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

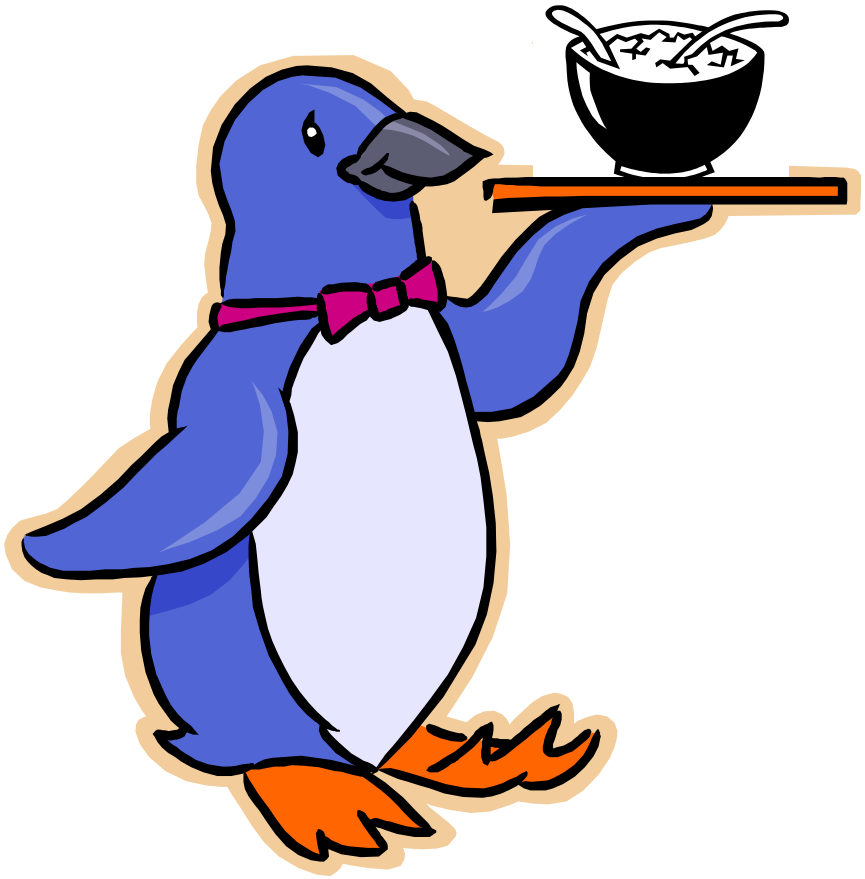
- **Access Points broadcast the radio (802.11b) signal**
  - **You want them to be dumb but not too dumb**
- **Controller manages the connections**
  - **The brains of the operation. Sometimes called a Gateway, Subscriber Unit, Smart AP, etc., etc.**
- **APs and Controllers will be the most significant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

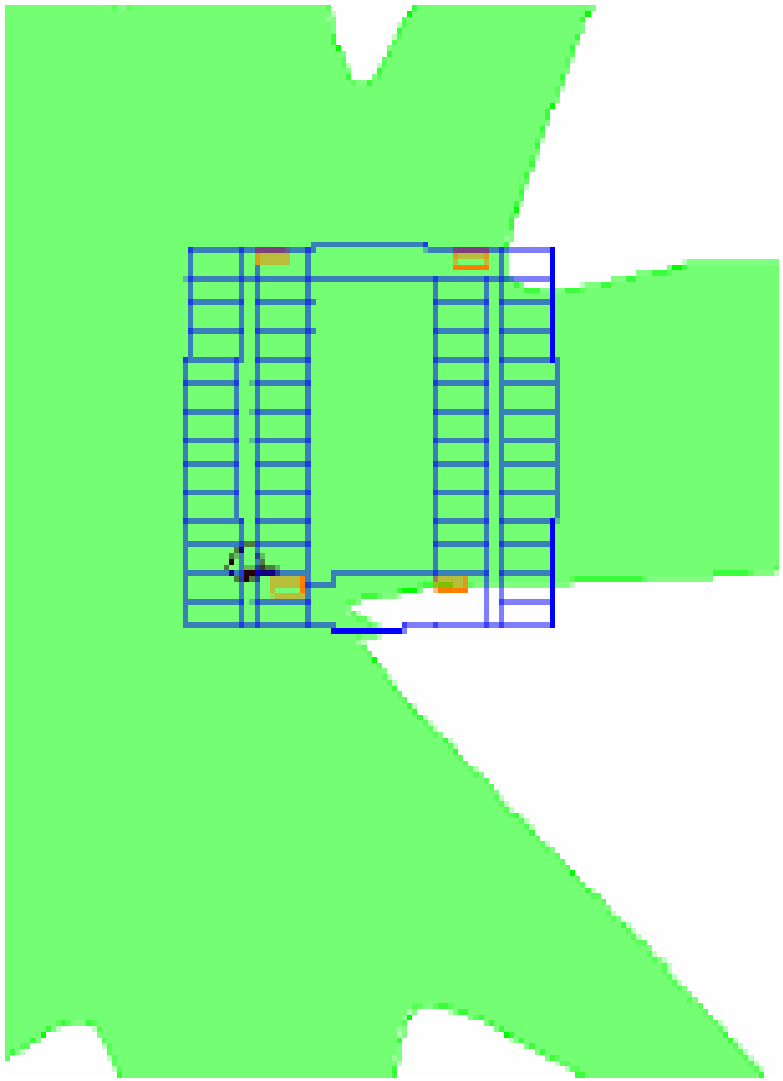
Public Access Hardware

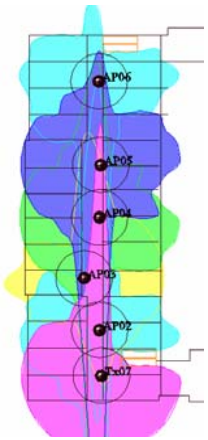
Public Access Hardware is just right

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

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

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?

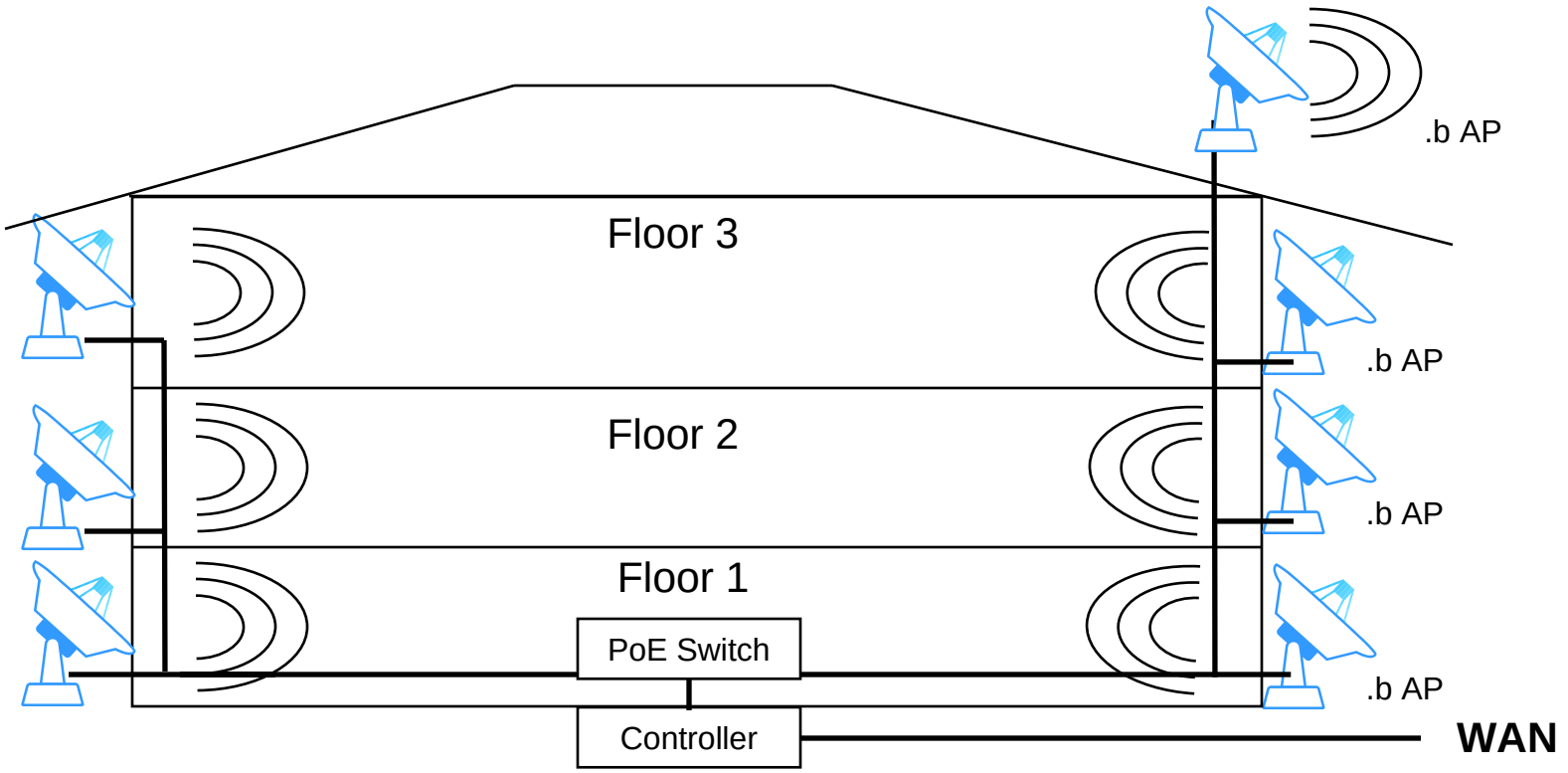
Some AP/building material rules of thumb:

- **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 in not rocket science**
- **However, the network not net-working will impact your business**
- **No matter what your do, some guests will not be able to connect, because their laptop in 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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