

Going Mobile: Mobile Application Design Principles for ADF Development

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ORACLE
ACE Director

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Mobile Home or Mobile App?

I'm goin' home
And when I wanna go home
I'm goin' mobile
Well, I'm gonna find a home
And we'll see how it feels
Goin' mobile
Keep me movin'

—Pete Townshend (1945-),
Going Mobile (Who's Next album)

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Agenda

- Brief history of Oracle UIs
- Design steps
- Further study

Slides and white paper are available on the NYOUG and Quovera websites.



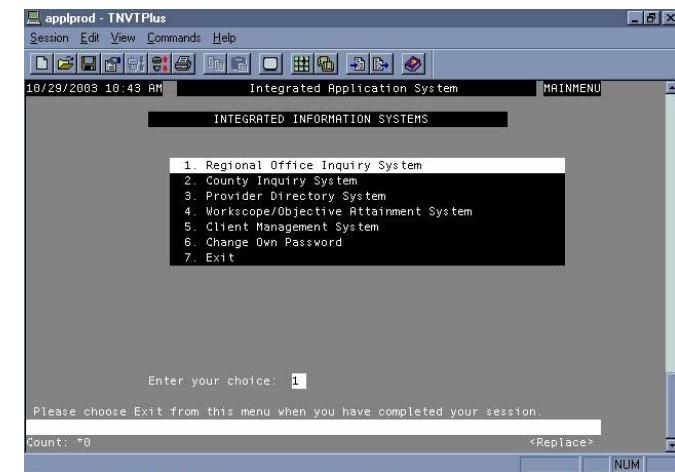
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In the Beginning Was...

- ...the “dumb” terminal
- PF and Fn keys!
- Training!

IAF to SQL*Forms
2.0 to Oracle
Developer Forms 6



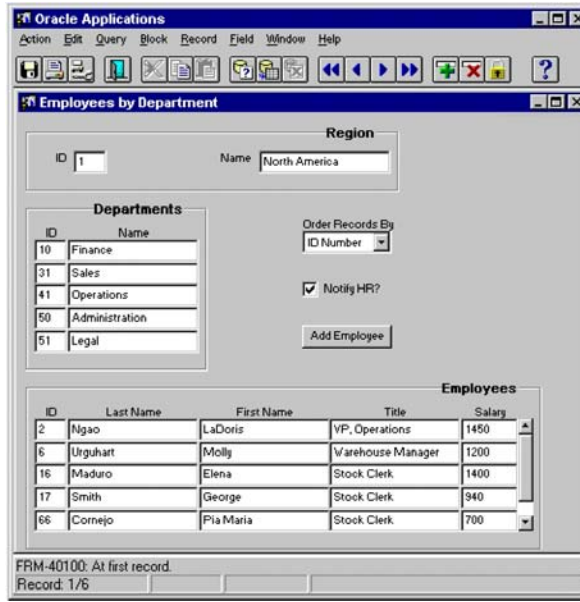
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Then Oracle Created ...

- ...tools for client/server applications
- Graphics!
- Mouse!

SQL*Forms 4.0 to
Oracle Developer
Forms 6.0



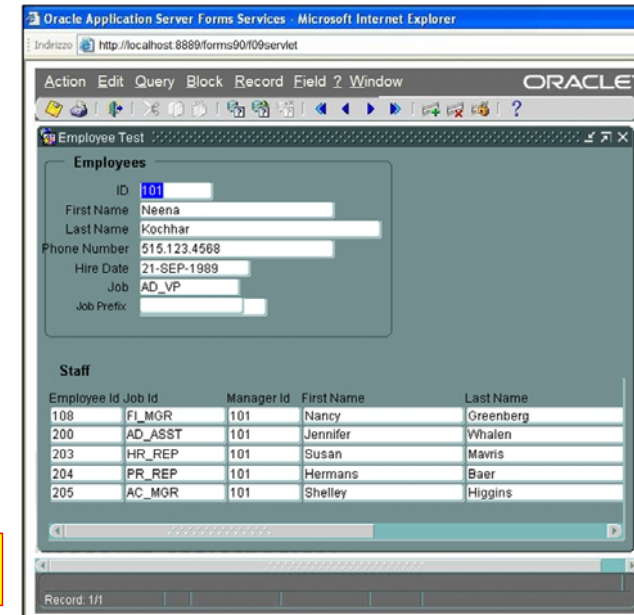
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Then, In The Year of the Internet...

- ...Java runs Forms within the web browser
- Familiar interface!
- Java install headaches replace Forms install headaches!

Oracle Forms 6i to
Oracle Forms 11g



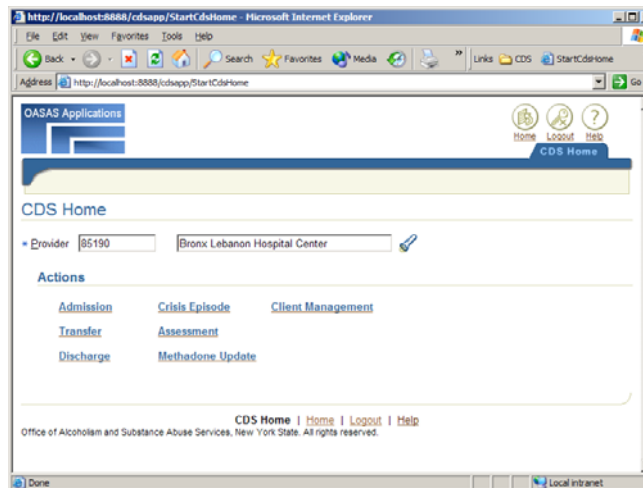
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In the Next Year of the Internet...

- ... lightweight Web Apps ("Web 1.0")
- Browser only!
- HTML rules!

Oracle UIX



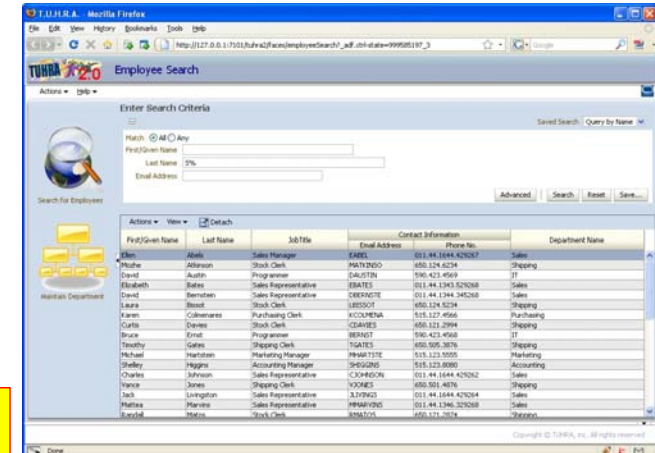
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In Another Year of the Internet...

- ...Web apps ("Web 2.0")
- Interactive components!
- Single page!

Oracle ADF Faces
10g to 12c

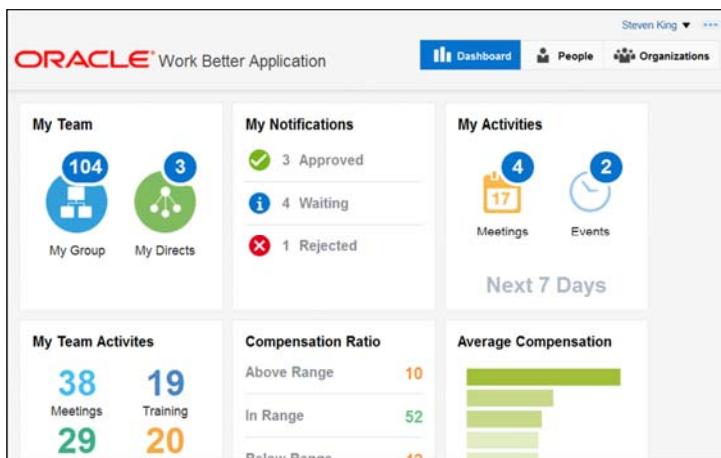


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Today

- Mobile
- Touch/ gesture!
- “Intuitive”!



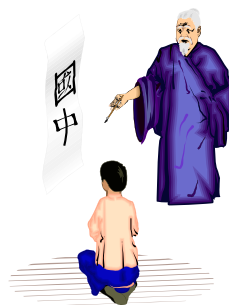
Oracle ADF 12c,
Oracle MAF 2.1

Comparing UI Devices

Display Paradigm	Graphics	Data Input	Navigation	User Training	Display Software
Character mode “dumb” terminal	N	Keybd	Keybd (Tab, Fn keys)	Lots	Terminal software and/or host O/S
Client/server	Y	Keybd, mouse	Mouse	Some	Special runtime and app files
Java applet in a browser	Y	Keybd, mouse	Mouse	Some	Web browser, Java
Light client (not J2EE)	Y	Keybd, mouse	Mouse	Some	Web browser
Light client (Java EE) with AJAX (Web 2.0)	Y	Keybd, mouse	Mouse	Less	Web browser
Mobile (“smart”phone, tablet, e-reader)	Y	Keybd, tap	Tap, swipe	None(?)	Mobile O/S (Android, iOS)

My Lessons Learned

- Mobile is hot
- Mobile is different
- When you go into the woods, you are not alone
- Main challenges: screen size, interface methods
- Mobile will **not** replace desktop
- Two separate mobile “platforms”
- Design for mobile first
- Two-minute task
- Visual not textual



So...

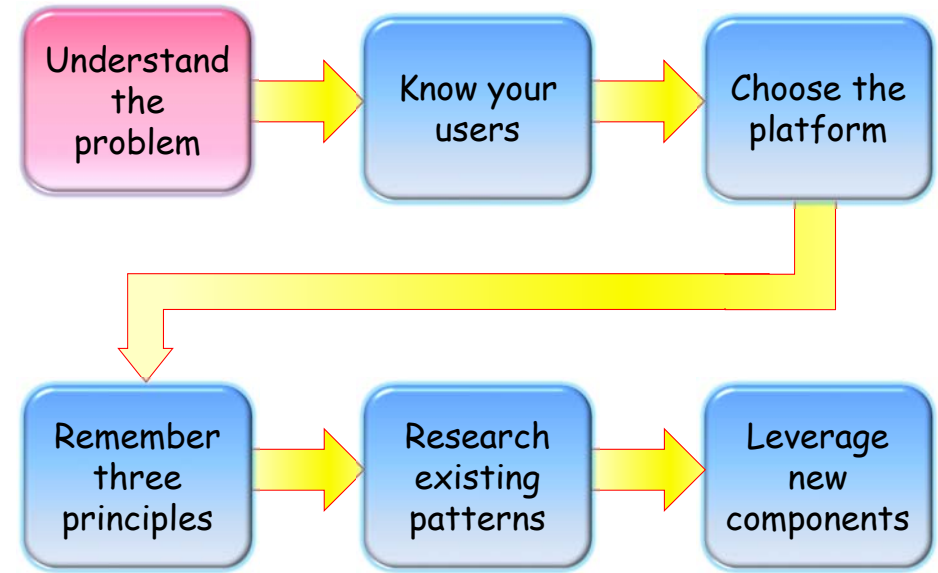
How do I design for a mobile platform?

- The objective of this session
- Example: ADF applications
- Users have **Great Expectations**
 - Less (or no) tolerance for training
 - Less forgiving of non-intuitiveness
 - Short attention span



Agenda

- Brief history of Oracle UIs
- Design steps
- Further study



Mobile is Hot

- Mobile devices of all types
 - Not just PC or Mac
 - Smartphone, tablet, e-reader
- The number of mobile devices has exceeded the world's population
- Apple's 2014 Q4 iPhone revenue > Microsoft and Google revenue



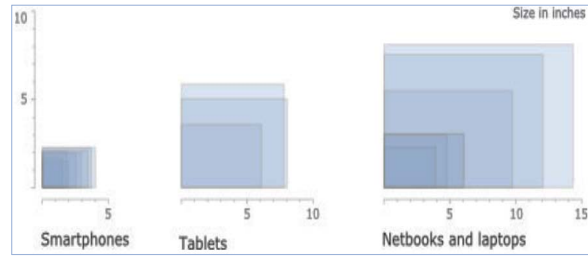
Mobile is Different

- Interface methods
 - Touch and gestures (taps, swipes), voice
 - Keyboard not primary method; no mouse
- Screen
 - Severe size variance
 - Orientation can shift (horizontal or vertical)
- Services
 - Camera
 - GPS
 - Contacts
 - Compass
 - Accelerometer
 - Telephone
 - Text messaging



Primary Challenges

- Display variances



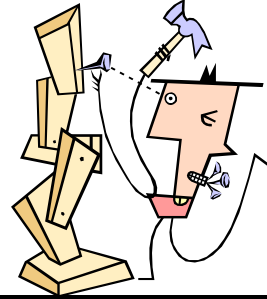
- Interface methods

From *User interface design for the mobile web*, by James Lentz, WebSphere experience architect (July 2011)

- No mouse
- No full-size keyboard
 - Built-in keyboard is clunky at best

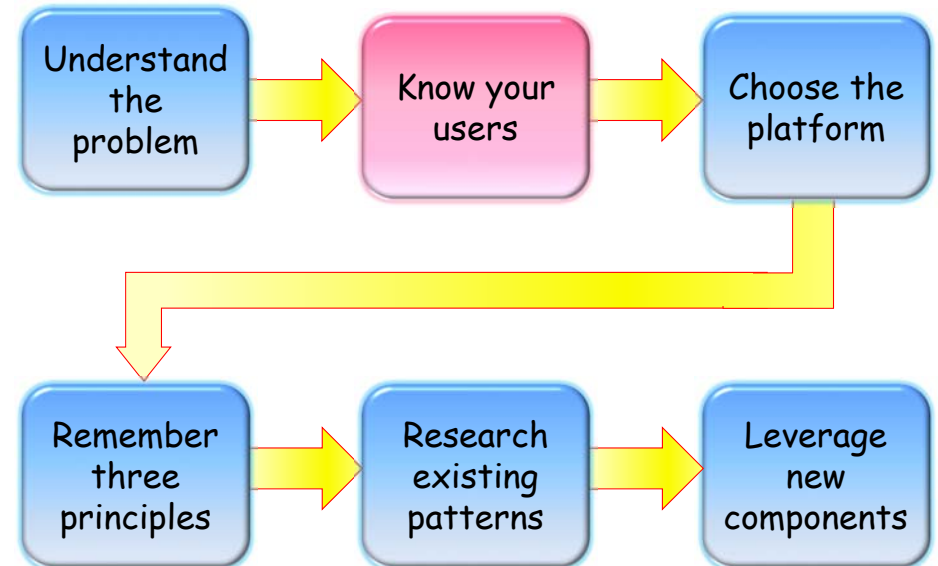
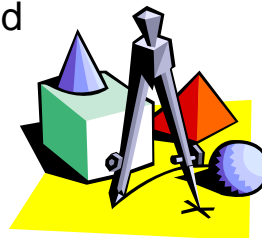
Other Challenges

- A driving force for design is screen size
 - Related force: interface methods
 - The old “display resolution” issue
- Orientation change - portrait to landscape
 - Components can take care of this
- Your mobile app design must accommodate the form factor differences



Preview: Main Solutions

- Display
 - Show important content only
 - Allow drilldowns
- Interface method
 - Use gestures instead of mouse
 - Select or talk rather than type data
 - Big icons to tap for navigation and drilldown



Know Your Users

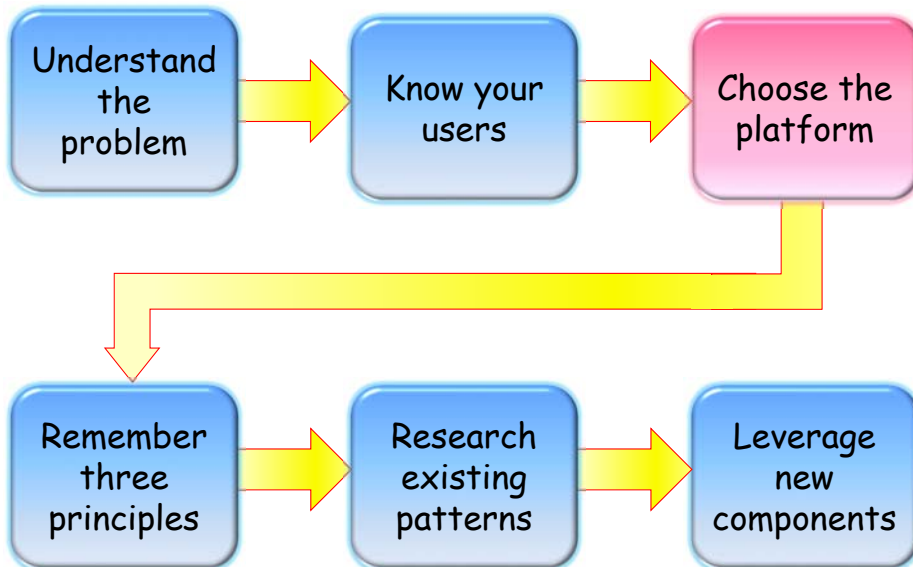
- Where will they be when they run your app?
 - In transit: short attention span, distractions
 - Workplace: attention span can be longer
- Do they always work in a mobile mode?
 - Or, are they always in a workplace and just prefer a mobile device?

a.k.a., Location, location, location



Why Know Your Users?

- Location determines screen real estate
 - Desktop and tablet have similar capacities
 - Smartphone is much smaller
- Two mobile platforms
 - Small mobile: cell phone
 - Tablet/desktop: also e-reader



Does Mobile Make Sense?

- Depends on your users
- Mobile will not replace desktop
 - Still a need for workplace computers
 - Heavy data input, reliable database connection
 - Design tasks, multiple monitors needed
 - Software development, etc.
- Platform determines the toolset
 - Small mobile – use MAF, AMX
 - Desktop/tablet – use ADF



Oracle Tools for Mobile

- Oracle ADF Faces components
 - Serves desktop and tablet – 12.1.3
- Oracle Mobile Application Framework
 - Serves small devices and tablets – 2.1
- One set of design guidelines to rule them all
 - Oracle Alta UI

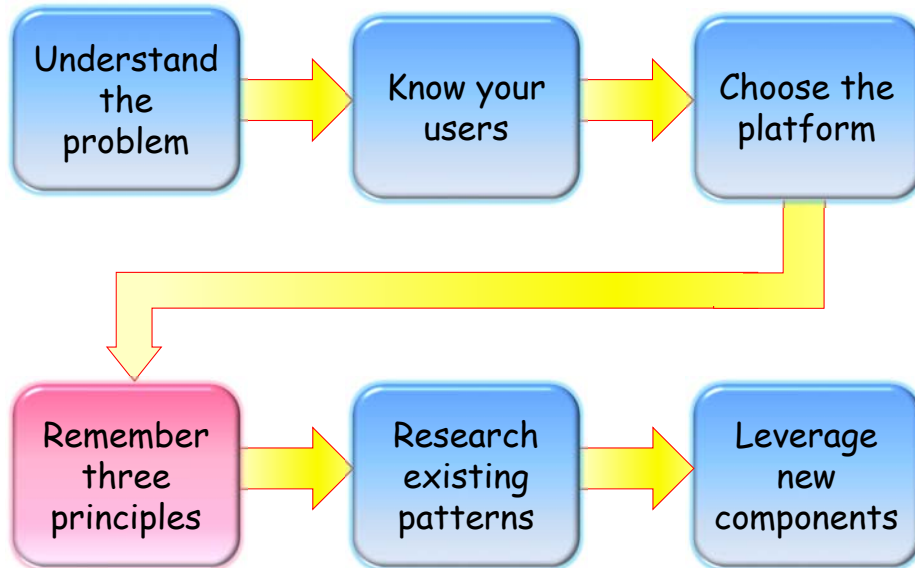
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"One Ring to rule them all, One Ring to find them. One Ring to bring them all and in the darkness bind them."



Mobile Application Framework (MAF)

- ADF development methods
 - Business services
 - Pages (features) with components
 - Task flows
- Supports iOS and Android
- Use local services like camera & contacts
- MAF components (HTML5/Java)
- AMX (application module XML) components
 - Subset of MAF; can be used with MAF



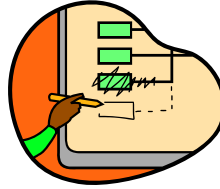
1. Design for Mobile First

- Mobile-designed app can run on desktop
 - Vice versa not always so
- Use the new components
 - Gesture- and orientation-aware
- Design for the narrowest width device
- Use Alta skins, icons, colors



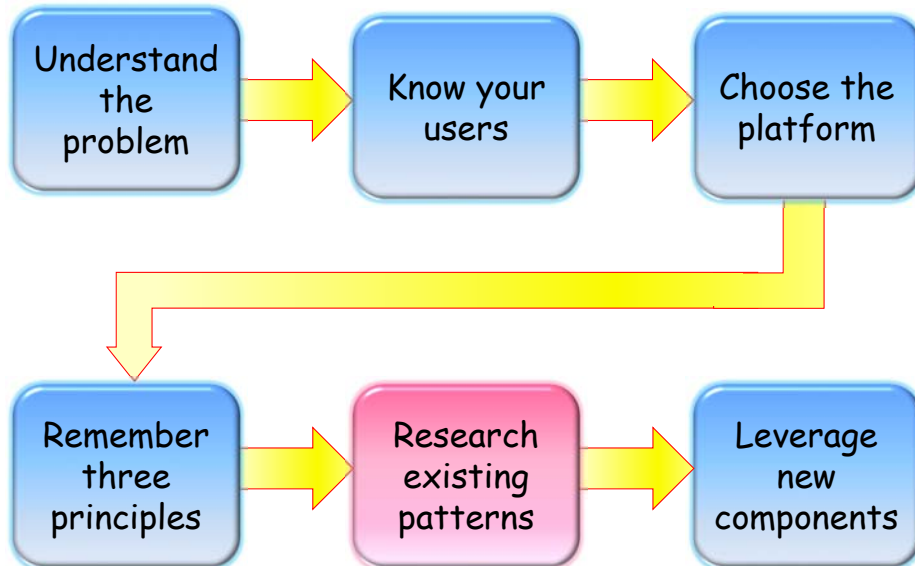
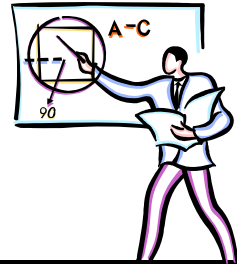
2. Visual, not Textual

- This is really important for success
- Simple design elements – Alta skin
 - Quick to render
 - Flat – few lines, little “chrome,” no gradients or shadows
 - Easy to read
 - Big icons
 - Color to highlight important data
- Emphasize the most important content
 - It must appear regardless of orientation or device
- Offer analytics – visual not textual
 - For quick decisions, but don’t overdo



3. Simple Navigation

- Easy to return to opening page
 - Content, not chrome, provides navigation
- Two-minute tasks
 - Work done in short spurts
 - Solves the short attention span and distractions issues
- Summarize essential data
 - Drilldown to details
 - Information hierarchy



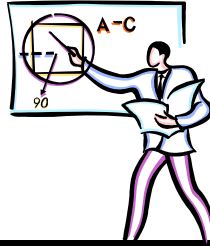
You are Not Alone

- When you go “into the woods” of mobile design
 - Oracle user experience (UX) research
 - For their Cloud (and Fusion) Applications
 - Other vendors, too
- Use results of this research
 - Guidelines - for any toolset
 - ADF components - if you’re doing ADF
 - Learn lessons from those

The woods are just trees; the trees are just wood... No need to be afraid there.
—Stephen Sondheim, *Into the Woods*

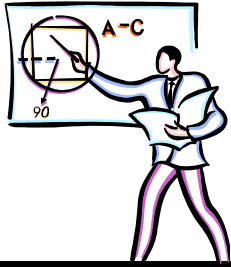
General Guidelines

- Search must be easy
 - Again, select criteria from lists
 - Aim for single field (google-like)
 - Voice-enabled if possible
- Add social features
 - Collaboration, instant messaging, etc.
- Use mobile device services
 - Camera, GPS, contacts



More General Guidelines

- Scroll vertically only
- Use design patterns like “infotile”
 - Tabs containing data (related or not)
 - Drill into/down for details
- Alternative views for same data
 - Card, map
- Data entry using lists if possible



About Oracle Alta UI


- Released at OOW 2014
 - Developed for Oracle Cloud (& Fusion) applications
- Home page
 - bit.ly/oraclealta **OR**
 - www.oracle.com/webfolder/ux/middleware/alta/index.html

Note: Future references to [ALTA_BASE]
= www.oracle.com/webfolder/ux/

ORACLE Alta UI Overview Component Sets Getting Started Gallery FAQ

Engaging Visual Content

Data visualizations and info graphics increase insight



FEATURED & NEW

- Oracle Alta UI Gallery **NEW!**
Get The Most Out Of Oracle Alta UI
- Work Better Demo App
Engaging Visual Content


ALTA UI SITES

- Mobile Design Guidelines
Browser UI Patterns
- Icon Mobile Design Guide
Icon Web Design Guide

To see more Oracle Alta UI samples check out the [ORACLE ALTA UI GALLERY!](#)

CUT THROUGH INFORMATION SMOG AND MAXIMIZE INSIGHT

A key design principle of Oracle Alta UI is to engage users with more visual content. Given the proliferation of mobile devices, social media, internet, and a 24hr news cycle ours is a fast paced, always on, information society. Most people skim web pages rather than fully reading them. This means we need to approach modern application design differently. Modern UIs, like Oracle Alta UI, are much more graphical in nature, moving away from a traditionally text based UI. A picture is worth a thousand words.




STRATEGIC AND THOUGHTFUL PRESENTATION OF INFORMATION IN VISUAL FORM

[ALTA_BASE]middleware/alta/visual-content.html

ORACLE Alta UI Overview Component Sets Getting Started Gallery FAQ

New Development With Oracle Alta UI

Opt-in to the Alta UI skin today!



FEATURED & NEW

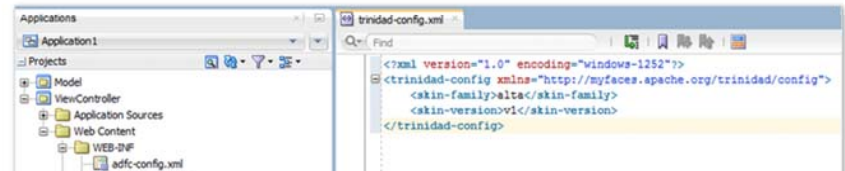
- Oracle Alta UI Gallery **NEW!**
Get The Most Out Of Oracle Alta UI
- Work Better Demo App
Engaging Visual Content

ALTA UI SITES

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Browser UI Patterns
- Icon Mobile Design Guide
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USING THE ORACLE ALTA UI SKIN FOR NEW DEVELOPMENT

The Oracle Alta UI skin is meant for new development and is an opt-in. To use Oracle Alta UI skin instead of Skyros, there are a few configuration steps. You configure your application to use the new skin by specifying values for the <skin-family> and <skin-version> elements in your application's **trinidad-config.xml** file, as shown below.



```
<trinidad-config xmlns="http://myfaces.apache.org/trinidad/config">
  <skin-family>alta</skin-family>
  <skin-version>v1</skin-version>
</trinidad-config>
```

[ALTA_BASE]middleware/alta/new-dev-w-alta-skin.html

ORACLE Alta Icon Web Design Guide

OVERVIEW

Design Objectives

ALTA ICON STYLE

ALTA COLORS

ALTA STYLE PRODUCTION GUIDE


Overview

Oracle Alta Icon Mobile Design Guide Oracle Alta Mobile UI Oracle Alta UI

Design Objectives & Goals

Our primary focus & goal for the Alta Icon Style is to ensure that the icon style translates elegantly on all platforms and devices while providing the flexibility needed to enhance and enrich the user experience of the overall UI experience. The design Objectives is to capture a branded L&F of an icons system that is:

FLEXIBLE in structure
LIGHTWEIGHT in rendition
CONTEMPORARY in expression
DIVERSE in translation



ALTA LOOK & FEEL
Experienced On
ALL PLATFORMS & DEVICES

[ALTA_BASE]middleware/alta_icon_web_design_guide/index.html

ORACLE Alta UI Patterns

INTRODUCTION

PAGE LAYOUT

- Branding Area
- Drawer
- Footer

PAGE TYPES

- Home Page
- Dashboard
- Master Detail
- Forms
- Wizard
- About Page

NAVIGATION

Introduction

Design Motivation

- Cloud and Mobile** --The Oracle Alta UI is both a visual design, as well as a layout approach (i.e., Look and Feel). The motivation behind the Oracle Alta UI is to enable applications deployed to the Cloud and used on Mobile clients to present a compelling and comfortable UI.
- Performance** -- For both Cloud and Mobile UIs, performance is key. The Oracle Alta UI advocates simpler page constructions to gain better performance.
- Adaptive/Responsive Design** -- Responsive Design allows the same semantic markup to layout appropriate UI designs at different browser display widths, therefore, the same web page can support multiple devices. Oracle Alta UIs are conducive to responsive design. That is, a product team may option to apply responsive design techniques to enhance the Oracle Alta UI without change to the Look and Feel.

This motivation has led us to make a number of design choices, such as:

- Less dense, light layouts**
- Reduced noise** in the UI chrome -- UI designers can make page content stand out because there is less UI chrome with which to visually compete. This is achieved by:
 - A lighter, flatter visual design
 - Buttons, menus, and other UI components that are larger to support a less dense look and offer a larger target for touch input.

[ALTA_BASE]middleware/alta/patterns/index.html

ORACLE Alta UI Overview Component Sets Getting Started Gallery FAQ

Design & Develop

Getting started with Oracle Alta UI

FEATURED & NEW

- Oracle Alta UI Gallery **NEW!** Get The Most Out Of Oracle Alta UI
- Work Better Demo App Engaging Visual Content

ALTA UI SITES

- Mobile Design Guidelines
- Icon Mobile Design Guide
- Browser UI Patterns
- Icon Web Design Guide

GETTING STARTED FOR DESIGNERS DEVELOPERS

DEVELOPING ORACLE ALTA UI APPLICATIONS

Oracle Alta UI is an all new design system. Those who adopt the entire design system will get the greatest benefit. The new Oracle Alta UI design patterns, skin, and emphasis on visual content work hand in hand in the creation of compelling Oracle Alta UI Style applications.

[ALTA_BASE] middleware/alta/start-design.html

ORACLE Alta UI Overview Component Sets Getting Started Gallery FAQ

Component Sets

Develop Browser & Mobile Applications

FEATURED & NEW

- Oracle Alta UI Gallery **NEW!** Get The Most Out Of Oracle Alta UI
- Work Better Demo App Engaging Visual Content

ALTA UI SITES

- Mobile Design Guidelines
- Icon Mobile Design Guide
- Browser UI Patterns
- Icon Web Design Guide

ADF FACES

Use **ADF Faces** when you need an application running in a browser. ADF Faces is a large set of Ajax-enabled JSF components that let you build a very rich user interface for your Java EE applications.

ADF Faces is declarative in nature and insulates

MAF - AMX

Use the **Mobile Application Framework (MAF)** when you need an on-device application that looks like a native app, can access device features and/or work offline. With MAF you can build and extend native-like enterprise

[ALTA_BASE] middleware/alta/framework.html

Oracle Alta Mobile UI

- Subset/wing of Oracle Alta UI
- Oracle Alta Mobile Design Guidelines
 - Style
 - Custom color palette, icons, fonts, skin
 - Components
 - MAF
 - Patterns
 - Examples

For desktop/tablet apps, look for "Browser UI" or "Web UI" examples.

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ORACLE Alta Mobile UI Home Style Components Patterns Examples Help

Mobile Design Guidelines

A design system for mobile app design & development.

ALTA UI SITES

- Alta UI Website
- Alta Mobile Icon Guide
- Alta Web Icon Guide

STYLE

Learn the Alta style

COMPONENTS

Use MAF building blocks

PATTERNS

Find design solutions

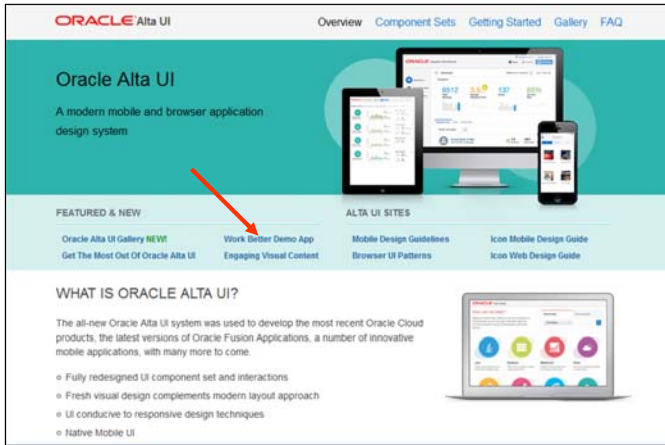
EXAMPLES

View demos and samples

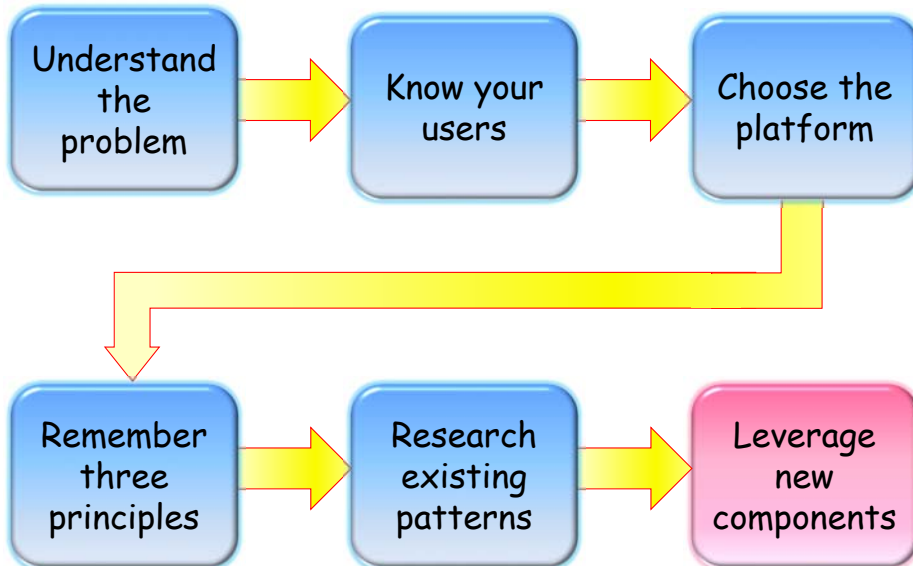
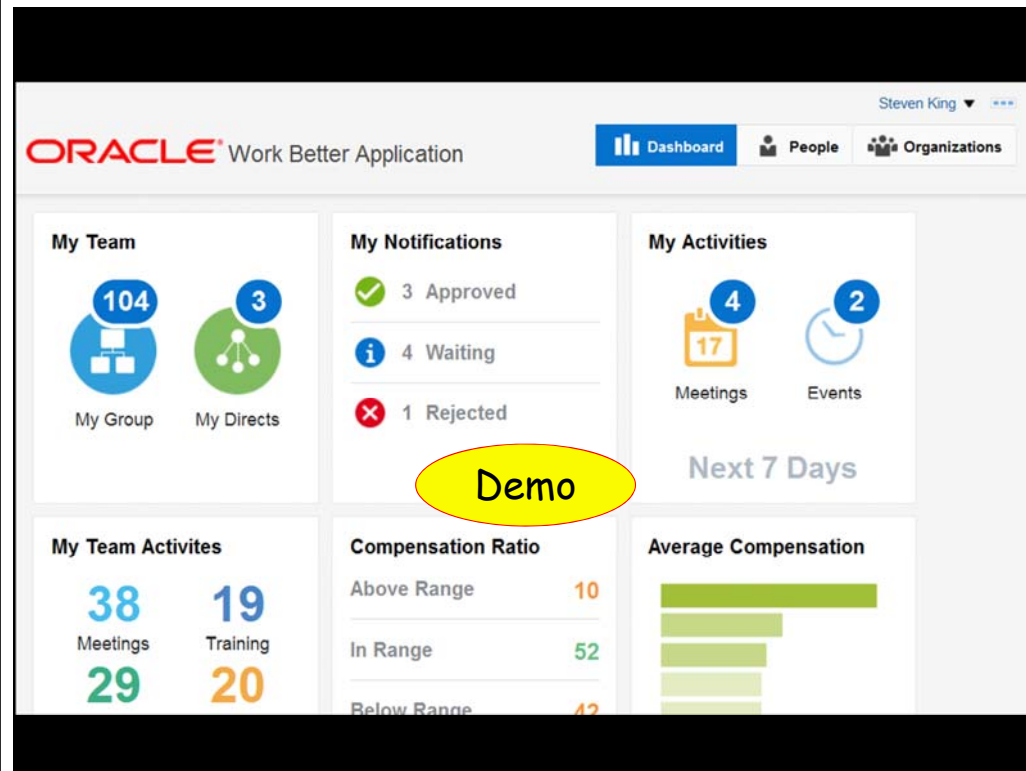
[ALTA_BASE] mobile/index.html

What About Examples?

- Oracle Alta UI website
 - Work Better demo app



jdevadf.oracle.com/workbetter/faces/index.jsf



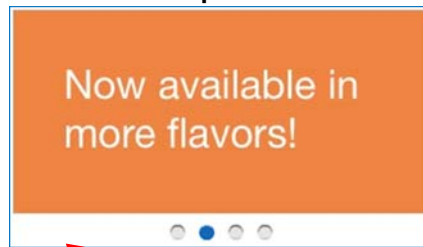
ADF Faces 12c - 12.1.3

- Application Development Framework
- Offers new components that support multiple interface paradigms
 - Finger tap on a mobile device == mouse click on a desktop device
 - Rendering accommodates varying sizes and orientations
- Backported to 11g
 - 11.1.1.7 used for Fusion Apps



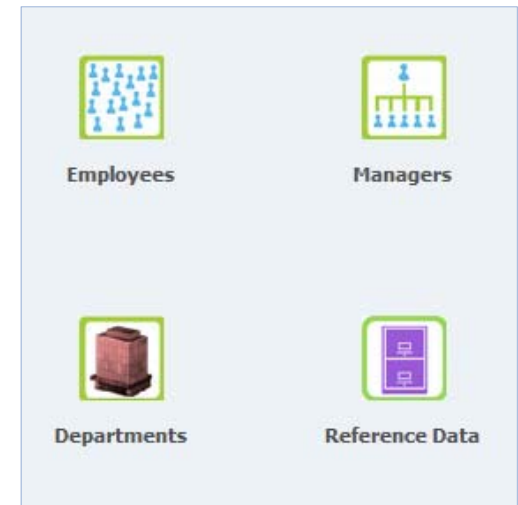
"New" ADF Faces Mobile Components

- Panel Springboard
- Panel Drawer
- List View
- Others
 - Card Deck (af:deck)
 - Transition (af:transition)
 - Child of a component that supports transitions
 - Diagram (dvt:diagram)
 - Led gauge (dvt:ledGauge)
 - Dial gauge, Status Meter Gauge

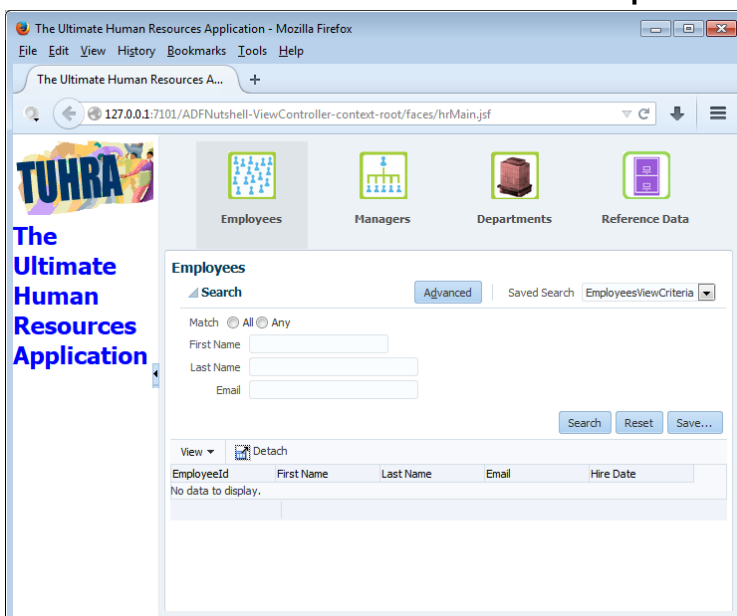


Panel Springboard - Navigation

- Not a pulldown or a list
- Graphical
 - Iconic
- Uses
 - Apps store
 - App functions

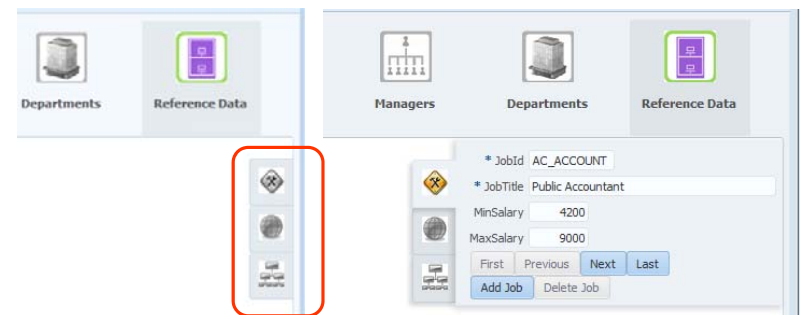


On a Tablet or Desktop



Panel Drawer - Alternative to Tabs

- Animated content display

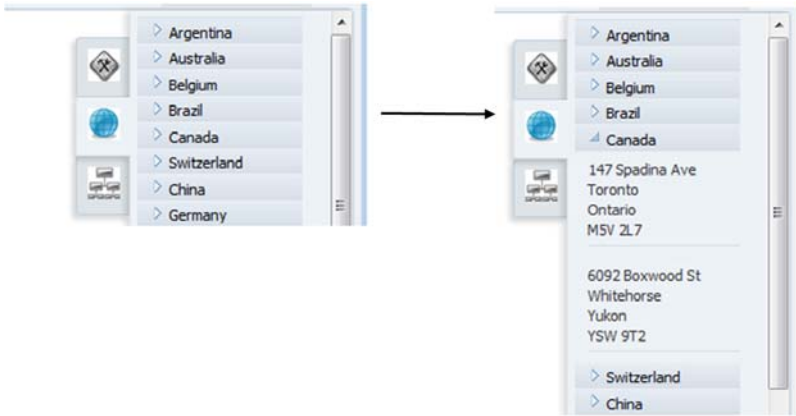


Collapsed

Extended

List View - Data Display

- Abbreviated list (not table of all values)
- List expands to show more data



Panel Springboard

- ADF Faces: af:panelSpringboard
- MAF: adfmf:springboard
- Container for af:showDetailItem
- *displayMode*: set to grid or strip

```
<af:panelSpringboard id="ps2" displayMode="grid">
  <af:showDetailItem text="Employees" id="sdil"
    icon="/images/peopleOff.png">
    <af:region value="#{bindings.empflow1.regionModel}"
      id="r1"/>
  </af:showDetailItem>
  <af:showDetailItem text="Managers" id="sdi2"
    ...
</af:panelSpringboard>
```

Properties Omitted
icon Depressed,
iconDisabled,
iconHover

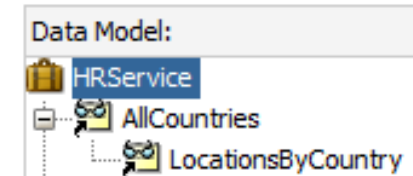
Panel Drawer

- ADF Faces: af:panelDrawer
- MAF: not available
- Container for af:showDetailItem
- *position*: right, left, etc.

```
<af:panelDrawer id="pd1" position="right">
  <af:showDetailItem text="Jobs" id="sdi5"
    icon="/images/toolsOff.png">
    <af:region value="#{bindings.jobflow1.regionModel}"
      id="r4"/>
  </af:showDetailItem>
  <af:showDetailItem text="Locations" id="sdi6"
    icon="/images/globeOff.png">
    ...
</af:panelDrawer>
```

List View

- ADF: af:listView
- MAF: adfmf:navigationBar
- Container for af:listItem (e.g., Locations)
- Optional groupHeaderStamp facet
– Content for heading of the group
- Model project objects
needed to supply data



List View Page Definition

```
<bindings>
  <tree IterBinding="AllCountriesIterator" Id="AllCountries">
    <nodeDefinition
      DefName="adfnutshell.model.views.CountriesView"
      Name="AllCountries0">
      <AttrNames>
        <Item Value="CountryName" />
      </AttrNames>
      <Accessors>
        <Item Value="LocationsView" />
      </Accessors>
    </nodeDefinition>
    <nodeDefinition
      DefName="adfnutshell.model.views.LocationsView"
      Name="AllCountries1">
      <AttrNames>
        <Item Value="StreetAddress" />
        <Item Value="City" />
      </AttrNames>
    </nodeDefinition>
  </tree>
</bindings>
```

The heading for zero to many locations

Allows listView to access Locations attributes

```
<af:listView
  value="#{bindings.AllCountries.treeModel}" var="item"
  fetchSize="#{bindings.AllCountries.rangeSize}" id="lv1">
  <af:listItem id="li1">
    <af:panelGroupLayout id="pgl1" layout="vertical">
      <af:outputFormatted
        value="#{item.bindings.StreetAddress.inputValue}"
        id="of1" />
      ...
    </af:panelGroupLayout>
  </af:listItem>
  <f:facet name="groupHeaderStamp">
    <af:listItem id="li2">
      <af:panelGroupLayout id="pgl2">
        <af:outputFormatted
          value="#{item.bindings.CountryName.inputValue}"
          id="of5" />
        </af:panelGroupLayout>
      </af:listItem>
    </f:facet>
  </af:listView>
```

List View Code Example

List View for Navigation

EmployeeId	First Name	Last Name	En
109	Daniel	Faviet	DF
110	John	Chen	JC
111	Ismael	Sciarra	IS
112	Jose Manuel	Urman	JM
113	Luis	Popp	LP

See the white paper and hands-on practice for implementation details.

Agenda

- Brief history of Oracle UIs
- Design steps
- Further study



Oracle Website

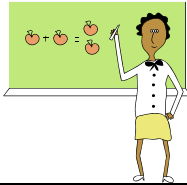
- Oracle Technology Network
 - MAF home page
 - ADF home page
 - OTN demo videos
 - ADF Academy videos
- Chris Muir - design principals on YouTube
 - UI Development in Oracle MAF series
 - Part 12: Mobile UI Design Strategies
 - bit.ly/1Bch45B

www.oracle.com/technetwork/developer-tools/maf



From Shay Schmeltzer, Oracle PM Extraordinaire

- Introduction
 - https://blogs.oracle.com/shay/entry/a_guide_to_developing_your
 - https://blogs.oracle.com/jdeveloperpm/entry/get_the_oracle_alta_ui
- Building with Oracle Alta UI
 - *Oracle Alta UI Development with Oracle ADF Faces*
 - Related blog is mentioned in the Youtube notes
 - www.youtube.com/watch?v=oUNdxY7L-3w



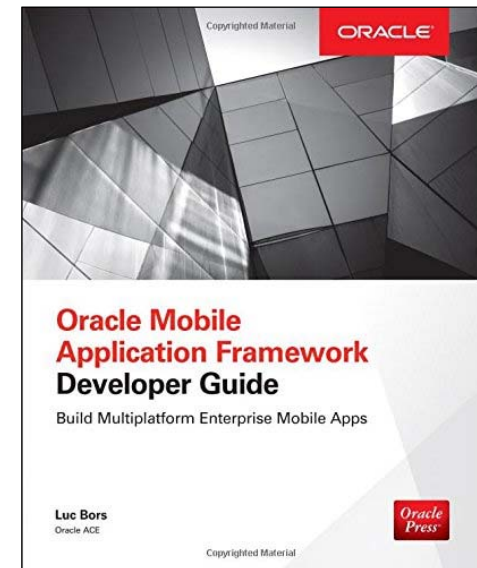
Non-Oracle Perspectives

- *User Interface Design for the Mobile Web*, James L. Lentz, July 2011
 - <http://www.ibm.com/developerworks/library/wa-interface/>
- *20 Beautiful Mobile User Interface For Your Inspiration*, Nancy Young
 - www.hongkiat.com/blog/mobile-app-ui/



A MAF Must Have

- Luc Bors
- Oracle Press
- All you need to know to start working with MAF once design is complete



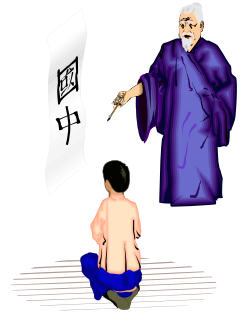
Quote

To be happy in this world,
first you need a cell phone
and then you need an airplane.
Then you're truly wireless.

— Ted Turner (1938-)

My Lessons Learned

- ✓ Mobile is hot
- ✓ Mobile is different
- ✓ When you go into the woods, you are not alone
- ✓ Main challenges: screen size, interface methods
- ✓ Mobile will not replace desktop
- ✓ Two separate mobile “platforms”
- ✓ Design for mobile first
- ✓ Two-minute tasks
- ✓ Visual not textual



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- Please fill out the evals
- Books co-authored with Dr. Paul Dorsey, Avrom Roy-Faderman, & Duncan Mills

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