

Rose City Park Presbyterian Church's Wifi Project Summary: How We Did It and You Can Too

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SCOPE

Simply trying to determine what the scope of the project should entail was a struggle. We knew that we wanted wifi but did we want it or NEED it throughout the entire building? For instance, we have building partners that provide their own wifi. Should we save a few bucks by not including their area in the project? Seems like a simple question now, but at the time it was an honest consideration. Also, we already had wifi in the office area and had extended it to a few other areas in the building, but it was unreliable. Still, we considered building a better system off the existing system which is not always a good idea.

In addition to the wifi, our office computers were in need of more RAM or outright replacement, our outdated email system needed replacing and our locally shared hard drive (NAS device) was aging out as well. These were all considerations in our initial plan. In the end, we hired individual contractors (literally, two separate people) to upgrade the computers, shared storage, and email at a nominal cost so we could just focus on the wifi. Again, trying to narrow down the scope of work was difficult yet it is essential to creating a successful bidding process. More on scope later.

CONSULTING

Meeting with vendors is usually exciting, informative and exhausting especially if the subject is a little daunting. We ended up meeting with three vendors and getting 3 bids for the project. When doing this, we learned different, sometimes conflicting, information from each company. We were still learning much of the terminology as well as what the current technology could do which meant that we often did not know the right questions to ask. Ask questions until you finally get an answer that you understand. IT people can sometimes assume that you know more than you actually do.

BIDS

The three bids we received varied enormously in detail, price and solution. I won't go into details here about each vendor but we ended up going with an outfit that was recommended to us by the local Comcast installer who said that our job required a company that specialized in larger cabling projects. (Progressive Telephone Systems and Communications in Vancouver, WA 503-665-4900) They were about twice as expensive as the lowest bidder but presented the most inclusive and detailed bid which included several options, plus their point person was professional, personable, confident and easy to work with. They were also the largest of the three companies and appeared to have more resources readily available to them. There were days when they had 4 people working onsite.

TIME FRAME

Initially the job was expected to take 2 or 3 days which, I recall thinking at the time, was overly optimistic. This would include running the cable, installing and programming the wifi switch, installing 11 access points (APs) and providing some minimal training on how to administrate the system. In reality the whole project spanned over a month. I am retired and so was able to be onsite to assist with access to the church's nooks and crannies.

Discussions about our project began in early 2019. The *whole* project, which included a comprehensive review of our overall tech situation, was completed in early 2020.

CHALLENGING BUILDING STRUCTURE

The church building is a composite of 3 structures built throughout the decades under a variety of building codes. Running cable from one section to another was unsurprisingly challenging; thick concrete barriers, restrictive crawl spaces, and lots of unmarked legacy wiring to weed through. Having a simple map of each floor and its rooms was extremely helpful! Also, it helps to know the locations of your electrical panel(s), your phone closet and where the internet cable enters the building (We ended up moving our cable entry point to a more logical location for the project).

DATA RACK LOCATION

This was a pivotal moment in the process. For years, our Comcast modem resided in the bookkeeper's office simply because the cable entered the building next to her window. Without any consideration, we had simply assumed that all of the new cabling and equipment would naturally be located in the bookkeeper's office! On day one of the installation, our bookkeeper realized that this was going to be a problem for her in terms of the new equipment taking up space and generating additional unwanted heat. It also meant that her work could be interrupted anytime there was an issue with the wifi or internet connection. She suggested we locate everything (data rack w/cable connections, Comcast modem, shared storage device), to inside the current copier/work room; an inner room with no windows. This was a brilliant idea but, of course, it required a change order and additional expense which, I believe, added about 20% more to the budgeted amount. Suddenly we had actual "data center" with everything located in one place, out of the way and on a wall.

DELAYS

After the first few days of work it was already clear that this was going to take much longer than first thought. Progressive was really hoping to have it done in 3 days because they had other jobs scheduled immediately after that. The wiring took longer than expected (routing challenges.) There was an instance where special cable-cover parts needed to be ordered. Also, we needed to bump up our Comcast bandwidth from 40 Mbps to 300 Mbps which added several days to get a newer, faster Comcast modem. (I'll be the fall guy on that one. I thought we could try the new wifi system with our existing bandwidth before upgrading. Wrong! I should have done that ahead of installation time.)

BUDGET

We have a Communications Committee that's been in existence for only a few years. We have a budget that has been well funded mostly because members have made wifi and other other IT resources a priority. After doing a walk through the building, we asked each vendor to give us a "ball park", "off the top of your head" idea of what the project might run. This helped us determine if the project was financially feasible. We assumed that there would be cost overruns regardless of who did the work. Whether we assumed 20 or 50 percent, I don't recall. Ultimately, Progressive Telephone's contract was pretty solid and we only paid what the contract stated plus the one change order. There were no billing or overrun surprises.

BIDDING CHALLENGE

Comparing the bids was very difficult. If we learned something new from one vendor, we tended to ask more sophisticated questions of the next vendor which would then influence what our perceived scope should be. In the end, the desired scope of work we presented, varied slightly from vendor to vendor. Ideally and ethically, each vendor should be given identical request for quotes (RFQ) so that all bids can be compared as apples to apples (and they must be the same type of apple, at that!) Our scope seemed like a moving target depending on who we talked to and how close it was to lunch.

WIFI ADMINISTRATION

Every IT device requires some form of administration especially if security is involved. Our system is made by Ubiquiti which includes a 24-port switch, 11 UniFi access points and the software controller for administration. What follows is true for most systems. The controller allows you to provide access (e.g. user accounts), monitor user activity and AP status, setup individual wifi networks (SSID) , manage access for wifi enabled systems (e.g. security cameras) and much more. The question then becomes, "Who manages this system?" Office staff, techie church member(s), or pay for support as needed? Once it's setup, it is very reliable and needs little attention until you decide to add or change something like create a separate network for a building partner, add security cameras, or quickly block access to someone or some thing for some reason. If you haven't used the system for several months as has been my case, it takes some time and effort to reorient yourself to the system. Of course, whoever needs to manage the system also needs a user account (name and password) to access the controller. You can setup up as many user accounts as you like, all will different levels of access. This means that managing your passwords becomes very important.

PASSWORD MANAGEMENT

If you already have a secure way to manage your passwords, great! If not, it's time to get one. Keeping a book of written passwords is a start. A spreadsheet in a secure place is a little better. It's best to consider an actual password manager that keeps your account credentials encrypted and has many other advantages as well.

SUMMARY

Know the scope of your project.

Know the location of electric panels, phone closet, cable entry point

Provide building and floor maps

Determine desired location of data rack, routers and other network equipment

Consult with the experts (vendors)

Write clear and specific RFQ for bidders (Make sure training is included)

Optional: Request bids that include high, low, and middle options. If you select the lowest option due to cost, make sure that it can be upgraded later if and when more funds become available.

Make sure you have plenty of bandwidth from your internet provider. (We have 300 Mbps)

Think about who will manage the system once it is up.

Use a password manager.

WHAT'S BEEN POSSIBLE?

In truth, we can't say yet-- we finished the project and immediately shut down the church complex because of Covid. For the short time the building was open, congregation members were excited about how easy it was to hold meetings and use the internet.

Our worship and all church activities moved onto Zoom during the Covid crisis. We will soon begin the process of planning for hybrid worship, where we will blend Zoom live worship with the live sanctuary-based service. We wouldn't even be able to consider this without wifi.

Wifi is also going to make it possible to utilizing more of the building for church and community activities. We've already been contacted by a number of organizations about our capacities for livestreaming from the sanctuary. We believe wifi will open other opportunities for our church to be more visible to and engaged with the community around us.