Rapid UI Prototyping Using Qt Quick

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We put stunning user experiences on the road.
Agenda

• Prototyping
• Prototyping with QML
• Prototyping with QML Demo
Prototyping
Prototyping

• Allow users to evaluate design proposals
• Feedback based on try-out
  – in contrast to read a description
Evolutionary Prototyping

- Build a structured prototype
- Constantly refine it
- Can become the product

...evolutionary prototyping acknowledges that we do not understand all the requirements and builds only those that are well understood.
Elements of User Experience

Surface
• Images, Text

Skeleton
• Placement of Buttons, Tabs, Photos, …

Structure
• Navigation and Data Hierarchy

Scope
• Features and Functions

Strategy
• Business Benefits

Source: THE ELEMENTS OF USER EXPERIENCE, Jesse James Garrett
UI Development

Wireframes
Graphics
Motion
Prototype

Structure
Skeleton
Surface
Surface
Tool
HMI Stack

- Motion
- Graphics
- Wireframes

Diagram:
- Home
- Movies
- Music
- Settings
  - Genres
  - Albums
    - Movie List
    - ...
    - ...
    - ...
    - ...
    - ...
    - ...
    - ...
    - ...
    - ...
    - ...

Evolutionary Prototype

Interaction Design -> Graphics Design

Development

Simulation

Product

UI
Real Backend

Simulated Backend

input feedback
review
Prototyping with QML
Information Flow

Requirements → UI Specification → Frontend → Backend → OS → Acceptance Test
Typical QML Based System

Frontend
- System UI
- Application Views
- Controls

Backend
- QML Plugins
- Services

API
Prototyping Environment

Frontend

- User Interface
- Mocked Controls

API

QML Backend Simulation
Practical Considerations

- Fast round trip time
- Simplified user interface
- Easy export of assets
- Easy access to data
- Verifiable on hardware
- Open to evolve
Toolset

- Balsamiq – UI Wireframing
- PNG Express – Photoshop export
- Sketch – Vector Drawing (Mac only)
- Qt Creator – The IDE for Qt
- QmlLive – live code viewer
- JSON data via REST API
- Many QML techniques
DEMO
Prototyping with QML
Pixy

Pixy - A corner for music lovers

1. Cat
2. Fish
3. Dog

* A list of albums with cover thumbnails and album names. When clicked, opens the album's viewer.
* A search field to filter results.
* Larger view on selected album cover with album information.
* Navigate back to album list.

Pixy

Paradise / Coldplay
Charlie Brown / Coldplay
Don't Panic / Coldplay
Shiver / Coldplay

Charlie Brown
Demo

• Part 1 – Structure, Skeleton
  – Mocking a Wireframe UI
• Part 2 – Surface
  – Adding Graphics, Polishing
• Part 3 – Backend API
  – Enabling Data
Conclusion
Conclusion

• Work close with Designers
• Inject yourself early in the creation pipeline
• Evolutionary Prototype becomes Product
• Clear separation between Frontend and Backend
• Prioritize communication
• Qt is often only one of many options for UI
References

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• Qt - http://www.qt.io
• PNG Express - http://www.pngexpress.com
• Sketch - http://bohemiancoding.com/sketch/
• Pixy - https://github.com/jryannel/pixy
• QmlLive - https://github.com/Pelagicore/qmllive
• Data Provider - https://github.com/Pelagicore/mock-dataprovider