Ten Sensational ‘Do-It-Yourself’ Technologies to Spice up Your Practice

October 4th, 2010
Chicago, Illinois
Goals

• To discuss new technology that might actually be useful to you in your practice
• Things that you should be able to head home today and start implementing tomorrow
• Discuss pearls that won’t break the bank
• Talk will be available to you online so you don’t need to take notes
Agenda

- Green IT
- Paperless
- Internet Use
- Cool Stuff
Green IT Issues

Environmental Issues that come to mind regarding your technology at the Practice:

- Recycling PCs
- Turn them Off?
Recycling Your Old PCs
eWaste

• By product of the age we live in
• Most any electronic device
  – PCs
  – Monitors
  – TV’s, Cell phones, digital cameras, etc…
• Can’t be tossed in the trash (lead, etc)
• End up accumulating
eWaste Recycling

• Many ‘free’ recyclers today
  – Government subsidized by the tax you paid when you bought the device
  – Valuable metals recovered
• Google “eWaste Recycling Chicago”
• Other possibilities
  – Community events
  – Retail stores such as Best Buy, Staples, ....
  – Municipal ‘Drop Centers’
What Happens to that PC?

- Plastics and Steel are separated by hand locally
- Circuit boards and components are shredded and shipped off shore for precious metals
What about your Data?

How can you be sure your data is removed from the PC before you lose control of it?

What might be on that hard drive?

• Favorites, Cookies, Financial Info
• Patient Info
  – Invisalign
  – OrthoCAD
  – Suresmile
How easy to Steal?

Step 1: Open Case

Step 2: Remove Hard Drive

Step 3: Connect to USB Hard Drive adapter and copy data
How to Destroy Your Data

Method 1:

Data destruction software designed to ‘Wipe’ the hard drive
- Acronis Drive Cleanser (www.acronis.com) $61
- Darik’s Boot and Nuke (www.dban.org) Free
How to Destroy Your Data

Method 2:

Fast, free and a great stress reliever!
Giving to Family or Staff

The most environmentally friendly method is to reuse the PC, not dump it.

• Reinstall Windows, reformatting the hard drive while you do this.

• Destroy the hard drive, and have them install another before reinstalling Windows ($<100).

• Ask your IT guy to do it.
There is no absolute wisdom on whether you should turn your PCs off at night.

Pros:
• Saves energy and money

Cons
• Wastes time and money
• Computers don’t like ‘power cycling’
How much is Electricity?

Tough to work out, but let’s try!

- Power is sold by the KiloWattHour (kWhr)
- kWhr = 1,000 watts for one hour
- 100 watt light bulb for 10 hours = 1kWhr
- Sacramento summer time = $0.118 per kWhr (12¢)
Consider a 4yr Old PC

How much power does a 4 year old Dell consume at various parts of the work day?

Dell Optiplex PC with 15” Flat Panel Monitor

Measure the power with a meter – Watts Up Pro.
Consider a 4yr Old PC
Old PC Electricity Use

• During the Day
  – 120W when busy, 75W when coasting
  – Assume 100W average ~ Light Bulb
  – 10 hour day (7am to 5 pm)
  – 10 hrs x 100W = 1kWhr = 12¢

• Night time
  – 60W (monitor asleep in power save mode)
  – 14 hours (remainder of the day)
  – 14 hrs x 60W = 0.84kWhr = 10¢
**Old PC Electrical Use**

- **Over the Weekend**
  - 60W (monitor asleep in power save mode)
  - 48 hours (two full days)
  - 48 hrs x 60W = 2.88kWhr = 34¢

- **One Month Total**
  - Days = 20 days x 12¢ = $2.40
  - Nights = 20 days x 10¢ = $2.00
  - Weekends = 4 weeks x 34¢ = $1.36
  - Total = $5.76 per PC (58% was night/weekend)
Old PC Electricity Use

Assume 12 PCs in the office, monthly costs:

- $28.80 during the days
- $40.32 on nights and weekends
- Total = $69.12 per month
Staff Costs

Staff time to turn them off?
- 30 seconds to flip the power on
- 30 seconds to close apps and click shutdown
- 1 min per PC per day
- 12 PCs per day = 12 minutes per day
- Assume $14 per hour
- 12 min @ 14 per hour = $2.80/day
- Month = 20 days x $2.80 = $56
Verdict

You would spend $56 in staff time to save the $40.32 of electrical costs spent on nights and weekends.

You add the reliability stress of power cycling the PCs.

The choice is yours.
New Computer Electrical Use

A new computer is faster, has more RAM, and has better video.

It consumes about 10 watts LESS than the old PC in my example!

On 12 PCs, that would save $113 per year.
Server Electricity Usage

Please leave your Server ON.

• Usually doing Updates at night
• Want it ready to go at all times
• They take much longer to boot up
• Don’t add the stress of the power cycling
Server Power Usage

• Daytime
  – 225 Watts average
  – Up to 330 Watts under severe load
  – Equivalent to about 4 PCs

• Nighttime about the same

• Costs
  – $17.79 per month

• Heating and Cooling
  – Those kW turn into heat in your office
Killer Uses for the iPad
Apple iPad

- Cool Personal Gizmo
  - New niche - not quite a computer, not a toy
- With it you can:
  - Surf the Internet
  - Email
  - Music and Video
  - Run Applications!
    - Cooking
    - Games
iPad Versions

- **WiFi Only**
  - 16, 32 and 64GB models
  - $499 to $699

- **Wireless and WiFi**
  - Add another $130 to WiFi model pricing
  - $15 or 25 per month for Data plan
  - Internet anywhere!

- **Cheapest $499 model is ideal for office**
  - You’ll need a WiFi at the office
iPad @ the Ortho Office

- Patient Entertainment
  - In the chair, maybe lobby
- Patient Communication
  - View your website or signup online tool
- Remote Control
  - Use the iPad to control a real PC
- Orthodontic iPad Apps
iPad for Remote Control

- Allows you to use the iPad to remote control another PC at the Practice
- You can do most anything at the iPad you could do at the PC
- Might be ideal for the Doctor roaming around, using as a reference mostly
- Battery life is great, 8+ hours
- Ties up a PC (if you have a Terminal Server, you’re all set)
Wyse Pocket Cloud

- Is an inexpensive App (<$15)
- Uses Microsoft's RDP Protocol to connect to your PC or Terminal Server
- Available for the iPhone or iPad
Wyse Pocket Cloud
iPad Ortho Apps

• Better than remote control, they actually run the program on the iPad
• An extension of your existing Practice Management and Imaging Applications
  – Dolphin Mobile
  – Orthotrac Point of Care
• Patient Education Software
  – Dolphin Aquarium
  – Solutions by Design iScreenPlay
• More to come!
Going Paperless

The basics of the paperless process:

• Don’t generate paper to begin with
• Your Records need to go digital
  – Digital X-ray
  – Digital Photography
  – Digital Models
• You need software
  – Practice Management
  – Image Management
• You need commitment to the process
Existing Documents

What to do with the paper that remains?

• Archive the old stuff off-site
• Scan
  – Flat Bed
    • Slow
    • Large
    • Special models can do x-rays (expensive)
  – Document Scanners
    • A new breed
Document Scanners

- Small Footprint
- Very Fast
- Reasonable Cost
- Multiple pages
- Double Sided
- Quiet
- Easy to connect (USB)
Document Scanners

- Can integrate into practice management applications Document Center via TWAIN.
- Can scan direct to Adobe PDF format with a touch of a button.
- NOT for X-rays.
- Some options: (all $400-$500)
  - Xerox Documate 152
  - Fujitsu Scansnap S1500
  - HP ScanJet N6010
  - Epson Workforce Pro GT550
Scanner Demo
Flat Panel Monitors

• In the past 10 years
  – Sizes have Increased
  – Resolutions have Increased
  – Prices have Decreased

• The Tube monitor is dead and gone

• You have two choices
  – Most are LCD (good)
  – Some newer models are LED (great)
Aspect Ratio

• Sizes
  – Measured Diagonally

• Aspect Ratios
  – 4:3
    • Traditional format
  – 16:9
    • Wide screen format

• 19” 4:3 ratio is the same height as a 22” wide screen monitor
Multiple Monitors

Easy to do ‘Duals’ today.
Mirrored Monitors

Same Image on both

Only looks right if both monitors are the same resolution
Extended Desktop

Monitors combine to make one larger display

Gives you more space to work
One monitor is ‘Primary’
Monitor Features

• VESA Mounting Options
  – Flat Wall Mount
  – Arm Mount
  – Pole Mounted
  – Endless choices
  – More costly than the monitor

• Integrated Options
  – Soundbars
  – Media Card Readers
  – USB ports
Monitor Prices

- Which would you choose?:
  - Fast computer with a poor monitor
  - Mediocre computer with a larger, excellent monitor

- Which would your staff appreciate more?

<table>
<thead>
<tr>
<th>Size</th>
<th>Price</th>
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<tbody>
<tr>
<td>17” (4:3)</td>
<td>Dell Professional P170S $128</td>
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<tr>
<td>19” (4:3)</td>
<td>Dell Professional P190S $162</td>
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<tr>
<td>22” (Wide)</td>
<td>Dell Professional P2210 $162</td>
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<tr>
<td>24” (Wide)</td>
<td>Dell Ultrasharp U2410 $407</td>
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Consult Rooms

- Dual Monitors
  - Extended Desktop
- 22” ideally positioned for the TC
- 24” or 1080p LCD ideally positioned for patients, usually wall mounted
- Integrated Sound on patient display
Records and Doctor

- Diagnostic requirement
- 24” Monitor
- Soundbar
Reception Desk

- 19” regular
- 22” if space permits
Chairside

- 19” regular aspect
- Mounted on Arm or Post
Monitor Upgrade

• What would it cost to change up all the monitors? Assuming:
  – 22” Monitors for, Reception 1, Reception 2, and Finance
  – 19” Monitors for Chair 1 thru 5
  – 24” Monitors for Consult, Records and Doctor

• Less than $2,300

• Happy Staff = Priceless
Time Wasters

• Are you struggling with staff misusing the Internet at the office for:
  – Facebook
  – MySpace
  – Online shopping
  – Personal Email

• Have you had any PCs get infected with Spyware or a Virus and suspected it was caused by the Staff surfing to bad sites?
How to Stop Time Wasters

• Turn it off entirely
• Office Policy on Internet Use
• ‘Sacrificial Lamb’ computer in Staff Lounge
• Firewall/Filtering Devices
OpenDNS is a free Internet Service that replaces the DNS servers your computers use to lookup an Internet Address.

DNS = Domain Name System
DNS explained in 45 sec

• Type www.potterybarn.com into web browser
• Your computer asks its DNS server to translate www.potterybarn.com into an IP numbered address. The DNS server is like the phone book or 411.
• The DNS Server responds “Find it at 67.58.216.78”
• The Computer then starts a connection with 67.58.216.78 to get the web page
If you substitute the OpenDNS servers for your existing ones, OpenDNS sends back an address to a “No-no-no” web page when you ask for the address to a site that is restricted. It logs the attempt.

Simple!
This domain is blocked.

Sorry, surfing www.sex.com is not allowed on the ddi network. If you truly need access to the site, please let Craig know and we can adjust things.

This site was categorized in: Adult Themes, Sexuality, Nudity, Pornography

Contact your network administrator

Rent a Harley-Davidson in the USA!
Planning a vacation? Rent a Harley-Davidson! EagleRider is the largest motorcycle rental company in the world.
www.eaglerider.com

Save Up To 50% On Travel
Steps to Setup

1. Go to www.opendns.com and sign up for a free account
2. On the dashboard, you need to ‘add’ your network (your offices firewall). This is how they know who is making the request
3. Set the level of filtering you want to have
4. Add any ‘white list’ sites that over-ride the restrictions
5. Change your network to use the OpenDNS servers
### Content Filtering

#### Choose your filtering level

- **High**
  - Protects against all adult-related sites, illegal activity, social networking sites, video sharing sites, and general time-wasters.
  - 27 categories in this group - [View] - [Customize]

- **Moderate**
  - Protects against all adult-related sites and illegal activity.
  - 14 categories in this group - [View] - [Customize]

- **Low**
  - Protects against pornography and phishing.
  - 5 categories in this group - [View] - [Customize]

- **Minimal**
  - Protects against phishing attacks.
  - 1 category in this group - [View] - [Customize]

- **None**
  - Nothing blocked.

- **Custom**
  - Choose the categories you want to block.

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<th>Categories</th>
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OpenDNS Caveats

• Crank up the filtering to Max, then relax as needed
• Staff will whine
• Applies to EVERY PC in the network
• Sit back and be amazed by the logs on the first few days
• Involve your IT person
Video at the Practice

Possible uses for informal Video at a Practice:

• Internal training to visually document and narrate an office procedure or policy.

• De-band ceremonies so it can be shared online (i.e. Facebook) with the parents that might have missed it.
The Flip

- The #1 Video camera on the market
- **Very simple to use**
- Ask your kids how!
- One big red button to record
- One button to playback
- One button to Delete
How simple is it to make a movie?
Very Simple

- Holds 120 mins of vid, no cards or tapes
- Has a built in flip out USB connector, no cords to carry, find, lose.
- Software is ON the camera, so you don’t need to find the CDs, etc.
- Uses AA batts. No chargers, special batts.
- Regular and HD versions
- Prices range from $129 to $229
- www.theflip.com
The Records 10-Step

1. Take Pictures
2. Shut off camera
3. Open camera door, remove card
4. Walk to PC with card reader
5. Insert card
6. Open software, capture images
7. Remove card
8. Walk back to camera
9. Insert card, close door
10. Turn on camera
What if?

What if you could just take the picture with the camera and have it magically fly over and land on the Server?

Saves:

• Time (and therefore $$)
• Wear and tear on the camera, card and reader
The Records 2-Step

1. Take Pictures

2. Whenever you like, anyone at any PC can open the software and capture images. Photos can continue to be taken while this is going on.
Wi-Pics

Recent AJ O-DO Techno Bytes Article
WiPics: Wireless and beyond
American Journal of Orthodontics and Dentofacial Orthopedics, Volume 137, Issue 1, Pages 147-149
A. Revankar, N. Gandedkar, S. Ganeshkar
Eye-Fi Card

SD card that has a built-in Wi-Fi connection
Supports most any* SD Camera
How does it work?

The wirelessly transferred photos get saved on your home computer when it is on.

Photos will instantly transfer while camera is on and within range of your wireless network.

After activating your Eye-Fi Card, plug it into your SD compatible digital camera.
Eye-Fi

Demo
Costs

• A normal 2GB SD card ~ $20
• Eye-Fi has several models:
  – Home model is most basic, and does everything that an Ortho Practice would need for $49. Online only at www.eye.fi
  – Best Buy carry’s several models, the cheapest is the Eye-Fi Share for $59.
Setup

1. Install the receiving application on the capture PC where your card reader is
2. Set the card to save images to a folder on your network
3. Adjust your imaging software to look to the network folder for new images to capture
Caveats

• Your camera must be supported
• Your camera must be ON to transfer
• You need to have a Wi-Fi setup at your practice
What if it doesn’t work?

- It’s still a 2GB memory card, so you can do the old 10 step process.
- If you can wait, it will store the images on the 2GB card until the Wi-Fi comes back online, and will catch up then.
Thank You!

steve@mmeconsulting.com

Presentation Online at www.mmeconsulting.com/presentations

See you at the AAO in San Diego and Chicago!
Bonus Material
I didn’t have time to cover in person
Pandora Radio

- Internet Radio
- ‘Tunes’ itself to your likes and dislikes
- Free account (has a few ads)
- Paid account eliminates ads ($36 per year)
- Works in a browser or with app (for paid account)
- Widgets for smart phones, and...
Logitech SqueezeBox

- Media Player
- Can play music from your PC
- Can link to your Pandora Account
- Connects to your office music amplifier
- Connect to your office network (cable or WiFi)
- Touch Screen Control
- No more XM costs or staticky local radio
- Costs about $300
Email at the Office

Email at the office is an indispensable tool. It comes with challenges:

- SPAM
- Maintenance
- Professionalism
- Costs
Email Providers

Options for email systems

• Freebie like
  – @yahoo.com
  – @aol.com
  – @gmail.com

• Your own MS Exchange

• Service from Sesame, Televox or Others
Google Apps Standard

• Google offering that is Free to anyone.
• Up to 50 email boxes
• It's branded with your domain name, but runs on their servers
• You route the email from your domain to them
• You get ad's along the edges (nothing is really free)
You get a lot

• You get more than branded email
  – Calendar
  – Docs
  – Sites
  – Chat
  – Web based
  – Mobile friendly
  – Spam filtered
Caveats

• Ad’s
• Doesn’t work well with email enabled applications like Dolphin or Ortho2 unless you setup Outlook in-between.
• Over the web – so if you can’t get to your Internet, you can’t get your email.
• You’ll need a little techie help setting it up
Wireless Networking

- Wi-Fi

Where in the practice might it be applicable?
- Doctor Laptop
- Lobby
- Tablet computing
- Wireless Printer
- Wireless Camera
- iPhone, iPod, iPad, iDontCare, etc…
The WiFi Dream

• Computing without cables
• Works everywhere
• Fast as wired
• Secure
... but the Reality is ...

For your Practice, we need to look realistically at:

- Speed
- Reliability
WiFi Speeds

- 802.11 Standards
- b - original standard
- a - faster, but limited range
- g - faster, decent range
- n - fastest so far
- Wired goes 1,000 Mbps (Gb)
- Wired is starting to go 10 Gb
- Get ‘n’ since it’s compatible with them all
WiFi Reliability

99% reliable in ideal conditions

• 1 time in 100 it’s not reliable

• Outside factors
  – Cordless phone
  – Microwaves
  – Other WiFi’s
Improve your Reliability

- Find the best channel for your Wi-Fi access point with InSSIDer.
- InSSIDer is a free tool to download to your laptop (www.metageeks.com)

![Image of InSSIDer software interface showing Wi-Fi signal strength and channel information.](image-url)
Best Practices

✓ Set the best channel
✓ Change the admin password
✓ Turn on WPA Security
✓ Use hard passwords and then write them on a sticky note and stick to the Wi-Fi

Admin Pwd: M0nk3yB0y
WPA Phrase: G00fyGurlz
Lobby WiFi

• Offering Free Wi-Fi in your waiting room
• Have a simple sign that lets them know and what the Passphrase is
Keeping things Private

No!

Lobby

Office Network
Keeping things Private

Free WiFi

Cable Modem

No Office Access

Office Network
Keeping things Private

Diagram:
- Internet Use
- Clinic WiFi
- Office Network
- Cable Modem
- Firewall
- Office Access!
Keeping things Private

Internet Use

Cable Modem

Free Clinic

Firewall

Office Network

The Geek Magazine - February 2008
Some Suggestions

Clinic Wi-Fi
Wireless Access Point
Linksys WAP610n
~$120
Some Suggestions

Lobby Free Wi-Fi
Wireless Router
Linksys WRT160n
~$60
Firewall/WiFi/Internet Filter

Internet Firewall
Wireless Router
Dual SSID Zones
Sonicwall TZ100 Wirelss N
~$360

Firewall
Firewall/WiFi/Internet Filter

Internet Firewall
Wireless Router
Dual SSID Zones
Watchguard XTM21 Wireless N
~$467
Some Best Practices

✓ Enable Time Restrictions limiting functionality to office hours
✓ Turn off the SSID broadcast to the Clinic Wi-Fi once you are connected
✓ Use different Passwords and Passphrases for the Lobby and Clinic
Internet Backup

- External Hard Drive
- Tape Drive
- Portable Hard Drive
- Portable Offsite Backups
- Server
- Databases
- Files/Images
- Internet
- Internet Backup Provider
Features

- **External Hard Drive**
  - Cheap (<$120)
  - Fast (USB) or Very Fast (eSATA) (~10 mins)

- **Tape Drive**
  - Not Cheap (>500)
  - Usually Slow (~163 mins)

- **Portable Hard Drive**
  - Cheap (<$100)
  - Fast (USB) (~23 mins)

- **Internet**
  - internet backup
  - Usually slow (~163 mins)
  - (~85 mins for today only)
  - (~113 hrs)

- **Internet Backup Provider**
  - Very Slow
  - Cheap? ($50+/mo)

- **Server**
  - Databases
  - Files/Images

- **40GB 500MB of Today’s Data**
  - Cheap? ($50+/mo)
But I have a fast Internet connection, why would it take so long?

- Upload speed is what matters.
  - Most connections are Asymmetrical, faster download than upload. i.e. 6Mbps down, 1Mbps up (test at www.speedtest.net)
    - Internet = 1 Mbps
    - Tape Drive = 42 Mbps
    - USB Drive = 480 Mbps
    - eSATA Drive = 1.5 Gbps or 1,500 Mbps
Hybrid Backup

- Databases
- External Hard Drive
- Tape Drive
- Portable Hard Drive
- Server
- Files/Images
- Internet
- Barracuda Backup Server
- Internet Backup Provider
Internet Backup

• Great Deal for Home users
  – Mozy.com and Carbonite.com
  – $5/mo for unlimited storage

• Business users pay per GB
  – Barracuda.com $50 per mo for <100GB
    • Requires a Barracuda Backup Server ($800+)
  – Carbonite.com $50 per mo for 50-100GB
  – Mozy.com $57 per mo for 100GB
  – OaktreeStorage.com
Internet Backup Summary

- Backup goes to the Internet to be stored
- Can supplement or replace a traditional or Image backup
- Offsite backup
- Fee based service
- What will you do when you need it all back at once?
- Not a solution for everyone I think