

# How Simple Is It To Develop a Mobile App?

Uma Sudhan  
OpenEdge Developer  
7<sup>th</sup> Oct 2013

# Agenda

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- What a mobile app is, and why is it so important?
- Challenges in mobile app development
- Progress Developer Studio – How it helps
- Demo
- Q&A

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# What Is A Mobile Device?

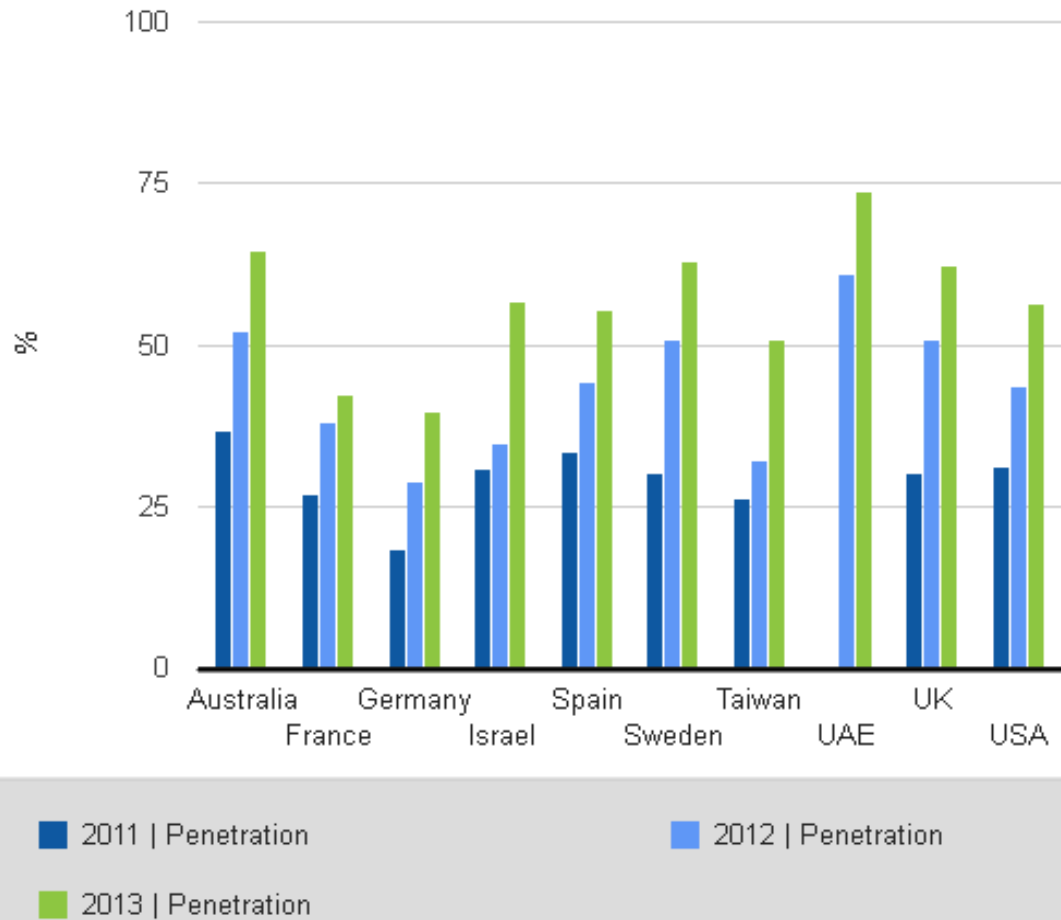
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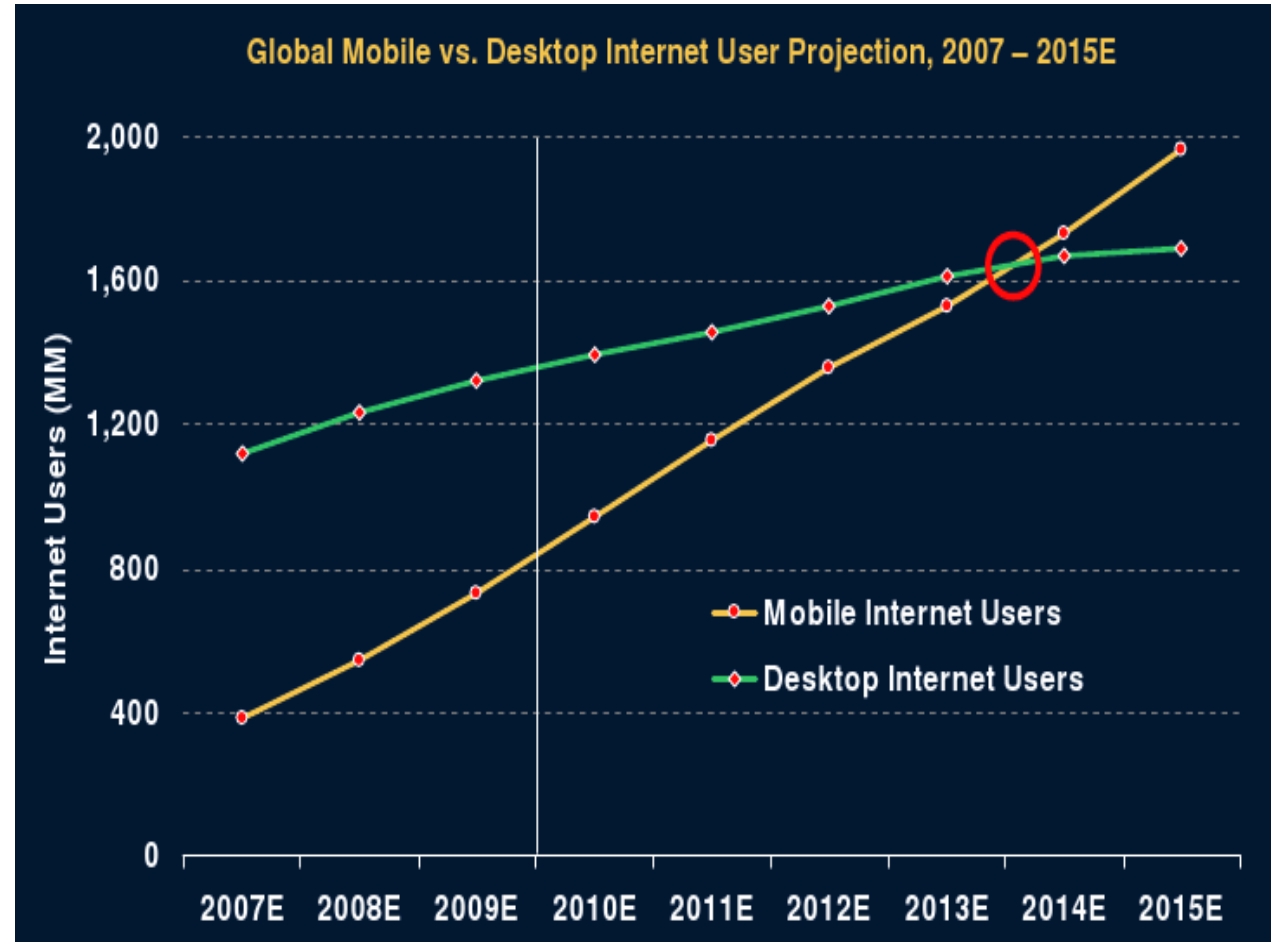
- Either tablets or smartphones
- Devices that combine telephony and computing
- Screen sizes vary from 3 inches to over 10 inches
- Most high end devices have multiple cores and large amounts of RAM

# Growth of Mobile Devices

## YoY growth

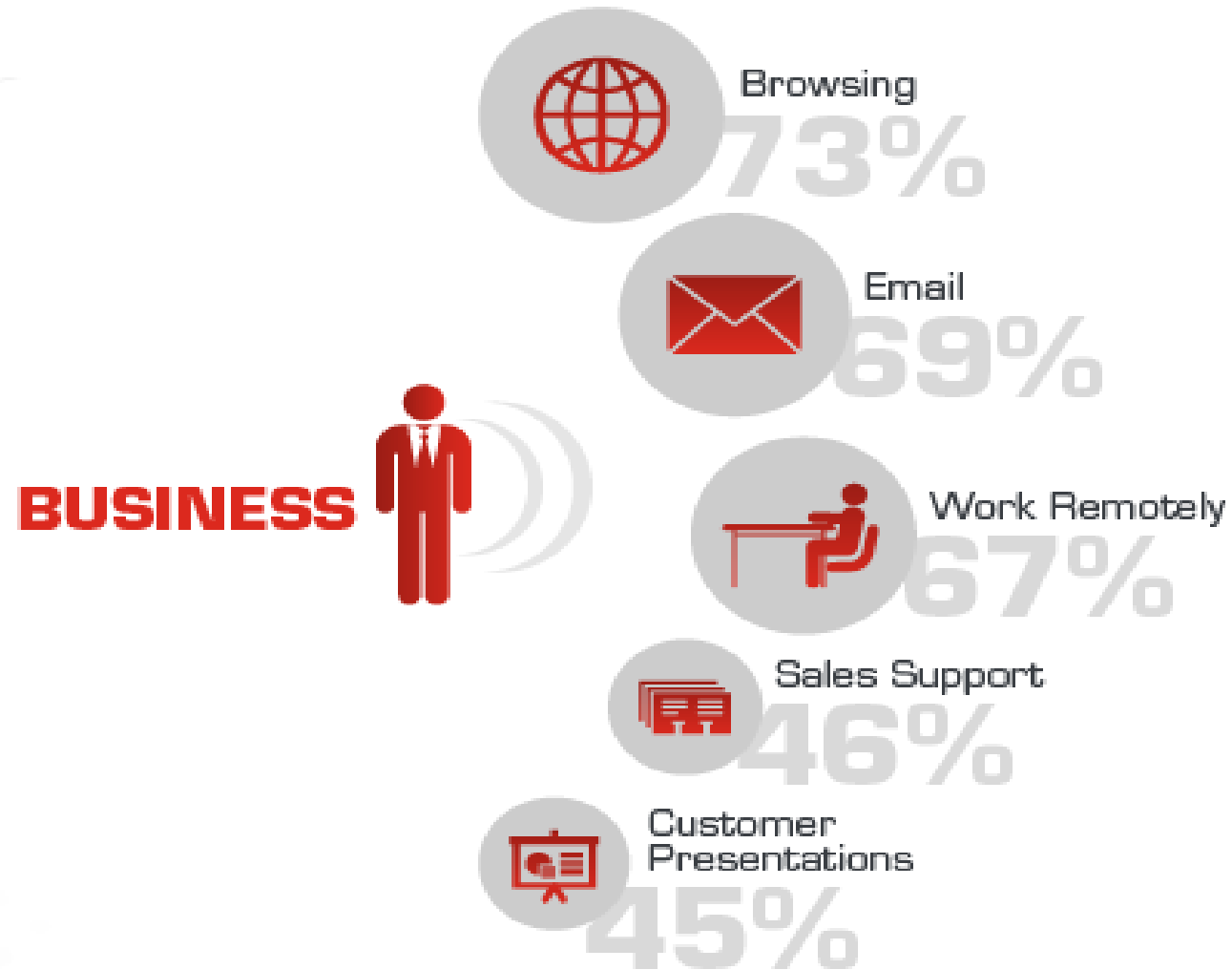


## Mobile internet usage



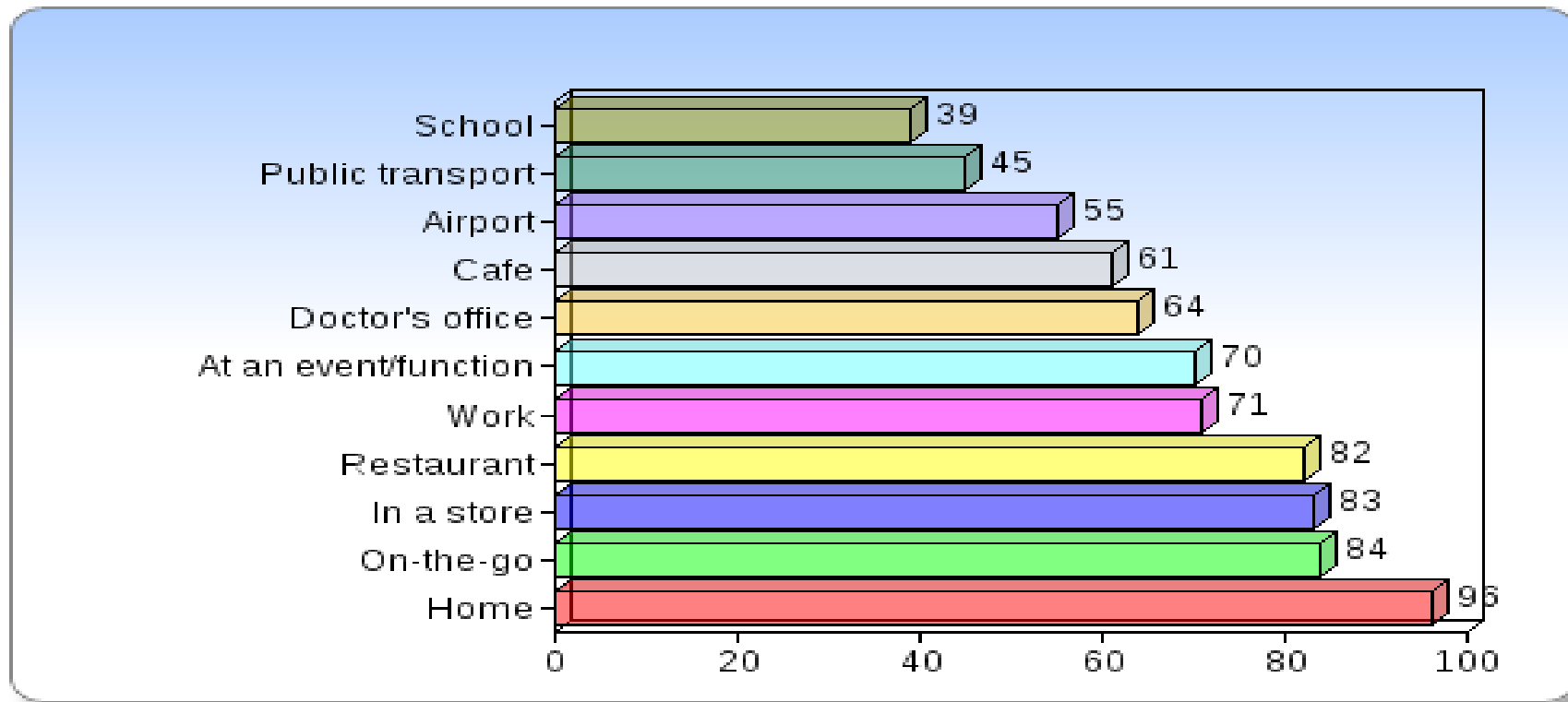
# What Do People Use Their Mobile Devices For?

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# Where Do People Use Their Mobile Devices?

- Mobile devices are a central part of people's daily lives
- They are always on, always with us
- They are used everywhere



Source: Google Report

# What Is a Mobile App?

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- What exactly is a mobile app
  - Software application designed to run on
    - Smartphones
    - Tablets
    - Other mobile devices





# Mobile Apps – Categorization

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- Form factor
  - Phone
  - Tablet
- Complexity
  - Basic app – static
  - DB driven
  - Fully dynamic
- Type
  - Native
  - Mobile Web
  - Hybrid



# Some Famous Apps

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# Honey, I Shrunk The Bank

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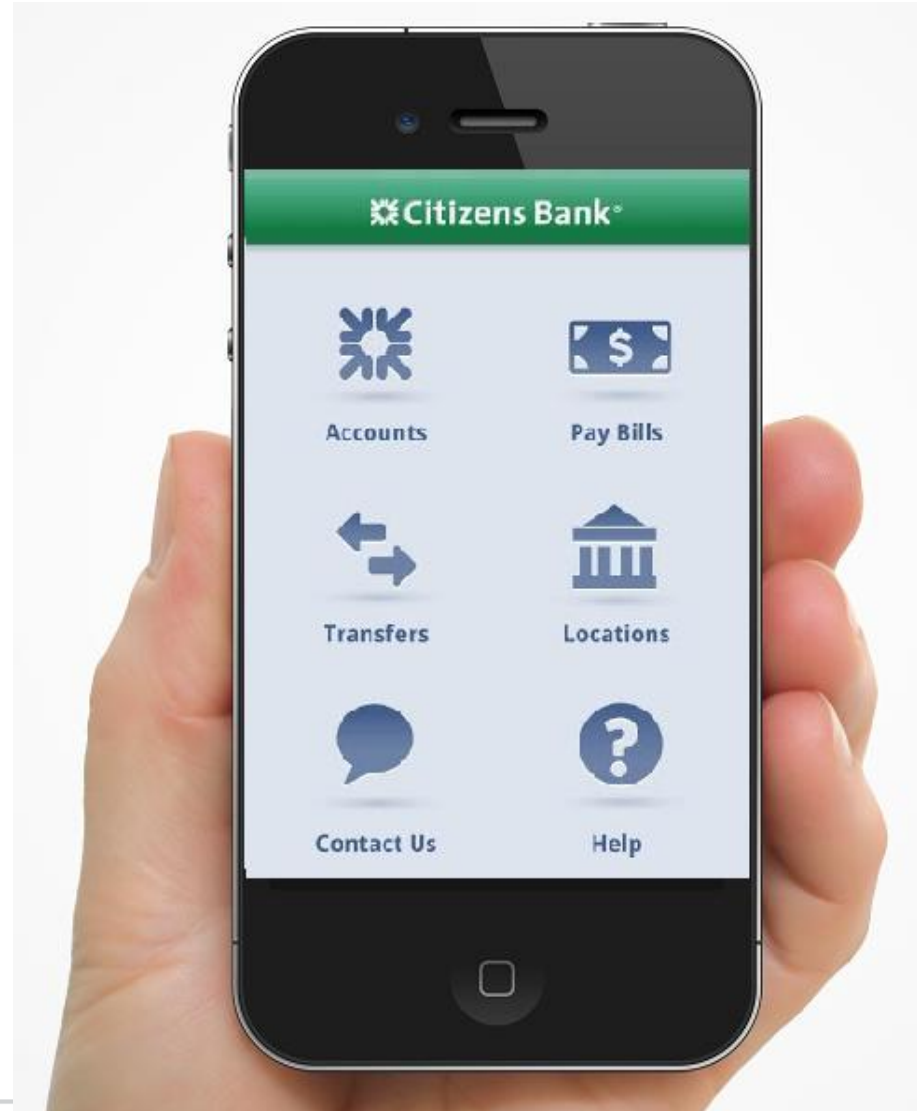
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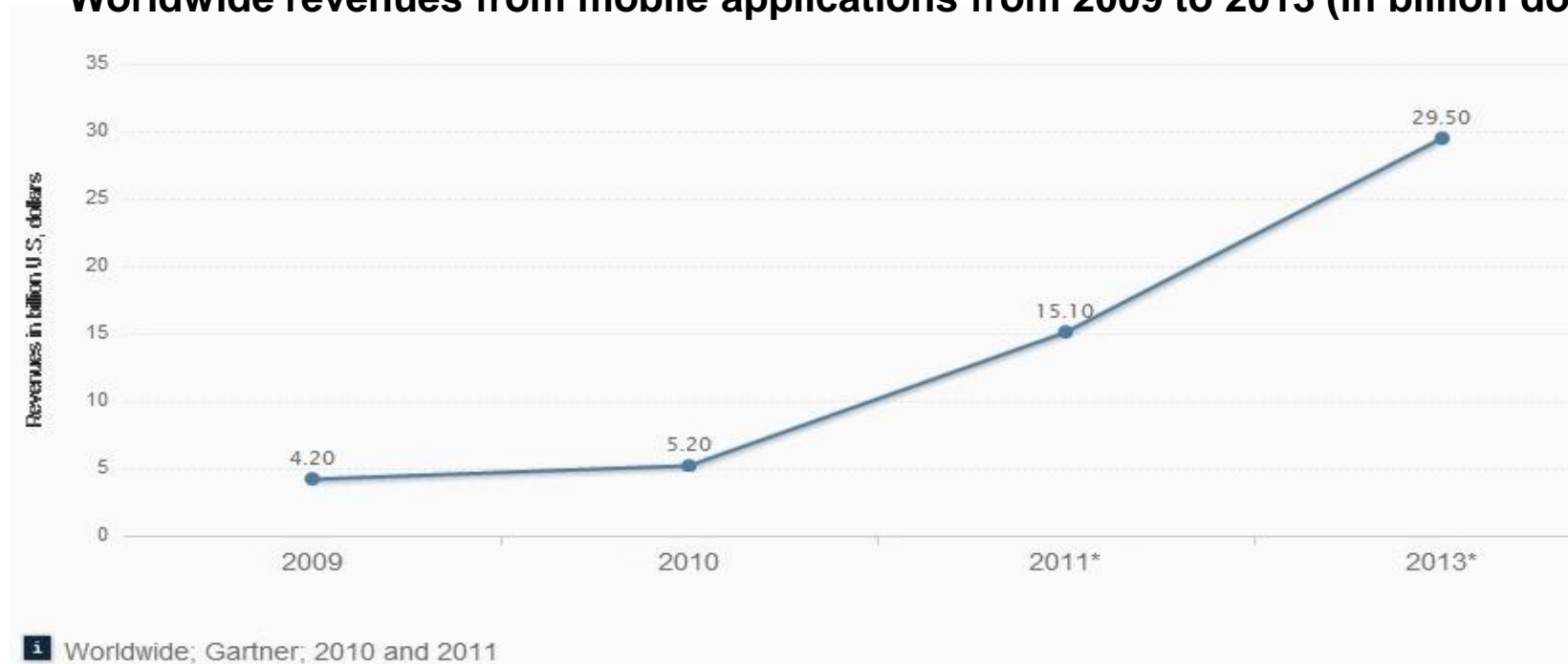


# Some Stats On Apps

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- App users growing rapidly YoY
  - 2012 End- 1.2 billion
  - 2015- 3.7 billion (est.)
- App revenues

**Worldwide revenues from mobile applications from 2009 to 2013 (in billion dollars)**



# App Explosion

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- Apple App Store
  - 50 billion downloads since launch in 2008
  - 900,000 apps
  - \$ 10 billion paid to developers
  - 575 million iTunes accounts
- Google Play
  - 50 billion downloads since launch in 2008
  - 1,000,000 apps
- Number of apps per device
  - 33 apps installed on average
  - 12 apps used in the past month on average
  - 8 paid apps installed on average



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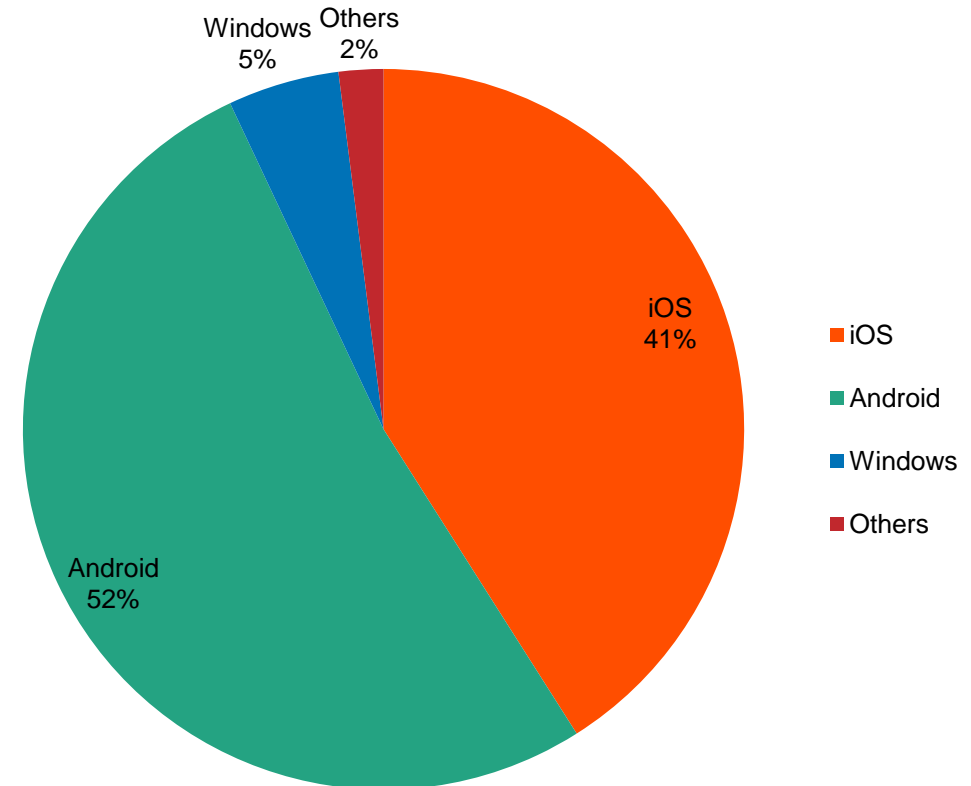
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# Mobile App Development – Challenges

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- OS fragmentation
  - Development models/environment different for each platform
  - Increases time to market
  - Maintaining codebase in too many languages and technology
- Tooling support for cross platform apps
  - Debugging
  - Testing
- Security issues
  - Client level
  - Server side



# Mobile App Development – Challenges (Continued)

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- Paradigm shift for traditional developers
  - Big application suites to focused apps
  - Efficiency very important
- Need for Consistent User Experience
  - User will access same functionality across devices
    - Initiates an order on PC
    - Monitors status on tablet
    - Alerts with tracking info on phone on shipment
  - Familiar UI and flow across devices
  - Productive user experience needed
    - Core functionality needs to be present across devices

# Mobile App Development – Challenges (Continued)

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- Time to Market
  - RAD imperative in mobile app development
  - Critical with today's pressing competition
  - Demanding customers
  - Frequent updates
  - Short shelf life
- Integration with backend systems
  - Need to easily integrate with existing system
  - Need secure access to resources like databases
  - Need to make minimal changes if any to existing backend code

# iOS Native App Development – Challenges

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- Need a developer subscription
- Development needs Mac OSX
- iOS UI can change drastically across releases
- Every app has to be manually reviewed by Apple — even updates

# Android Native App Development – Challenges

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- Need Java development experience
- Version fragmentation
  - A lot of devices still stuck on old versions
- Number of devices very large
  - Contrast with one phone and one tablet for iOS
- Android allows customizing OS
  - UX slightly different from vendor to vendor depending on divergence from stock OS



# Factors Affecting Cost

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- Depends on app complexity
  - Plain vanilla app will cost in the region of a couple of thousand dollars
- Escalates quickly with complexity
- Customizations are expensive
- Need to factor in cost of
  - Developing backend systems
  - Graphics and UI elements

# Building an App – Possible Approaches



## Native App (Device specific)

- Build app for each platform one by one
- Full capabilities and integration with device
- AppStore presence, restricted distribution

## Mobile Web App (HTML5/CSS/JavaScript)

- Write app once, runs in web browser on device
- Limited access to device capabilities
- No AppStore, unrestricted distribution
- Internet connection required

## Hybrid App (Device specific + HTML5/CSS/JavaScript)

- Write app code once run on many devices
- Native container provides access to device capabilities
- AppStore presence, restricted distribution

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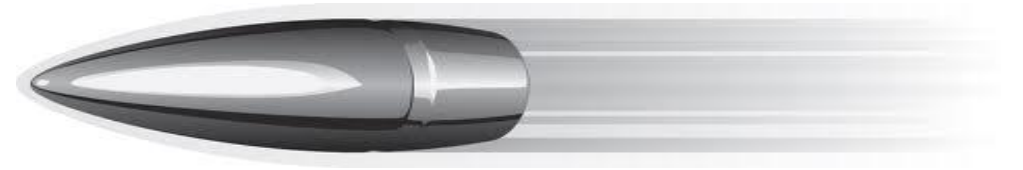


# Progress OpenEdge Mobile – The Silver Bullet

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## ■ Value Proposition:

- **Write Once, Run Anywhere** Portability with the Benefits of Native Applications. The Easiest Way to Build an OpenEdge Application Supporting Mobile Devices, End-to-end



## ■ Benefits:

- A comprehensive and integrated tool set with support for a wide variety of devices
- Mobile UI development is Cloud-based, so collaboration among the development team, business analysts and with end users is fully supported
- Leverage existing business logic, the OpenEdge AppServer and database

# Problem Tag Cloud

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If you are not part of the problem...

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# Progress OpenEdge Mobile = “The Best Of Both Worlds”



By 2015, 80% of all mobile web applications developed will be hybrid or mobile web.

*Gartner 2012: Magic Quadrant for Mobile Consumer Application Platforms*

## Hybrid App (Native Wrapper + Web App)

- Standards-based solution
- Write the UI code once, deploy to multiple devices
- Native container provides support for App Store and HTML5 limitations
- Flexible deployment options of both **Web App** and **Hybrid App**
- No need to learn device-specific languages or development environments

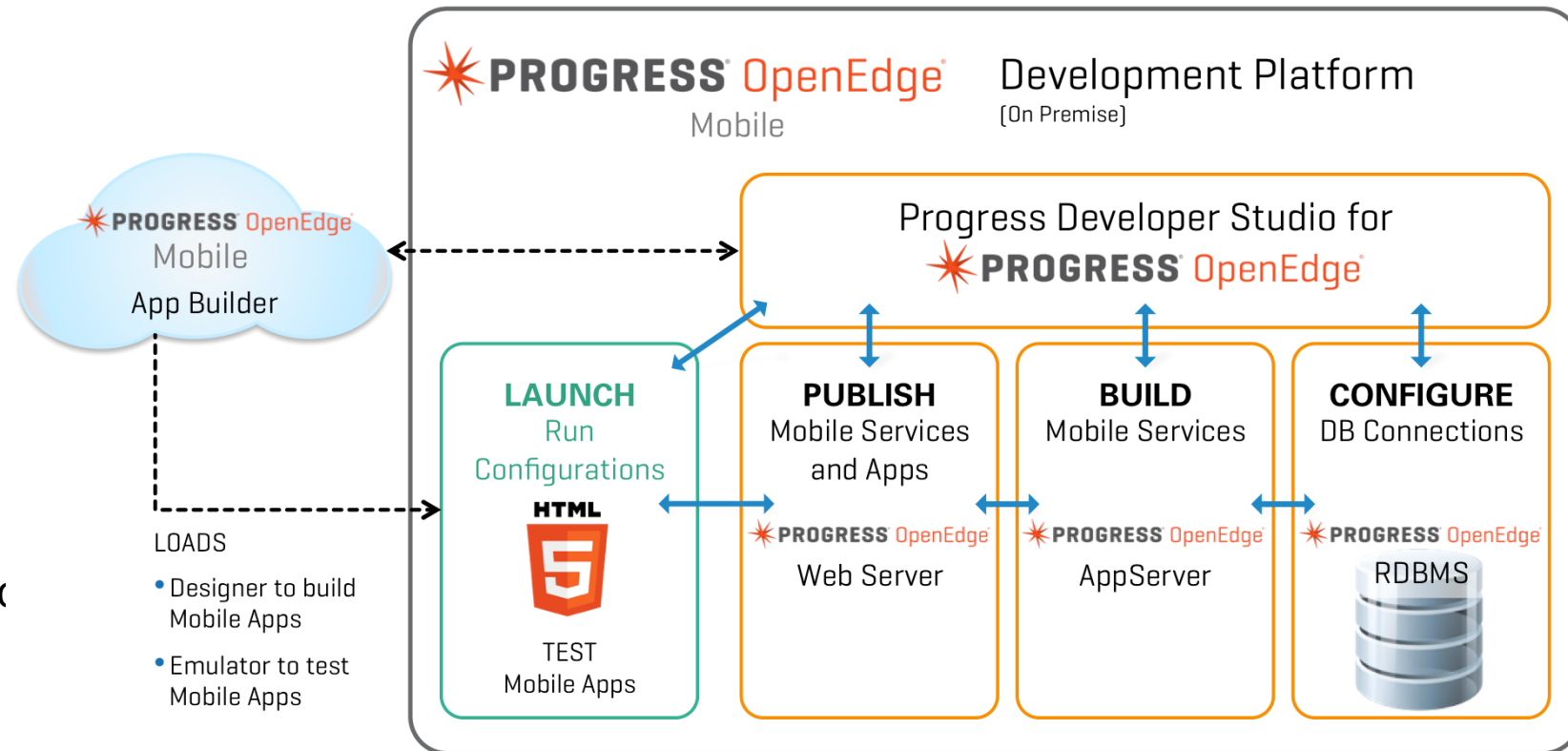
# Development: Integrated Development Environment

## ■ Mobile App Builder

- Drag-n-drop UI designer
- Integrated emulator
- Tight data binding to OE
- Packages mobile apps for deployment

## ■ Developer Studio for OE

- Define and build mobile services
- Deploy Mobile services and Mobile Web Apps
- Test App from browser



# Progress OpenEdge Mobile for Rapid Application Development

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- Rapidly develop apps
  - Custom UI creation with Drag and Drop
  - Also choose from one of the pre-defined templates
    - User also has option to create own templates
  - Express mobile
    - Most configuration done by default
    - Enter bare minimum details – more in the demo
    - More details in the demo

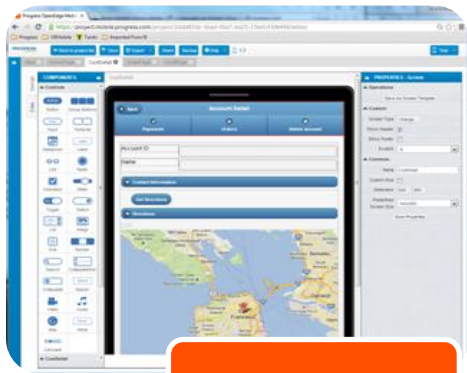
# Developing a Mobile App Methodology

Step 1

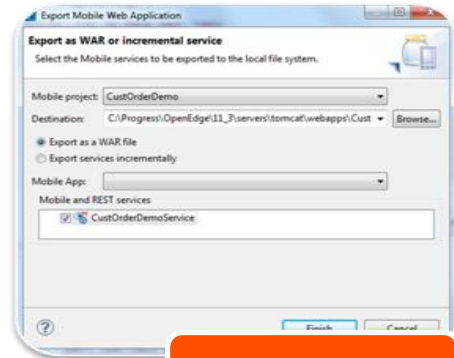
Step 2

Step 3

Step 4



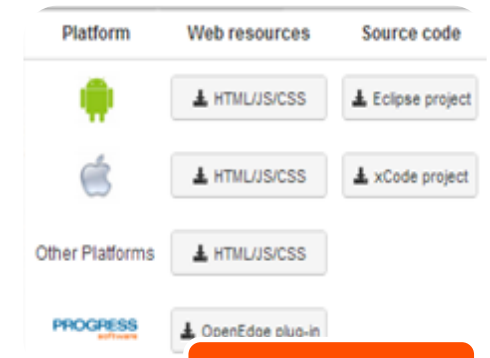
Build UI



Build OE services



Bind data and UI



Build and deploy

# Build the UI (Step 1)



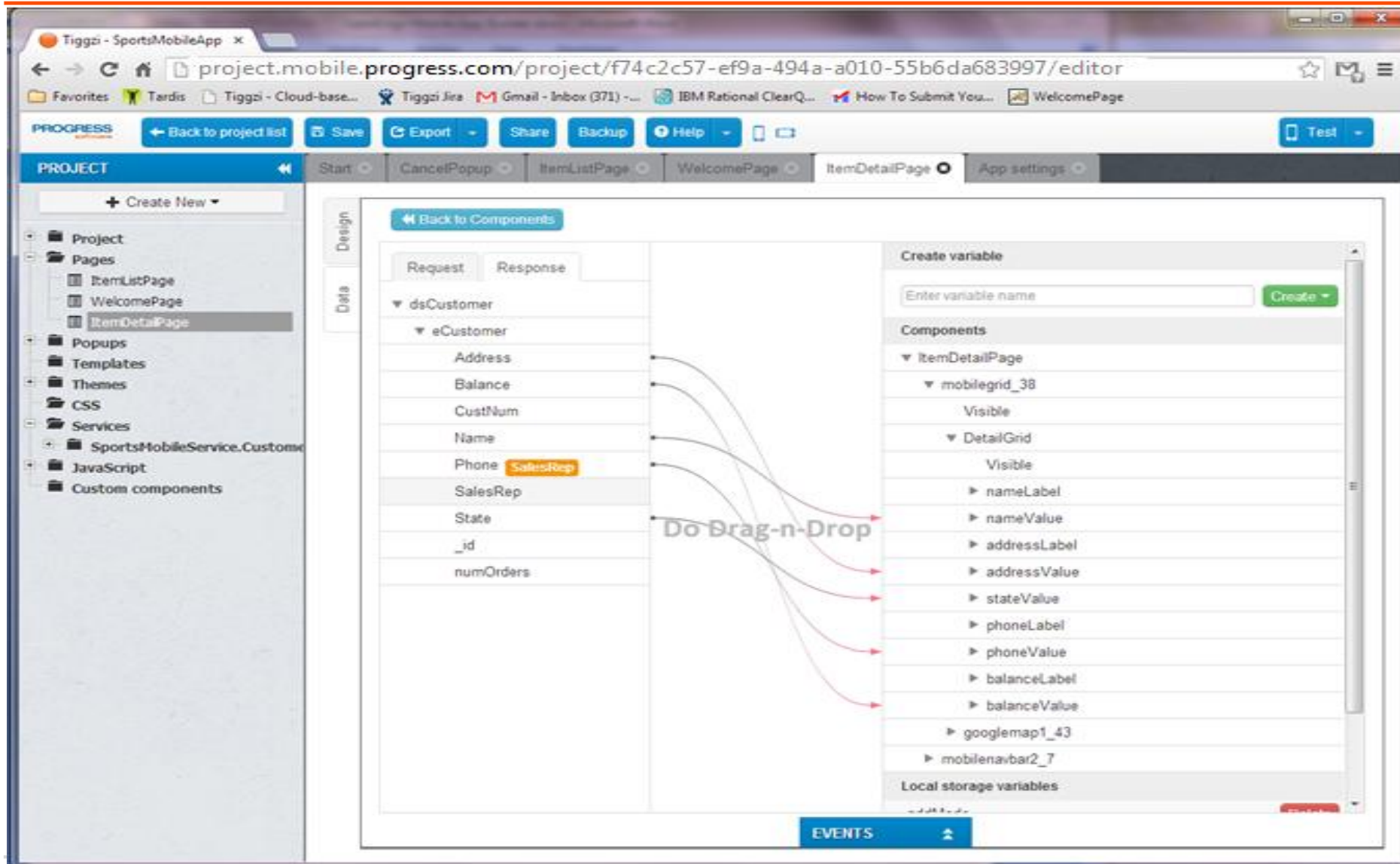


# Define Mobile Service (Step 2)













The image displays three overlapping dialog boxes from a software application, illustrating the steps to define a mobile service.

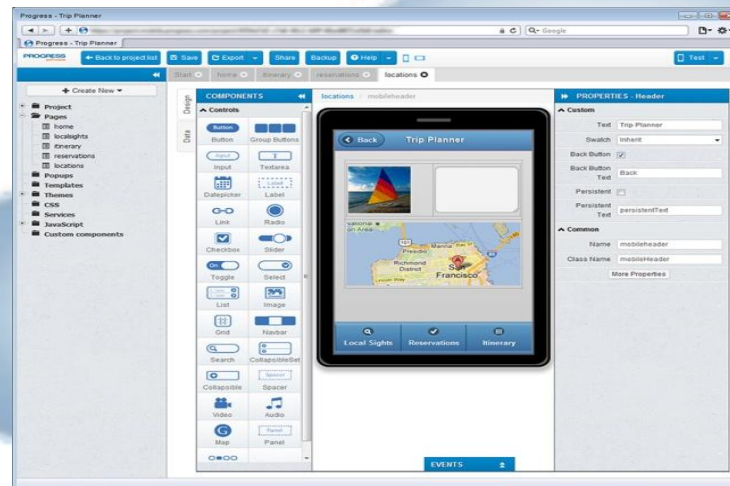
- New OpenEdge Project:** This dialog prompts the user to "Create an OpenEdge Project". The project name is "DemoOEMobile", and the location is "C:\\_Work\OEMobile\11\_3\DemoOEMobile". Under "Project type configuration", "Mobile" is selected.
- New Business Entity:** This dialog prompts the user to "Select a schema file". The resource name is "CustomerOrderBE", and the operations are set to "CRUD". The "Select Schema from file" option is chosen, with the schema file "CustOrderDemo/AppServer/dsCustOrder.i" and schema "dsCustOrder" selected. The "Expose as mobile service" checkbox is checked, and the resource URI is "/CustomerOrderBE".
- New Mobile Service:** This dialog prompts the user to "Create a Mobile service". It shows a list of resources under "AppServer", with "CustOrderBE.cls" selected. The "Sample URI" is "http://<host>[:port]/OEMobileService/rest/OEMobileService/CustOrderBE".

# Drag and drop Data mapping (Step 3)



# Build and Deploy (Step 4)

Platform	Web resources	Source code	Debug binary	Release binary
	 HTML/JS/CSS	 Eclipse project	 .apk	 .apk
	 HTML/JS/CSS	 xCode project		 .ipa
Other Platforms	 HTML/JS/CSS			
	 OpenEdge plug-in			



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Demo using Express mobile wizard



# Demo – What is happening behind the scenes

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1. Creates an Mobile Project in Developer Studio with the Facets
2. Creates the Mobile Service
3. Creates the Business Entity
4. Creates the Express Mobile Project (Mobile App) in Mobile App Builder
5. Synchronizes Sources from the Cloud to the local environment
6. Updates the AppConfig.js file with required content
7. Restarts the REST broker if the selected Database connection was not defined in the configuration
8. Publishes the Mobile App and Mobile Service to OE Web server after creating the WAR files
9. Runs the Mobile application using the emulator

# Summary

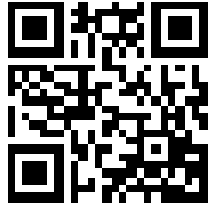
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- Progress OpenEdge Mobile
  - A **Complete End-to-end** Solution for Supporting Mobile Devices with OpenEdge Applications
  - Develop with the premier OpenEdge development environment, Progress Developer Studio for OpenEdge
  - Mobile App Builder in the cloud
  - Express Mobile to rapidly develop working apps

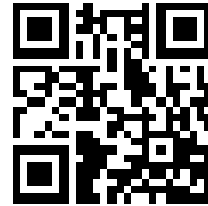
# References

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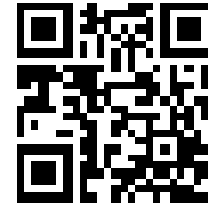
- [Google Mobile Planet](#)



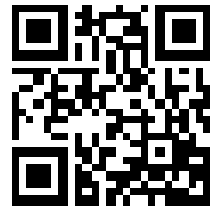
- [Flurry five year report on apps](#)



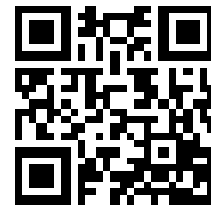
- [Developer Economics – State of the developer nation](#)



- [Forrester Mobile Trends](#)



- [Gartner strategic technology trends](#)





# Q & A, Related Sessions

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- Other OE Mobile related presentations

What	When
Progress OpenEdge Mobile and the Bits Involved	Mon Oct 7 2:30pm - 3:30pm
Inside Progress OpenEdge Mobile: The JSDO, the Business Entity and Other Components	Mon Oct 7 4:00pm - 5:00pm
The Age of Mobility	Tue Oct 8 10:00am - 11:00am
Engineering Progress OpenEdge Business Solutions for BYOD Mobility: A Case Study	Tue Oct 8 11:15am -12:15pm
Mobile App Showcase and Discussion	Tue Oct 8 1:45pm - 2:45pm
Progress OpenEdge Mobile: Zero to Hero in Two Weeks	Tue Oct 8 1:45pm-2:45pm
OE Mobile Workshop	Wed Oct 9 9:00am-12 noon, 2:00pm-5:00pm



**PROGRESS**