

MOBILE INTERFACES & THE IMPACT ON (AND OPPORTUNITIES FOR) PUBLISHER CONTENT

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May 20, 2011

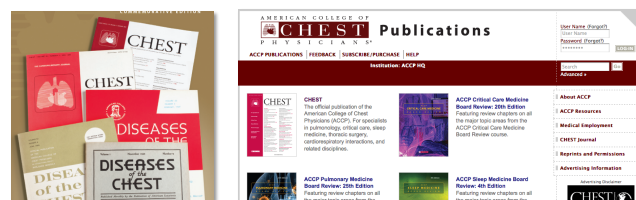


American College of Chest Physicians

- Organization of 18,000 Physician Members
 - Practicing clinicians, specializing in pulmonary, critical care, and sleep medicine
- Mission
 - To promote the prevention, diagnosis, and treatment of chest diseases through education, communication, and research.



76 Years in Publishing



1935
Print

1999
Online

2009
Mobile



Overview

- Case 1
 - Why Apps
 - How We Did It
 - Where We Are Today
 - Lessons Learned



- Case 2



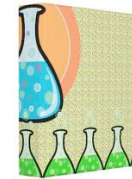
Why Apps

And how do you decide on a platform?



Why not the mobile Web?

- Did not want a positive user experience to rely on internet connectivity
- Hoped to offer personalization and functions that could be saved easily



- Global adoption
- Trusted e-commerce platform
- Ease of use
- High-res touch screen



Consider the audience

Fortune | News | Markets | Technology | Personal Finance | Small Business | CNN.com

Home | Fortune 500 | Street View | Investing | Management | Rankings

Daily Tech | **Apple 2.0** | Google 24/7 | Technate | Guest posts

Mac news from outside the reality distortion field

Six out of 10 doctors prefer iPhones

Posted by Philip Elmer-DeWitt
August 4, 2009 7:08 PM

Healthcare professionals would seem a natural market for smartphones, especially if the Obama administration makes good its campaign promise to computerize U.S. health care records. But which smartphone will doctors and nurses be using?

Software Advice, an Austin-based resource for software buyers, tried to answer that question last week. In what it admits was not a "super-scientific" survey, it e-mailed a questionnaire to 700 healthcare professionals and processed 71 replies. The results, released on Tuesday, show an interesting mix of preferences that vary according to job description.

Smartphone Use by Profession

Physician
Nurse
Health IT
Admin
Other

iPhone
BlackBerry
Palm Pre
Windows Mobile
Other

home | reviews | news | downloads | email tv | On Microsoft: The 20 worst click bids since 1999

cnet news | Latest News | CNET Drive | Webware | Crave | Business Tech | Green

Home > News > Health Tech

Study: Doctors choosing iPhone over BlackBerry

by Elizabeth Armstrong Moore

July 27, 2010 12:10 PM PDT

In 2008, Spyglass Consulting Group released a report, "Trends in Mobile Communications," finding that 59 percent of physicians interviewed were using smartphones. Today, according to the firm's latest report, that figure has jumped to 94 percent.

"Physician smartphone adoption is occurring more rapidly than with members of the general public," said Gregg Markov, managing director at Spyglass. Moreover, Markov added, "Physicians are showing a clear preference (almost doubled) for using the Apple iPhone (44 percent) over the RIM BlackBerry (20 percent)."

A note of caution: the study's sample size is small. The "Point of Care Communications for Physicians" report involves telephone interviews in the spring of 2010, with just more than 100 physicians working in acute care and ambulatory environments across the United States. (Meanwhile, the 2010 Manhattan Research "Taking the Pulse" survey of more than 2,000 physicians puts the percentage of physicians using smartphones at a more modest 72 percent, compared with 20 percent of the general public.)

(Credit: Apple, Research in Motion)



Spy on readers (and talk to them)

Operating System	Visits
Windows	92.35%
Macintosh	6.50%
Linux	0.40%
(not set)	0.31%
iPhone	0.31%
iPod	0.05%
SymbianOS	0.03%
Android	0.02%
PalmOS	0.02%
Danger Hiptop	0.01%

- Members transition from BlackBerry to iPhone
- Hospitals were finding more utility in the iPhone
 - Allscripts
 - Epocrates

Traffic to chestjournal.org
Jan 1, 2009 thru June 30, 2010



How We Did It

Choosing the right content, finding a reliable partner, and diving in



Case 1: Select app-worthy content

23. B. Diffuse alveolar hemorrhage.

This patient has developed diffuse alveolar hemorrhage (DAH) at the typical time period of 7 to 40 days from the start of therapy following bone marrow transplantation (BMT). In general, patients undergoing allogeneic BMT have a greater risk of DAH if they are receiving high-dose chemotherapy, have a greater degree of neutropenia, and/or have a greater degree of thrombocytopenia.

23. A 45-year-old man who underwent an allogeneic bone marrow transplant procedure 2 weeks ago for non-Hodgkin's lymphoma is transferred to the ICU for the rapid onset of shortness of breath and requires intubation for hypoxemic respiratory failure. His initial pretransfusion counts were unremarkable. His CBC count from the day prior to transfer showed a leukocyte count of $1.000/\text{mm}^3$ ($1.0 \times 10^9/\text{L}$) with 82% segmented neutrophils, 7% monocytes, and 9% lymphocytes. Hemoglobin was 6.5 g/dL (65 g/L), hematocrit 20% (0.20), and platelets $70,000/\text{mm}^3$ ($70 \times 10^9/\text{L}$). Weights have been stable. No hemoptysis has been reported.

On physical examination, he is intubated and mechanically ventilated. On an FIO_2 of 0.65, his arterial blood gas measurements are PO_2 67 mm Hg, PCO_2 38 mm Hg, and pH 7.37. His temperature is 38.0°C , blood pressure 100/70 mm Hg, pulse 100/min, and respiratory rate is via the ventilator at 15 breaths/minute. His chest examination is remarkable for end tracheal, lung examination reveals diffuse crackles, cardiovascular examination is without murmurs, abdominal examination is benign, and examination of the eyes, ears, nose, and throat is without abnormalities. His laboratory tests reveal a leukocyte count of $2,200/\text{mm}^3$ ($2.2 \times 10^9/\text{L}$) with 83% neutrophils, 9% monocytes, and 9% lymphocytes. His hemoglobin is 6 g/dL (60 g/L), hematocrit 22% (0.22), and platelet count $65,000/\text{mm}^3$ ($65 \times 10^9/\text{L}$). His chest and bone function studies are within normal limits. Cultures to date are negative. His immunosuppressive regimen includes cyclosporine, prednisone, and azathioprine. His chest radiograph is shown in Figure 23A. The patient undergoes bronchoscopy with bronchoalveolar lavage (BAL). The BAL cytology is shown in Figure 23B. Microbiology studies are pending. The most likely diagnosis in this patient is:

A. Cardiac pulmonary edema.
B. Diffuse alveolar hemorrhage.
C. Acute graft-versus-host disease.
D. Idiopathic pneumonia syndrome.
E. Bacterial pneumonia.

Figure 23A

Figure 23B
Papaini et al, original $\times 100$

ACCP-SEEK
Self-Education and
Evaluation of
Knowledge

ACCP-SEEK

- Granular format
- Rich images
- Built-in "actions"
 - Select an answer
 - Turn a page to read rationale
 - Read references for more info



Find a partner

- Focus on delivery of educational content
- Understanding of scientific writing and research
- Apps in progress
- Past projects
 - Developed collaboration tools for scientists and researchers



Assess special challenges

- 8 x 11 inch book \rightarrow 3.5 inch (diagonal) screen
- Editorial review would need to occur within the device
 - Special characters, table and figure labels, references
- Pricing model (book \$100 - \$300)
 - \$9.99 download + \$9.99/10 questions
- 3 different editions
 - Pulmonary, Critical Care, Sleep Medicine (100 Qs)



Develop interface and functionality



Feature list

Planned for Launch

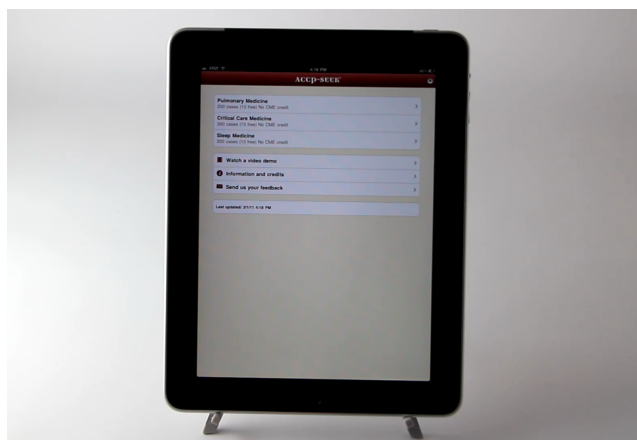
- Reader for questions, answers, and rationales
- Embedded images with link to image viewer with zoom in/out
- List view, indexes, search
- Auto-scroll with tilt
- Note taking and voice annotation
- Save place on open/close
- Link references to PubMed via in-app browser
- Email references to contacts
- In-app purchase
- Save state on closing/relaunch

Planned for Future Releases

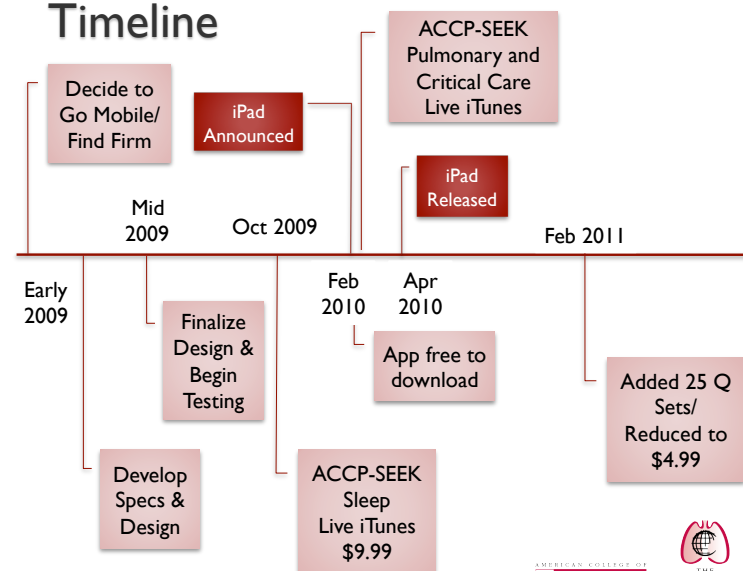
- Advertising support
- Push notifications of new volumes
- Send data for CME accreditation
- Add survey component
- In-app viewing of educational videos
- News/feeds from ACCP



ACCP-SEEK app demo



Timeline



Case 2: Select app-worthy content



- High traffic
- Broad audience
- Quality content and images
- Strong browsing use cases
 - Detailed table of contents
 - Abstract views



Assess special challenges

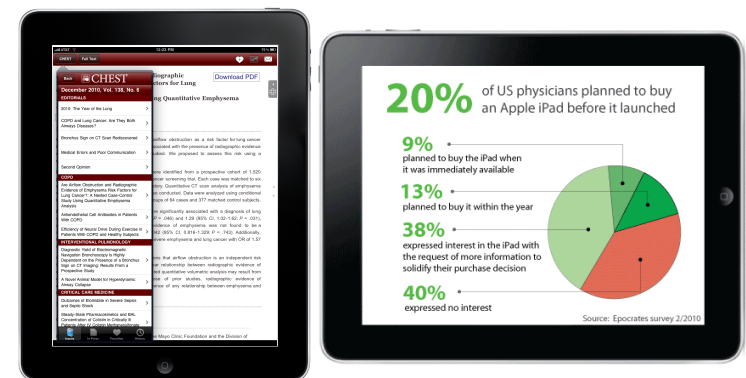
- User authentication
- Quantity of content
- Speed of use
- Need to make the app different from the Web without sacrificing the features of the Web site



Develop interface and functionality for iPhone and iPod touch...



... And this time iPad, too



Feature list

Planned for Launch

- 3G download, access to recent issues
- Article navigation by section
- View by table of contents, abstract, full-text iOS optimized, full-text PDF, and history list
- Figure viewer with legend overlay
- Save favorite articles
- In-app Web browser
- Settings to save log-in info, preferred email address
- IP authentication

Planned for Future Releases

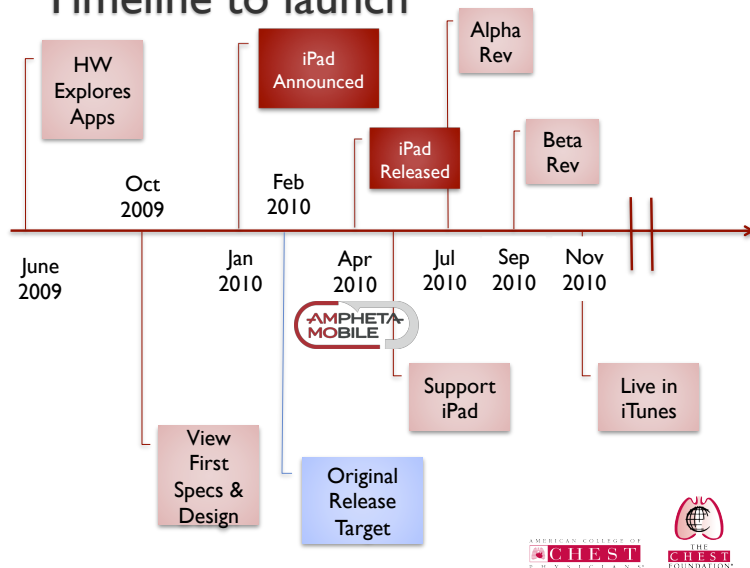
- Advertising support
- Usage statistics & analytics
- Note taking
- Browse by topic
- Podcasts
- Voucher access



CHEST Journal app demo

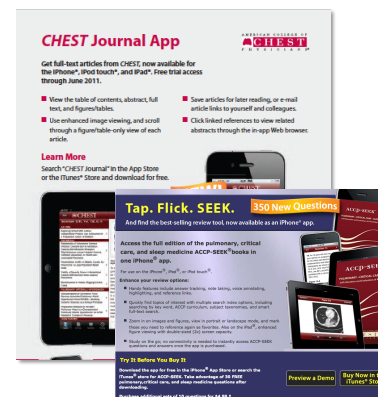


Timeline to launch



Work involved to launch

- 2 staff (development)
- 5+ rounds of review
 - Design
 - Text and front matter
 - Functionality
 - Engaged members for input
- Many meetings on marketing and pricing

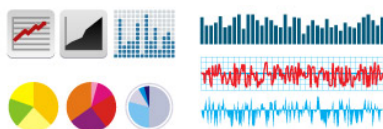


... AND THEN
CUSTOMER SUPPORT
AND UPDATES!

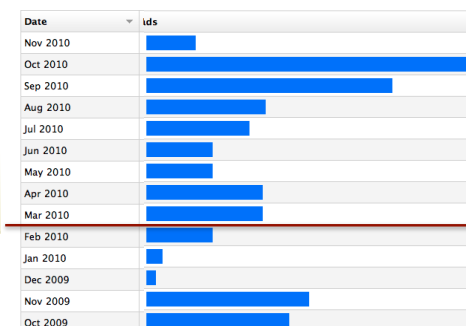


Where We Are Today

Data, downloads, and diverging from the original game plan



Case 1: Downloads



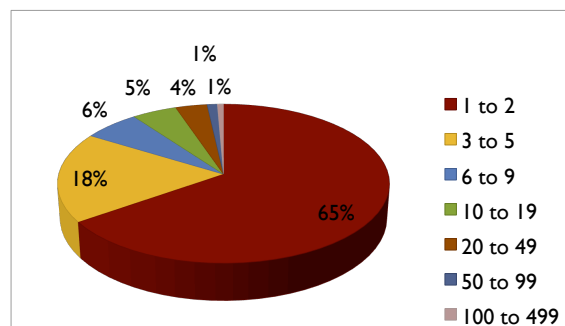
Free + in-app purchase

\$9.99

- ACCP-SEEK is tied to board exam season
- Cannot yet assess impact of price change
- 16% of those who download in the "off season" buy question sets
- ~ 40% buy question sets in board exam season



Usage, no. sessions per month



Most users are spending 3 to 10 min per session.
On the CHEST Web site, readers average 2.5 min per session.



What the customers say

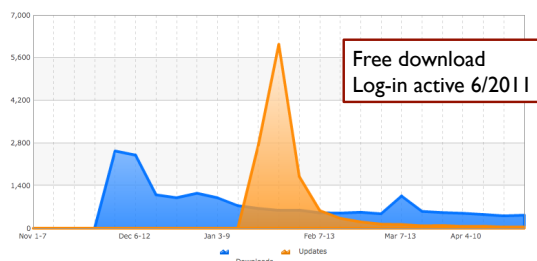
- Overall excellent application. Biggest problem is that there is no CME like the hardcopies. Also, I personally feel that if you bought the hardcopies, you should get the same SEEK questions for free in the app...
- Interface is easy to use & the radiology and pathology images are valuable to the experience.



• No CME
• Free download + in-app purchase of \$9.99



Case 2: Downloads



Country	Downloads
United States	8,305
Mexico	850
Brazil	808
United Kingdom	664
Canada	658
Colombia	549
Spain	472

↑ 18,000 downloads

↑ 12,000 updates

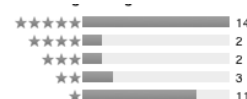
Global Reach

No usage data ☹



What the customers say

- It's tiny on the iPhone, but it actually looks great on the iPad... I like the easy one-button integration of the CHEST Web site by way of the little side button.
- Great app but crashes.



Ongoing challenge is to find a way to address the one-star ratings by improving the apps ...



Continue to monitor what users are doing on their mobile phones

- 29% downloaded an app
- 13% paid to download an app
- App users skew younger, more educated, and affluent

App use ranks low on a list of non-voice cell phone activities

% of adult cell phone users who do each of the following on their phone...

Take a picture	76%
Send or receive text messages	72
Access the internet	38
Play a game	34
Send or receive email	34
Record a video	34
Play music	33
Send or receive instant messages	30
Use an app	29

Source: Pew Research Center's Internet & American Life Project, April 29-May 30, 2010 Tracking Survey. N=1,917 adult cell phone users.

Source: Pew Internet & American Life Project



Continue to monitor what users are doing on their mobile phones

By the end of 2010, an estimated 22 percent of U.S. physicians were using iPads, according to Chilmark Research.

Doctors Adopting iPad Use Nationwide To Enhance Medical Care. Institutions Buy In. Apple The New Healthcare Company.

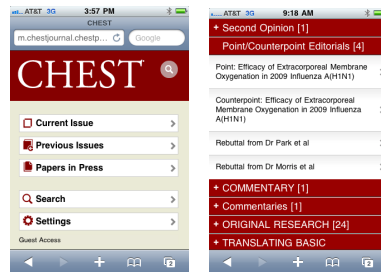
Posted on April 10, 2011 by Jeffrey Newman

load purchases by and for physicians is doctors is occurring nationwide on a

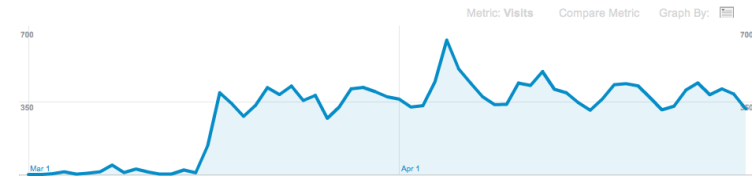


Diverge from the plan, cover all bases

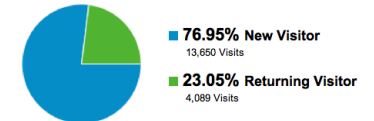
- Decided to partner to create mobile site
- False start on launch Dec 2010
- Final launch of mobile-opt site March 22, 2011



Mobile-optimized site use



Operating System	% Visits
iPhone	70.04%
Android	19.54%
iPod	8.60%
Windows	1.01%
Macintosh	0.36%
BlackBerry	0.18%



Lessons Learned

A brief rundown before your important questions

App development 101

- Partner strategically, do not become a software developer
- Know your target audience (and their devices)
- Allocate time for testing (and re-testing and more testing)
- Price with caution, apps are cheap
- Retain functionality and features from original
- Prioritize download and performance speeds
- Plan to incorporate usage statistics
- Prepare to respond to users (and new devices) with updates

**CARDINAL RULE:
BE FLEXIBLE**



Thank you!
...Questions?



Search iTunes for:

ACCP-SEEK
or
CHEST Journal

