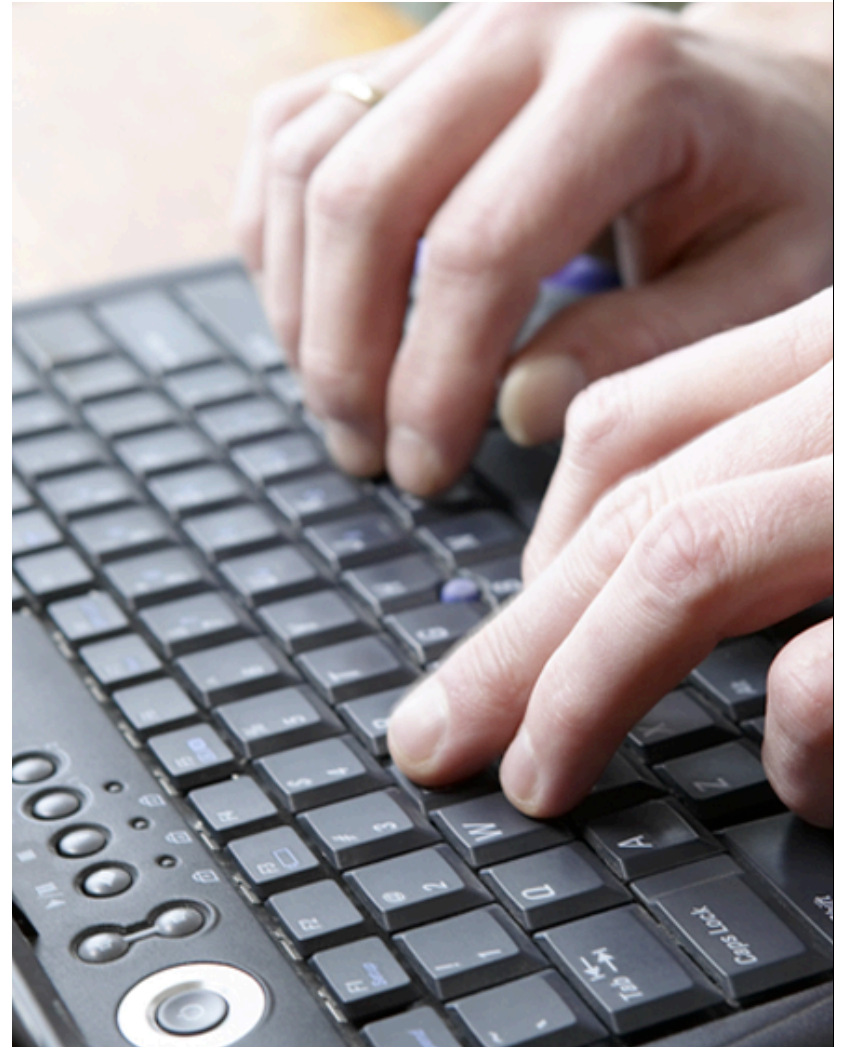


# Rich Internet Applications

Ryan Stewart

Rich Internet Application  
Evangelist

[rstewart@adobe.com](mailto:rstewart@adobe.com)



## Ryan Stewart

- Flex Developer for 3 years
- Rich Internet Application Blogger for 2 years
  - <http://blogs.zdnet.com/Stewart/> - The Universal Desktop
  - <http://blog.digitalbackcountry.com> - DigitalBackcountry
- Rich Internet Application Evangelist for Adobe - 5 months
- Live in Seattle, Washington

# Rich Internet Application Characteristics

**Step 1: General Mortgage Information** *Partially completed*

Property Sales Price \* 400000  
Down Payment \* 40000

**Mortgage Amount** \$360,000

Type of Application  Single Applicant  
 Co-Applicants

First Name: Kel  
Last Name: Varsen

We accept applications with a closing date within 10 and 60 days. Your closing date must be between 01/29/2006 and 03/19/2006.


Closing Date \* [Calendar Icon]

**Step 2: Property Information** *Please fill out*  
**Step 3: Applicant Information** *Partially completed*  
**Step 4: Employment History** *Please fill out*  
**Step 5: Financial Assets** *Please fill out*  
**Step 6: Real Estate Assets** *Please fill out*  
**Step 7: Other Assets** *Please fill out*

Save for Later   Fill Out Offline   Submit Application

**Help**

**Live Help**



**Lucinda (Loan Officer)**

Can there be a time gap under Employment?

Send   Disconnect

**Help Resources**

Search online help documents and frequently asked questions:

[Search Box]   Search

**Frequently asked questions**

1. How do I get started?
2. What types of mortgages do you arrange?
3. If my mortgage application is approved, am I obligated in any way?
4. Is my personal information secure?

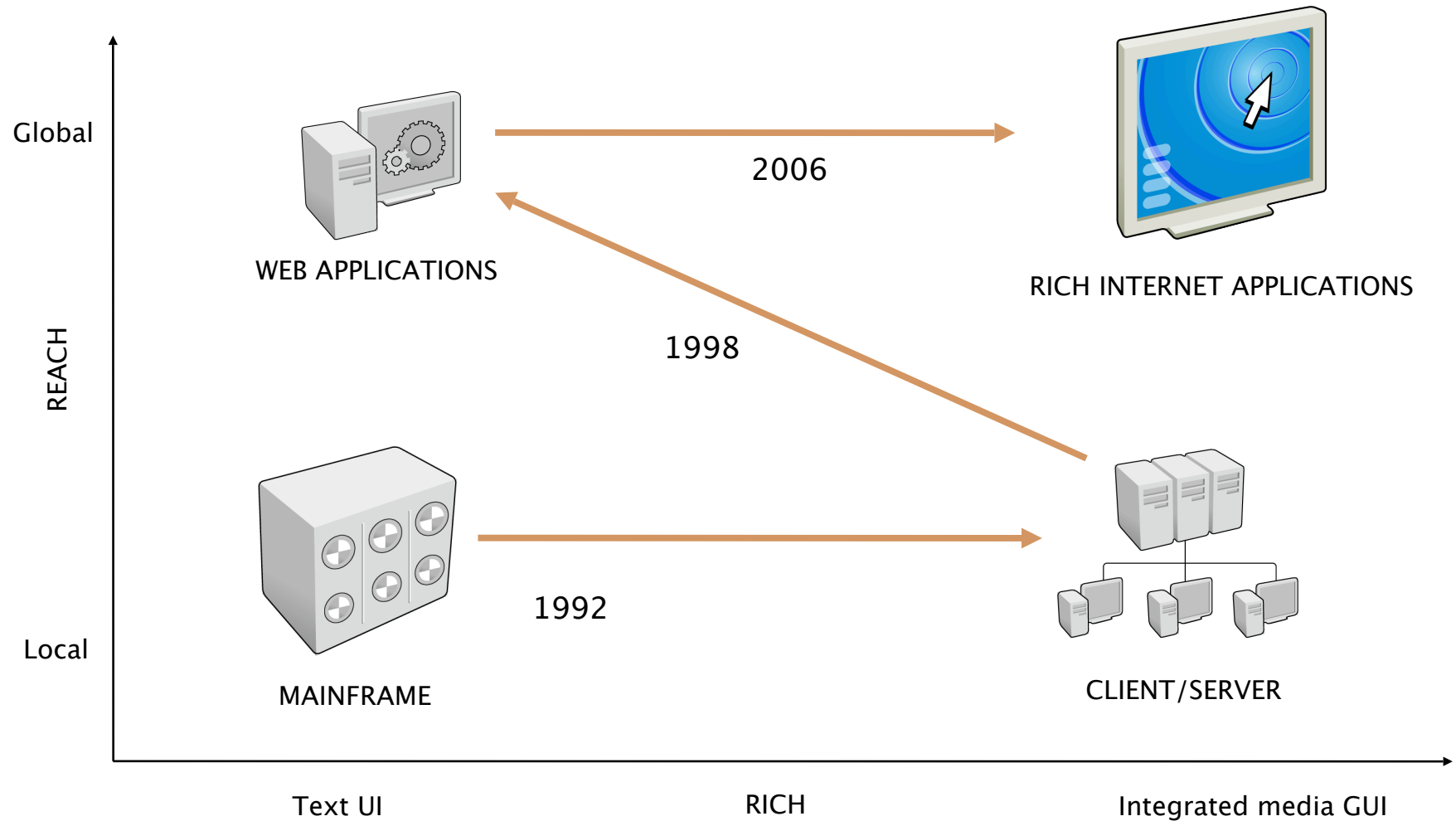
- Smooth, intuitive user experience
- No install
- Cross platform
- Rich media integration
- Real-time collaboration
- Real-time messaging
- Offline support
- Document generation
- Deep back-end integration

# Business Challenges on the Client Tier



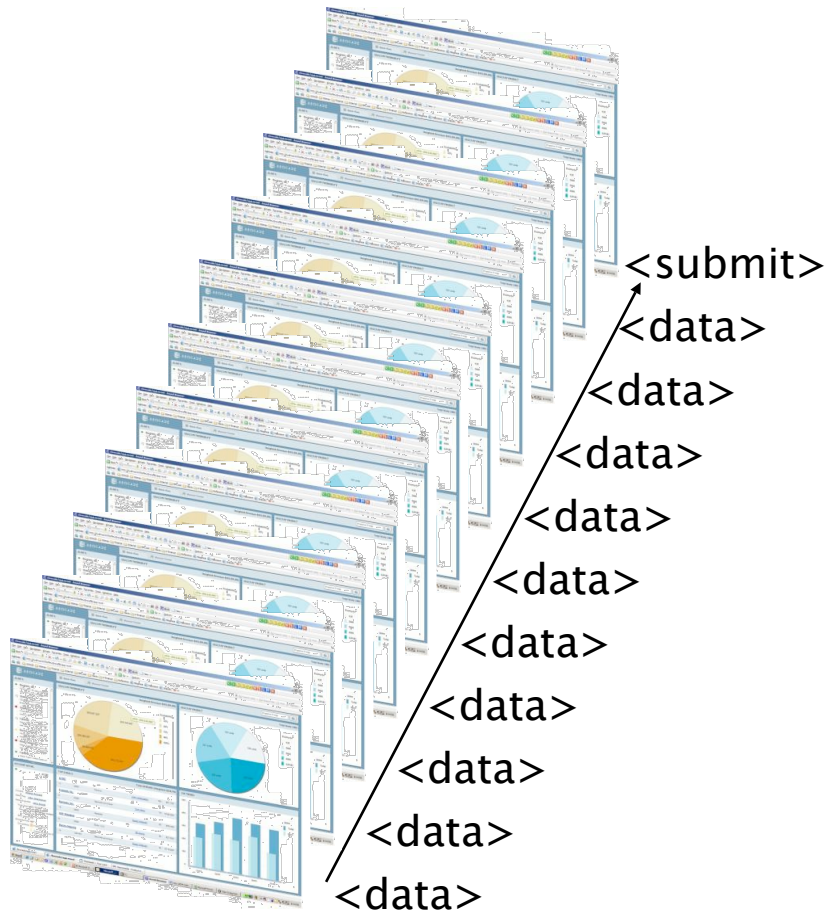
- **Low conversion rates** due to poor UI design
- **High error rates** due to poor information architecture
- **Process abandonment** due to poor Experience design
- **Slow and unresponsive** HTML pages
- Customer/Employee/Business Partner frustration translates to **lost opportunities and revenue**

# Experience Evolution



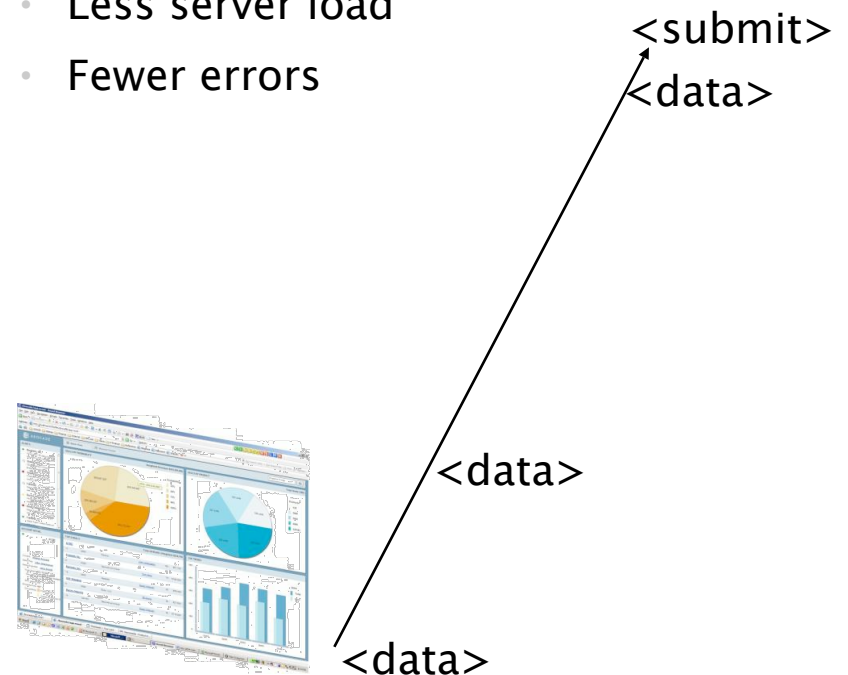
# Technology Difference

## Traditional Web Application



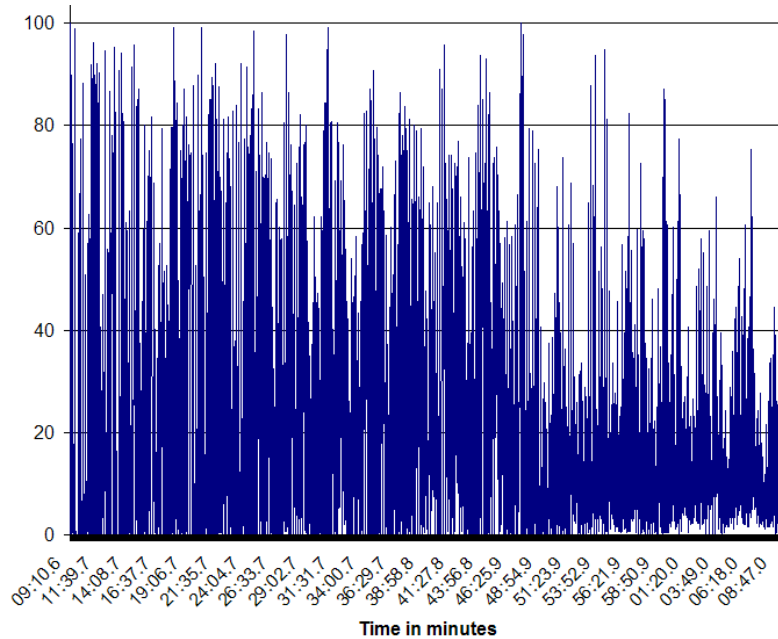
## Rich Internet Application

- Less waiting
- Less bandwidth
- Less server load
- Fewer errors

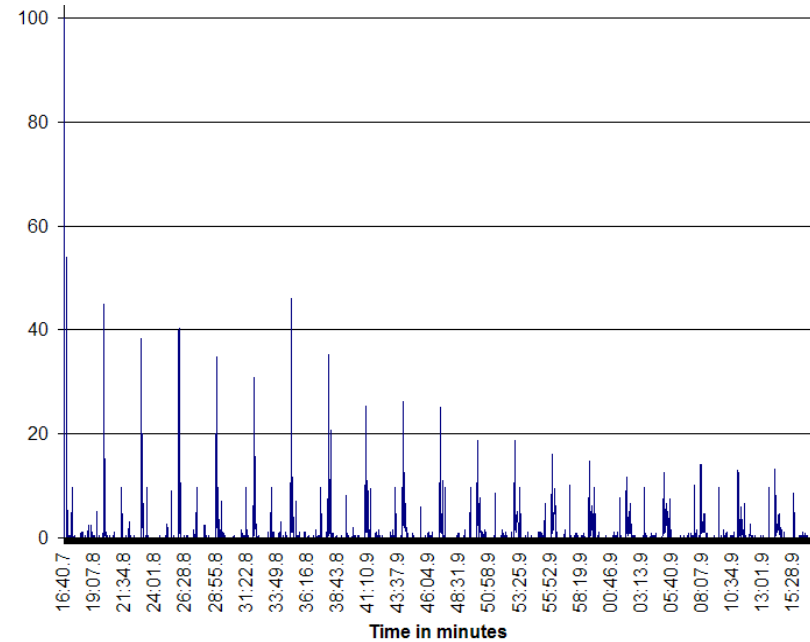


# Performance Difference

## JSP CPU consumption under load



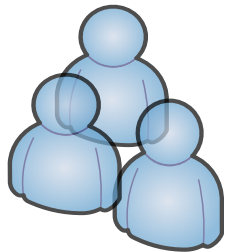
## RIA consumption under load



- More users served with same infrastructure
- Reduced bandwidth expense

# Business Benefits

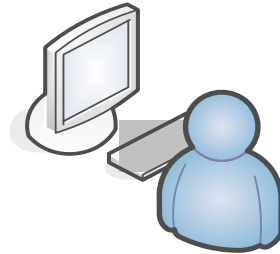
## USERS



- Users make more informed decisions based on relevant and a dynamic data interface
- Employees get more work done with less training and less errors

Interfaces  
that Work

## DEVELOPERS



- More functionality
- Less code
- Cleaner architecture
- Less development time

Higher  
Productivity

## IT OPERATIONS



- Less server load
- Less bandwidth
- More users served with same infrastructure

Operational  
Efficiency



# 3 Types of Rich Internet Applications

Level of Richness



Mobile



Browser



Desktop

# Mobile Rich Internet Applications

Level of Richness



Mobile

## Benefits

You Will Never Be Closer to Your Users

Ability to Create Small, Engaging Experiences

Mobile Handsets are More Powerful Now

New UI Paradigms

Good Distribution Channels

# Mobile RIAs: Flash Lite

Level of Richness

## Flash Lite



Languages Used: ActionScript

Current Version: 3

Features:

- Video Streaming to Devices
- Multiple OS support
- Persistent Data Storage

Pros:

- Works with Flash Assets
- Powerful Mobile Runtime

Cons:

- FlashLite 3 still very new
- Doesn't support ActionScript 3

# Mobile RIAs: JavaFX Mobile

Level of Richness

## JavaFX Mobile



Languages Used: JavaFX Script

Current Version: Not Released

Features:

- Complete Mobile OS
- Includes Support for Java ME
- Close Application Communication

Pros:

- Lots of Java-Powered Phones
- Great Java Ecosystem

Cons:

- Not Yet Released
- New Scripting Language to Learn

# 3 Types of Rich Internet Applications

Level of Richness

## Benefits

Everyone Has a Browser

Easiest Maintenance

Zero Install

Lowest Security Risks

Most Innovative Space Right Now



# Browser

# Browser RIAs: Ajax

Level of Richness

## Ajax



Languages Used: JavaScript, HTML, CSS  
Current Version: Not Versioned

Features:

- Lightweight way to add interactivity
- Fully Standards Based
- Central to the Browser Experience

Pros:

- No Plugins Required
- Supported by Every Browser

Cons:

- Works Differently in Every Browser
- No Rich Media Capabilities

# Browser RIAs: OpenLaszlo

Level of Richness

## OpenLaszlo



Languages Used: Ajax or Flash (LZX)

Current Version: 4 in beta

Features:

- Same Code can be Flash or Ajax
- Open Source
- Declarative Markup

Pros:

- Flexible Delivery Model
- Open Source RIA Technology

Cons:

- Small Developer Community
- Not As Much Sophistication

# Browser RIAs: JavaFX

Level of Richness

## JavaFX



Languages Used: JavaFX Script

Current Version: Not Released

Features:

- Interactivity for Java
- Leverages Java Libraries
- Should be Open Source

Pros:

- Quality Effects for Java Developers
- Open Source

Cons:

- Not Yet Released
- New Scripting Language to Learn



# Browser RIAs: UltraLightClient

Level of Richness

## UltraLightClient

The logo for UltraLightClient, featuring the word "ultralightclient" in a stylized, lowercase font. The "ultra" part is in red and the "lightclient" part is in white, all set against a dark, textured rectangular background.

Languages Used: Java

Current Version: 6.2

Features:

- Server Based Java RIA
- Uses Swing for Interfaces
- Flexible Deployment Options

Pros:

- Fully Java Based
- Bridges Gap Between Swing-Web

Cons:

- Requires Java Plugin
- Not as Expressive as other RIAs

# Browser RIAs: Curl

Level of Richness

## Curl



Languages Used: Curl  
Current Version: 6.0 (Beta)

Features:

- Very Powerful RIA Platform
- Heavy Emphasis on the Enterprise
- Used a lot in Asia

Pros:

- Very Performant
- Rich Components/Charts/Etc

Cons:

- Very Few Developers
- No Rich Media

# Browser RIAs: Silverlight

Level of Richness

## Silverlight



Languages Used: JavaScript, C#, Others  
Current Version: 1.0 (1.1 in Alpha)

Features:

- High Quality Video
- Common Language Runtime (1.1)
- Good Designer/Developer Workflow

Pros:

- Supports .NET (1.1)
- Great Rich Media Experiences

Cons:

- Major Features Aren't Out Yet
- Few Out of the Box Components

# Browser RIAs: Flex

Level of Richness

## Flex



Languages Used: MXML, ActionScript  
Current Version: 3 (Beta)

Features:

- Developer Framework for Flash
- Recently Open Sourced
- Good Designer/Developer Workflow

Pros:

- Runs on Top of the Flash Player
- Fully Cross Platform

Cons:

- Framework Overhead
- Doesn't Work Well With the Browser

# 3 Types of Rich Internet Applications

Level of Richness



## Benefits

Richest Experience

Most Powerful Features

Ability to Use Hardware Resources

Becoming Easier to Build

Highest Potential for New User Interfaces



Desktop

# Desktop RIAs: Prism

Level of Richness

## Prism



Languages Used: JavaScript, XUL

Current Version: .8 (Beta)

Features:

- Desktop Web Applications
- Standards Based
- Open Source

Pros:

- Easy Desktop Experience
- Barrier to Entry is Low

Cons:

- Little Native Integration
- No Control over Chrome

# Desktop RIAs: Adobe AIR

Level of Richness

## Adobe AIR



Languages Used: ActionScript, JavaScript  
Current Version: 1 (Beta)

Features:

- Desktop Applications for Web Devs
- Program in Flash or Ajax
- Supports Many Desktop Operations

Pros:

- Cross Platform Desktop Apps
- Lightweight Install/Footprint

Cons:

- No Native Code
- No Hardware Acceleration

# Desktop RIAs: Eclipse Rich Client Platform

Level of Richness

## Eclipse RCP



Languages Used: Java

Current Version: 3.3

Features:

- Create Powerful Native Apps
- Large Developer Base
- Easy to Use GUI Components

Pros:

- Can integrate Swing components
- Uses Java Knowledge/Patterns

Cons:

- Not as Native as Some Platforms
- No Rich Media



# Desktop RIAs: Windows Presentation Foundation

Level of Richness

## WPF



Languages Used: .NET Languages  
Current Version: 3 (3.5 Beta)

Features:

- Next Generation of .NET
- Tight Hardware Integration
- Great Development Environment

Pros:

- 3D and Hardware Acceleration
- Full Featured Framework

Cons:

- No Cross Platform
- Heavy Resource Requirements

**The End**

**Q&A**