Using Agile to Develop Mobile Apps

Xelaration – IBM Rational Seminar

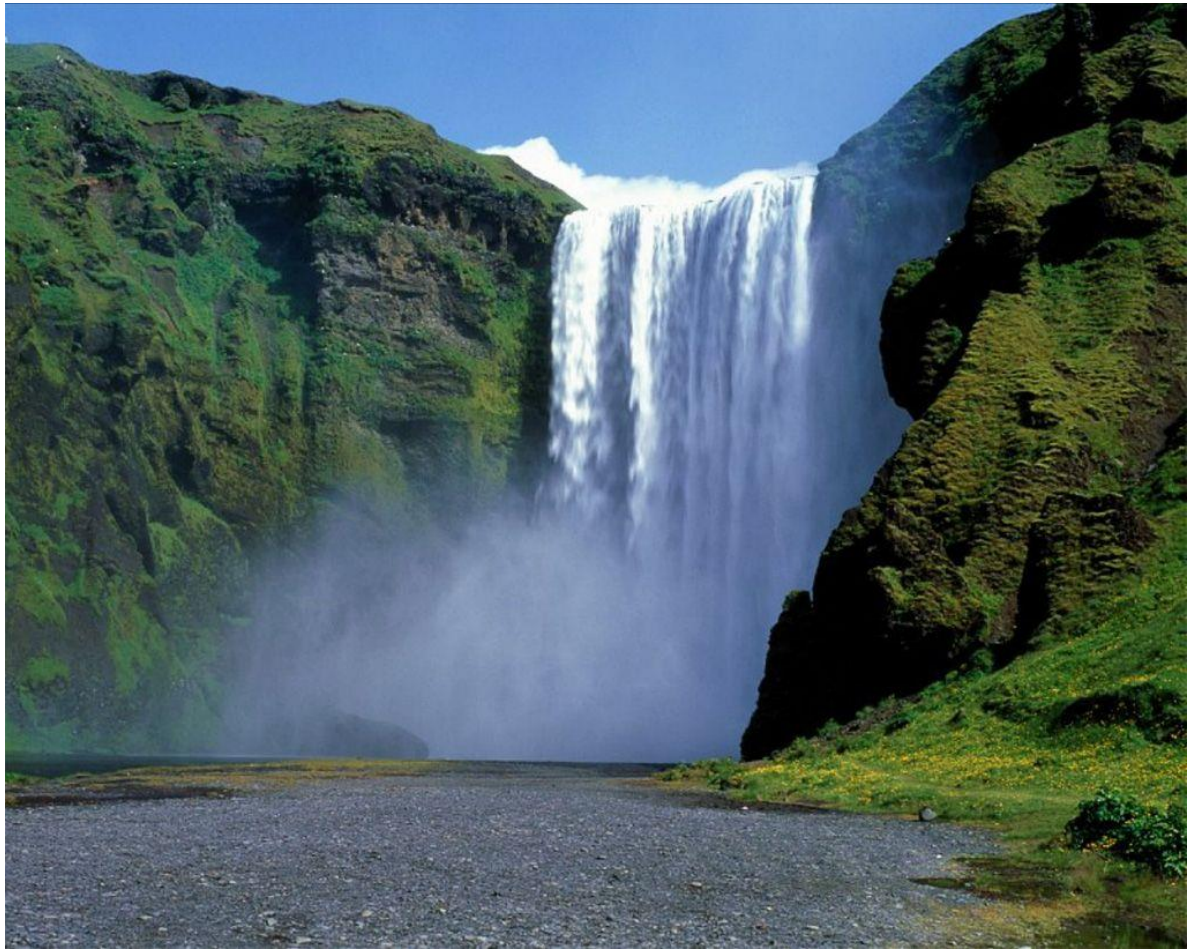
May 29, 2013

Agenda

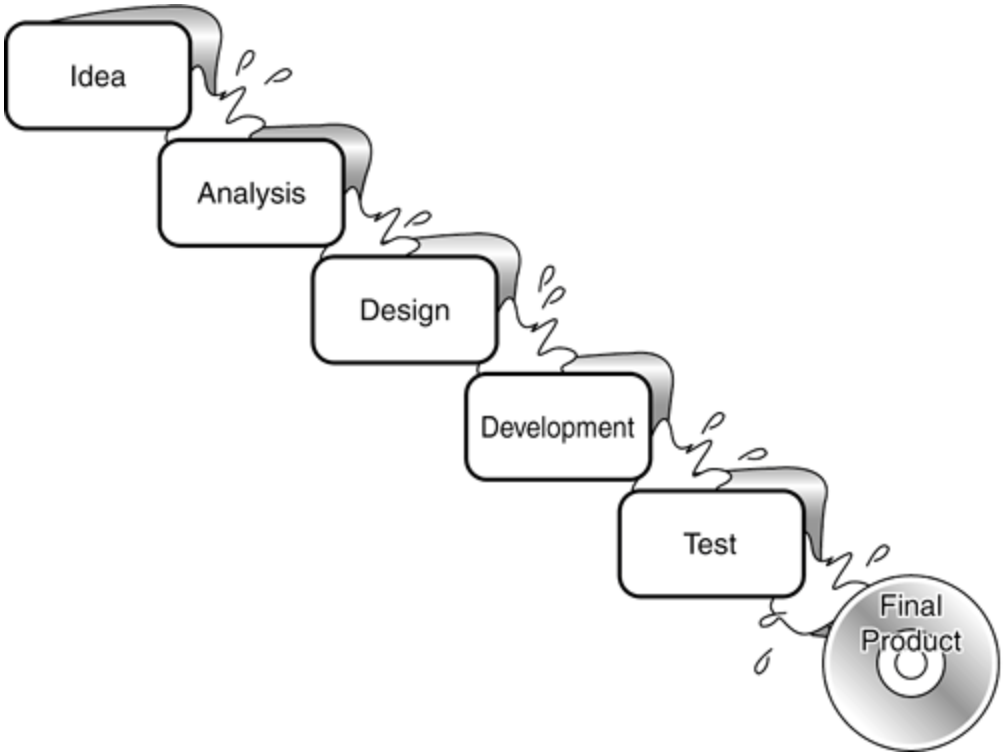
- Agile
  - From waterfall to agile
  - Agile properties
  - Traditional versus agile
  - Agile for mobile apps, why not!
- Mobile apps development
  - Mobile apps landscape
  - Different kinds of mobile apps
  - Mobile apps development strategies
  - Is ASO the new SEO?
- Case study

Agile

Waterfall (Traditional) Lifecycle



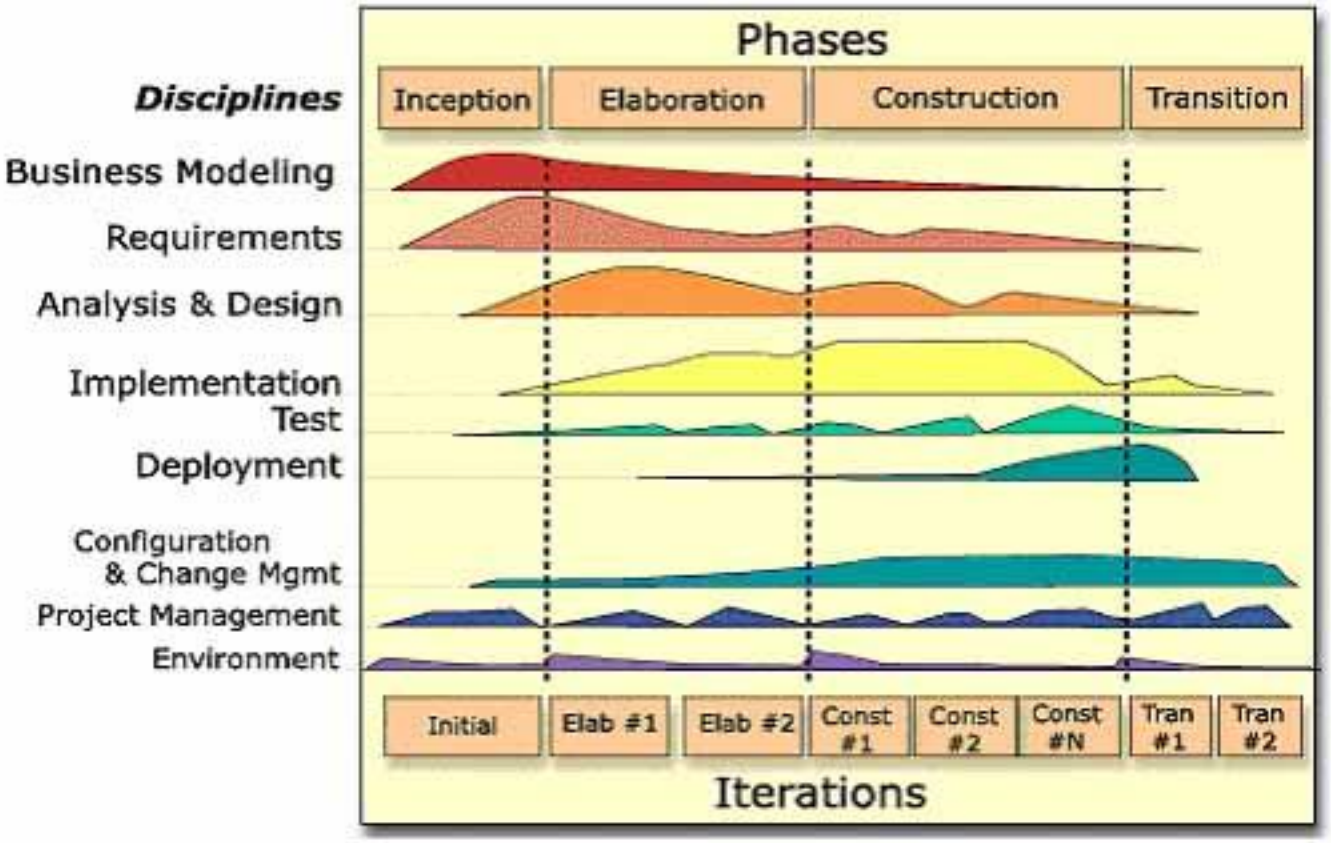
Waterfall (Traditional) Lifecycle



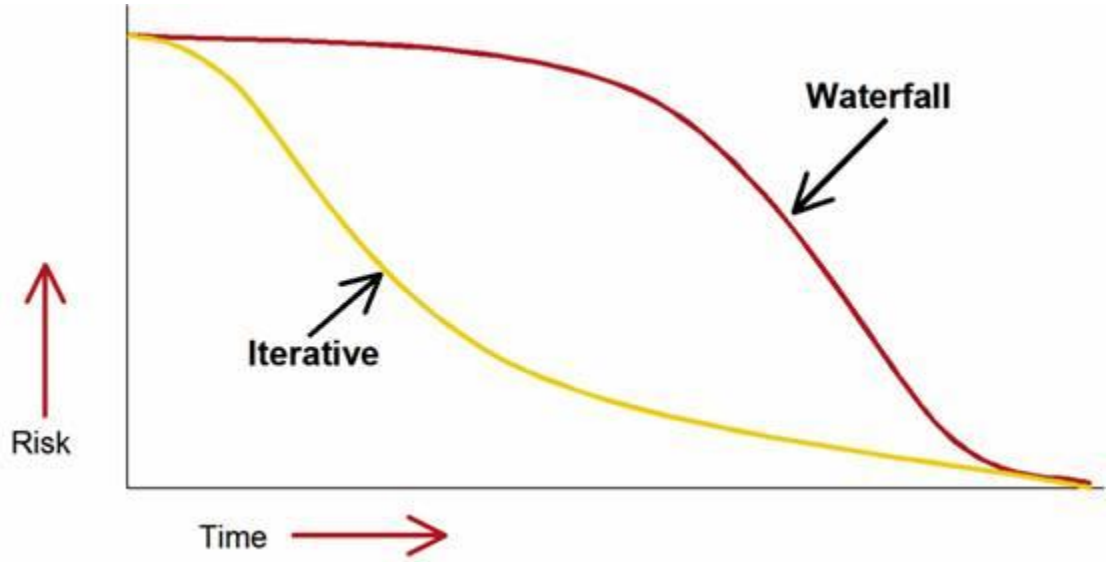
Waterfall (Traditional) Lifecycle

- A Dance In The Dark Every Monday
  - Analysis
  - Design
  - Implementation
  - Testing
  - Documentation
  - Evaluation
  - Maintenance

Iterative (Unified Process) Lifecycle



Iterative (Unified Process) Lifecycle



Agile (Scrum) Lifecycle

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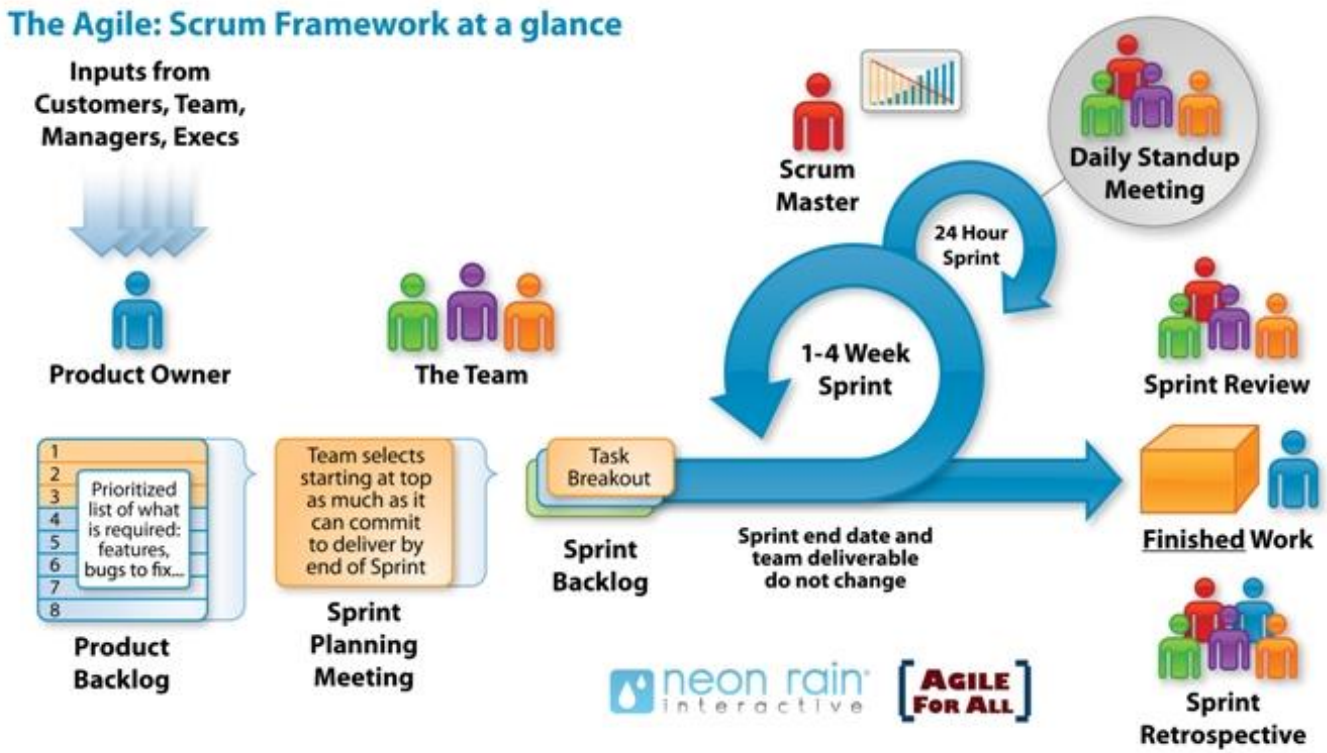


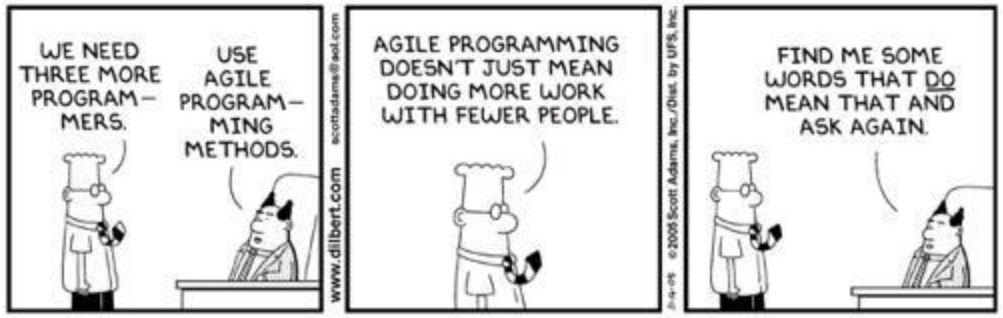
Agile Properties

- All agile methodologies share the same properties:
  - Short development cycles (1-6 weeks)
  - Self organizing development teams
    - Joint planning meetings
    - Stand-up meetings
  - High personal responsibility of team members
    - Developers manage their work
    - Developers / Teams estimate
  - Progress tracking
  - Ongoing customer involvement
  - Retrospectives
  - Use of historical data to improve planning

Traditional Versus Agile

Traditional	Agile
Process-oriented with formal hand-offs between roles	Emphasizes values and principles rather than process
Sequential approach: Requirements > Design > Development > Test	Iterative approach produces working software early
Changes are nearly impossible without starting over	Project properties and requirements are re-evaluated at the end of each iteration
Risks mitigated later in the development lifecycle	Risks mitigated earlier in the development lifecycle

Agile for Mobile Apps, Why Not!



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Mobile Apps Development

Mobile Apps Landscape

Mobile Apps Landscape

Mobile Apps Landscape

- High user expectations
  - Flawless end-user experience.
- Ease of installation
  - You press, you get.
- Low cost
  - Many free or very affordable apps.

Mobile Apps Landscape

- Mobile computing growing exponentially.
- Gartner forecasts that by the end of 2014 over 185 billion apps will have been downloaded from mobile app stores since the launch of the first one in 2008.

Different Kinds of Mobile Apps 1 of 3

1. Mobile-friendly Web apps
    1. Run on any Web browser, any device or computer, and any platform or operating system
    2. Optimized for mobile Web browser (smaller and touch-enabled screens)
    3. Generic Web technologies
        1. HTML, CSS and JavaScript for client-side interaction and processing
        2. CGI scripts for server-side processing
    4. Limited access to device capabilities (GPS, gyroscope, accelerometer, others)

Different Kinds of Mobile Apps 2 of 3

2. Mobile native apps
    1. Run on specific mobile device operating systems (iOS, Android and others)
    2. Optimized for specific device capabilities (smaller and touch-enabled screens, GPS, gyroscope, accelerometer, others)
    3. Device-specific technologies
        1. Objective C on iOS
        2. Android
        3. Others
    4. Full access to device capabilities (GPS, gyroscope, accelerometer, others)

Different Kinds of Mobile Apps 3 of 3

3. Hybrid mobile apps
    1. Run on specific mobile device operating systems (iOS, Android and others)
    2. Optimized for specific device capabilities (smaller and touch-enabled screens, GPS, gyroscope, accelerometer, others)
    3. Generic Web and device-specific technologies
        1. HTML, CSS and JavaScript running on device Web view
    4. Full access to device capabilities (GPS, gyroscope, accelerometer, others)
    5. Frameworks for porting Web apps to native apps
        1. PhoneGap
        2. Seattle Clouds
        3. Others

Mobile Apps Development Strategies

1. Build a mobile-friendly Web app that works on all mobile devices Web browsers.
2. Port mobile-friendly Web app to native app manually or using existing framework such PhoneGap or SeattleClouds.
    1. UIWebView in iOS provides a GUI identical to the GUI on a Web browser.
    2. Similar classes exist for other mobile platforms.

Is ASO the New SEO?

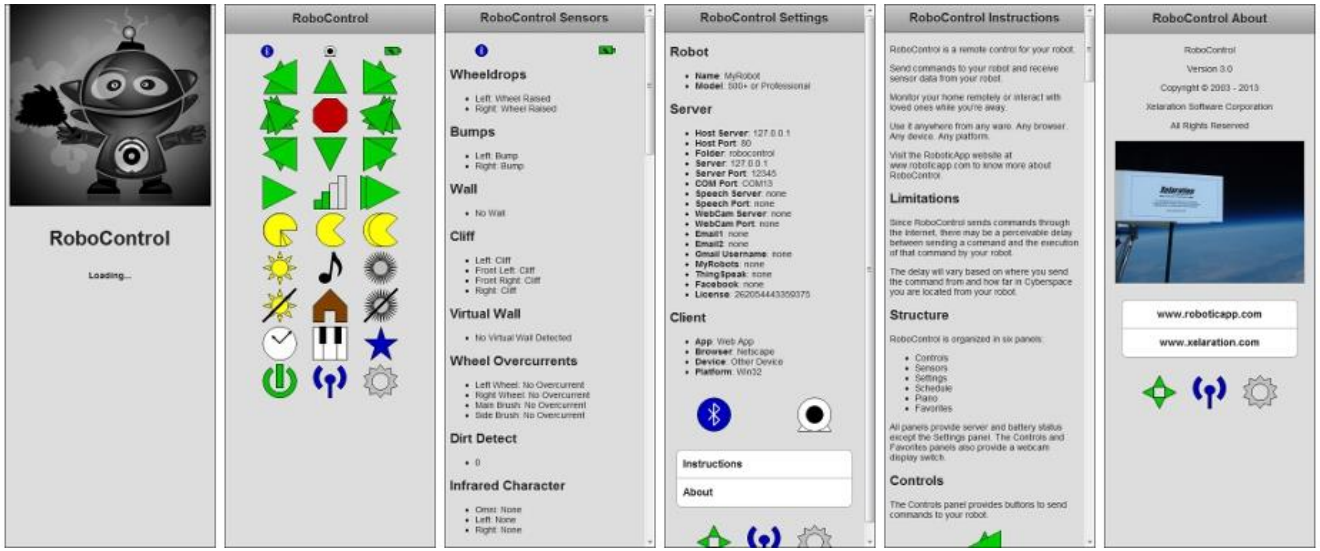
- Search Engine Optimization (SEO)
  - Process of improving a website visibility on the Web when using a search engine (Google)
- App Store Optimization (ASO)
  - Process of improving the visibility of a mobile app (iOS, Android or other) on an app store (App Store, Play Store of other)

Case Study

Mobile Apps for Personal Robots

- RoboControl mobile-friendly Web app
  - Mobile Web app for controlling personal robots , and reading their sensors, remotely from any Web browser, on any device or computer, and any platform or operating system
- iRoboControl native iOS mobile app
  - Native version of RoboControl for iOS available on the Apple App Store
  - Ported manually using iOS UIWebView

Web App versus Mobile App



Agile Approach

- 6 months release cycles with 4 week sprints each
  - 2011 Q2 → Development start
  - 2011 Q4 → RoboControl 1.0
  - 2012 Q2 → RoboControl 1.1 and 1.2, and iRoboControl 1.0
  - 2012 Q4 → RoboControl 2.0 and iRoboControl 2.0
  - 2013 Q2 → RoboControl 3.0 and iRoboControl 3.0

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- PhoneGap
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- SeattleClouds
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- Book
  - “Building iPhone Apps with HTML, CSS, and JavaScript” by Jonathan Stark

Thank you