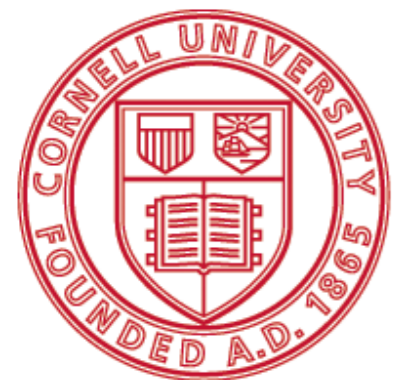


IT for IVF

Brian A. Levine, M.D., M.S, FACOG
Technology Editor, Contemporary OB/GYN
Fellow, Weill Cornell Medical College, New York Presbyterian Hospital

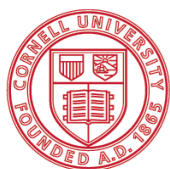


The Ronald O. Perelman and Claudia Cohen
Center for Reproductive Medicine

It's all about language...

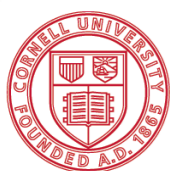
What's the difference between an etymologist and an entomologist?

An etymologist knows the difference!



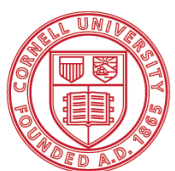
Learning Objectives

- **At the conclusion of this CME program participants should be able to:**
 - Examine the role of the tablets/portable technologies in enhancing provider workflow
 - Utilize specific apps to improve efficiency
 - Understand the advantages/disadvantages of wearable technologies

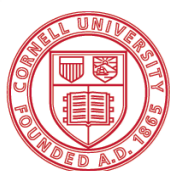


Conflict of Interest Disclosure Statement

I do not have financial interest or other relationships with the industry relative to the topics being discussed.

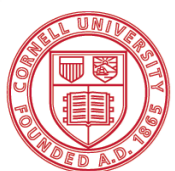


WARNING: Audience Participation



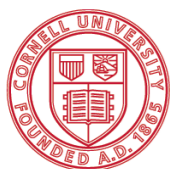
What is in your pocket?

- **1) iPhone**
- **2) Android**
- **3) Blackberry**
- **4) Windows Phone**
- **5) Other**



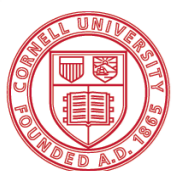
How long have you had your device?

- 1) less than one month
- 2) less than 6 months
- 3) less than 1 year
- 4) 1 to 2 years
- 5) more than 2 years



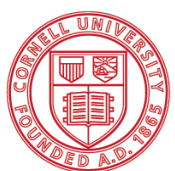
How often do you use your device at work?

- 1) multiple times a day
- 2) once a day
- 3) a few days a week
- 4) once a week
- 5) rarely



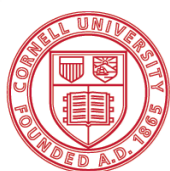
Do you own a tablet?

- 1) Yes
- 2) No



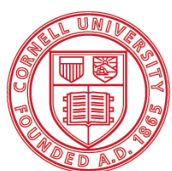
How long have you had your tablet?

- 1) less than one month
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How often do you use your tablet at work?

- 1) multiple times a day
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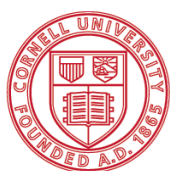


Computing Culture

- For the first time since the 2001 dot-com bust, shipments of personal computers (PCs) fell in 2012.
- In the early 2000s PC-sales declined because of the stock market.
- In 2013, despite a robust economy, PC sales continued to plummet.... Why?!?

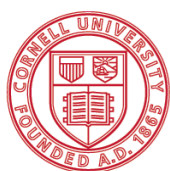
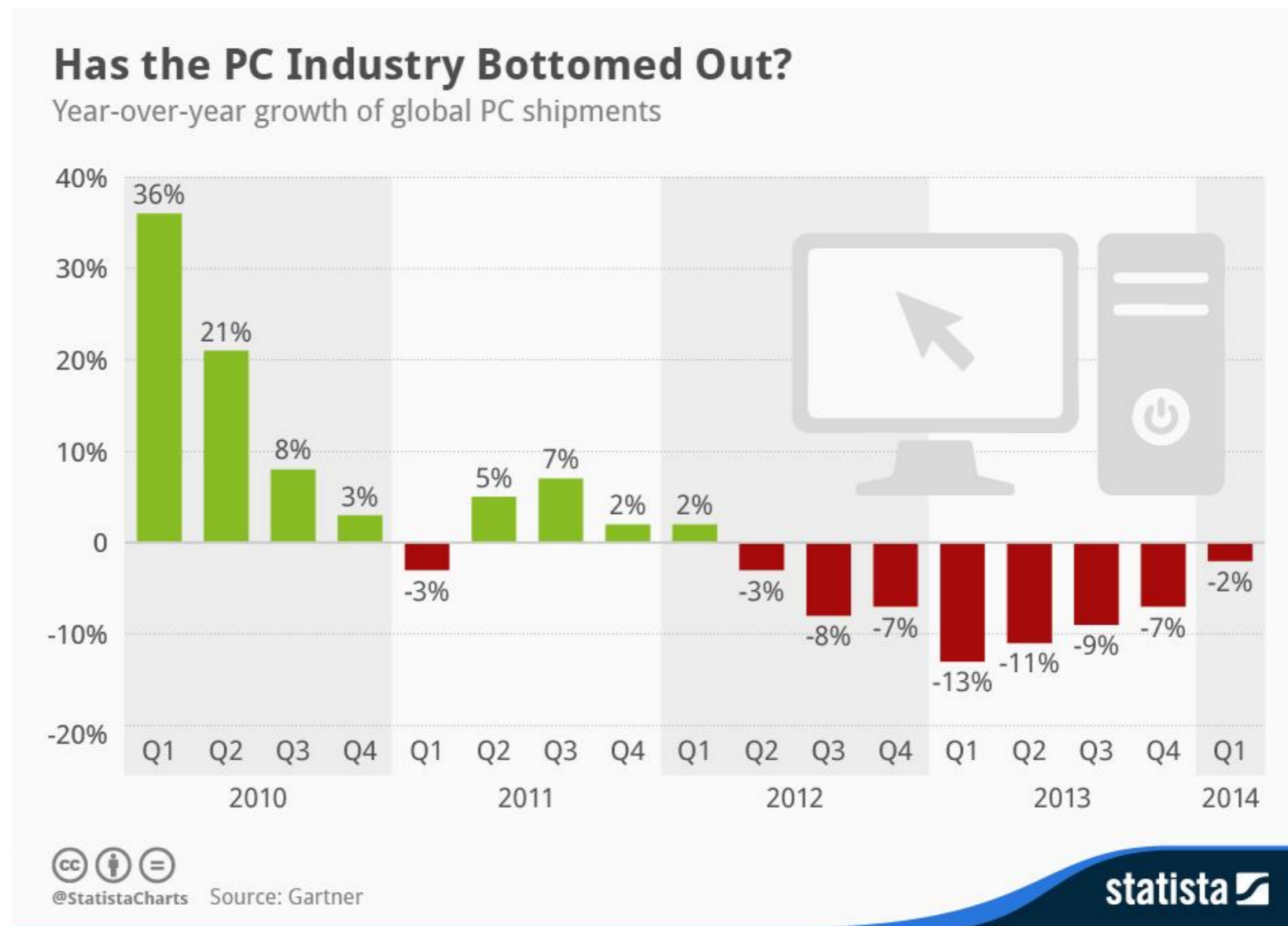
TABLETS

- According to analysts at J.P. Morgan, tablet sales rose **72%** in 2012 and surged an additional 54% in 2013.



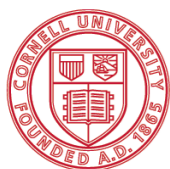
But in 2014, PC sales improved...

- Businesses and consumers alike are again purchasing PCs, and Mac sales are on the rise year-over-year.

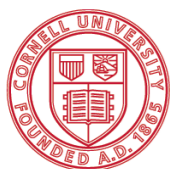
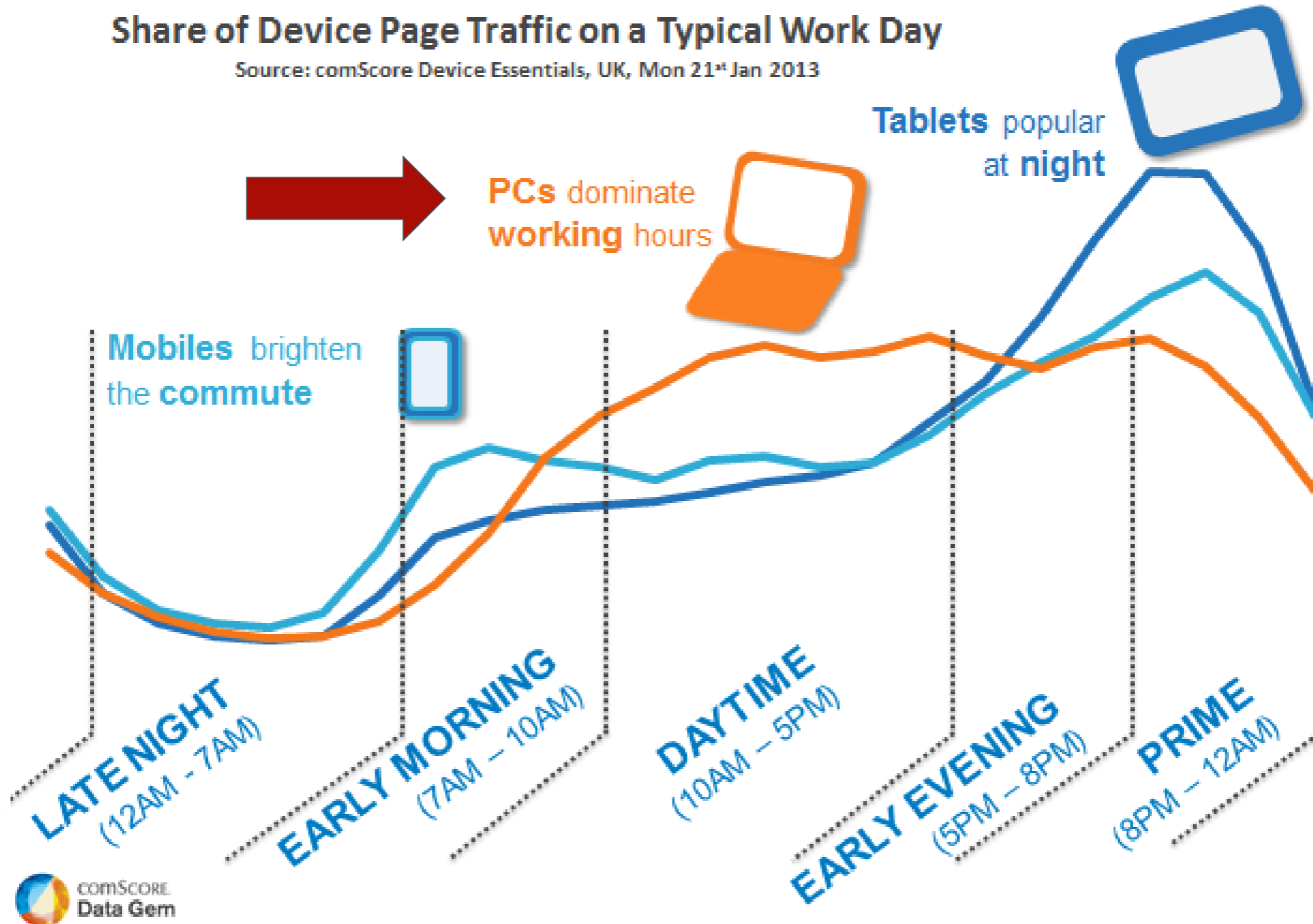


Tablets ARE PCs

The most productive tablets on the planet.

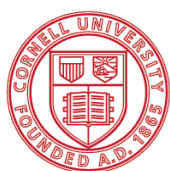


When do people use their devices?



What can you do with a tablet?

- **E-Read (Continuing Medical Education)**
- **Download apps!**
- **Reference tools**
- **Electronic Health Records**
- **Email / Messaging**



Tablets come in many shapes / sizes / OSes

LENOVO TABLETS
WORK. PLAY. COMFORT. VERSATILITY.

YOGA TABLET
3 MODES & 18 HOURS OF BATTERY.

EXPLORE YOGA >
SEE THE UNVEILING

YOGA TABLET
ASHTON KUTCHER

Battery life may vary. For further details, go to Lenovo.com.

Android or Windows? **Screen Size**

ANDROID TABLET PCS



Backed by the Google App Store, Android offers all of your favorite apps, games and productivity tools. With near-limitless customization and easy access to all of Google's services, it's no wonder Android is considered the world's most popular mobile OS.

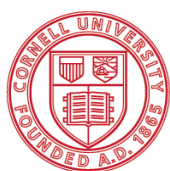
[Explore Android >](#)

WINDOWS TABLETS PCS



Windows 8 makes it's easy to do more than one thing at once – like running multiple apps side-by-side. It works the way you do: customize your experience by placing your favorite apps, sites, and people on the Start screen, all while getting live updates at a glance.

[Explore Windows >](#)



Big mistake at a delicate time...

Windows 8

MICROSOFT SURFACE WITH WINDOWS RT

Microsoft's Surface offers a sleek magnesium chassis, sharp screen and magnetic Touch Cover that doubles as a keyboard, proving to be one of the most innovative iPad alternatives yet.

At 10.8 x 6.8 x 0.4 inches and 1.5 pounds, the Surface is heavier and thicker than the ASUS Vivo Tab RT (1.1 pounds, 10.4 x 6.7 x 0.3 inches). A panel on the back flips up to become a sturdy kickstand. The Touch Cover snapped on quickly and accurately, and the bond between the dock and the covers is very strong.

When we watched a 1080p offline trailer for "Skyfall" on the 10.6-inch 1366 x 768-pixel display, images were bright and colorful. Viewing angles on both tablets were strong from 90 degrees to any side.

When we played the



standing 5 feet away from us couldn't make out the lyrics.

We found the \$119 Touch Cover an accurate way to type on the Surface, but not as pleasant as typing on a traditional keyboard. The slightly thicker \$129 Type Cover's keys offer solid tactile feedback that made our typing a lot faster.

The Surface notched a solid 347 on the Peacekeeper browser benchmark, better than the Vivo Tab RT's 338. The Surface's internal memory took a sluggish 6 minutes and 3 seconds to com-

of the worst-quality images and video we've seen on a premium mobile device. Images were horribly blurry and noisy, and many of the colors were washed-out.

The Surface still had more than 30 percent of its charge left after 7 hours of sitting with its screen and Wi-Fi on.

★★★★☆
\$699
(\$499 to start)

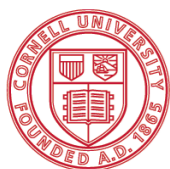
PROS

- Striking industrial design
- Innovative Touch Cover
- Sharp display
- Microsoft Office included

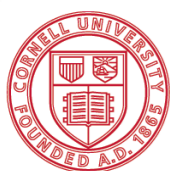
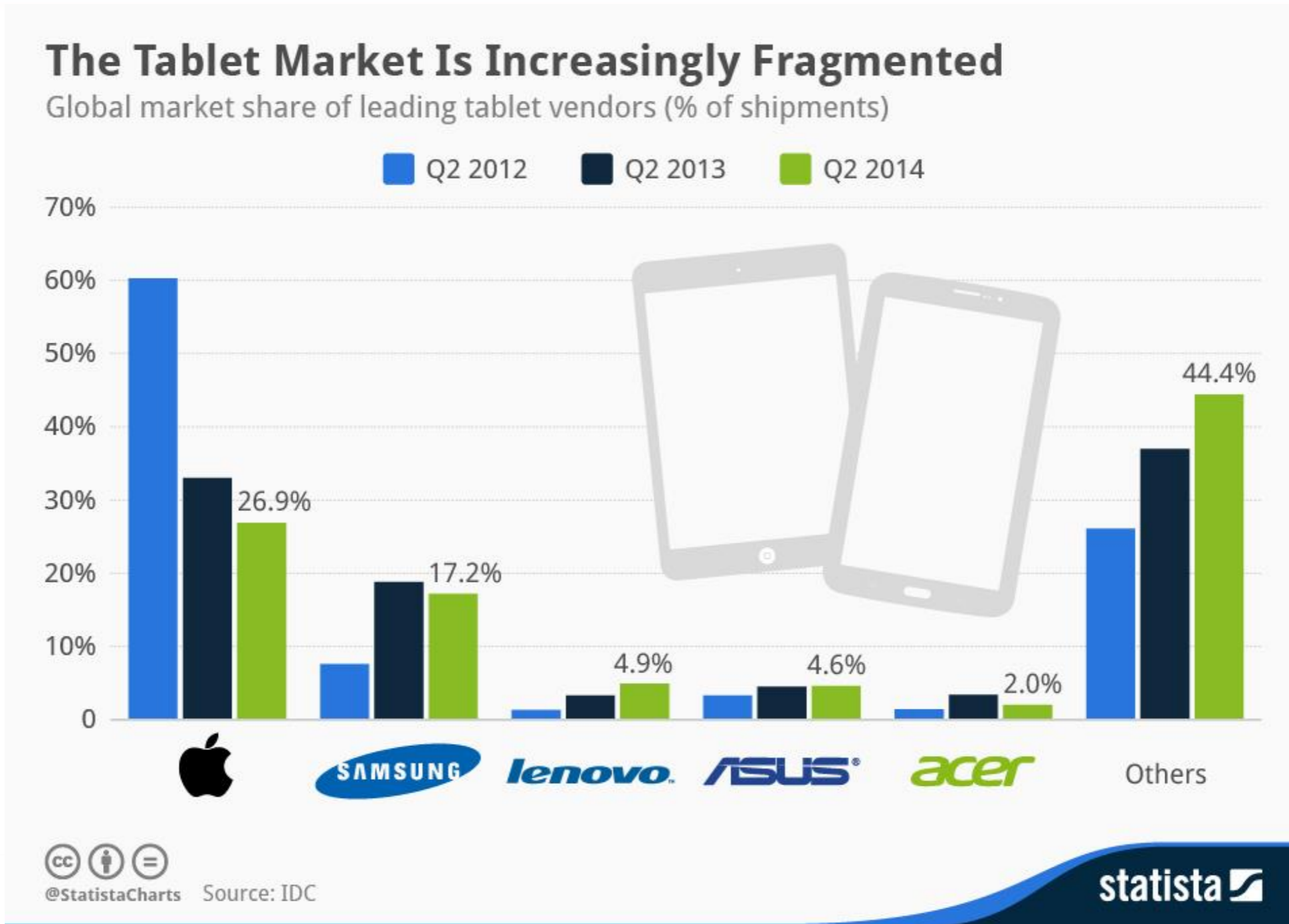
CONS

- Few high-quality apps available
- Poor cameras
- Sluggish and unresponsive at times

CPU: 1.3-GHz
Nvidia Tegra 3
OS: Windows RT
RAM: 2GB
Display: 10.6 inches /1366 x 768
Front/Rear Camera: 1-MP/1-MP
Size: 10.8 x 6.8 x 0.4 inches
Weight: 1.5 pounds



Most popular vendors...



Do I need a new tablet?

- Tablets have hardly improved beyond relatively superficial changes in size, screen resolution, and processor speed.
- People that want tablets have them, and there's just no need to upgrade because they more than adequately perform their assigned tasks.
- The market for tablets is saturated: grandparents and kids have them!



iPad Air 2



iPad Air



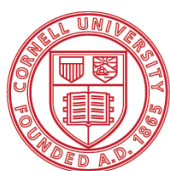
iPad mini 3



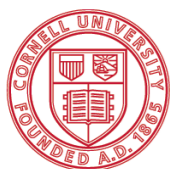
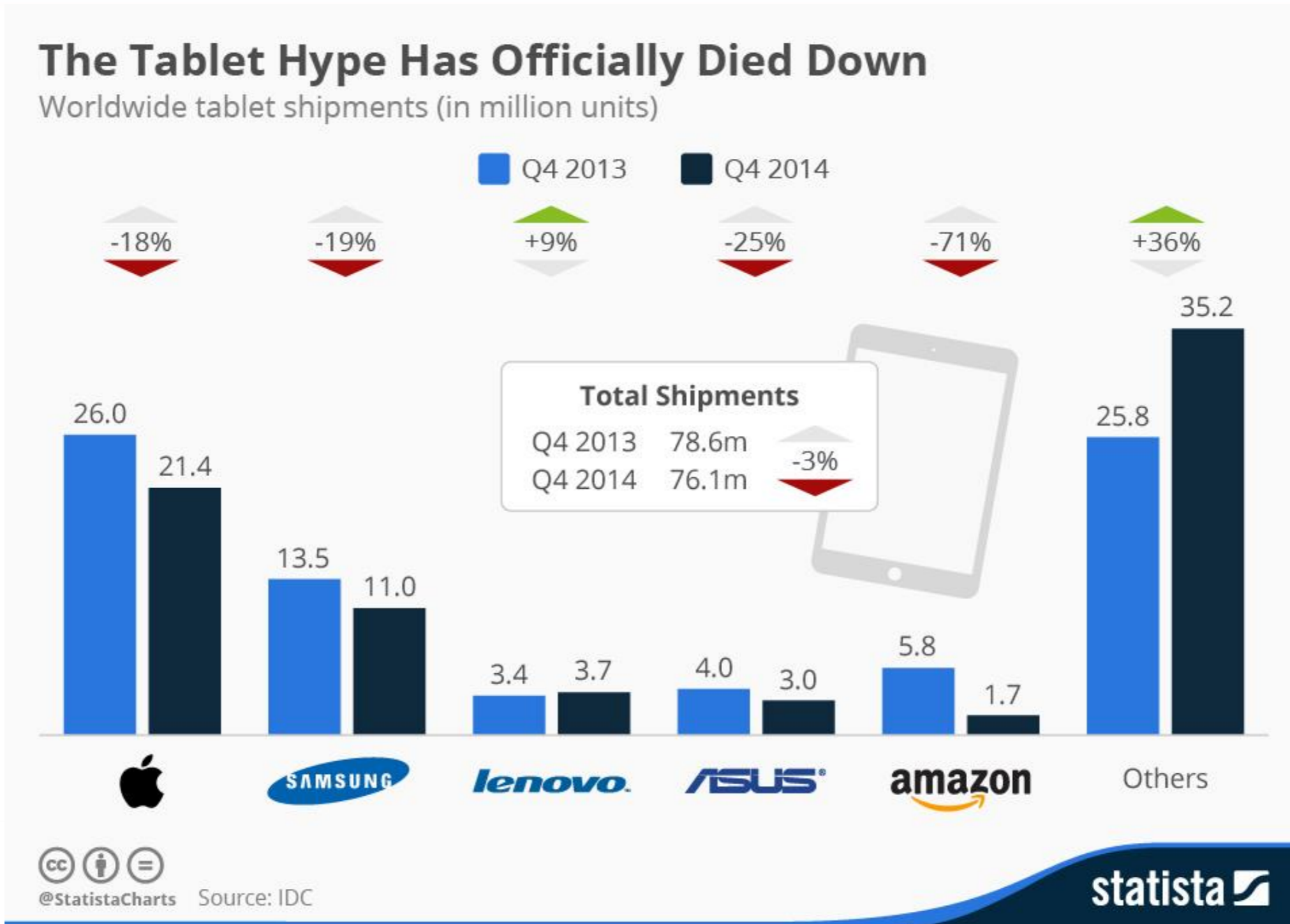
iPad mini 2



iPad mini

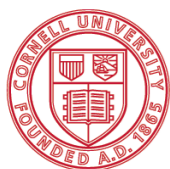


Tablet Adoption...

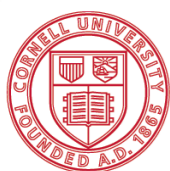


Why do people use their devices? (2012)

Smartphones Serve As Pocket PCs and Extend Desktop Experience

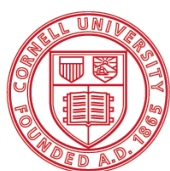
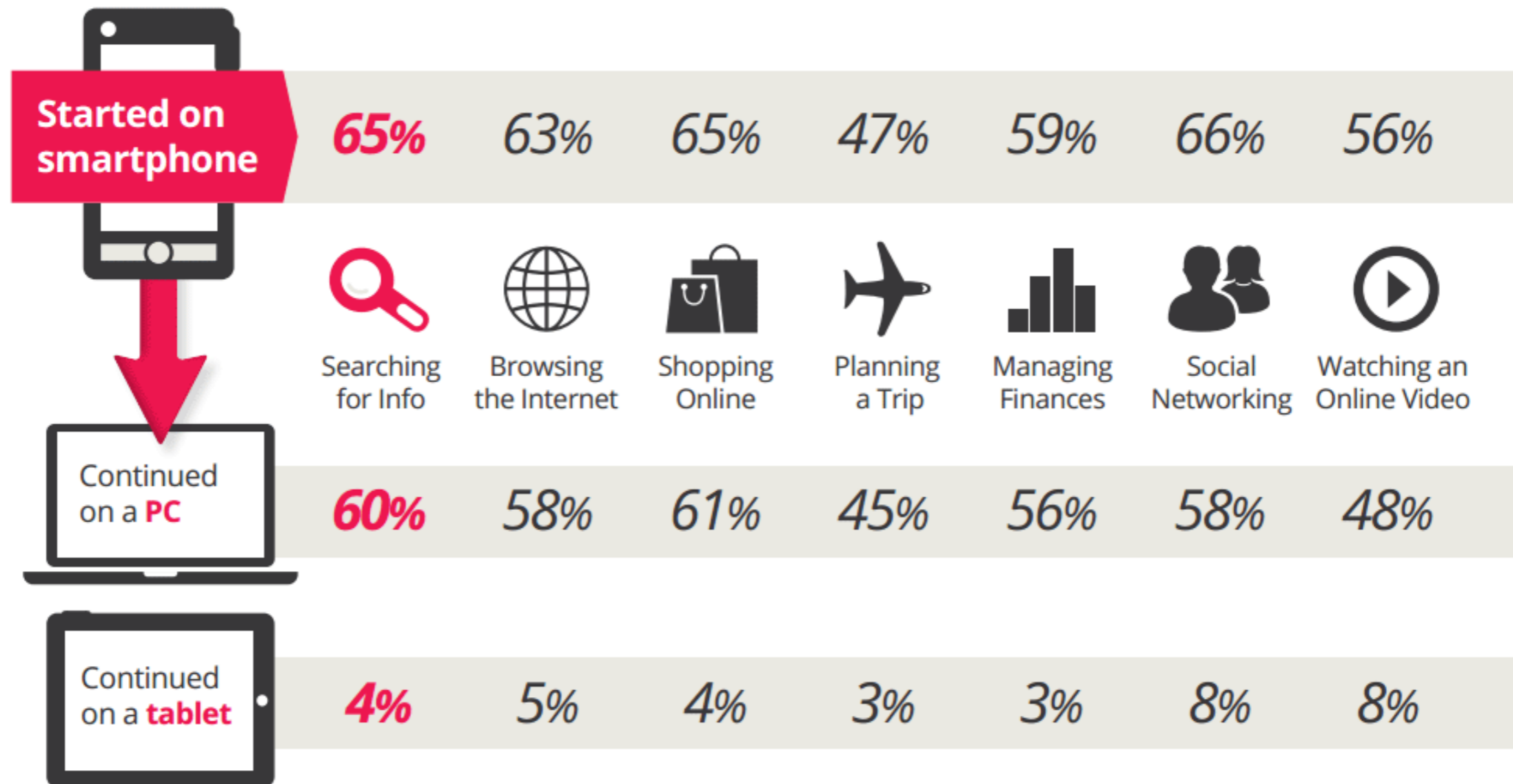


How do people use their devices? (2015)



Smartphones are a common starting place

Smartphones are the most common starting place for online activities



Do I really need a tablet or a bigger phone?

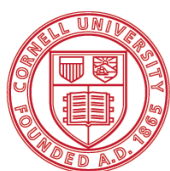
iPhone 6
Bigger than bigger



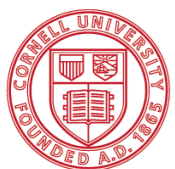
The Next Big Thing Is Here™

The Samsung Galaxy S[®] 5 isn't just groundbreaking innovation, it's technology that adapts to your life.

To order yours, select your carrier and color below.



The Flagship Showdown

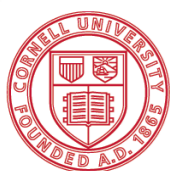


What do you need? / What do you want?



Xiomara Blanco/CNET

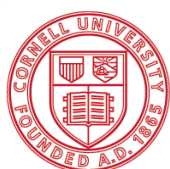
- Is this device for work or personal use?
 - If for work, do you plan on using it outside of work?
 - If for personal use, do you plan on bringing it to work?
- Are you looking to replace your PC?
- How do you use email? How do you want to email?
- Do you read electronic publications?
- Will you be the only user of your tablet?



Best question from ACOG ACM 2014....



- Price does not equal quality!
- Expensive tablets can be expensive paperweights
- Not all “cheap” tablets are cheap on features.
- Monthly service charges are part of the cost of the device



Brian's Solution: Microsoft Surface Pro 3



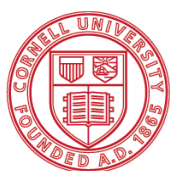
Mobility



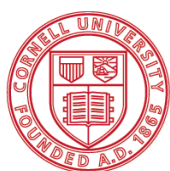
Sanitizable



Security

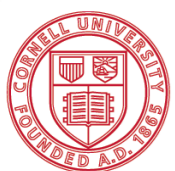


WARNING: Audience Participation



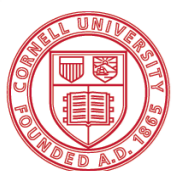
Do you use cloud-based software?

- 1) Yes
- 2) No



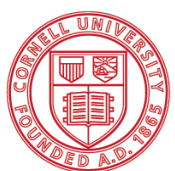
Do you use Netflix or Hulu?

- 1) Yes
- 2) No



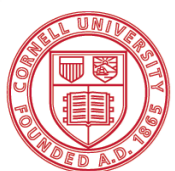
Do you use Gmail or Yahoo?

- 1) Yes
- 2) No

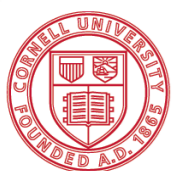


Do you use iTunes?

- 1) Yes
- 2) No

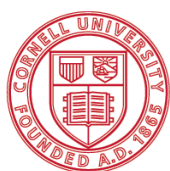


Backup / Allocation of Resources



It's looking a little cloudy out there....

	<u>OneDrive</u>	<u>Dropbox</u>	<u>Google Drive</u>	<u>Box</u>	<u>Copy</u>
File size restrictions?	2GB	None with Dropbox apps	10GB	250MB for free plan, 5GB for paid plan	None
Free storage?	15GB	2GB	15GB	10GB	15GB
Can I earn extra free storage?	Yes	Yes	No	No	Yes
Paid plans	\$2/month for 100GB, \$4/month for 200GB	\$10/month for 1TB	\$2/month 100GB, \$10/month for 1TB	\$10/month for 100GB	\$10/month for 250GB
OSes supported	Windows, Mac, Android, and iOS	Windows, Mac, Linux, Android, iOS, Blackberry, Kindle Fire	Windows, Mac, Android, and iOS	Windows, Mac, Android, Blackberry, and iOS	Windows, Mac, Linux, Android, and iOS



Is the cloud a safe space?

TECH TOOLS

BY BRIAN A. LEVINE, MD, MS,
AND DAN GOLDSCHLAG, MD, FACOG



Do healthcare data belong in the cloud?

In June, the *Wall Street Journal* reported that the Obama administration had hired Amazon.com to host certain HealthCare.gov components.¹ That may seem to be a curious partnership, but remember that the world's largest online retailer never closes.² Amazon.com is always just a click away and sells not only books and other tangible products, but also streaming media such as TV

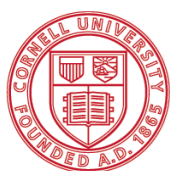
and Yahoo! are 2 examples of web-based email systems in which data “live” on a server and can be accessed remotely. Other cloud-powered services you may be using include Box.net, Dropbox, GoogleDocs, GoogleDrive, and iCloud. Each has different applications and modes of interaction, but the principle is the same—data are stored remotely and can be accessed wherever and when

how do you know it was really deleted? What if the service provider backed up the information on 3 different servers to ensure that there would be no service interruptions?

What seems to be a secure backup feature may, in fact, be a dangerous form of data duplication.

Healthcare data and the law

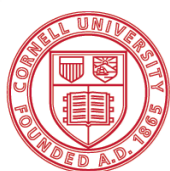
Things get murky when it comes to



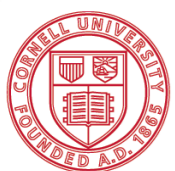
Our texts are in the cloud !?!



[text] messages may reside on a mobile device *indefinitely*... messages often can be accessed without any level of authentication, meaning that anyone who has access to the mobile phone may have access to all text messages on the device without the need to enter a password



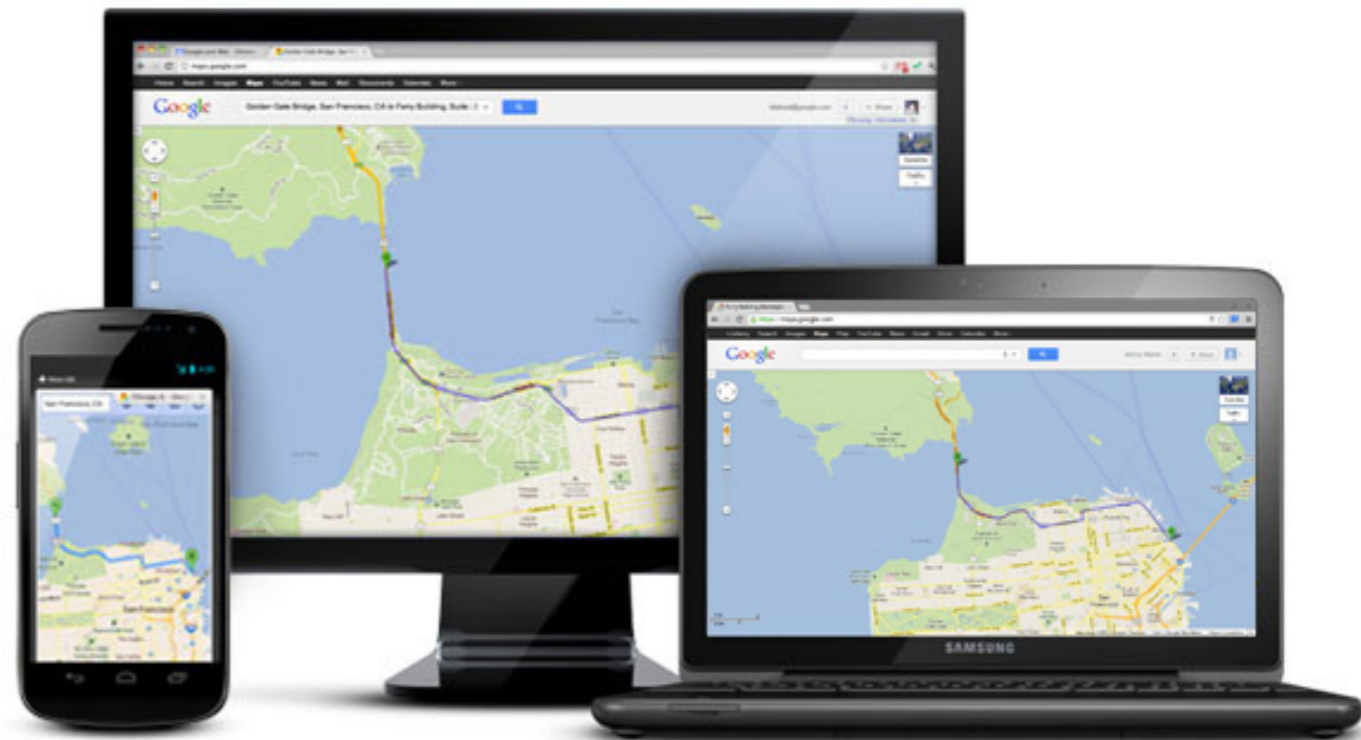
Be Cloud Conscious!



Explore the Chrome Browser

Chrome is a fast, simple, and secure web browser, built for the modern web.

[Download Chrome](#)



Speed

Chrome is designed to be fast in every possible way. It's quick to start up from your desktop, loads web pages in a snap, and runs complex web applications lightning fast.

[More](#)

Privacy

Chrome puts you in control of your private information while helping protect the information you share when you're online.

[More](#)

Simplicity

Chrome's browser window is streamlined, clean and simple. For example, you can search and navigate from the same box and arrange tabs however you wish -- quickly and easily.

[More](#)

Customization

There are tons of ways to customize Chrome and make it yours. It's easy to tweak your settings and add apps, extensions, and themes from the Chrome Web Store.

[More](#)

Security

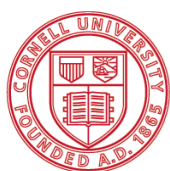
Chrome is designed to keep you safer and more secure on the web with built-in malware and phishing protection, auto-updates to make sure you have all the latest security fixes, and more.

[More](#)

Signing In

Signing in to Chrome brings your bookmarks, history, and other settings to all your computers. It also automatically signs you in to all your favorite Google services.

[More](#)



Embryo Mail Website

Embryo Mail is a moderated discussion group devoted to all scientific aspects of mammalian embryology. The membership consists of scientists and practitioners interested in issues related to embryology of human, laboratory and livestock species. Topics of discussions range from the basic to the applied. Participants receive four to ten messages a week. Each e-mail message may contain correspondence from members on several topics. **Please note, no commercial advertising is allowed.** Neither e-mail addresses contained in EmbryoMail News messages nor e-mail addresses listed at our web site may be used for any commercial purpose.

This website contains an archive of Embryo Mail News messages

- [Search](#) message database using **Keywords or phrases**.
(Pre-October 2008 messages are in the [Archival Search / Browse](#))
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Advancing reproductive medicine through education, research, and advocacy.

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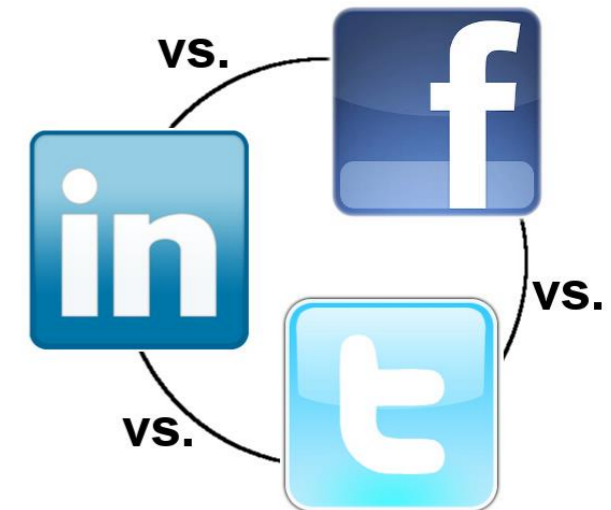
Benefits | Publications | Groups

[View Details](#)



Patient & Consumer Resources

ReproductiveFacts.org



Home	Membership	Education	Specialty groups	Accreditation and Certification
Guidelines and Legal	Press room	Annual Meeting	Data collection and trials	Publications



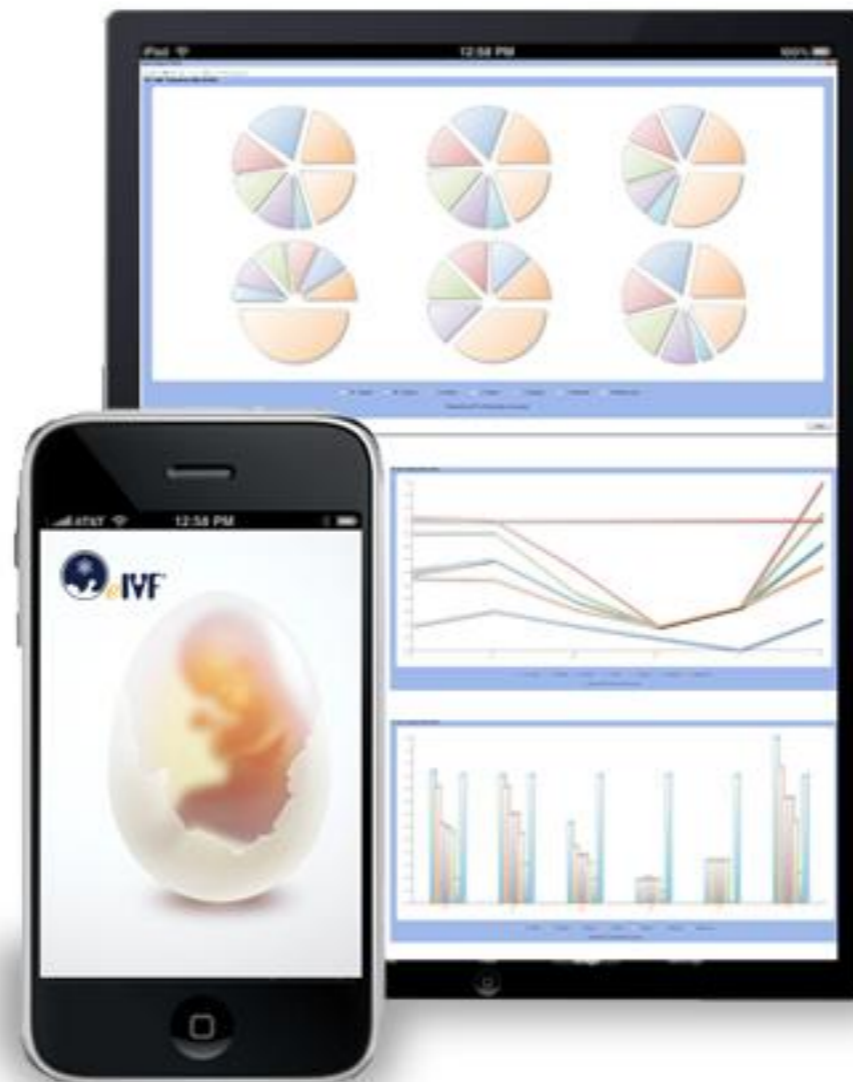
ESHRE

THE LEADING SOCIETY IN REPRODUCTIVE SCIENCE AND MEDICINE

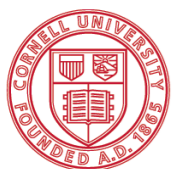
European Society of Human Reproduction and Embryology

ESHRE

SCIENCE MOVING PEOPLE MOVING SCIENCE



Moving your fertility practice to the 21st century



Dragon Demo

blevine

Electronic Health Record (1.2.13.43)

Patient List Signature List

Name	MRN	Age
McPartland, Adele	mrm0141931	86
Adams, Mark	mrm0141929	52
Briggs, Steven	mrm0141927	64
Carpenter, Michael	mrm0141925	37
Southerland, Marjorie	mrm0141923	86
Anderson, Dave	mrm0141919	52
Bates, Charles	mrm0141916	64
Cabot, Angelo	mrm0141913	37
Ray, Douglas	mrm0141910	77
Etheridge, Randall	mrm0141907	72
Furman, Melissa	mrm0141904	70
Gauss, Anja	mrm0141901	72
Hawkins, Celia	mrm0141898	85

Adele McPartland [Visit Id: v0141930]

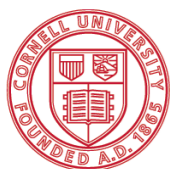
MRN: mrm0141931 Sex: Female Blood Pressure: 160/98mmHg
DOB: 5/15/1928 Height: 5" 8' Pulse:
Age: 86 Weight: 152 lbs Temperature: 99F

Note Patient Summary

Mrs. McPartland is a lovely 86 year-old woman who presents to discuss oocyte donation.

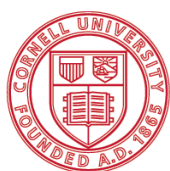
Save Sign Cancel

1:05 PM 4/6/2015

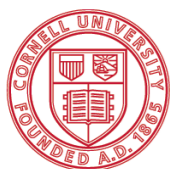
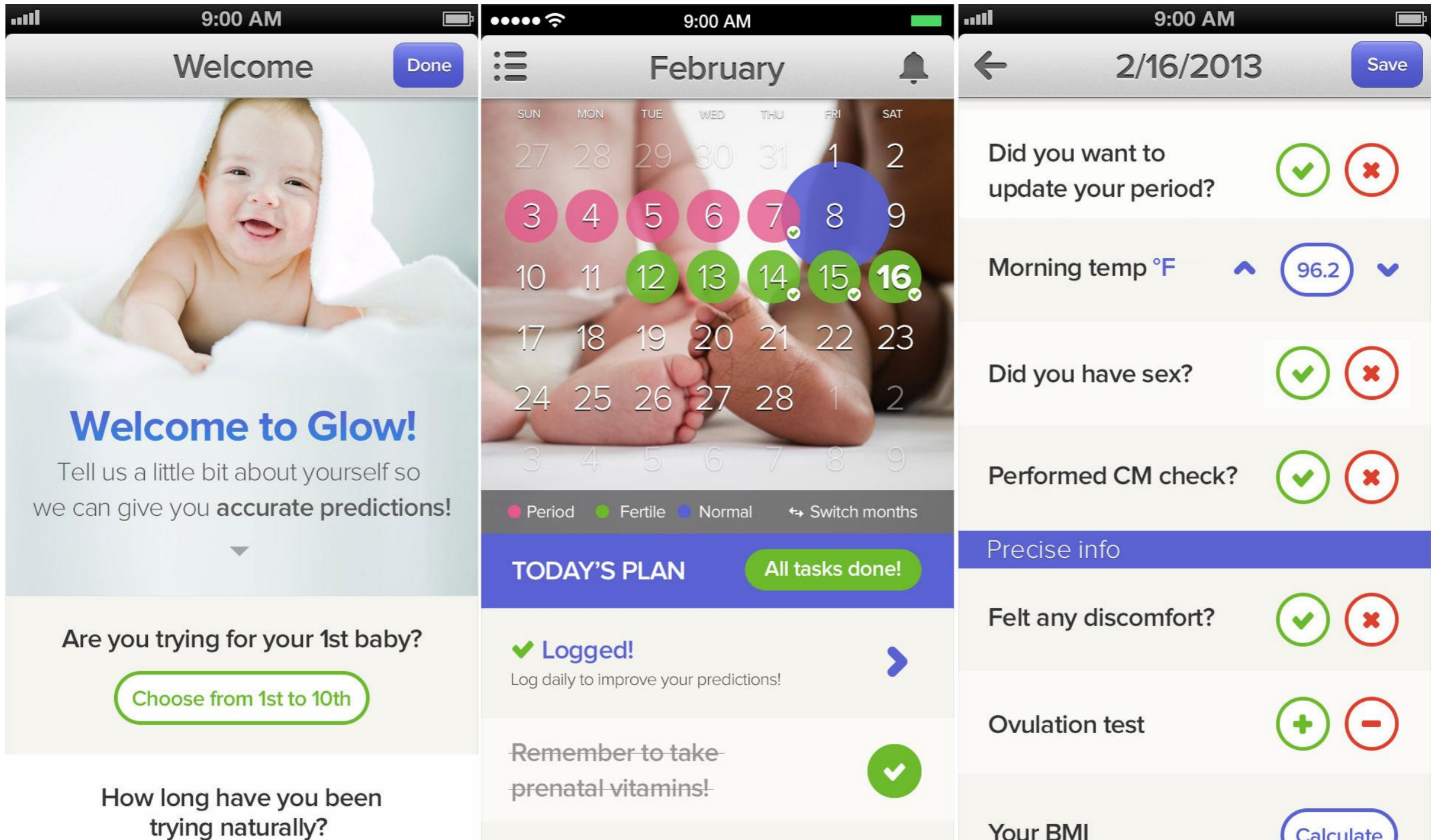


Problem: What's a good "fertility tracker"?

- Fertility trackers allow patients to enter simple information such as last menstrual period and length of cycle.
- The apps then generate a personalized calendar that shows the user her next fertile window and a 5-day view that shows the chance of conceiving on any given day.
- Many of the apps allow this information to "shared" so that the couple can be "synced" and alerted for when they should be "trying."

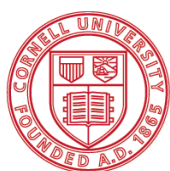


Solution: Glow



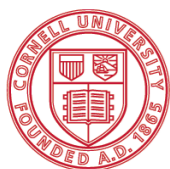
Problem: How do I prescribe exercise

- The 2009 Institute of Medicine recommendations for amount and rate of weight gain during pregnancy indicate that practitioners should discuss "diet and exercise" with their patients.
- For those of us who follow patients with gestational diabetes, demonstrating the effect of certain foods on blood sugar is a powerful educational tool for helping patients understand the importance of adhering to a diet.
- Yet when it comes to discussing exercise, it seems that many of us are at a loss for words.
 - What kind of exercise should I recommend?
 - How much exercise is enough?
 - How much is too much?
 - How do I know that my patient is actually exercising?
 - How do I prescribe exercise?



Solution: Objectively measure exercise

- The dilemma of how to quantify physical activity has been a hot topic of discussion for more than 50 years.
- In 1965 a Japanese doctor developed the first pedometer to give people the opportunity to meet measurable goals and thus increase their physical activity. The device was called the Manpo-kei (meaning "10,000-steps meter").



Solution: Runkeeper

RunKeeper [Donate](#) [Logout](#)

[Home](#) [Forums](#) [News](#) [Blog](#) [FAQ](#) [Tutorial](#) [Support](#)

Activity Details

[<< Back to History](#)

Label:

Activity Type: **Running**

Start Time: **12/17/08 3:39 pm**

End Time: **12/17/08 4:16 pm**

Elapsed Time: **36:57**

Distance: **3.13 mi**

Avg Pace: **11:49 / mi**

Avg Speed: **5.08 mph**

Total Rise: **261 ft**

Notes:

Share with Friends
[Make Activity Public](#)

Export to: [Google Earth](#) [GPX](#)

[Delete this Activity](#)

Running 12/17/08 3:39 pm

[Fullscreen Map](#)

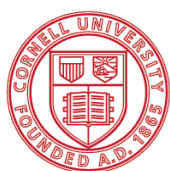
Map

Map data ©2008 Tele Atlas

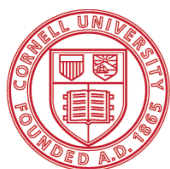
6 speed(mph) elevation(ft) 200

4.42 mph 58.00 ft

distance(mi) 0.00 0.84 1.62 2.13 2.34



Solution: Nike+



Solution: FitBit

Day **Week** Month Year Sep 27 - Oct 03, 2012

Activity

46560 steps taken 67% of goal of 70,000

21.03 miles traveled 60% of goal of 35.00

Time active (excluding sleep)

Sedentary	↑ 88.5	Fairly active	↓ 5.9
Lightly active	↓ 3.7	Very active	↑ 1.9

Know where you stand

Tracks weight and more. Uploads info automatically into your dashboard.

[Learn more](#)

Devices

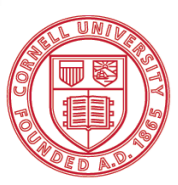
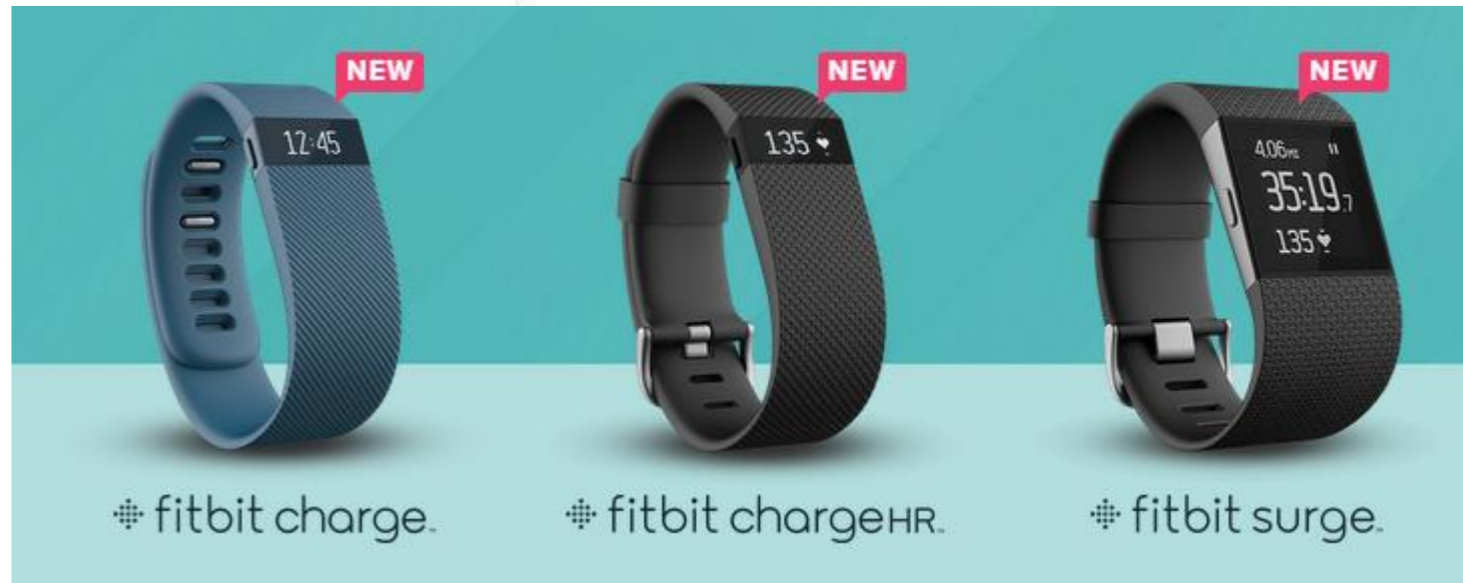
[settings](#)

Fitbit Zip
Synced today at 10:26AM
Battery level High

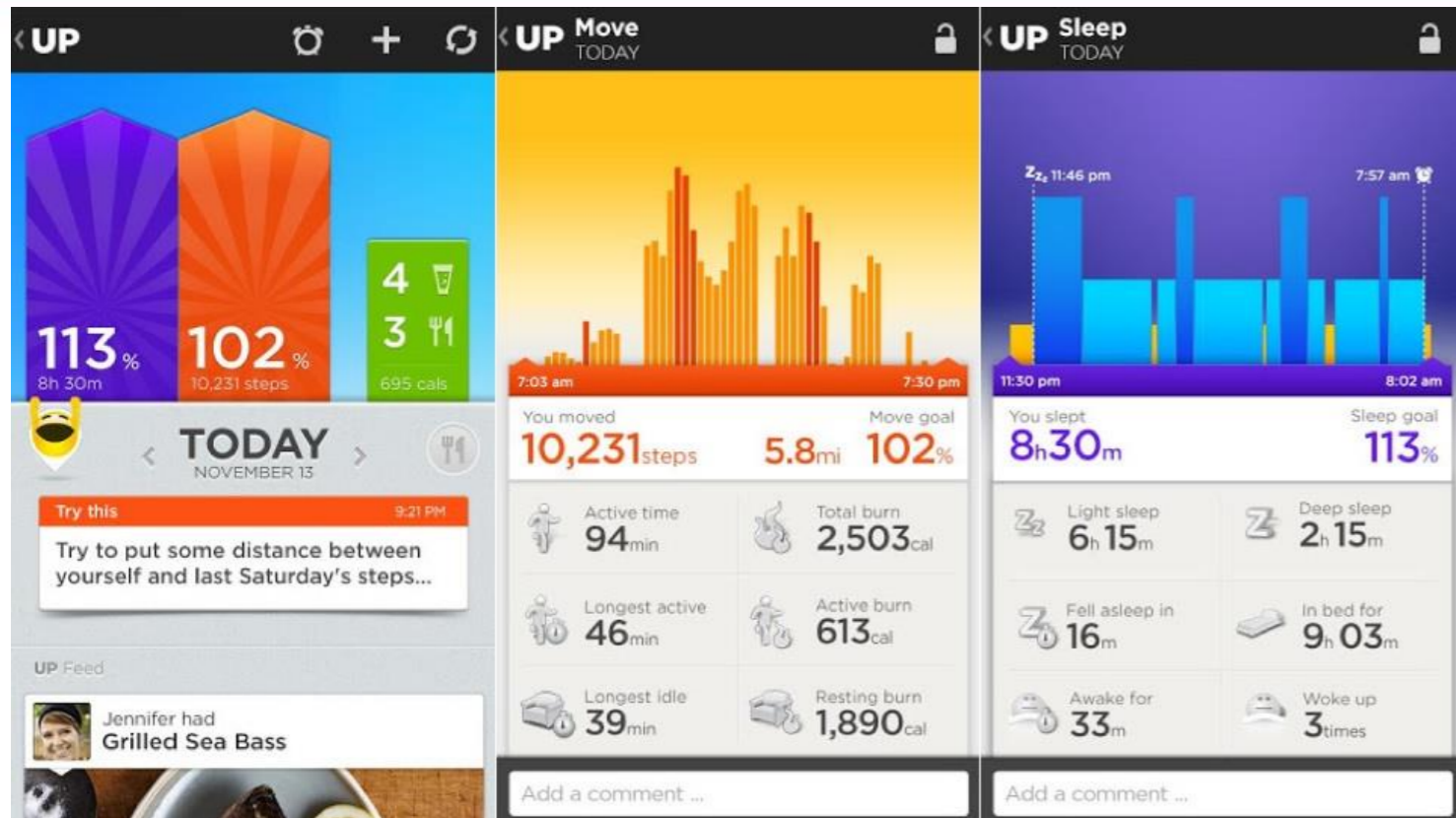
Top Badges

[My Achievements](#)

[See all badges](#)



Solution: Jawbone Up



UP move™



Move more. Get fit.

Get fit, lose weight and have fun doing it. Choose your color, clip it on and get moving.



With Activity Tracking, Sleep Tracking and Smart Coach

\$49.99

UP 24™



Eat, sleep and move. Better.

Make fitness a habit. Wear the motivation you need on your wrist to improve your days and nights.



With Activity Tracking, Sleep Tracking and Smart Coach

\$129.99

UP 3™



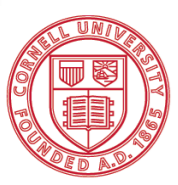
The world's most advanced tracker.

Heart health, advanced sleep and workout recognition. Welcome to the future of you. How far will you go?



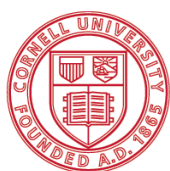
With Activity Tracking, Sleep Tracking, Smart Coach and Heart Health

\$179.99



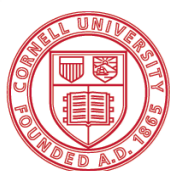
The Ronald O. Perelman and Claudia Cohen Center for Reproductive Medicine

Solution: Apple HealthKit



Problem: What's a good translation app?

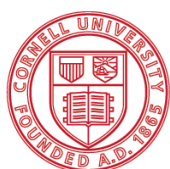
- Without the luxury of a “live” medical translator, taking care of non-English speaking patients can be challenging.
- Although many translation apps are available (ie Google Translate), they are not designed for complex medical phrases.
- A timely and accurate history is the cornerstone of medical diagnosis and treatment; the relative difficulty of obtaining one with non-English speakers is a significant barrier to care.



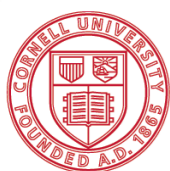
Solution: Canopy Medical Translator



- Communicate instantly with patients in any language.
- Translated medical phrases covering history, physical exam, procedures, and reassessment in:
 - Spanish, Chinese, Arabic, Bengali, Filipino, Hindi, Korean, Malay, Portuguese, Russian, Vietnamese, and more.
- Call medical interpreters with one click right from the app.



Problem: What is a wearable technology?



Solution: This was Google Glass!



Camera

Glass has a 5MP camera capable of shooting video at 720p

Projector

The primary display of Glass is a rear projector that projects an image into a Glass Cube that is situated above the wearers right eye

Touch Pad / Camera Button

Although the primary control of Glass is intended to be voice, a touchpad exists to help navigate through cards and menus. This is a multitouch touchpad that allows for 2 points of touch.

Main Housing

Glass contains an impressive amount of hardware inside of its main housing. This includes a WiFi Radio (b/g) and Bluetooth Radio, 16GB of Storage (12 usable), 1 GB RAM, OMAP 4430 CPU (Dual Core ARM Cortex A9 clocked at 1GHZ). gyroscope, accelerometer and more.

Plastic and Titanium Band

Plastic and Titanium are used to form the frame of Glass. This allows it to be both lightweight and strong.

Battery

Glass has a 570 mAh battery that should get most users through a full day of use

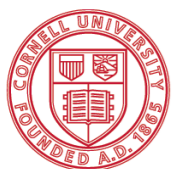
Micro USB

Used to charge Glass or to manage photos via a PC

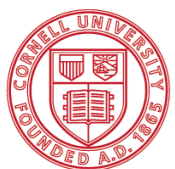
Speaker

Bone Conduction speaker in order to keep your ears free

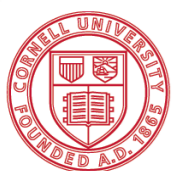
Google Glass Alternatives



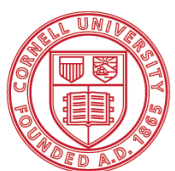
Microsoft HoloLens



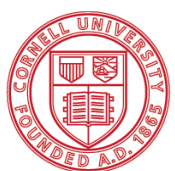
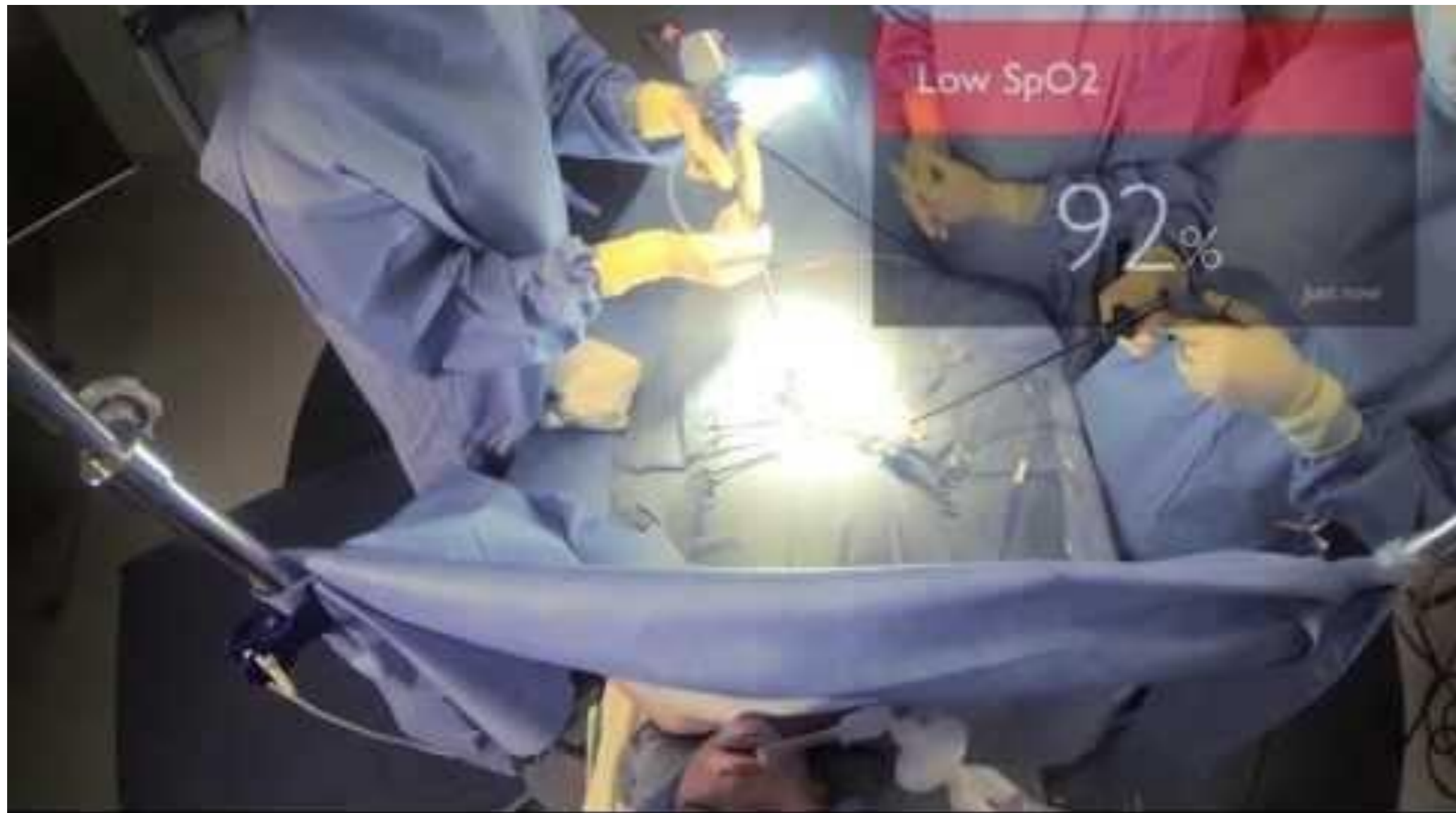
Problem: What can wearables do for Medicine?



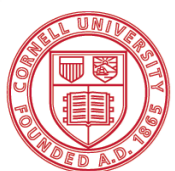
Problem: What can wearables do for Medicine?



Problem: What can wearables do for Medicine?






Problem: What can wearables do for Medicine?




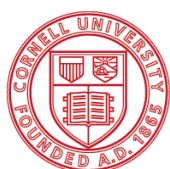
Wearables in the IVF Laboratory?

Early blastocyst grading photos:

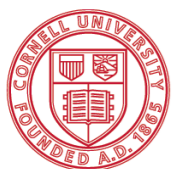
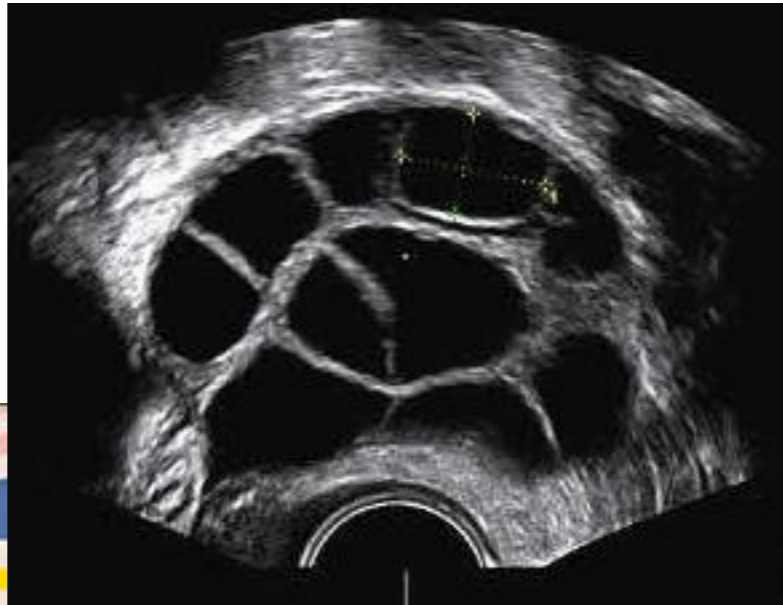
		
Early blastocyst	Early blastocyst	1AB
Cavity very small = Can't yet grade Inner cell mass = Can't yet grade Trophectoderm = Can't yet grade	Cavity very small = Can't yet grade Inner cell mass = Can't yet grade Trophectoderm = Can't yet grade	Cavity < 1/2 embryo's volume = 1 Inner cell mass = A Trophectoderm = B

Intermediate blastocyst grading pictures:

		
2BB	2BC	3BB
Cavity > 1/2 embryo's volume = 2 Inner cell mass = B Trophectoderm = B	Cavity > 1/2 embryo's volume = 2 Inner cell mass = B Trophectoderm = C	Cavity completely fills embryo = 3 Inner cell mass = B Trophectoderm = B

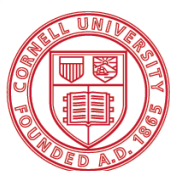


Wearables in the IVF Laboratory?



Learning Objectives

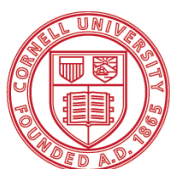
- **At the conclusion of this CME program participants should be able to:**
 - Examine the role of the tablets/portable technologies in enhancing provider workflow
 - Utilize specific apps to improve efficiency
 - Understand the advantages/disadvantages of wearable technologies



How would you spend \$1000?



- What features do you need?
- What features do you want?
- What features are you willing to forgo?
- How much are you willing to spend on your apps?
- How much are you willing to spend on monthly service charges?
- When will you buy your next device?



Shameless Plug....

TECH TOOLS

BY BRIAN A. LEVINE, MD, MS
AND DAN GOLDSCHLAG, MD, FACOG



TECH TOOLS

BY BRIAN A. LEVINE, MD, MS
AND DAN GOLDSCHLAG, MD, FACOG



TOP TABLETS

A healthcare-focused tablet primer

Tablets are redefining personal computing and making what we need from a device and its software.

For the first time since the 2001 dot-com bust, shipments of personal computers (PCs) fell in 2012. Financial woes reduced demand for PCs in the early 2000s, but in 2012 PC sales took a hit because of a new player in town: the tablet. According to analysts at J.P. Morgan, tablet sales rose 72% in 2012 and may surge an additional 54% this year.¹

TABLET SOFTWARE

Tablets are more powerful than mobile phones but not as powerful as laptop computers. Here's a short list of currently available medical applications, their key features, and the devices that support them. The list is incomplete because we cannot review all the available programs at this time.

Reference tools

Epocrates is a free, time-tested, drug-reference application for brand, generic,

and over-the-counter medicines. It allows users to check for potential dangerous drug interactions and can identify a medication by analyzing a picture of a pill. In addition to its famed pharmacopeia, Epocrates Essentials is a paid subscription application that offers all the features of the free software and also includes an infectious-disease guide, lab references, and evidence-based disease monographs. Both these applications are available on iOS and Android and can be used from the Web.

UpToDate is a paid subscription service that provides evidence-based, physician-authored clinical resources designed to help clinicians make point-of-care decisions. Its list of authors is impressive (>5,000), and information is available on almost every clinical scenario. UpToDate is available on iOS, Android, and Windows 8 and can be used from

the Web. It offers a low-intensity and prescription drug and available on iPhone and Android. It is a clinical decision support tool.

TECH TOOLS

BY BRIAN A. LEVINE, MD, MS
AND DAN GOLDSCHLAG, MD, FACOG



Apps and monitors for patient health

Apps for fitness, diet, and sleep help patients quantify their activity and reach their goals

The 2009 Institute of Medicine recommendations for amount and rate of weight gain during pregnancy indicate that practitioners should discuss "diet and exercise" with their patients.¹ Although most of us have not had formal nutrition training, it is safe to assume that a discussion of a healthy diet (ie, caloric intake, sugars, and saturated fats) is relatively straightforward. In fact, for many of us who follow patients with gestational diabetes, demonstrating the effect of certain foods on blood sugar is a powerful educational tool for helping patients understand the importance of adhering to a diet.

Yet when it comes to discussing exercise, it seems that many of us are at a loss for words. What kind of exercise should we recommend? How much exercise is enough? How much is too much? How do I know that my patient is actually exercising? How do I prescribe exercise?

According to the US Department

of Health and Human Services, US adults should engage in moderately intense physical activity for a minimum of 150 minutes each week; this is equivalent to 30 minutes a day, 5 days per week.²

While it is relatively easy to keep track of the duration and frequency of exercise, it is much more difficult to quantify the intensity of an activity, let alone ensure that the activity is "moderate" for the entire 30 minutes. In fact, in a 2008 study of women's understanding of "moderate-intensity" physical activity as presented in the popular media, the authors found that it is not enough to simply hear and read a description of physical activity, but that it requires practice.³

Using data to measure health and fitness

So, what are we to do? Should we have our patients log their daily activities? Should we have our patients show us sign-in sheets from the local

gym? It turns out that the dilemma of how to quantify physical activity has been a hot topic of discussion for more than 50 years. In 1965, a Japanese doctor developed the first pedometer to give people the opportunity to meet measurable goals and thus increase their physical activity. The device was called the Manpo-kei (meaning "10,000-steps meter"). It was based on research by Dr. Yoshiro Hatano that demonstrated that 10,000 steps a day allowed for a proper balance between the traditional Japanese caloric intake and the caloric expenditure of walking approximately 5 miles per day (the average person's stride length is approximately 2.5 ft long, therefore 2000 steps/mile).⁴

The validity of the 10,000-steps model for Americans has been questioned by many researchers, since today's American diet is far more calorie-rich than the 1965 Japanese diet and 5 miles of walking per day may be too much for the average person.

All this leads back to the origi-

For your practice, a new coop on scopes

This column will introduce you to tech tools for your patients. Healthcare-focused apps with the general consumer in mind that the decisions doctors make about patient care and, ultimately,

Stethoscope apps

One of the most popular medical smartphone apps attempts to replace the traditional stethoscope. This app works by taking advantage of a smartphone's camera or microphone. It uses either the camera—to look for changes in capillary colors, thereby interpreting flow and ultimately calculating a heart rate—or the microphone, to amplify audible heart tones.

Apps relying upon the camera are subject to the patient's skin color and the lighting in the exam room, and apps using the microphone will be subject to the patient's habitus and the distance between the microphone and the patient's skin. These 2 different methods of heart rate calculation are second

BY IET JANUARY 2013

WHAT'S ON THE MARKET

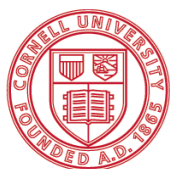
Thinklabs Stethoscope

Manufacturer's description: "A powerful tool for bedside auscultation, in office, or remotely." By Thinklabs
Price: \$69.99 **Version:** 1.1.1
Size: 4.4 MB **Requirements:** iPhone 4 or 3G; iPad requires Apple's Camera Connection Kit, a ds32a stethoscope and a small USB adapter such as Turtle Beach Amigo II.

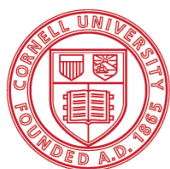
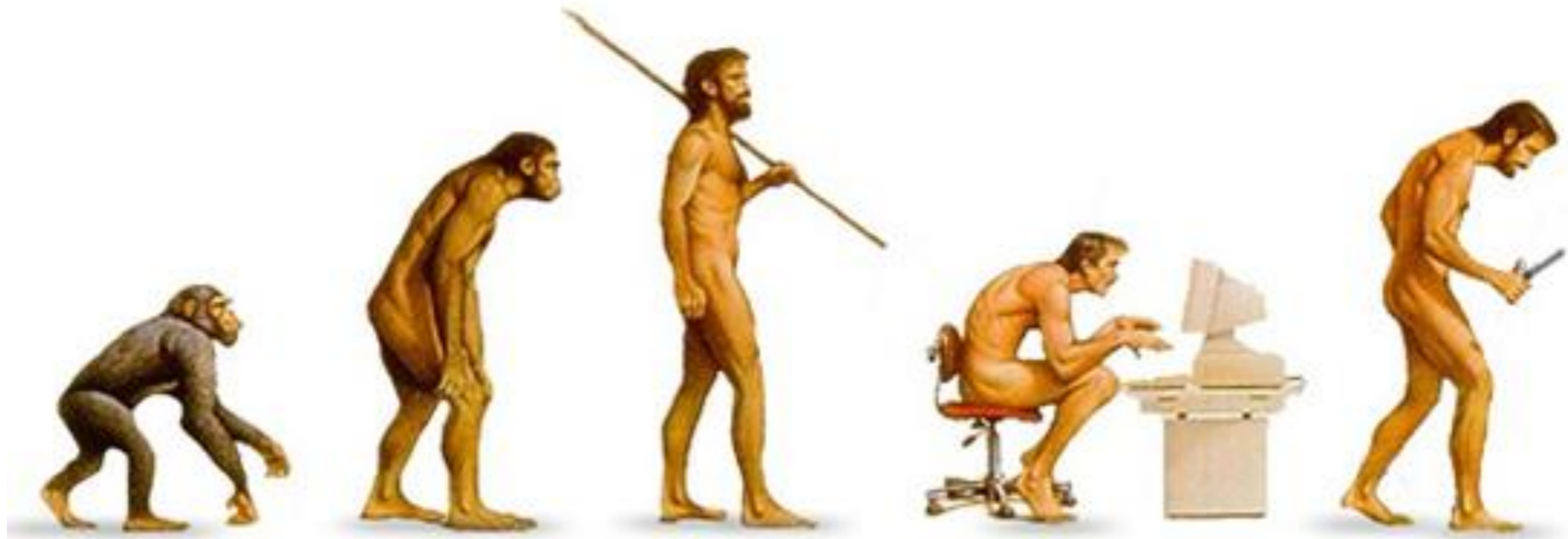


Instant Heart Rate

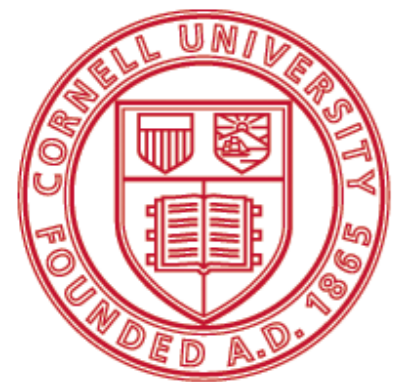
Manufacturer's description: "Instant Heart Rate is the most accurate Heart Rate Monitor app for any smartphone and it does not need any external hardware." By Azumio Inc.
Price: Free
Version: 2.5.7
Size: 4.9 MB
Requirements: Android 2.1 and up.



We are still evolving...



Thank You!



The Ronald O. Perelman and Claudia Cohen
Center for Reproductive Medicine