

Having a Mobile App Presence: Necessary or Nice to Have?

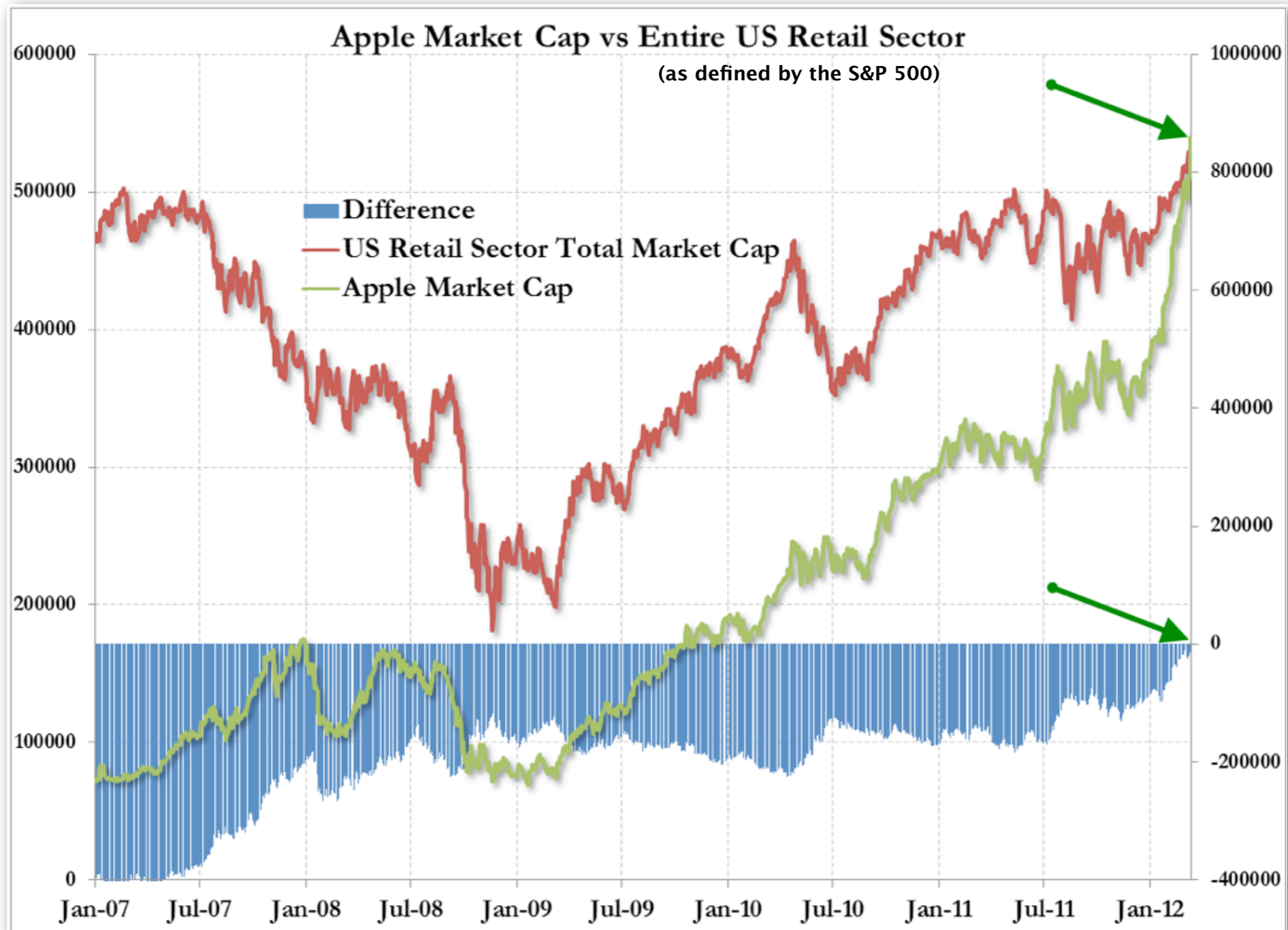
Dr. Steven Muskal

Chief Executive Officer

Eidogen-Sertanty, Inc

smuskal@eidogen-sertanty.com

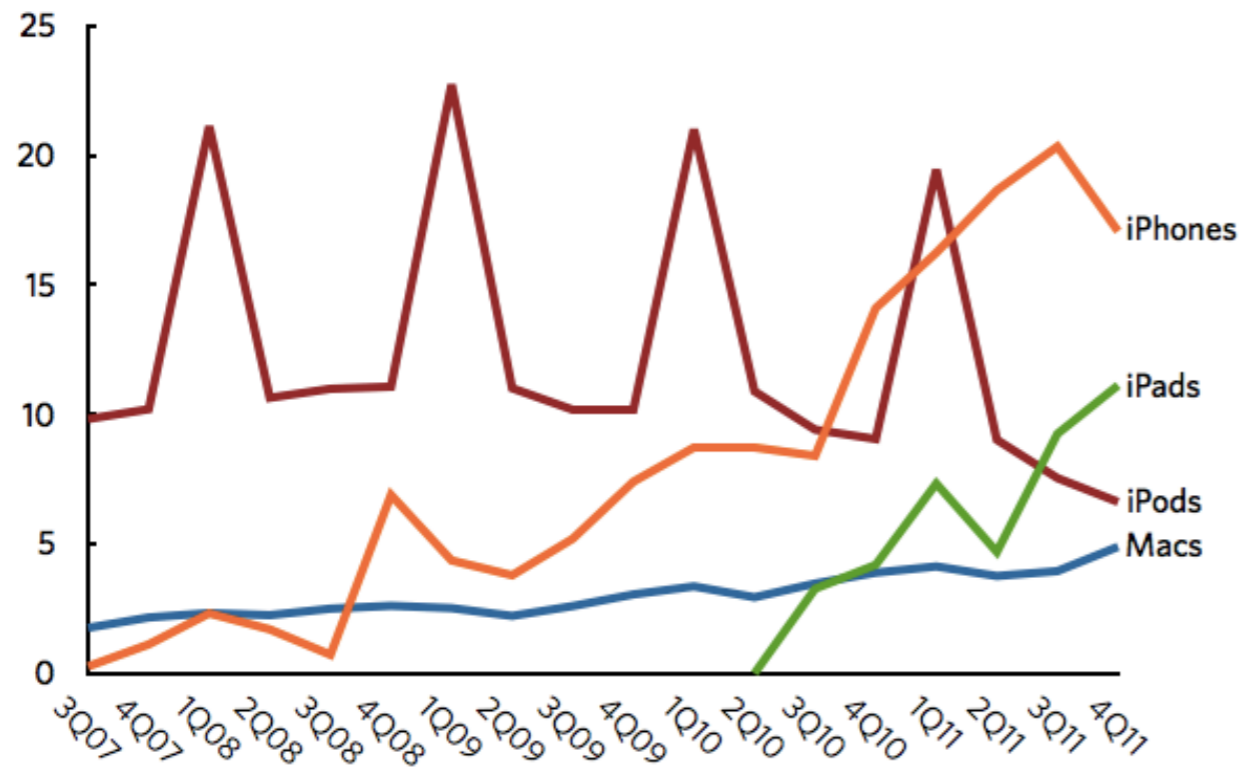
Apple Market Cap = US Retail Sector Total Market Cap



Source: <http://www.zerohedge.com/news/its-official-apple-now-bigger-entire-us-retail-sector>

Apple Product Unit Sales Trends

Millions



Most of Apple Revenue is from Mobile Devices

Apple is Crushing the Competition



Thursday, March 15, 2012

Apple stock seen hitting \$718 on sales of 60M iPads, 134M iPhones in 2012

What if I had bought Apple stock instead?

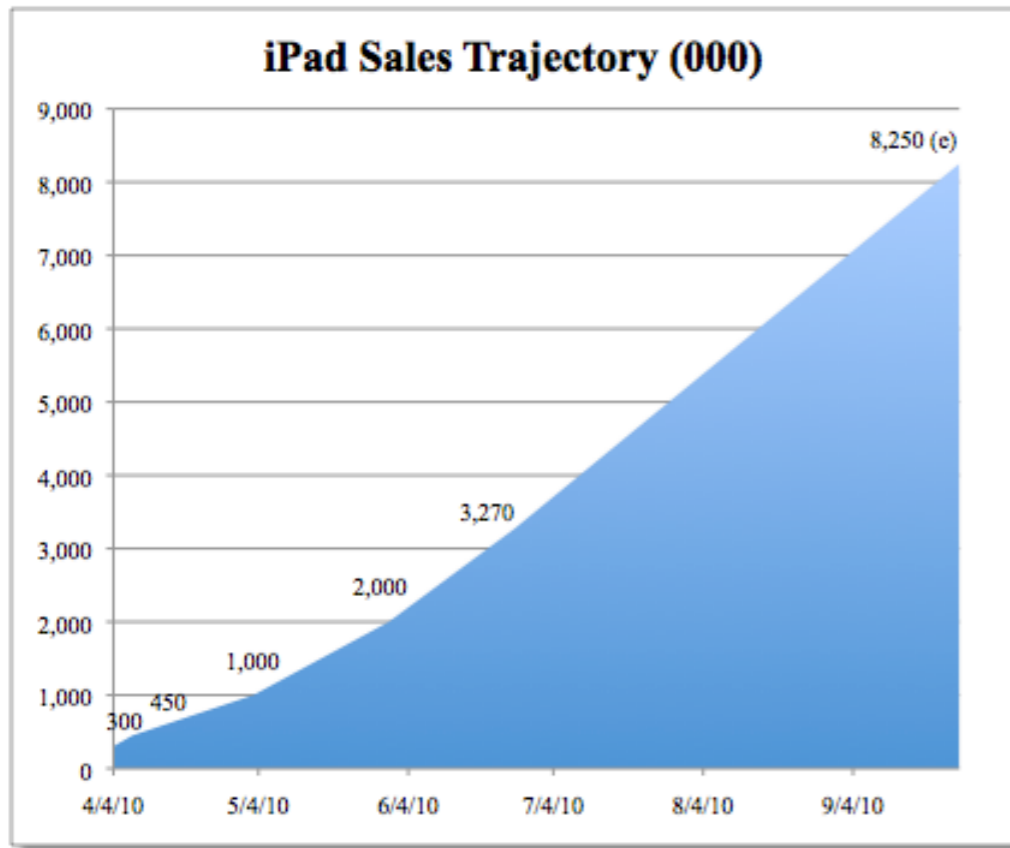
Last updated April 1, 2012

<http://kyleconroy.com/2010/04/apple-stock>

Product	Release Date	Original Price	Stock Value Today
Apple PowerBook G3 250 (Original/Kanga/3500)	1997-11-10	\$5700.0	\$731784
Apple Xserve RAID	2003-02-10	\$5999.0	\$500933
Apple Mac Server G3 266 Minitower	1998-03-02	\$4499.0	\$474055
Apple Mac Server G3 300 Minitower	1998-03-17	\$4999.0	\$454802
Apple Power Macintosh G3 266 Minitower	1997-11-10	\$3000.0	\$385149
Apple PowerBook G3 292 (Wallstreet)	1998-05-06	\$4599.0	\$363763
Apple Mac Server G3 233 Minitower	1998-03-02	\$3349.0	\$352881
Apple PowerBook G3 300 (PDQ - Late 1998)	1998-09-01	\$4999.0	\$351365
Apple Xserve RAID (SFP)	2004-01-06	\$5999.0	\$325493
Apple Mac Server G3 333 Minitower	1998-09-01	\$4599.0	\$323250
Apple Xserve G4/1.33 DP (Slot Load)	2003-02-10	\$3799.0	\$317227
Apple Power Macintosh G3 233 Desktop	1997-11-10	\$2400.0	\$308119
Apple Power Macintosh G3 233 Minitower	1997-11-10	\$2400.0	\$308119
Apple Power Macintosh G3 266 Desktop	1997-11-10	\$2400.0	\$308119
Apple Mac Server G4 1.25 DP (MDD)	2002-08-27	\$3499.0	\$282345
Apple Mac Server G4 533 DP (Digital Audio)	2001-01-09	\$3999.0	\$278790
Apple Mac Server G3 400 (Blue & White)	1999-01-05	\$4999.0	\$276745
Apple Power Macintosh G4 1.25 DP (MDD)	2002-08-13	\$3299.0	\$270947
Apple Mac Server G3 450 (Blue & White)	1999-06-01	\$4999.0	\$267602
Apple PowerBook G4 1.0 17" (Al)	2003-01-07	\$3299.0	\$266206
Apple Mac Server G4 800 DP (Quicksilver)	2001-09-08	\$3799.0	\$262104
Apple Power Macintosh G3 300 Desktop	1998-03-17	\$2750.0	\$250191

“Apple's iPad Sales Blow Past Projections”

San Jose Business Journal March 14, 2011



Sources: Company reports and the consensus estimate for Q4

FORTUNE

Apple sold 14.8M iPads in 2010

During the release of the [iPad 2](#) in March 2011, Steve Jobs said that just under 15 million iPads had been sold in the device's first nine months on the market — more than all other tablet PCs combined

Apple iPad Sales Projected to Hit 28 Million in 2011

DailyFinance
An AOL Money & Finance Site

Posted 10:00 AM 09/09/10

<http://srph.it/ak77OA>



Apple sells 3 million new iPads in 3 days

By Jefferson Graham, USA TODAY

<http://usat.ly/FQ40dD>

<http://tech.fortune.cnn.com/2010/10/05/how-many-ipads-has-apple-really-sold/>

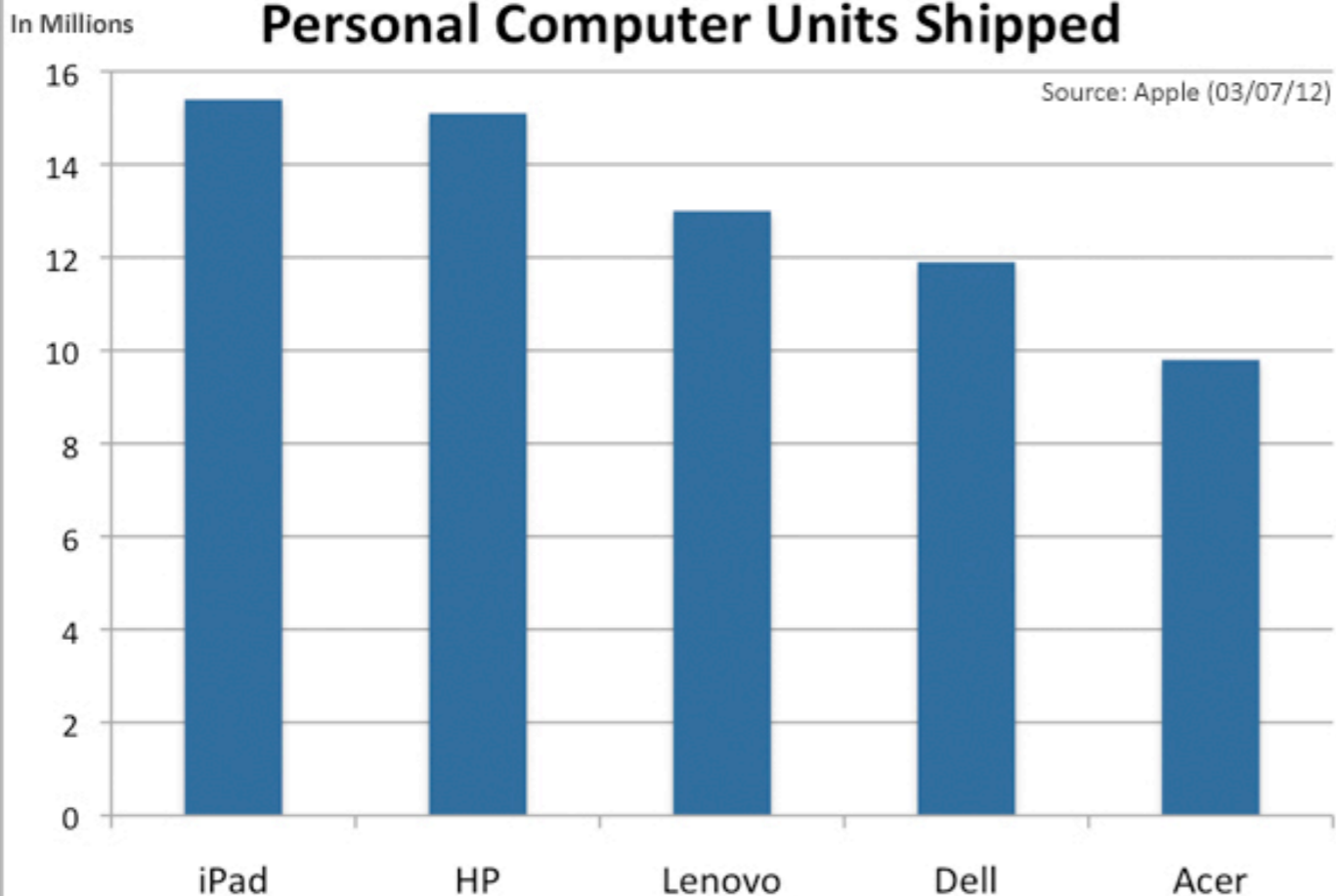
<http://www.publishersweekly.com/pw/by-topic/industry-news/financial-reporting/article/44882-ipad-total-nears-7-5-million.html>

<http://www.dailyfinance.com/story/company-news/apple-ipad-sales-projected-to-hit-28-million-in-2011/19626822/>

The Post-PC Revolution Is Here...

Silicon Alley Insider  Chart of the Day

Personal Computer Units Shipped



Apple Sold More iPads In Q411 Than Any Single Manufacturer Sold PC Devices

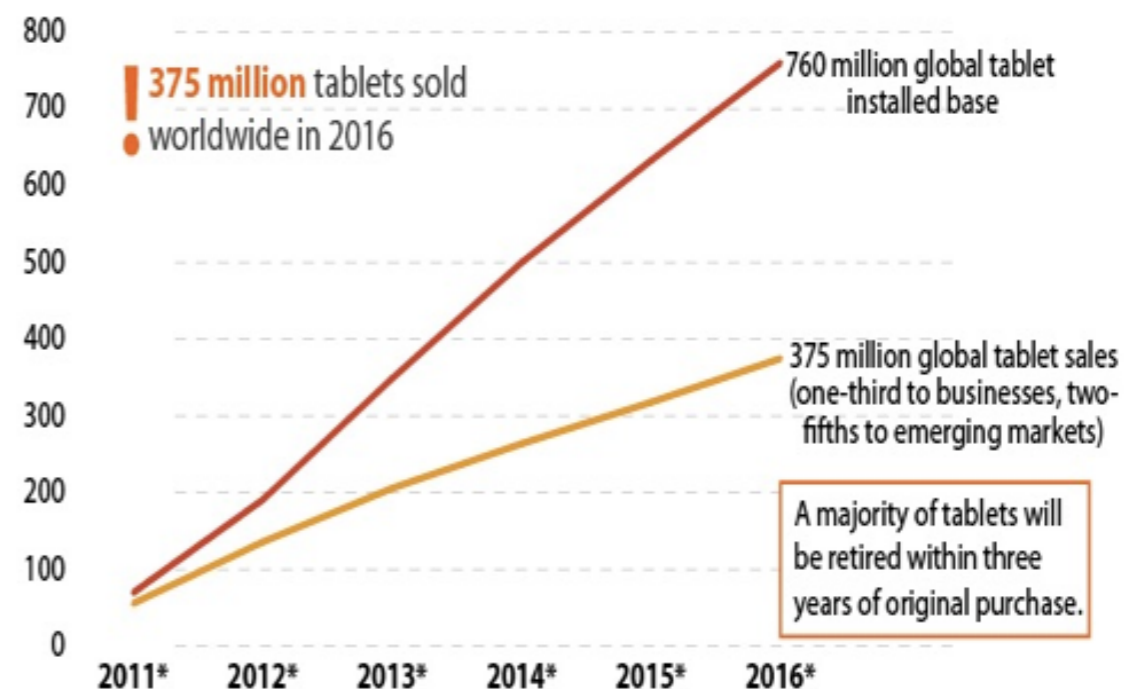
Apple Demolishes Expectations, Delivers Another Monster Quarter

Jay Yarow | Apr. 24, 2012, 6:05 PM | 110,500 | 64

Tablet sales to top 760M worldwide by 2016, and a third will be iPads

Global tablet sales will rise to 375 million in 2016

Global tablet sales and installed base (millions)

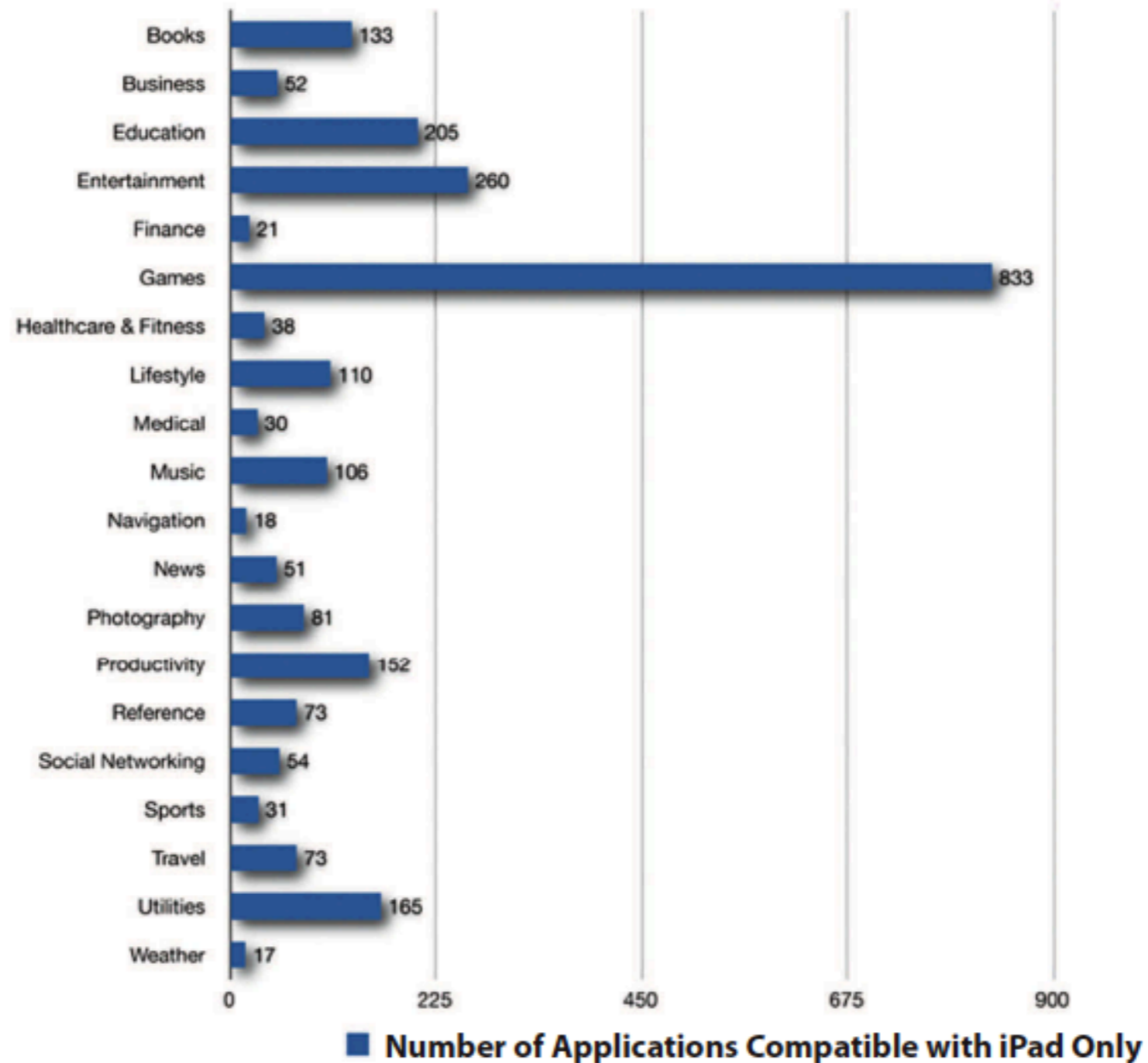


<http://www.businessinsider.com/apple-q2-2012-earnings-2012-4>

<http://venturebeat.com/2012/04/24/forrester-tablet-sales-predictions/>

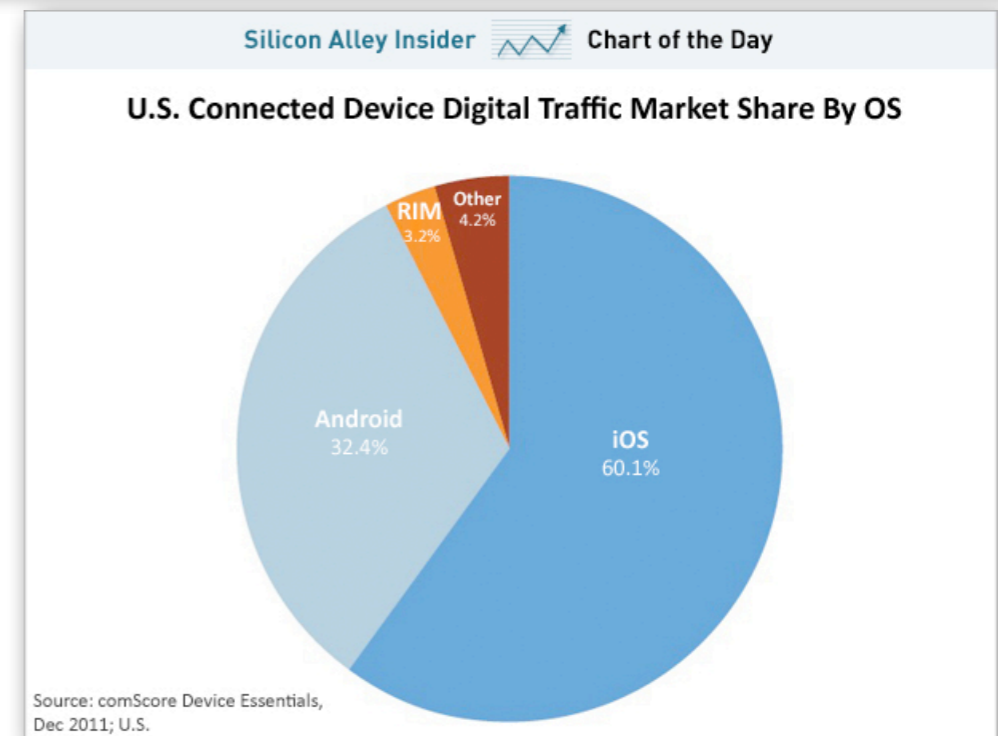
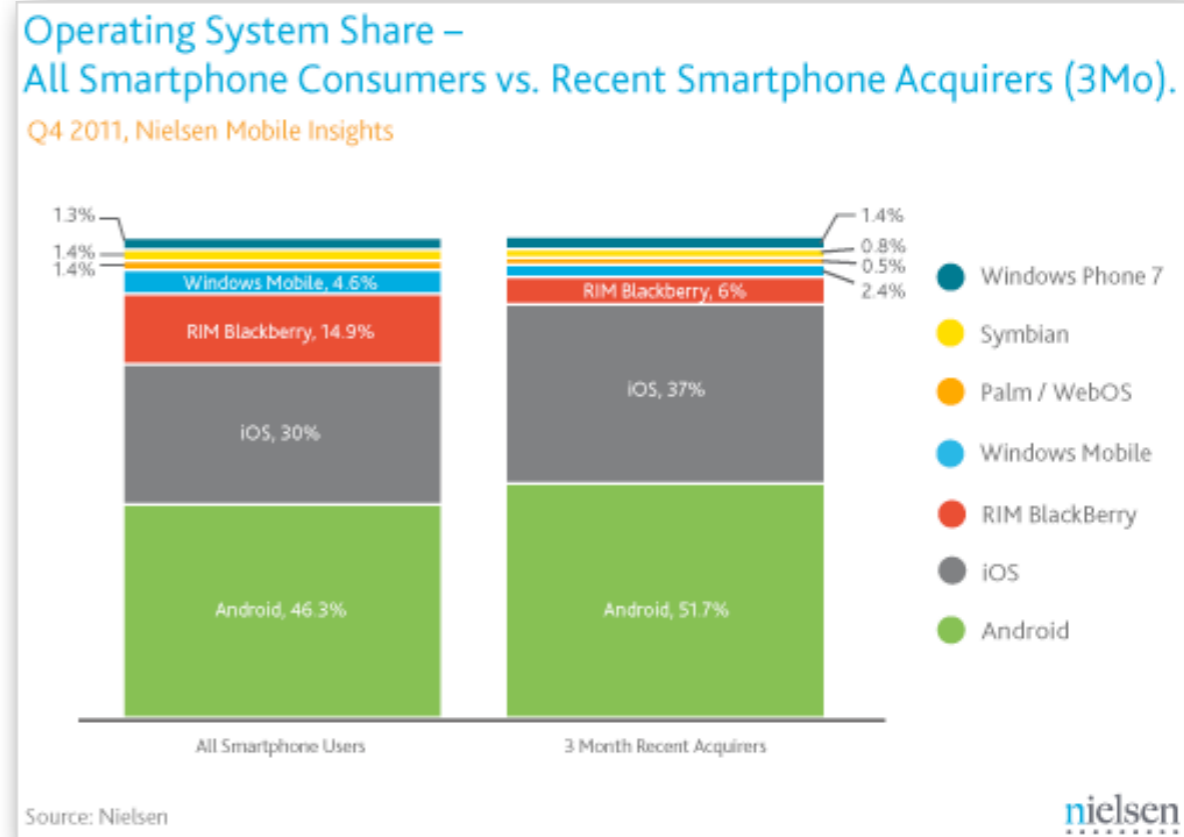
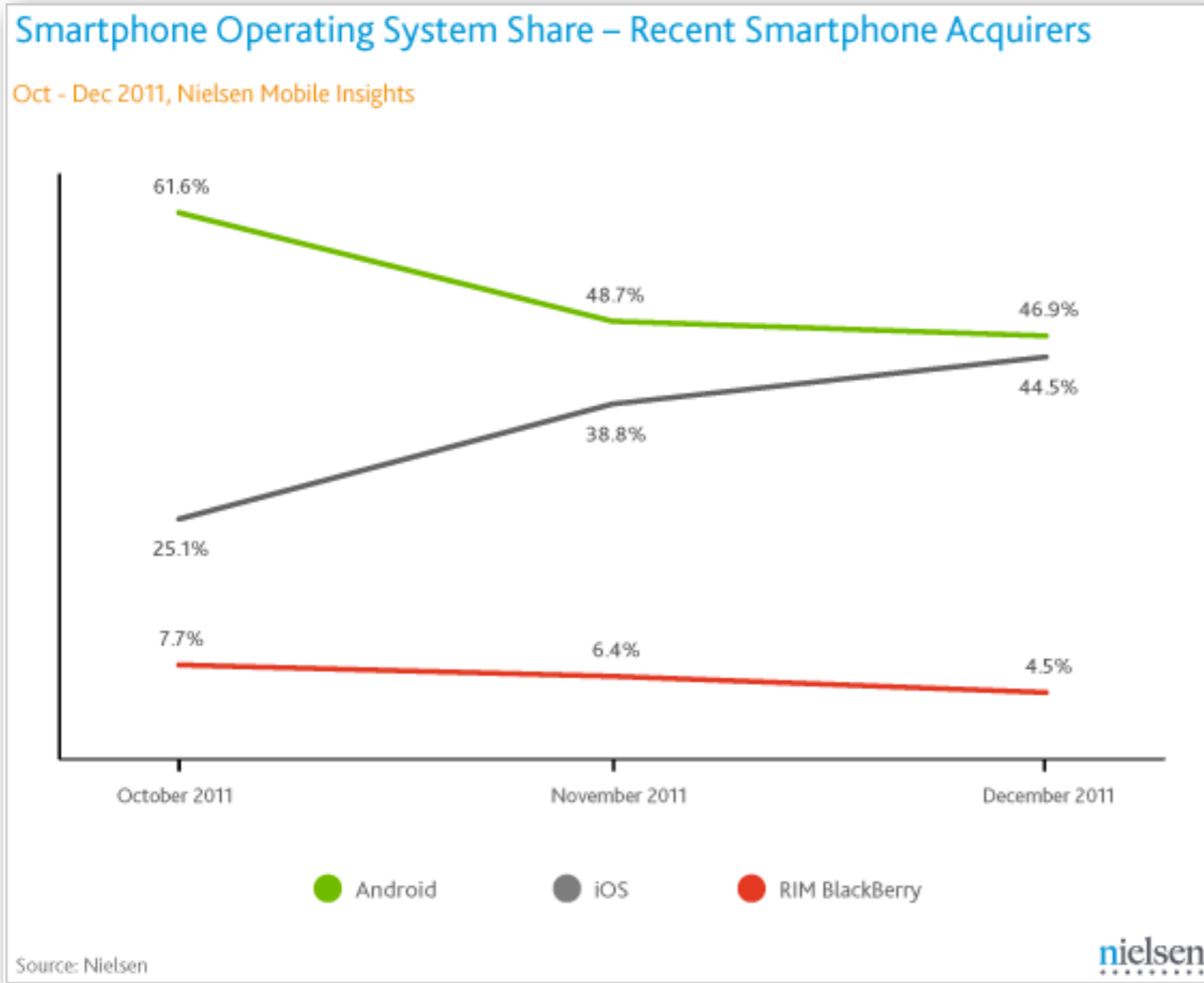
Significant Growth Opportunity in “Our” Space

Number of iPad Applications



Source: **NeuroSoftware**

iOS v. Android - The Numbers Vary



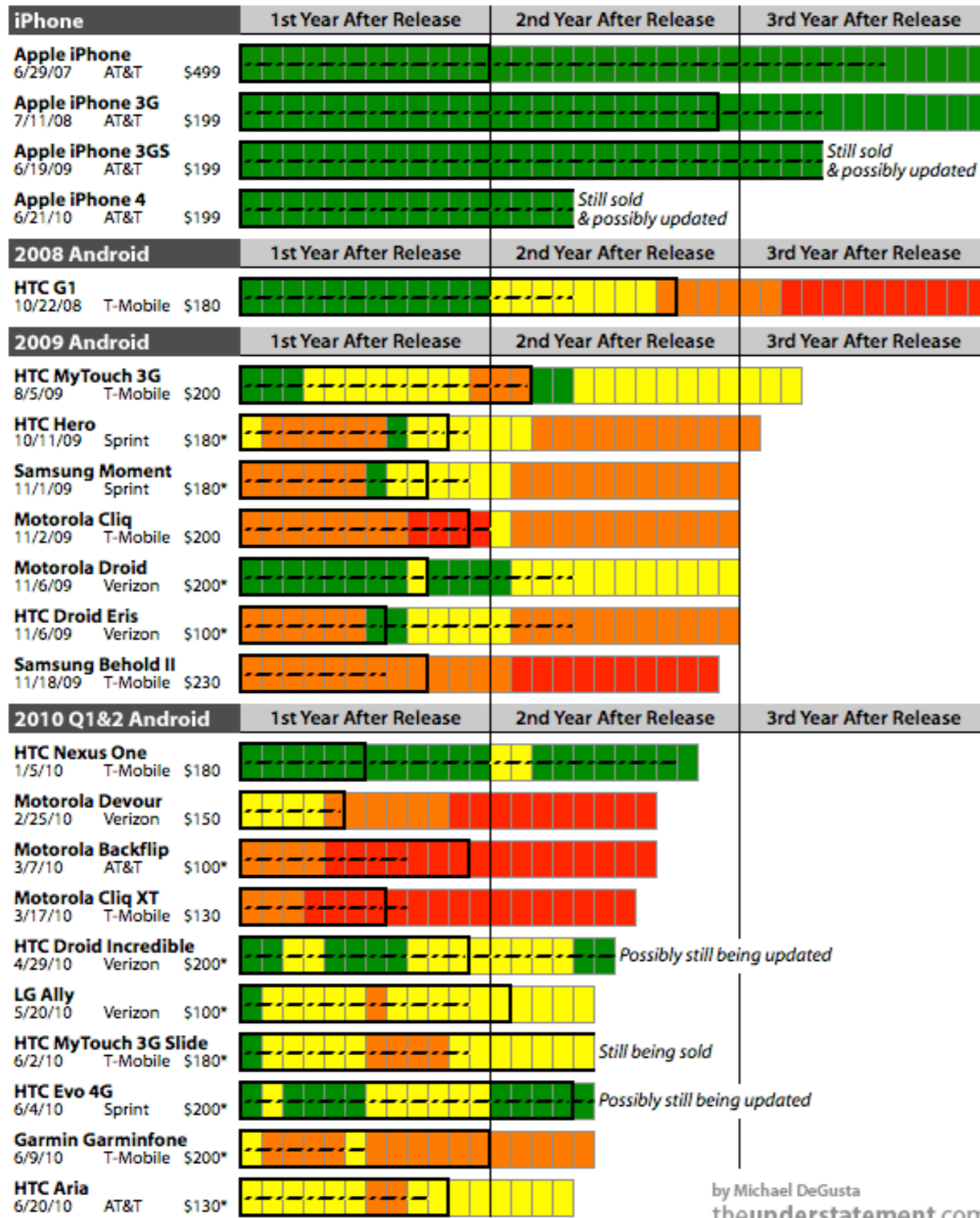
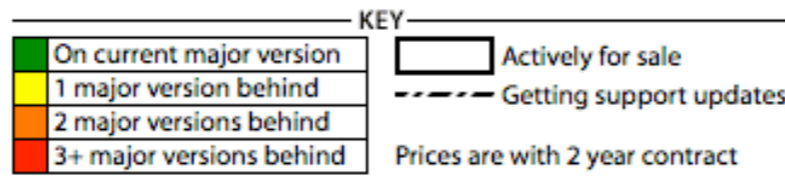
<http://blog.nielsen.com/nielsenwire/consumer/more-us-consumers-choosing-smartphones-as-apple-closes-the-gap-on-android/>

http://articles.businessinsider.com/2012-03-13/tech/31158768_1_ios-android-ipad

ANDROID & IPHONE UPDATE HISTORY

Includes every iPhone & Android model released in the US before July 2010.

Data as of the end of October 2011.



* After \$100 mail-in rebate (\$50 on MyTouch 3G Slide & Garminfone)

by Michael DeGusta
theunderstatement.com
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Advantages iOS

- Minimal fragmentation
- Nice development environment
- Better tablet support
- Apple is a powerhouse

“Apple App Store Generates Twice As Much Revenue As Android Market In 2011” Distimo

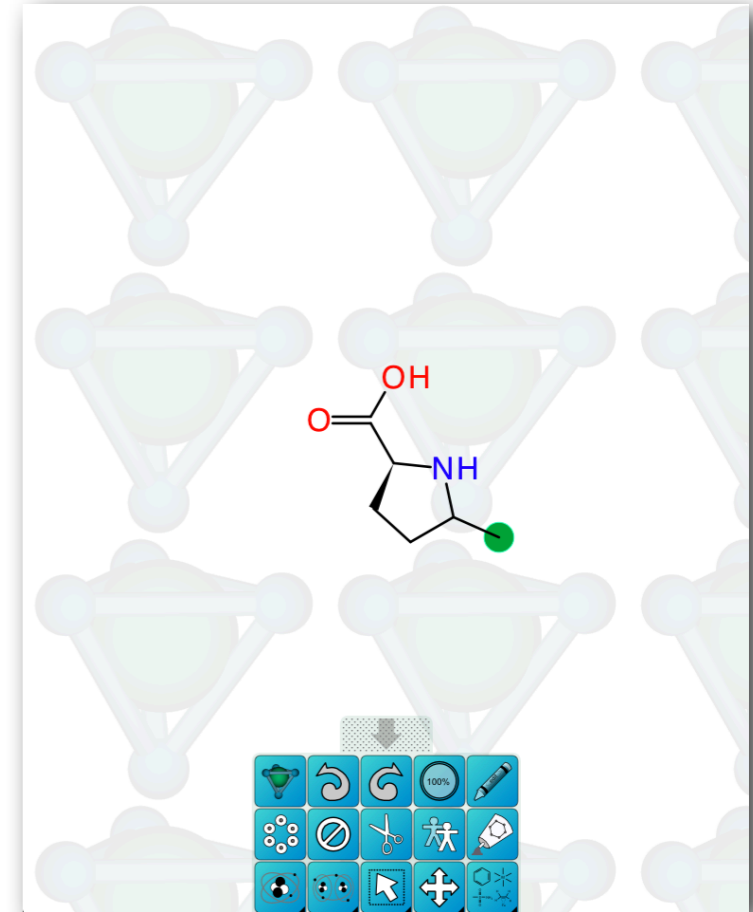
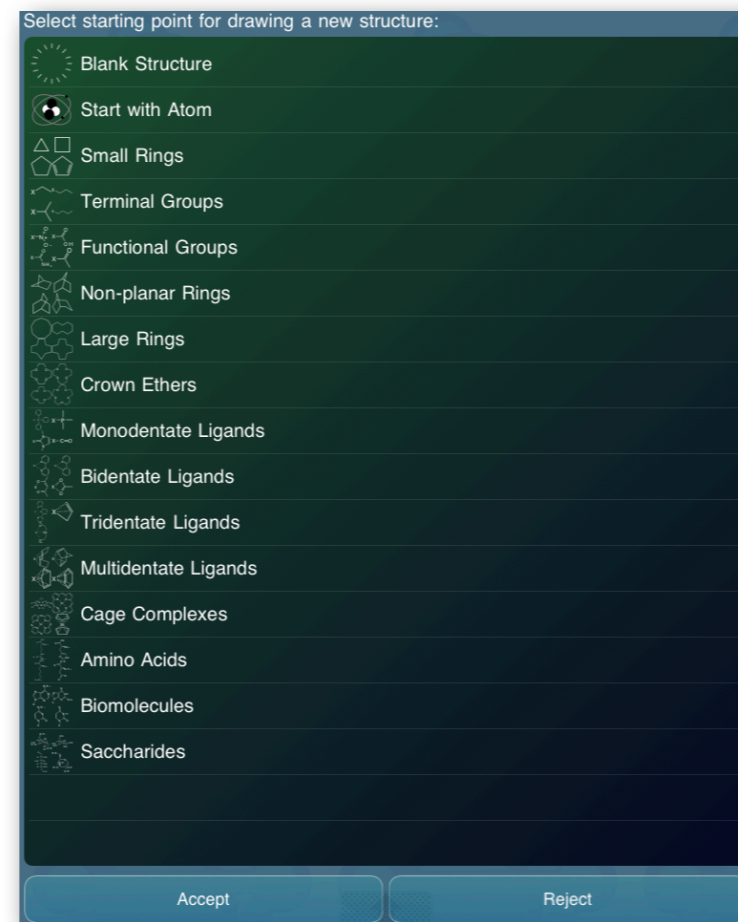
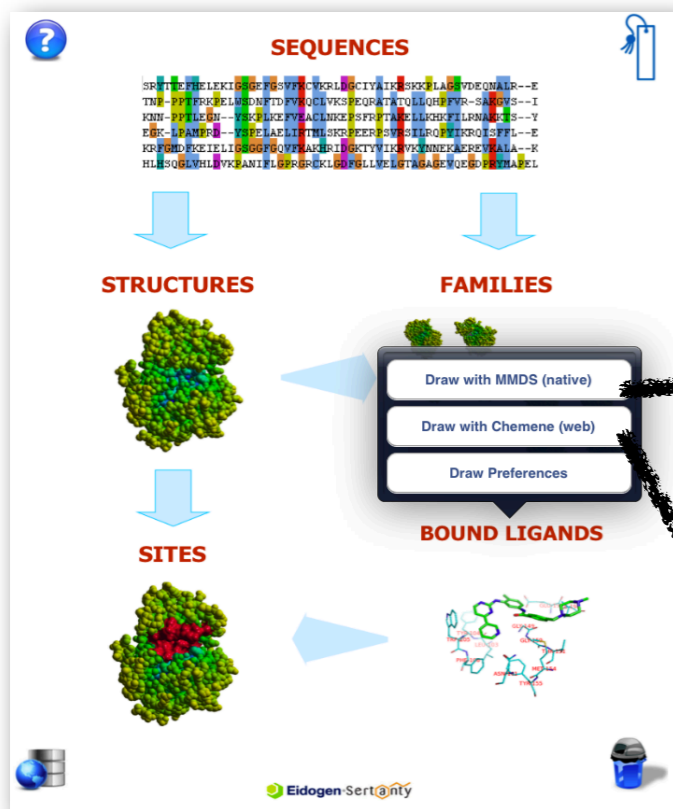
Advantages Android

- Java-based
- Several development environments available
- Many powerful devices
- Many hardware vendors

Web Apps v. Native Apps

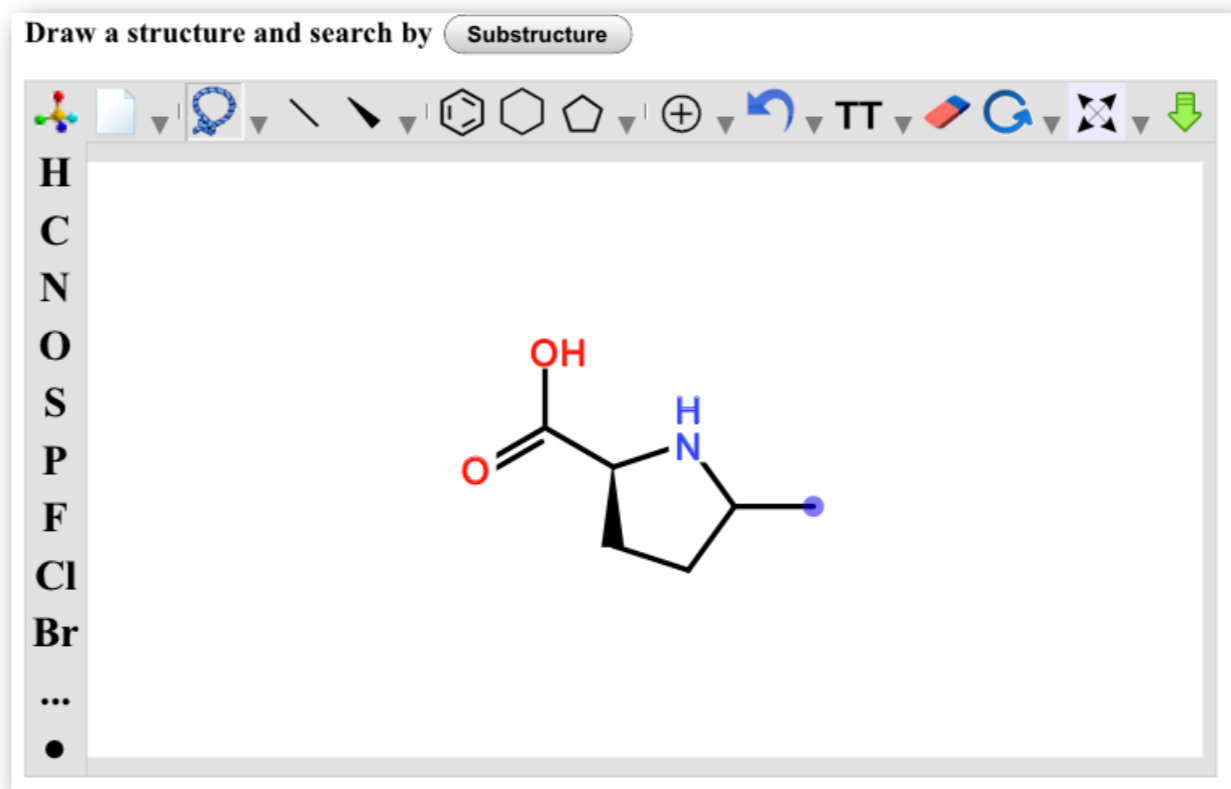
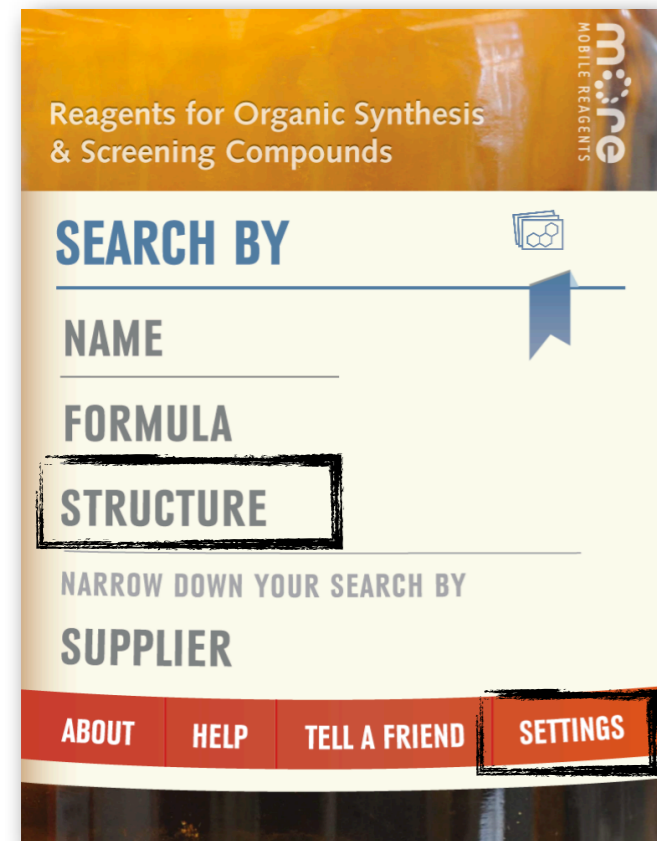
Web Advantages	Web Disadvantages
Central Management	InterApp Communication Difficult
Device Agnostic	Can't Maximize Device Features (e.g. Gestures & Motion)
No App Store Approval	URL exposed
HTML5 is very powerful	No App Store promotion

Hybrid → Native Apps with WebViews



iProtein: > 8600 users
70% JSDraw/30% MMDS

MMDSLlib (native, template-based)

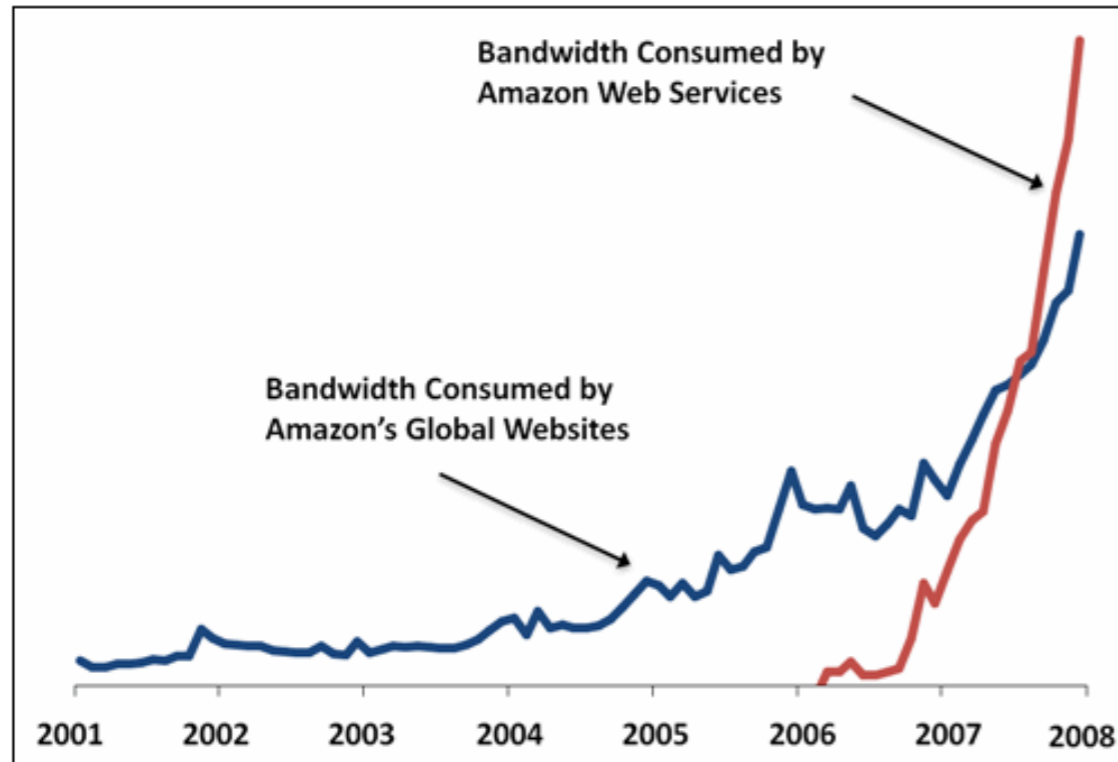


MobileReagents: > 6000 users
5% JSDraw/95% MMDS

JSDraw (web-based)

The Cloud: Amazon AWS Growth

In January 2008, Amazon announced that the Amazon Web Services consume more bandwidth than its entire global network of Amazon.com retail sites



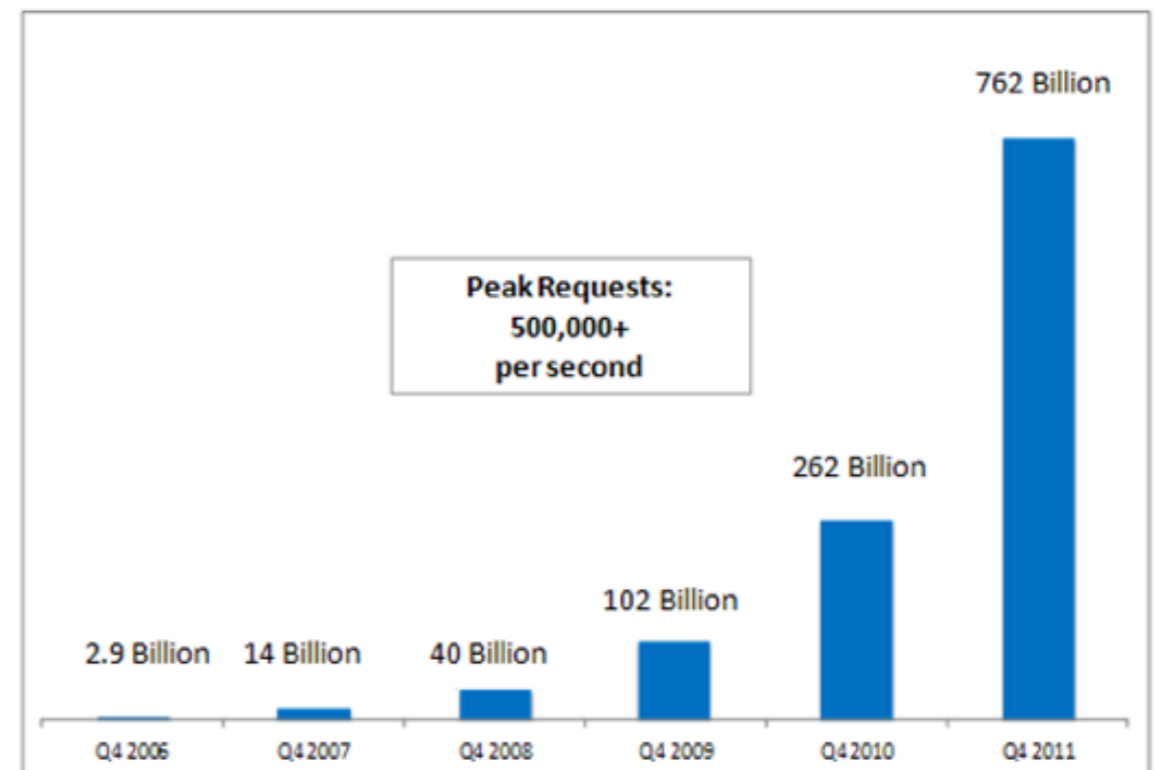
<http://aws.typepad.com/aws/2008/05/lots-of-bits.html>

AWS Free Usage Tier now includes Amazon MS-Windows Server EC2 instances

February 23, 2012

Amazon S3 grew 192% year-over-year

Total Number of Objects Stored in Amazon S3



<http://venturebeat.com/2012/01/31/amazon-aws-s3-growth-cloud/>

Cloud Computing - In Practice

AWS Management Console > Amazon EC2 Steven Muskal | Help

Navigation: Region: US East (Virginia)

- EC2 Dashboard
- Events
- INSTANCES
 - Instances
 - Spot Requests
 - Reserved Instances
- IMAGES
 - AMIs
 - Bundle Tasks
- ELASTIC BLOCK STORE
 - Volumes
 - Snapshots
- NETWORK & SECURITY
 - Security Groups
 - Elastic IPs
 - Placement Groups
 - Load Balancers
 - Key Pairs
 - Network Interfaces

Amazon EC2 Console Dashboard

Getting Started

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

[Launch Instance](#)

Note: Your instances will launch in the US East (Virginia) region.

Service Health

Service Status

Current Status	Details
✔ Amazon EC2 (US East - N. Virginia)	EBS API errors View complete service health details

Availability Zone Status

Current Status	Details
✔ us-east-1a	Availability zone is operating normally
✔ us-east-1b	Availability zone is operating normally
✔ us-east-1c	Availability zone is operating normally
✔ us-east-1d	Availability zone is operating normally
✔ us-east-1e	Availability zone is operating normally

My Resources

You are using the following Amazon EC2 resources in the US East (Virginia) region:

- 5 Running Instances
- 5 Elastic IPs
- 8 EBS Volumes
- 5 EBS Snapshots
- 5 Key Pairs
- 0 Load Balancers
- 0 Placement Groups
- 3 Security Groups

Events

US East (Virginia): No events

Related Links

- Getting Started Guide
- Documentation
- All EC2 Resources
- Forums
- Feedback
- Report an Issue

Performance Metrics (3/23 03:00 - 03:30)

- Avg CPU Utilization (Percent):** Fluctuating between 50% and 80%.
- Avg Disk Reads (Bytes):** Low activity until a spike to ~28,000 bytes at 03:30.
- Avg Disk Writes (Bytes):** Low activity until a spike to ~3,000,000 bytes at 03:30.
- Max Network In (Bytes):** Peak of ~200,000,000 bytes at 03:00.
- Max Network Out (Bytes):** Peak of ~28,000,000 bytes at 03:00.

Mobile-Cloud Infrastructure

- Internet Connection (Wi-Fi or 3/4G)
- Database/WebServer (e.g. GoDaddy/HostGator)

- Apache + php
- mysql

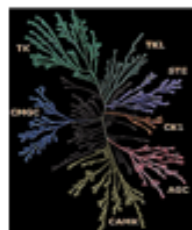


- Application Server (Amazon Cloud-LAMP)

- Apache + php, EC2 instances
- mysql, RDS instances
- ChemAxon JChem + JChemWebServices (includes tomcat/axis2, etc.)
- InfoChem SPRESI Web Services
- JSDraw (javascript)

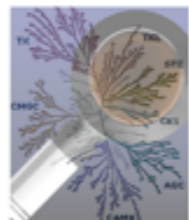


Eidogen-Sertanty's iPhone and iPad Apps



iKinase

iKinase



iKinasePro

iKinasePro



Mobile Reagents



Reaction101



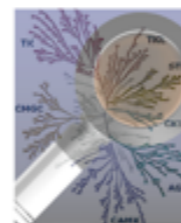
Yield101



SPRESImobile



iProtein



iKinasePro

iKinasePro



Mobile Reagents



Reaction101

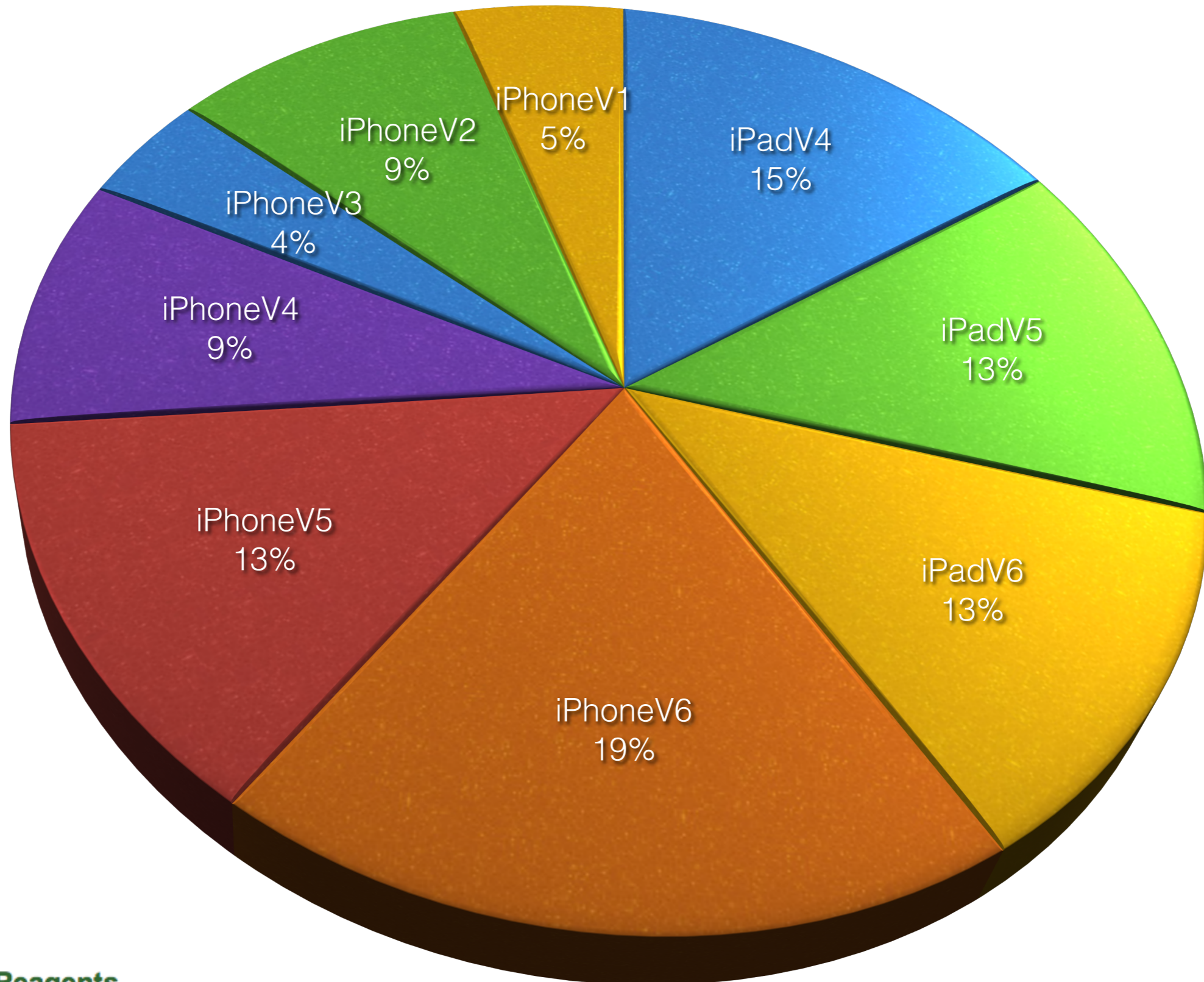


Yield101

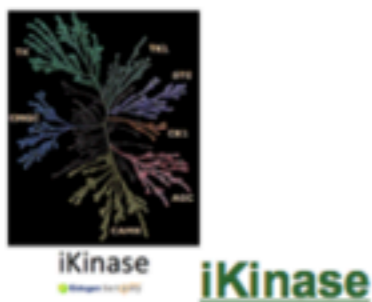


SPRESImobile

Mobile Reagents: Devices and Versions



MobileApps: Worldwide Marketing Vehicles!



~ 25,000 People Use Eidogen Mobile Apps

App Awareness is Not Automatic

COVER STORY

ELECTRONIC CHANNELS

Companies Offer Many Ways To Learn About, Use, And Purchase Consumables

Mobile technology is starting to put product information in researchers' hands literally through smartphones and tablets that are now appearing in labs. And instrument suppliers are creating software applications, or apps, to help customers search for and use reagents and consumable products.

Agilent Technologies has apps for calculating liquid and gas chromatography parameters to determine equipment setups. Likewise, Thermo Scientific has a GC column selector tool. And Waters has a part selector app that allows users to select ultra-performance LC sample plates, vials, filters, and columns. Once users find a desired configuration, they can save or e-mail it, or place an order.

In biosciences, Life Technologies has mobile apps for cell imaging and viewing; plotting and comparing spectra; and calculating common sci-

entific parameters. Merck Millipore has an app for finding filters and another for finding data and research reagents for histone modification and epigenetics research. Another app allows customers to view its EMD Chemicals catalog, with supporting product documents and pricing.

Aggregated information on commercially available chemicals is accessible through Eidogen-Sertanty's MOBILE REagents app, which integrates with the firm's other chemistry apps. The MORE app covers about 6 million compounds from more than 50 suppliers. Chemical structure searches are possible through a mobile device's camera and the app's optical structure recognition capability. And by using mobile devices' ability to scan and print bar codes, Eidogen-Sertanty is trying to enable local inventory management.

Although ubiquitous in

everyday life, mobile devices are just beginning to be adopted in the lab. "More and more companies are looking into bringing these devices into the labs," says Maurizio Bronzetti, Eidogen-Sertanty's business development director. Cost may be an issue and security a concern, especially in regulated industries such as pharmaceuticals.

Even so, companies "recognize that bringing the device closer to the experiment has its advantages," Eidogen-Sertanty CEO Steven Muskal adds. And for scientists, "it is really important to be close to a device that gives them access to applications and content that helps them explore their ideas."



AT HAND A researcher uses the MORE app to search for chemicals.

Online ordering remains popular, and suppliers continue to improve their websites to make it simpler for customers to find what they need. The "find and decide experience," which may happen on a mobile device, is often apart from the "buy experience," says Larry Milocco, senior market development manager at Life Technologies. Many researchers shop from their desks, but an agent completes the purchase. "We are trying to look at how our customers want to connect with us," he adds.

New iPhone/iPad App - SPRESImobile



SPRESImobile: 410,000 Chemical Reactions Freely Available

15 of 100

Name & Synonyms (5)
2-Methyl-6-methoxyquinolin
2-Methyl-6-methoxyquinoline
6-Methoxy-2-methylquinoline
6-Methoxy-2-methylchinolin

Journal Articles (29)
Wang Xiao-Bing, Zhou Yong-Gui, "Synthesis of Tunable Bisphosphine Ligands and Their Application in Asymmetric Hydrogenation of Quinolines", *J. Org. Chem.*, vol. 73, pp. 5640-5642 (2008)
<http://dx.doi.org/10.1021/jo800779r>
Li Zhi-Wei, Wang Tian-Li, He Yan-Mei, Wang Zhi-Jian, Fan Qing-Hua, Pan Jie, Xu Li-Jin, "Air-Stable and Phosphine-Free Iridium Catalysts for Highly Enantioselective Hydrogenation of Quinoline Derivatives+", *Org. Lett.*, vol. 10, pp. 5265-5268 (2008)
<http://dx.doi.org/10.1021/ol802016w>
Zhou Haifeng, Li Zhiwei, Wang Zhijian, Wang Tianli, Xu Lijin, He Yanmei, Fan Qing-Hua, Pan Jie, Gu Lianquan, Chan Albert S. C., "Hydrogenation of quinolines using a recyclable phosphine-free chiral cationic ruthenium catalyst: enhancement of catalyst stability and selectivity in an ionic liquid", *Angew. Chem., Int. Ed. Engl.*, vol. 47, pp. 8464-8467 (2008)
<http://dx.doi.org/10.1002/anie.200802237>

Information
Registration No.: 0006298-800
Molecular Formula: C₁₁H₁₁NO
Molecular Weight: 173.21

Calculated Properties
Calculated Log P: 2.3599999
Rotatable Bonds: 3
H-Acceptors: 1
H-Donors: 0

Patents (1)
Butera John A., Bagli Jehan F., "N-quinolinyl alkyl-substituted 1-aryloxy-2-propanolamine and propylamine derivatives possessing class III antiarrhythmic activity" (1993) Patent owner: American Home Products Corp. Patent country: US Patent number: 5084463

Commercial Availability (6)
Apollo Scientific <http://www.apolloscientific.com>
Sigma-Aldrich <http://www.sigmaaldrich.com>
VWR <https://www.vwrsp.com>

7 of 21

Calculated Properties
Yield: 53%

Journal Articles
SHCHUKINA M. N.; VASIL'EVA V. F.; ZAGRUTDINOVA R. A., "SUBSTITUIERTE 1,2,3,4-TETRAHYDRO-CHINOLINE. 3. 2-(BETA-DIALKYLAMINOETHYL)-DERIVATE.", *KHIM. FARMATSEUT. ZH.*, vol. 9, pp. 24-26 (1975)

Reactant 1
MW: 173.211
MF: C₁₁H₁₁NO

Reactant 2
MW: 45.0837
MF: C₃H₇N

Product 1
MW: 230.306
MF: C₁₄H₁₉N₂O

Summary

- Post-PC revolution is here - Go Mobile!
 - ➔ Apple sold \$3M iPad3 in the first weekend of its debut!
- Apps can be phenomenal marketing vehicles
 - ➔ People come to you, BUT don't expect large app revenue unless you tap into gaming
- Mobile and cloud computing pair well
 - ➔ Server-side cloud (infinite) computing is a great enabler
- Patience is important...
 - ➔ Don't expect 22.4M weekly users ;)

Acknowledgements

- Dr. Rajan Sharma and Prof. Stephan Schurer



- Dr. Maurizio Bronzetti



- Dr. Alex Clark



- Dr. Tony Yuan



- Dr. Peter Löw, Dr. Josef Eiblmaier, et al.

