



Deploying an affordable low-maintenance WiFi Network on your property

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What is the purpose of this session?

- **Learn how you can make WiFi affordable at your hotel**
 - You must install and maintain your network
 - Affordable today may not be affordable tomorrow
 - You probably have to pass the brand standard now
- **Avoid common and obvious (to me) mistakes**
- **Target audience:**
 - Hotel owners or managers
 - Hotel owner's brothers who have said they can deploy WiFi for \$5 a room, or are trying to fix the network they already deployed for \$5 a room

What will I cover?

- **Selecting hardware**
- **Deploying hardware**
- **Any questions**

Selecting Hardware

- **Building a Wireless Network is not really much different in concept than building a Wired Network**
- **Figure out who needs connectivity where and deploy the appropriate equipment**
- **The Challenge is finding hardware that is just right**

Hardware Commodities

- **Antennas**
 - Don't be lazy and use all omni-directionals
- **Routers and switches**
 - Your Controller will do basic NAT routing
 - You will need 4-12+ switch ports for APs
 - A PoE Master Switch could be a good option for a big hotel
 - We'll talk about "PoE" later
- **A single source is useful for when the pieces do not get along**

Hardware: Access Points and Controllers

- **Access Points broadcast the radio (802.11b) signal**
 - You want them to be dumb but not too dumb
- **Controller manages the connections**
 - The brains of the operation. Sometimes called a Gateway, Subscriber Unit, Smart AP, etc., etc.
- **APs and Controllers will be the most significant installation cost**

Enterprise Hardware



Enterprise Hardware is too hot

- **Enterprise is Cisco, Symbol, etc.**
 - Affordable? NO
 - Low-maintenance? Maybe
- **Access Points**
 - You'll pay for stuff you can't use
 - VPN Termination, LEAP, PEAP, VoIP
 - Not tamper proof, and you provide your own enclosures outside.
 - However, you can build a really nice public network with these reliable APs.
- **Controller**
 - No Auto-IP, SMTP, branding, local accounts
 - Again, you will pay for things you can't use
 - Gigabit Ethernet, trunking, VLAN, STP, etc.
- **Expect to pay \$400+ for the AP, \$2500+ for a controller**
 - You'll need an amplifier too, or giant antennas

SOHO Hardware



SOHO Hardware is too cold

- **Small Office Home Office Equipment is from BestBuy**
 - Affordable? Oh yes! Free after rebate (for one)!
 - Low-maintenance? Hell no!
- **Access Point**
 - These units are designer to be alone, so expect interference
 - OK for REALLY FREE, as in free for the neighborhood
 - Cheap plastic is not going to survive long indoor or out
- **Controller**
 - No such thing
- **You are screwed if you put these in and have to support the guests. Save yourself!**
- **Expect to pay about \$50 after the free-after-rebate one**

Public Access Hardware



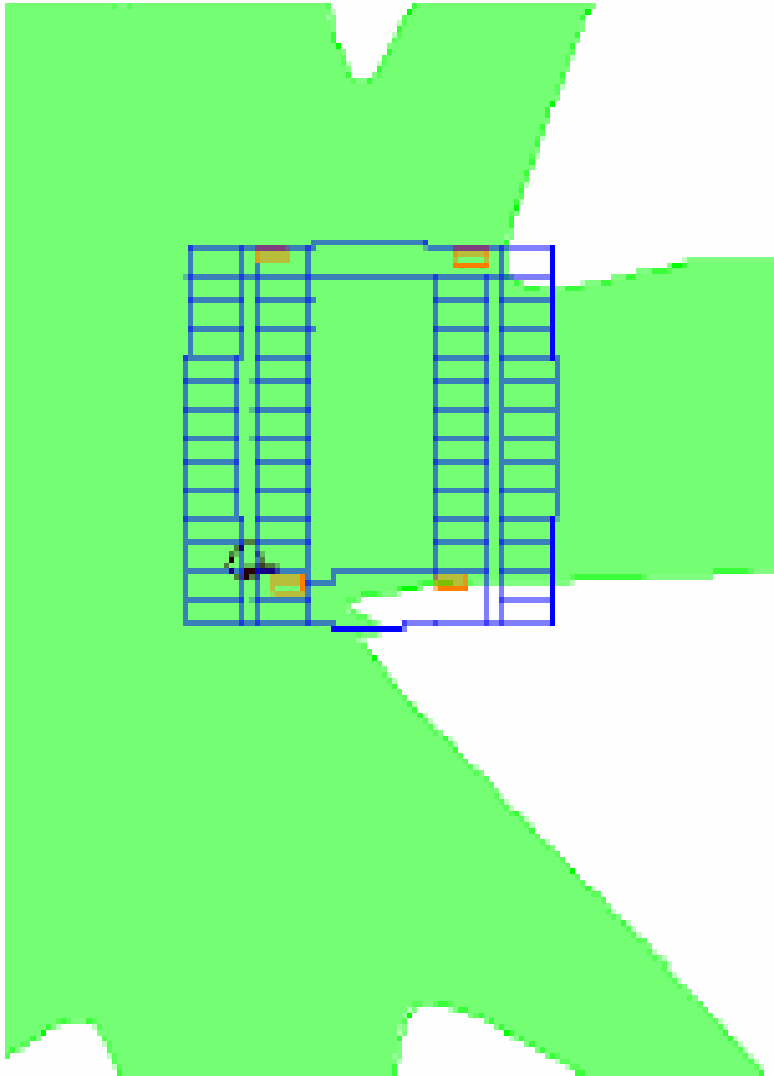
Public Access Hardware is just right

- **There are a few specialized manufacturers who make hardware for public access**
 - **Affordable? Yes**
 - **Reliable? Yes**
- **Public Access APs**
 - **Weather and Tamper proof**
 - **200mW is a 'nice' power level**
 - **Smart enough but not too smart**
- **Public Access Controllers**
 - **Solves those email and configuration problems**
 - **Flexible authentication and branding options**
 - **Lots of other stuff you need for public access**
- **Expect to pay about \$200 for a commercial AP and \$500 for a Controller**

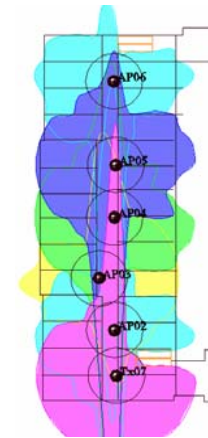
Commercial AP

vs.

SOHO APs



**East and West Wing – 1 Access Point
(probably need one more)**



**East Wing – 6 Access Points
(Doesn't account for interference)**

Deploying Hardware

- **The Challenge is guaranteeing a minimum level of reliable service**
- **A single support call is about \$12, and if it is not resolved people want a free night**

How many APs do you need?

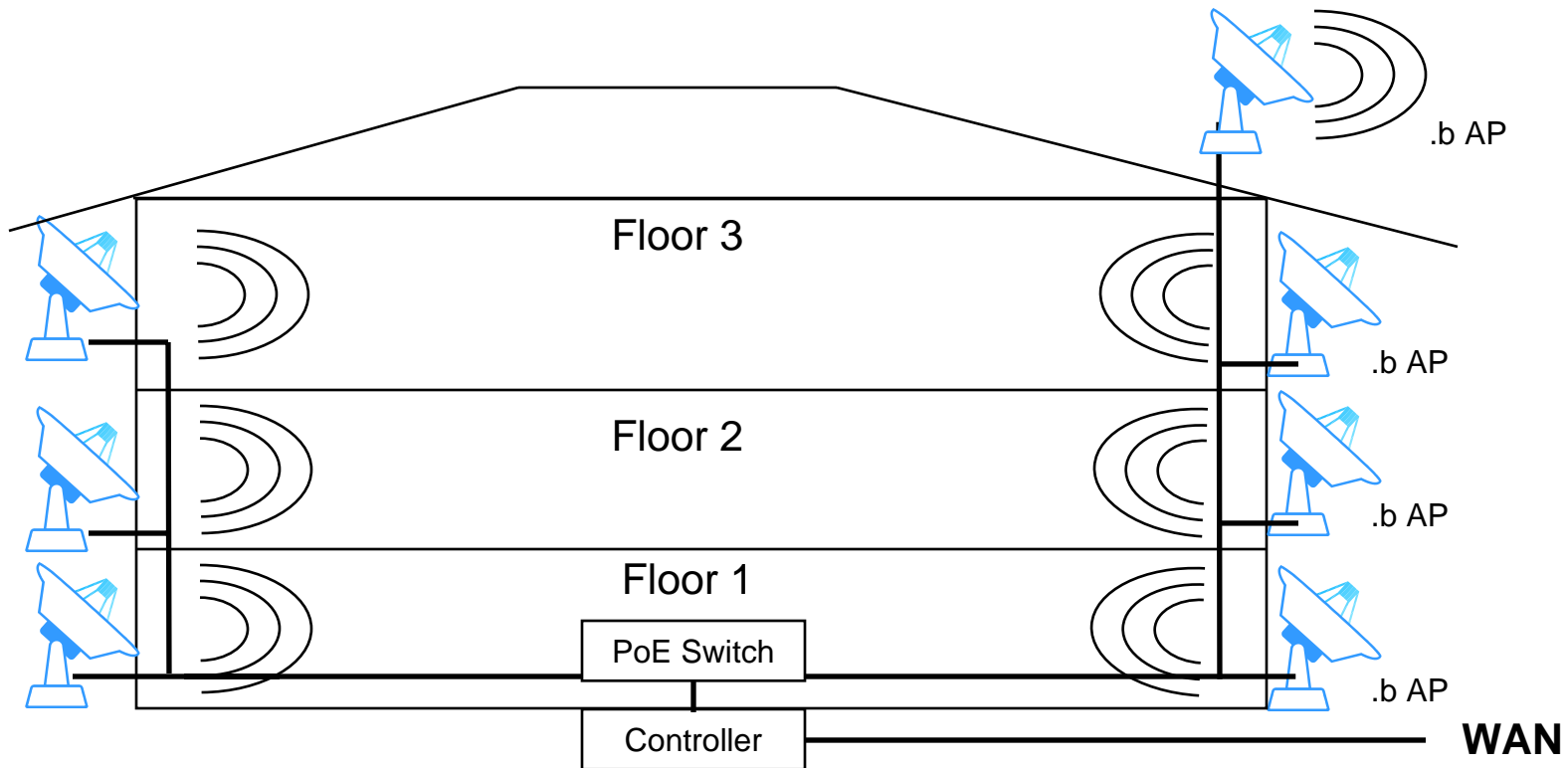
Some AP/building material rules of thumb:

- **West Coast = Steel or wood frame construction**
 - You can cover about 15 rooms per high-power AP
- **East Coast = Brick or concrete**
 - You can cover 10 rooms or less per high-power AP
- **Could be more or less, only your site-surveyor knows for sure**
- **Battling dead spots costs far more than a few \$200 APs**
 - **Err on the conservative side**

Power over Ethernet

- **Power over Ethernet (PoE) is a huge money saver**
- **You can run power and data 300 feet, maybe farther**
 - **Works outdoors too!**
- **PoE injectors and splitters do not always get along, so this is a good place to single source the hardware**
- **A PoE master switch does both injection and switching**

Hotel California: affordable and reliable



- **Double Cat5, double AP design**
- **Pool coverage included using outdoor AP**

Hotel California

- **Pros**

- **No dead spots**
- **Excellent throughput**
- **Integrated Antennas in APs can reduce cost and complexity**
- **Pool and cabana coverage too!**
- **Branded, reliable, and secure access will pass brand standard**

- **Cons**

- **Higher hardware cost**
- **Double cable runs**
- **Interference between floors makes 4 channels desirable**

- **Shopping List**

- **7 802.11b APs**
 - **Integrated 12db patch antennas**
- **8 port PoE master switch**
- **1 Network Controller**
- **Pigtails, cat5, etc.**

Support headaches the Controller eliminates

- **Misconfigured clients are inevitable, so the network must be self-configuring**
 - **Someone's settings from home won't work at the hotel**
- **In their hatred of Spam, many SMTP servers will not accept mail from a public/unknown network**
 - **Guest's sent email will be rejected with an unfriendly message**
- **Big Companies use proxy servers to keep employees off of Homestarrunner.com**
 - **When they leave work they can not connect to any web site.**
- **War Drivers will sponge off an open network**
 - **Your guests won't be able to get on**

Should your brother put this in?

- **WiFi networking is not rocket science**
- **However, the network not net-working will impact your business**
- **No matter what you do, some guests will not be able to connect, because their laptop is not plugged in for example**
 - **Who will take those calls?**
 - **In our experience, your brother's cell phone is not a good support line**
- **It is worth considering a professional integrator to install and support your hardware, and it does not have to cost \$50/room**

Any Questions?

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