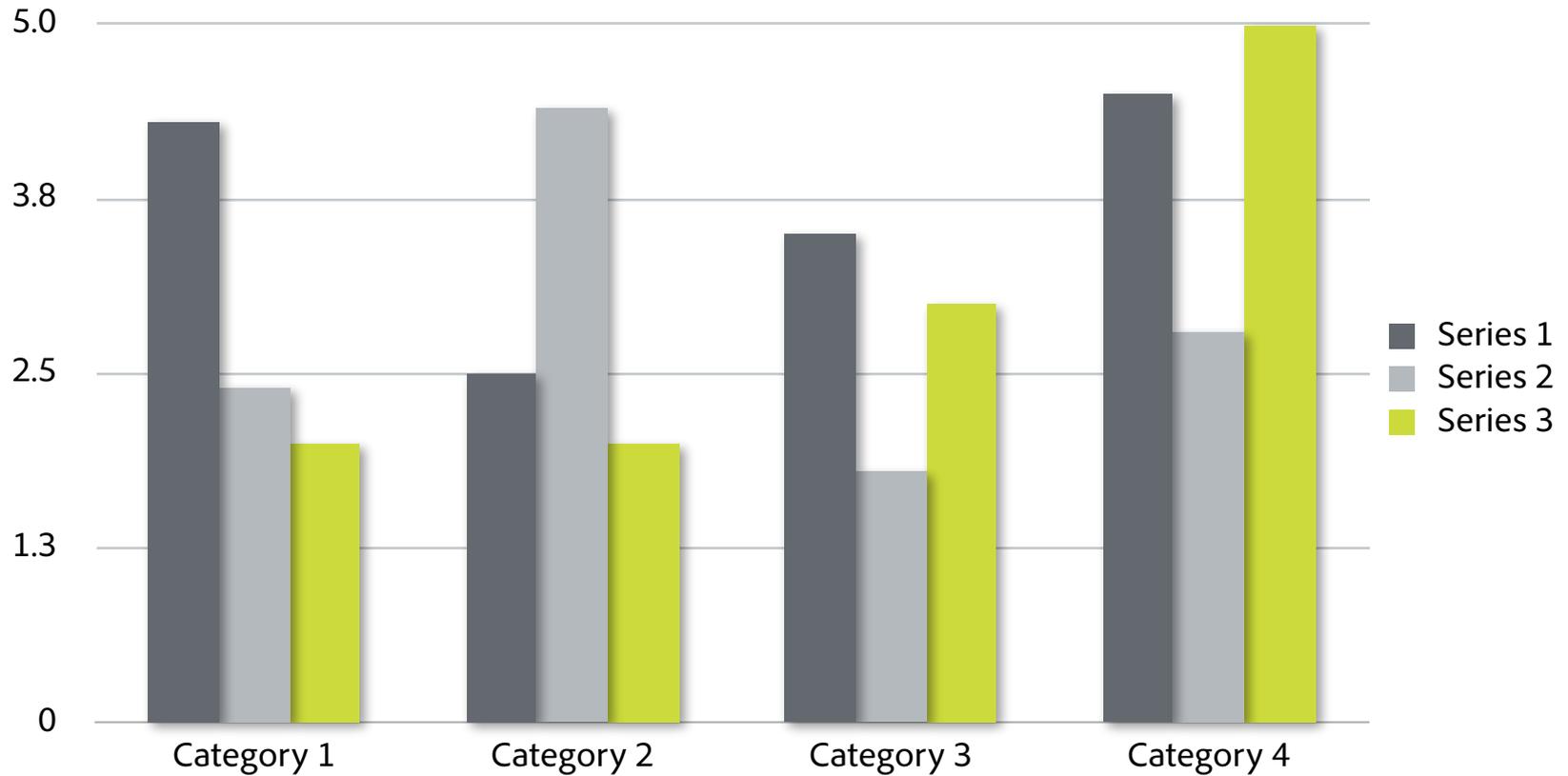
developer.adobe.com

Tour de Mobile Flex



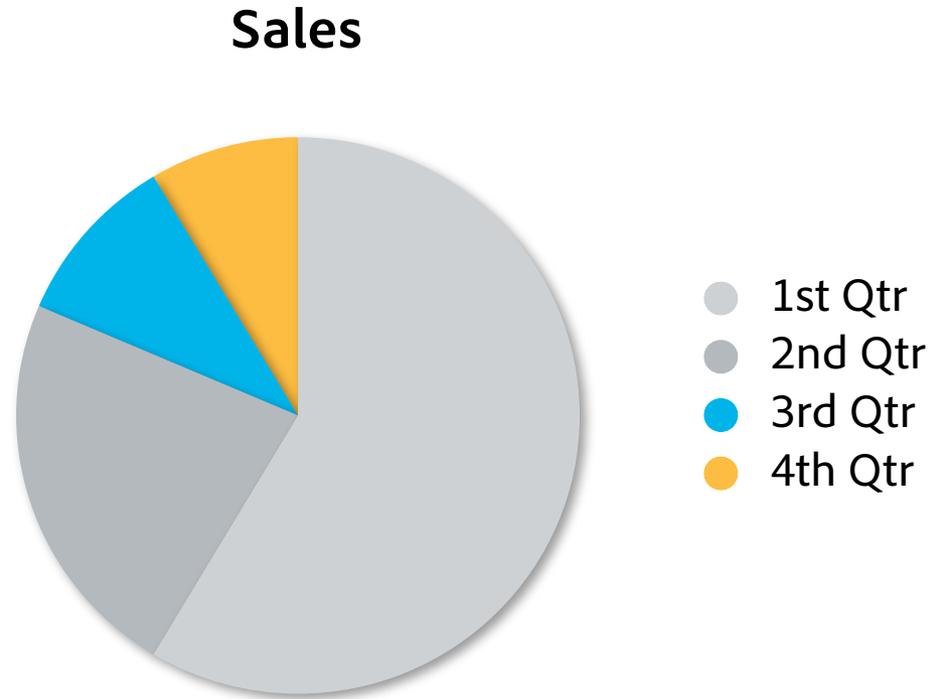
# Bar Chart

Try to use neutral colors for most chart elements, and highlight elements of interest with bright colors



# Pie Chart

Try to use neutral colors for most chart elements, and highlight elements of interest with bright colors



# Gray Content Area Layout

For use with full-screen images or diagrams that look good on gray



- Android Permission Required:

```
<uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION" /> <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
```

- Geolocation.isSupported

- g.addListener(GeolocationEvent.UPDATE, callbackFunction);

- GeolocationEvent:

- altitude
- heading
- horizontalAccuracy
- latitude
- longitude
- speed
- timestamp
- verticalAccuracy

# Accelerometer APIs

- Accelerometer.isSupported
- a.addEventListener(AccelerometerEvent.UPDATE, callbackFunction);
- AccelerometerEvent:
  - accelerationX
  - accelerationY
  - accelerationZ
  - timestamp

- Android manifest change:

```
<uses-feature android:required="true" android:name="android.hardware.touchscreen.multitouch"/>
```

- Gesture OR Multitouch --- Multitouch.inputMode

- MultitouchInputMode.GESTURE

- TransformGestureEvent

- GESTURE\_PAN
- GESTURE\_ROTATE
- GESTURE\_SWIPE
- GESTURE\_ZOOM

- GestureEvent.GESTURE\_TWO\_FINGER\_TAP

- PressAndTapGestureEvent.GESTURE\_PRESS\_AND\_TAP

- MultitouchInputMode.TOUCH\_POINT

- TouchEvent

- TOUCH\_BEGIN
- TOUCH\_END
- TOUCH\_MOVE
- TOUCH\_OUT
- TOUCH\_OVER
- TOUCH\_ROLL\_OUT
- TOUCH\_ROLL\_OVER
- TOUCH\_TAP

- Android Permission Required:

```
<uses-permission android:name="android.permission.INTERNET"/>
```

- Standard Flex Networking Libraries:

- HTTPService
- WebService
- RemoteObject

# Full Screen & Orientation

- `stage.displayState = StageDisplayState.NORMAL`
- `stage.displayState = StageDisplayState.FULL_SCREEN`
- `stage.displayState = StageDisplayState.FULL_SCREEN_INTERACTIVE`

- StageOrientationEvent:

```
stage.addEventListener(StageOrientationEvent.ORIENTATION_CHANGE, callbackFunction);
```

- foo-app.xml:

```
<initialWindow>
```

```
    <autoOrients>true</autoOrients>
```

- Camera - Raw camera feed

```
<uses-permission android:name="android.permission.CAMERA" />
```

```
<uses-feature android:name="android.hardware.camera" android:required="true"/>
```

```
<uses-feature android:name="android.hardware.camera.autofocus" android:required="false"/>
```

```
<uses-feature android:name="android.hardware.camera.flash" android:required="false"/>
```

- CameraUI - Native Camera App

```
var cameraUI:CameraUI = new CameraUI();
```

```
cameraUI.launch(MediaType.IMAGE);
```

- CameraRoll - Choose photos from the device's camera roll

```
var cameraRoll:CameraRoll = new CameraRoll();
```

```
cameraRoll.browseForImage();
```

```
cameraRoll.addBitmapData(bd);
```

# Native App Integration

- Open Email, Browser, Maps, Phone, or SMS
  - `navigateToURL(new URLRequest('mailto:foo@bar.com'));`
  - `navigateToURL(new URLRequest('http://www.jamesward.com'));`
  - `navigateToURL(new URLRequest('http://maps.google.com/'));`
  - `navigateToURL(new URLRequest('tel:1234567890'));`
  - `navigateToURL(new URLRequest('sms:1234567890'));`

# Local DB APIs

- SQLite - Nothing different than AIR for the Desktop
- SQLConnection
  - Sync and/or Async connections
- SQLStatement
  - Prepared Statements:

```
var stmt:SQLStatement = new SQLStatement();
```

```
stmt.sqlConnection = FlexGlobals.topLevelApplication['sqlConnection'];
```

```
stmt.text = "INSERT into giberish values(:giberish)";
```

```
stmt.parameters[":giberish"] = g.text;
```

```
stmt.execute();
```

# StageWebView

- Requires Android INTERNET permission:

```
<uses-permission android:name="android.permission.INTERNET" />
```

- WebStageView.isSupported

```
var swv:StageWebView = new StageWebView();
```

```
swv.viewPort = new Rectangle(0, stage.height - height, width, height);
```

```
swv.stage = stage;
```

```
swv.loadURL("http://www.riagora.com");
```

# Black Content Area Layout

For use with full-screen images or diagrams that look good on black

# Color Palette

## Dynamic



R - 255  
G - 0  
B - 0



R - 251  
G - 176  
B - 52



R - 255  
G - 221  
B - 0



R - 193  
G - 216  
B - 47



R - 0  
G - 164  
B - 228



R - 131  
G - 72  
B - 181

## Neutral



R - 218  
G - 221  
B - 224



R - 172  
G - 179  
B - 185



R - 107  
G - 115  
B - 123



R - 228  
G - 223  
B - 217



R - 192  
G - 181  
B - 169



R - 136  
G - 120  
B - 104

## Note

The Adobe corporate color palette has been incorporated into this presentation template.

Refer to the Corporate Brand Guidelines, found on Brand Center for more guidance on using this color palette

[www.adobe.com/brandcenter](http://www.adobe.com/brandcenter)