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

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Apple Market Cap = US Retail Sector Total Market Cap

Most of Apple Revenue is from Mobile Devices

Apple is Crushing the Competition

http://www.appleinsider.com

Apple stock seen hitting $718 on sales of 60M iPads, 134M iPhones in 2012
<table>
<thead>
<tr>
<th>Product</th>
<th>Release Date</th>
<th>Original Price</th>
<th>Stock Value Today</th>
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<td>1997-11-10</td>
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</table>
Apple's iPad Sales Blow Past Projections

San Jose Business Journal March 14, 2011

Apple iPad Sales Projected to Hit 28 Million in 2011

DailyFinance

Posted 10:00 AM 09/09/10
http://srph.it/ak77QA

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.

http://tech.fortune.cnn.com/2010/10/05/how-many-ipads-has-apple-really-sold/
The Post-PC Revolution Is Here...

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

Apple Demolishes Expectations, Delivers Another Monster Quarter

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

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

- Books: 133
- Business: 52
- Education: 205
- Entertainment: 260
- Finance: 21
- Games: 833
- Healthcare & Fitness: 38
- Lifestyle: 110
- Medical: 30
- Music: 106
- Navigation: 18
- News: 51
- Photography: 81
- Productivity: 192
- Reference: 73
- Social Networking: 54
- Sports: 31
- Travel: 73
- Utilities: 166
- Weather: 17

*Number of Applications Compatible with iPad Only*

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
## 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

<table>
<thead>
<tr>
<th>Web Advantages</th>
<th>Web Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Management</td>
<td>InterApp Communication Difficult</td>
</tr>
<tr>
<td>Device Agnostic</td>
<td>Can’t Maximize Device Features (e.g. Gestures &amp; Motion)</td>
</tr>
<tr>
<td>No App Store Approval</td>
<td>URL exposed</td>
</tr>
<tr>
<td>HTML5 is very powerful</td>
<td>No App Store promotion</td>
</tr>
</tbody>
</table>

**Hybrid** → **Native Apps with WebViews**
JSDraw (web-based)

MMDSLib (native, template-based)

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

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

Amazon S3 grew 192% year-over-year

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

February 23, 2012

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

http://venturebeat.com/2012/01/31/amazon-aws-s3-growth-cloud/
Cloud Computing - In Practice

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

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

Events

- US East (Virginia): No events

Related Links

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

Avg CPU Utilization (Percent)

Avg Disk Reads (Bytes)

Avg Disk Writes (Bytes)

Max Network In (Bytes)

Max Network Out (Bytes)
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)
MobileApps: Worldwide Marketing Vehicles!

~25,000 People Use Eidogen Mobile Apps
App Awareness is Not Automatic

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 scientific 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 APPROACH 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.”

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
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
  ‣ OKB - Coming Soon!

• Dr. Maurizio Bronzetti
  ‣ Mobile Reagents
  ‣ Reaction101
  ‣ SPRESImobile

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  ‣ MMDSLib:
    ‣ Mobile Reagents
    ‣ iProtein
    ‣ Reaction101
    ‣ Yield101
    ‣ SPRESImobile

• Dr. Tony Yuan
  ‣ JSDraw:
    ‣ iKinasePro
    ‣ Mobile Reagents
    ‣ iProtein

• Dr. Peter Löw, Dr. Josef Eiblmaier, et al.
  ‣ SPRESImobile