Computer Services and Networking for Co-housing and Communal living spaces

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1 Introduction

I am writing this for my erstwhile college chum Kim. And anyone else who might be interested in planning a computer and network system for a communal living space.

Before I begin, my assumptions are:

1. There are a collection of independent living spaces with need for a computer with internet access and possibly streaming.

2. A communal center

I will try and delineate choices that can be made during design that will ease both connection to existing data sources as well as plan for the future.

2 Networking

Let's begin with networking. Almost every location has access to an Internet provider. Even those that do not (in rural America) have access to satellite; we'll discuss that later. Providers typically provide either coaxial cable (CATV) or fiber (Telephone). In locations that have both, there is fierce competition for the right to shove bits at you. This is to your advantage. In places with local monopolies, not so much.

2.1 Wired

In either case (coax or fiber), it would be prudent to run both coaxial cable (75 Ω) and fiber in a conduit that terminates in each living space.

There is an interesting design choice to be made concerning the other end of the cable/fiber. Perhaps the most obvious choice is to terminate at the

perimeter of the property and allow the provider access to the cabinet. But another choice is to have the cabinet in the communal space and have the provider connect there. The implication is that the provider will have to put the router in the communal space. Not a bad thing, really.

This brings up another choice: If the router is communal, you could consider buying the highest speed line available and then sharing the cost amongst all the members. However, this would mean the commune would be responsible for the router and not the provider. We'll get to the problem of support last.

If located in a rural spot without an internet feed, the idea of having a centralized router gains new prominence. Basically, you can install a satellite antenna (and modem) on the communal space and then route the bits to each living space.

Even with a centralized router I should note that the bits are secure to each member. No member would be able to read any other traffic. Paranoids could always encrypt if they wanted.

Finally, be sure and cable up the communal space even if you don't have a communal router.

2.2 Wireless

I don't think it's possible to overstate the importance of WiFi service. Thinking about it before the construction begins means that it's possible to put the WiFi access points ("hot spots") in distributed locations. In particular, I advocate for putting access points on lamp posts: you can run the cable in the same conduit as the power. Then cabling from the posts to a router in the communal space. I also propose that the wireless service be a communal asset so that a monthly/yearly fee pays for the line.

3 Computing and Storage

Although I mention computing, I doubt that most (if any) communes are interested in shared computing. However, it's easy to envision a shared file storage as well as a possible email service. If this is appealing, you have to place the server in the shared space and provide some sort of air conditioning. Perhaps more critically, this is something that requires support. Someone has to deal with upgrades, updates, hardware failure, file system backup and the like. The commune may have someone with that kind of expertise. But nothing lasts forever and that person may leave. So, is the commune prepared to hire it out?

4 Conclusion

It's better to plan for the future and not the present. It's also better if you don't guess what the future will bring but rather prepare for all circumstances. It's much easier to run conduit during construction, so choose large conduit and run as many cables as you can. Choose your termination location carefully. Talk to the local provider(s) and see what they offer.