Design Modernization Case Study: Applying Mobile App Design Principles to the UTOUG Website

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Survey

- Job responsibilities?
  - DBA, developer, graphics designer
- Development tools?
  - APEX
  - Developer Forms/Reports
  - ADF and Java
  - JavaScript tools
  - MAF
  - PL/SQL and SQL
Agenda

- Why is application design different now?
- App design principles and standards
- UTOUG website modernization

Slides will be available on the UTOUG website.

Quiz
HOW DID WE GET HERE?

In the Beginning Was...

- The “dumb” terminal
- Character mode
- PF and Fn keys!
- Training!

IAF to SQL*Forms 2.0 to Oracle Developer Forms 6
And Oracle Created …

• …tools for client/server applications
• Graphics!
• Mouse!

SQL*Forms 4.0 to Oracle Developer Forms 6.0

Client/server Begat 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 12c
TYoTI Begat the Next Year of the Internet...

- ... lightweight web apps
- Browser only!
- HTML rules!

Oracle UIX

TYoTI Begat Another Year of the Internet...

- More web apps
- Interactive Forms-like components!
- Single page!

Oracle ADF
Faces 10g to 12c
Today

- Mobile-oriented
- Tap/swipe
- “Intuitive!”

**Oracle ADF, Oracle MAF, Oracle JET, Oracle MAX**

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### Comparing UI Devices

<table>
<thead>
<tr>
<th>Display Paradigm</th>
<th>Graphics</th>
<th>Data Input</th>
<th>Navigation</th>
<th>User Training</th>
<th>Display Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Character mode “dumb” terminal</td>
<td>N</td>
<td>Keybd</td>
<td>Mouse</td>
<td>None</td>
<td>Terminal software and/or host O/S</td>
</tr>
<tr>
<td>Client/server</td>
<td>Y</td>
<td>Keybd/mouse</td>
<td>Mouse</td>
<td>Some</td>
<td>Special runtime and app files</td>
</tr>
<tr>
<td>Java applet in a browser</td>
<td></td>
<td>Keybd/mouse</td>
<td>Mouse</td>
<td>Some</td>
<td>Web browser, Java</td>
</tr>
<tr>
<td>Light client (not J2EE)</td>
<td></td>
<td>Keybd/mouse</td>
<td>Mouse</td>
<td>Some</td>
<td>Web browser</td>
</tr>
<tr>
<td>Light client (Java EE) with AJAX (Web 2.0)</td>
<td>Y</td>
<td>Keybd/mouse</td>
<td>Mouse</td>
<td>Less</td>
<td>Web browser</td>
</tr>
<tr>
<td>Mobile (“smart”phone, tablet, e-reader)</td>
<td>Y</td>
<td>Keybd/tap</td>
<td>None(?)</td>
<td>None(?)</td>
<td>Mobile O/S (Android, iOS, Win10 tablet)</td>
</tr>
</tbody>
</table>
User Interface Trends

- Keypresses
- Training
- Mouse
- Graphics
- Tap/Swipe

Char mode "dumb" terminal | Client/Server | Applet in a browser | Light client (pre-J2EE) | Light client (J2EE+) | AJAX (Web 2.0) | Mobile ("smart" device)

Today’s Computing Playing Field

- The number of mobile devices has exceeded the world’s population
- Mobile computing is here to stay
- Users have Great Expectations
  - Less (or no) tolerance for training
  - Short attention span
    - Computing while walking through the parking lot
- This impacts application UI design
Foundation of Modern UI Design

• Business applications need to comply with mobile “standards”
  – Even if they do not support mobile
• Mobile device user interfaces set the bar
  – Intuitive
    • Three-second user acceptance time
  – Touch interface – tap/swipe
  – Mobile device features: camera, GPS, texting
  – Short tasks
  – Orientation changes

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THE MAIN CHALLENGE

Display Size Variances

- Severe size variance - the old display resolution issue
- Orientation can shift – portrait, landscape

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

Smart Phone
**TOP 20 DESIGN PRINCIPLES**

**Principle #1: Design for Mobile First**

- Use modern components
  - Gesture- and orientation-aware
  - Automatic resizing and relocation
- If supporting mobile-only
  - Incorporate mobile device services
    - Camera, GPS, contacts
- Add social features
  - Collaboration, instant messaging, etc.
More #1: Design for Mobile First

- Use design patterns
  - Oracle Alta UI skins, icons, colors
  - For example, “infotile”
    - Tabs containing data (related or not)
    - Drill into/down for details
- Test on the narrowest width device
  - View reacts to orientation shift
  - Tiles move with width change
  - Containers and contents resize automatically
  - “No horizontal scrolling.”

Principle #2: Visual not Textual

- Really important for success
- Simple design elements
  - Quick to render
  - Flat – few lines, little “chrome,” no gradients or shadows
- Easy to read
  - Saturated colors for competition with ambient light
  - Use color to highlight important data
  - Big icons and buttons
  - Text uses large fonts
More #2: Visual, not Textual

• 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

Principle #3: Simple Navigation

• Easy to return to opening page
  – Content, not chrome, provides navigation
  – Breadcrumbs
• Two-minute tasks
  – Work done in short spurts
  – Solves the short attention span and distractions issues
• Summarize essential data
  – Drilldown to details
    • Information hierarchy
• Shallow menus (2 levels)
More #3: Simple Navigation

- Search must be easy
  - Select criteria from lists
  - Aim for single field (google-like)
  - Voice-enabled, if possible
- Scroll vertically only
- Alternative views for same data
  - Card, map, list
- Data entry using lists if possible

A SAMPLE STANDARD

STANDARD
Oracle Alta UI

• Released at OOW 2014
  – Developed for Oracle Cloud (f.k.a., Fusion) applications
  – Part of Oracle’s UX effort

• Home page
  – bit.ly/oraclealta OR
Tips

Make your application shine!

Getting The Most From Oracle Alta UI

Get the most out of the Oracle Alta UI design system by embracing the entire system. Products that make the most of Oracle Alta UI are designed around the Oracle Alta UI Design Principles including layouts, responsive designs, Alta skin, components and approaches for visually presenting content to users in a clean, uncluttered and highly consumable way.

Utilize modern layout approaches

- Simpler, less dense, uncluttered layouts
- Favors flowing pages conducive to mobile and responsive
- Allows for flexible configurations
- Emphasis on fewer elements and cleaner designs
- Minimal UI chrome with fewer nested borders and lines

Design For Mobile First

- Layouts fit within a tablet display width and are allowed to flow vertically
- Avoid vertically stretching layouts, to permit responsive design
- Incorporate responsive design techniques
Feature the Oracle Alta UI skin

- Fresh visual design complements modern layout approach
- Minimal UI chrome with fewer nested borders and lines
- More spacious padding and spacing
- Larger text, buttons and touch targets

Oracle Alta UI Design Patterns Browser - Mobile | New Development With Oracle Alta UI Skin

Use the new Oracle Alta UI Icon System

- Flexible in structure
- Lightweight in rendition

Use the new Oracle Alta UI Color Palette

- Extends the Oracle Alta UI Icon Palette
- Mix and match colors
- Create a seamless visual language with color
- Noticable and engaging primary messaging colors
- Clean and soft complimentary colors add fresh appeal

Oracle Alta UI Color Palette | Icon Palette

Engage users with more visual content

- Strategically use data visualizations and info graphics
Design for all users

Highly visual user interface designs can be made accessible; in fact, they can enhance accessibility. For example, visuals are especially helpful to people with some cognitive disabilities. Some things to consider:

- Content which enlarges, sufficient color contrast, and no reliance on specific colors help people with low vision.
- Text equivalents (e.g., alternative text for images) and semantic identification (e.g., things that look like buttons, labels and headings are identified as such) help people who are blind.
- Supplying audio information as text (e.g. captions or transcripts) helps people with hearing impairments.
- Ensuring everything can be done from the keyboard helps people with motor disabilities or who need to use voice recognition.
- Simpler layouts, understandable labels and instructions, and consistency of the design help people with cognitive disabilities.

More about Accessibility [W3C Designing for Inclusion]

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Visual

**Visual Content**

Data visualizations and info graphics increase insight

See more UI samples in the Oracle Alta UI Gallery and in the Examples page!

**Cut Through Information Smog And Maximize Insight**

A key design principle of Oracle Alta UI is to engage users with more visual content. Use of visual and typographical techniques make modern application pages more easily consumable and more pleasurable to use.

**Strategic Use Of Visual Content**

- Makes pages more browsable
- Makes important information pop
Oracle Alta UI Gallery

www.oracle.com/oaux
Oracle Applications User Experience

- Implements UX and Alta UI principles
- UX Rapid Development Kits
- Blog: blogs.oracle.com/oaux
- Working applications
- “Wireframe” templates
  - Powerpoint objects you can use for design purposes
- eBook instructions
- Video instructions
- Built for cloud applications but use it for custom apps, too

Work Better - ADF
Agenda

• Why is application design different now?
• App design principles and standards
• UTOUG website modernization
**Principle #1: Design for Mobile First**

- Modern components
  - Gesture, orientation
  - Auto resize
- Social Features
- Mobile-only
  - Not applicable
- Test on smallest device

**Principle #2: Visual Not Textual**

- Simple design elements
  - Flat graphics
- Easy to read
  - Saturated color
  - Color highlights
  - Big icons and text
- Most important content first
- Analytics
  - Graphs not text
Principle #2: Visual Not Textual p2

Principle #3: Simple Navigation

- Easy return to previous page
- Alternative views of same data
- 2-minute tasks
- Summarize essential data (N.A.)
- Shallow menu
- Scroll vertically only
- Easy search
Another Resource

- https://developers.google.com/search/mobile-sites/
- Mobile friendliness site tester
- What to consider when hiring a web developer (!?)

From Shay Schmeltzer, Oracle Guru 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
Examples: JET

- JavaScript Extension Toolkit
- FixIt Demo
- Work Better Demo

Non-Oracle Perspectives

- User Interface Design for the Mobile Web, James L. Lentz, July 2011
- 20 Beautiful Mobile User Interface For Your Inspiration, Nancy Young
  - www.hongkiat.com/blog/mobile-app-ui/
- Smashing Magazine
- Code My Views
  - https://codemyviews.com/blog/mobilefirst
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-)

Summary

• Mobile apps have raised the bar for UI design
• Remember Top Three Principles
  – Design for mobile first
  – Visual not textual
  – Simple navigation and display
• Start with prebuilt, proven patterns in Alta UI
• Use modern components
• Test using multiple devices
• Please fill out the session evaluation
• 7 of 8 books co-authored with Dr. Paul Dorsey, Avrom Roy-Faderman, & Duncan Mills
• Slides are on the UTOUG website.

APPENDIX A: TECHNIQUES
Example: ADF

- Application Development Framework 12c - R12.2.1
- 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
  - 11.1.1.9 used for Fusion Apps
- Most are also available in MAF
  - Mobile Application Framework

“New” ADF Faces Mobile Components

- Panel Springboard
- Panel Drawer
- List View
- Others
  - Card Deck (af:deck)
  - Diagram (dvt:diagram)
  - Led gauge (dvt:ledGauge)
  - Dial gauge, Status Meter Gauge

Now available in more flavors!
Panel Springboard - Navigation

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

On a Tablet or Desktop
Panel Drawer - Alternative to Tabs

- Animated content display

List View - Data Display

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