

AmplifyTablet

Creating Collaborative Distributed Systems for
Education

May 23, 2014



Who are we



Leslie Borrell
VP, Engineering

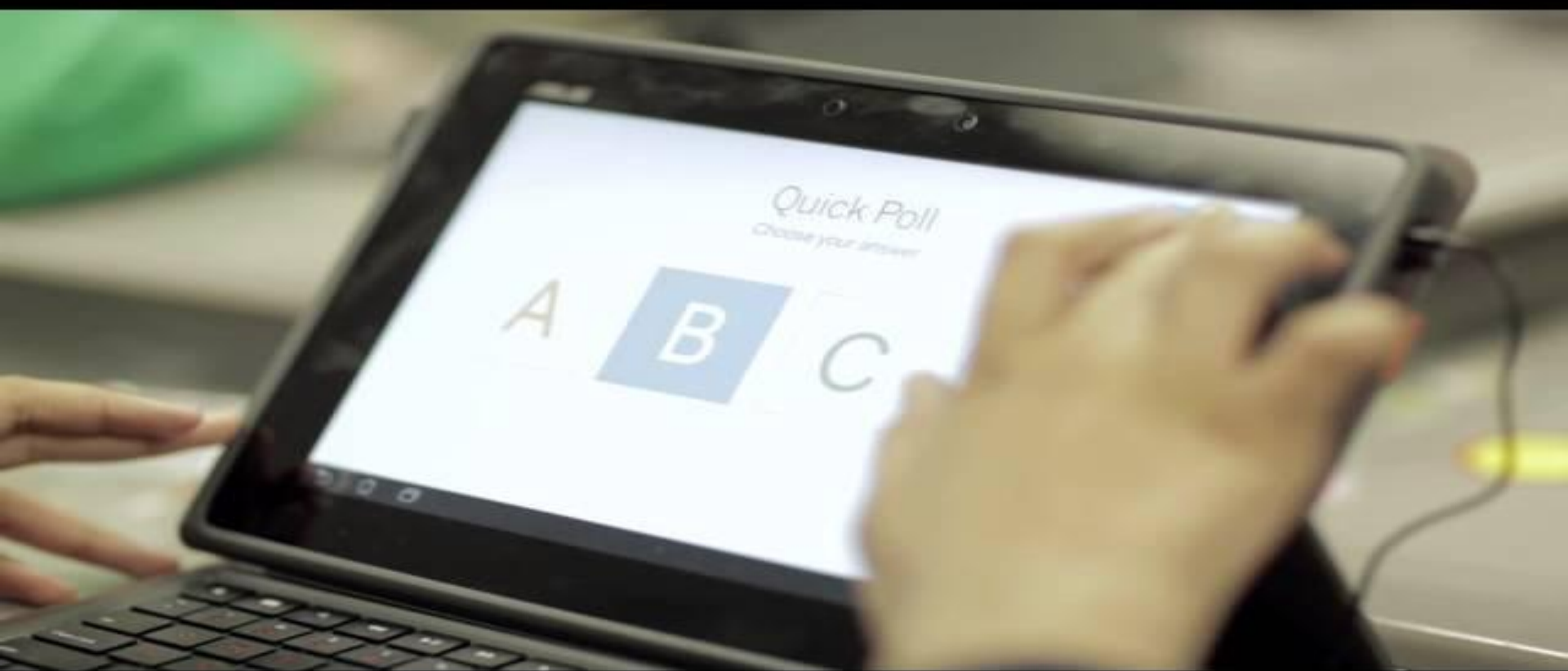


Nathan Hurst
Lead, Content



Alberto Silveira
Lead, Tools







“Change is hard because people overestimate the value of what they have—and underestimate the value of what they may gain by giving that up.”

—James Belasco and Ralph Stayer

Flight of the Buffalo (1994)

Difficult environment in the schools

“The school infrastructure has never been mission critical before.”

What's the ratio of IT staff:students?

Choose your answer

A

1:100

B

1:500

C

1:1000

What's the ratio of IT staff:students?

You chose



1:1000



...and few questions arise:



AmplifyTablet

Event Driven Architecture

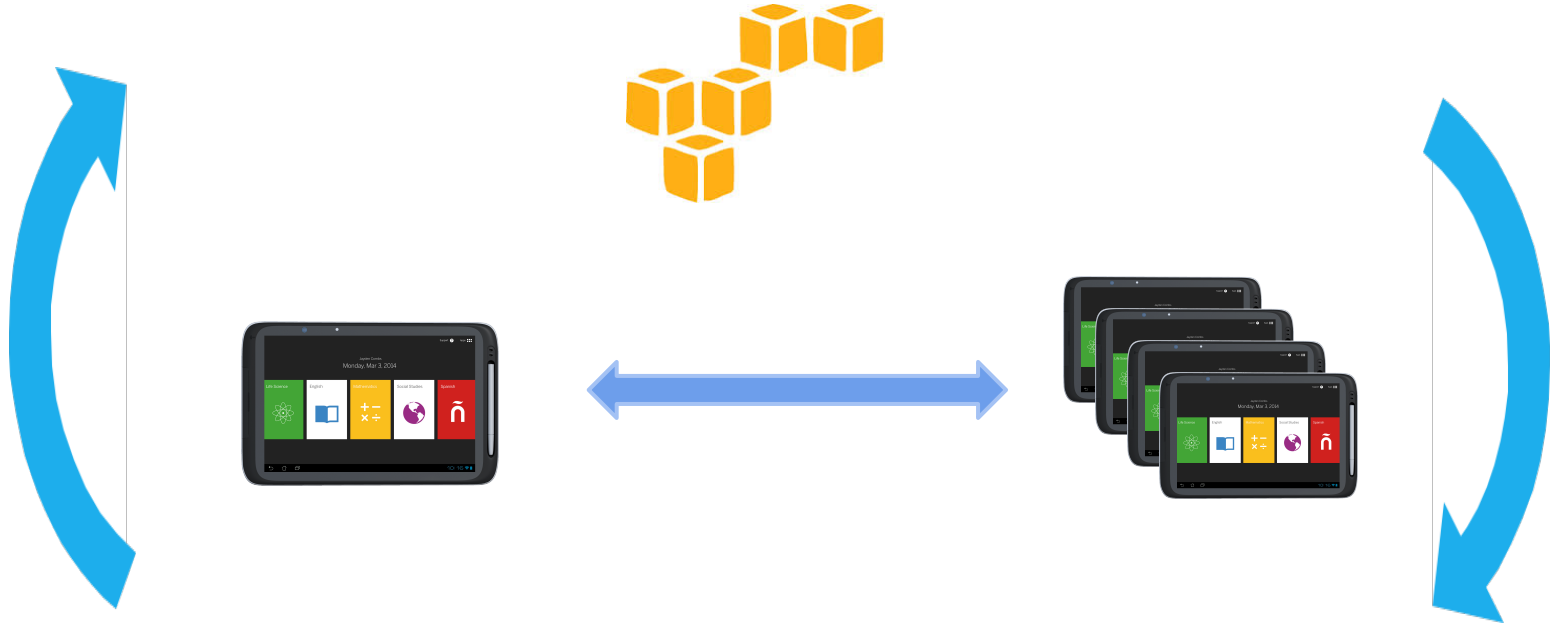
- Intended to handle transient and state change messages
- It relies on Event Processors to persist information contained in events and to trigger user interactions.
 - They may exist on both the client and on the server
- Events need to be backwards compatible with old event versions
- They must be idempotent and fast

Lessons Learned of an Event Driven Architecture

- Not good for transient events
- Can compromise reliability when lose an event
- Schema changes
- Performance and scalability concerns
- We don't need ALL the data available ALL the time



... how to collaborate?



AmplifyTablet

Messaging challenges...

Long polling

Bluetooth

AllJoyn

Pusher.com

WiFi Direct

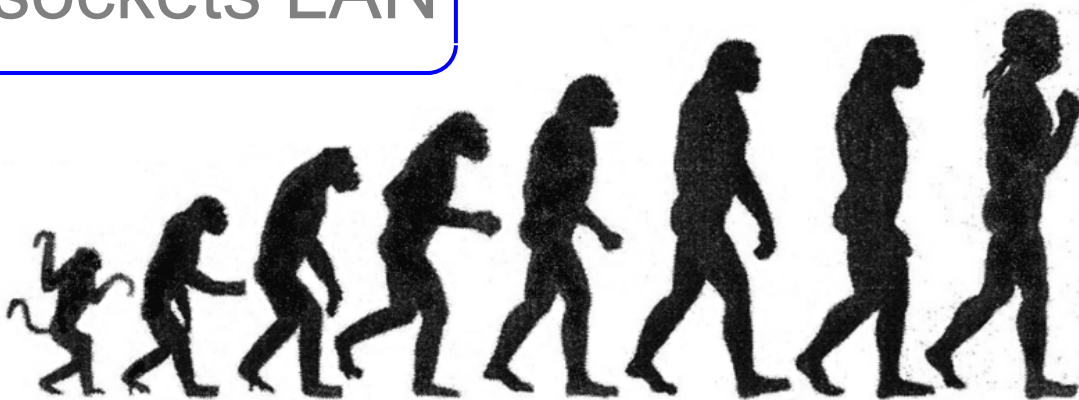
And this is our messaging evolution...

XMPP

GCM

Websockets Cloud

Websockets LAN



Spot Check



Got it



Not sure



Confused

Submit



10:59



Done

Spot Check

You chose



Got it



11:00



Information Security



Email or Phone

☐ Keep me logged in

Password

Log In

[Forgot your password?](#)

Connect with friends and the
world around you on Facebook.



See photos and updates from friends in News Feed.



Share what's new in your life on your Timeline.



Find more of what you're looking for with Graph Search.

Sign Up

It's free and always will be.

First Name

Last Name

Your Email

Re-enter Email

New Password

Birthday

Month

Day

Year

[Why do I need to provide my birthday?](#)

☐ Female

☐ Male

By clicking Sign Up, you agree to our [Terms](#) and that you have read our [Data Use Policy](#), including our [Cookie Use](#).

Sign Up

[Create a Page](#) for a celebrity, band or business.

Server and Database Security



Kids will be kids





Support ?

Apps 

Jayden Combs

Monday, Mar 3, 2014

Life Science



English



Mathematics



Social Studies



Spanish



10:16





Amplify Settings



Candy Crush



Chrome



Amplify

Manuel Ahrens

Serial: D10KCT054044

Phone: (888) 975-1431



Shotguns



Wallpaper



Drawings



Hunting Guns



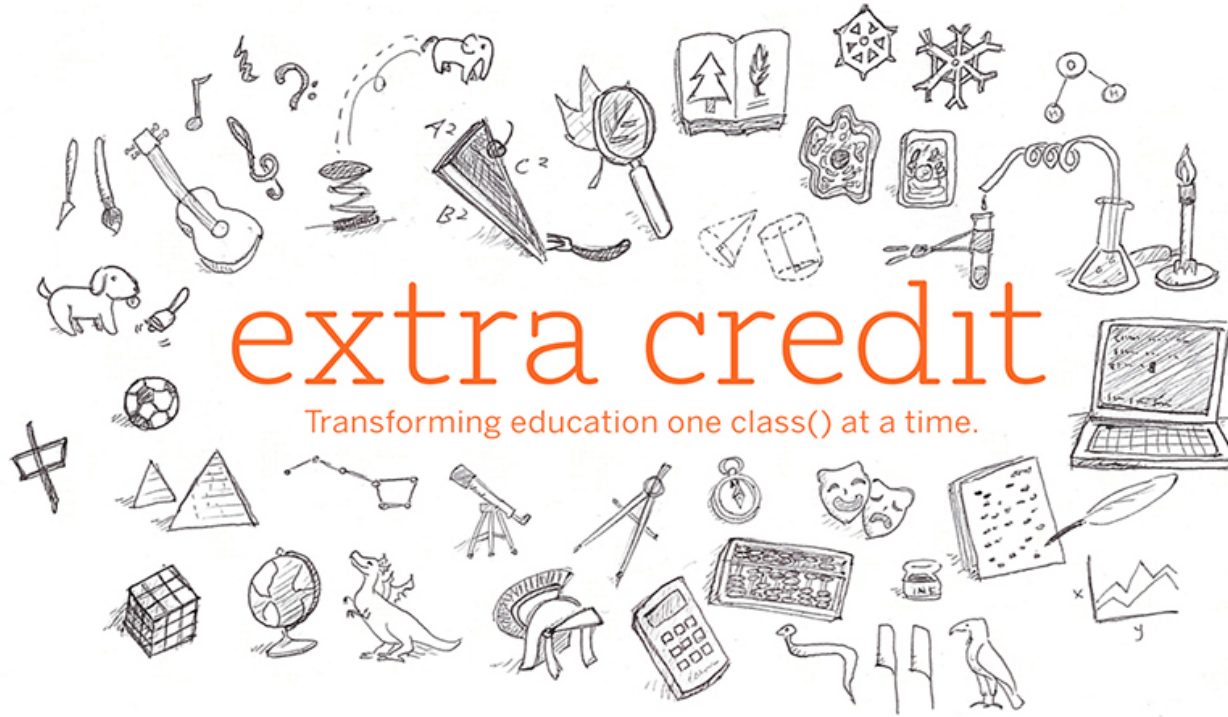
Handguns



Take-aways

- Challenges: network, engagement, mobile rate of change
- Solutions:
 - Defensive coding
 - Monitoring, Logging
 - Continuous deployment, lean development

Questions? We're Hiring :)



AmplifyTablet

extracredit.amplify.com/jobs



Corning® Gorilla® Glass



English 701

Class Feed

Assignments

All Items

English Stuff

Class Feed

Fri May 2 2014

April 23, 2014



Shared with 29 students

Google Sign in - Google Accounts

1:32 PM

April 17, 2014



You issued a Spot Check

1:39 PM



You called on Student Borrell

1:37 PM

November 22, 2013



You issued a Short Answer

2:45 PM

August 29, 2013



You added a comment

aaaa

9:15 PM

Apps



Start Class



0 / 30

students checked in



Eyes On Teacher



App Blocker



Call On



Timer



Quick Poll



Short Answer



Spot Check



Discussion



Go Research



Count Off



































3:02



App Blocker

3 Apps Allowed

Apply

All other apps 	 3D Bowling	 ASUS Studio	 Adobe Reader	 Amplify Reader	 Amplify User Guide	 Amplify Video	 App Backup
 Apparatus	 AudioWizard	 Battery Info	 Bridge Constructor	 Browser	 Calculator	 Calendar	 Chrome
 Clock	 DIVE	 Downloads	 Drive	 Earth	 Email	 Enlight	 File Manager
							

App blocker turned on

Done



Amplify Reader



Browser























3:11



Done

Class Monitor

22/27 students present

 Carlos Alcaraz Science	 Christopher Drury Science	 Emily Montelione Google Chrome	 Jennifer Herrera Science	 Robert Summerlin Science
 Dave Cameron Clash of Clans	 Tristan Fisher Science	 Jered Philippon Not Present	 Stephanie Chang Science	 Vanessa McBayne Project Noah
 Tom Czarniecki Science	 Mykola Kurutin Google Chrome	 John Piser Science	 Michael Wongwaisayawan Not Present	 Rachel Van Aken Science
 Ritwik Dey Science	 Joe McLean Science	 Mukund Sudarsan Science	 Srikar Ayilavarapu Science	 Thomas Spiegelman Science



Eyes on Teacher



10:51





Math SAT Prep

Class Feed

Assignments

All Items

Introduction to Expo...

Geometry : Types of T...

Sup

Slope of the line

dcd

dcdyftyfyfyfyy

Look a playlist

BOOM BOOM

Class Feed

Mon Apr 28 2014

Apps

Today



You issued a Short Answer

11:51 AM



Shared with 1 student

11:47 AM



Poll Finds Only 83% Of New Yorkers Visit Statue Of Liberty Every Day | The Onion - America's Finest News Source

February 07, 2014



Shared with all students

11:45 AM



Check out "NYTimes"

January 28, 2014

End Class



1 / 30

students checked in



Eyes On Teacher



App Blocker



Call On



Timer



Quick Poll



Short Answer



Spot Check



Discussion



Go Research



Count Off





Math SAT Prep

☰ Class Feed

📅 Assignments

📖 All Items

Introduction to Expo...

Geometry : Types of T...

Sup

Slope of the line

dcd

dc dytftyfyfyy

Look a playlist

BOOM BOOM

All Assignments

Apps

	Order of Operations with Exponents	Jan 28
	Geometric Sequences with Fractions Quiz	Jan 27



Saving screenshot...
Screenshot is being saved.

All

Clear

Share

Choose Students

1/30 students selected

Manuel Ahrens	Hannah Berlin	Beatrice Bridge	Kenneth Colvin	Kevin Combs
Deanna Crittenden	Sheryl Croft	Marvin Dillingham	Roger Fisk	Arthur Gailey
Allen Galarza	Betty Gallagher	Amber Hashimoto	Terry Jaffe	Fannie Lattimore
Brian Lum	Christine Marine	Kenneth Mcgowan	Clarence Nickel	Martin Ordonez
Bertha Pifer	Pauline Raine	Kenneth Sessoms	Amy Shealy	Travis Surratt
Carolyn Sutphin	Regina Waddell	Keith Waugh	Jennie Willette	Erica Yi

Geometric Sequen...

Assigned Jan 27

This quiz has been shared.

3 months ago



Geometric Sequences with Fractions
Quiz



Tap here to enter a response

Send

1. Choose the fraction that comes next in the sequence. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$

A:

B:

C:

D:



4. True or False? $32/77$ is the next fraction in this sequence:
 $2/77, 4/77, 8/77, 16/77$

A: True

B: False



4 of 4



11:59





Math SAT Prep

☰ Class Feed

📁 Assignments 1

📖 All Items

Introduction to Expo...

Geometry : Types of T...

Sup

Slope of the line

dcd

dcdyftyfyfty

Look a playlist

BOOM BOOM

Geometric Sequences with Fractions Quiz

Apps

🔍 View Original

	Travis Surratt
	Carolyn Sutphin
	Regina Waddell
	Keith Waugh
	Jennie Willette
	Erica Yi
	Beatrice Bridge
1	Manuel Ahrens

1. Choose the fraction that comes next in the sequence. $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$

A: $\frac{1}{32}$



B: $\frac{1}{17}$

C: $\frac{3}{24}$

D: $\frac{3}{32}$





IVE
LOST MOBILE
PHONE
PLEASE CALL
IF FOUND
07910 984 996

Lost or stolen tablet?

- PIN policies
- Remote wipe
- Encrypted DB - SQLCipher