



Layer-2 Network Design

Campus Networking Workshop



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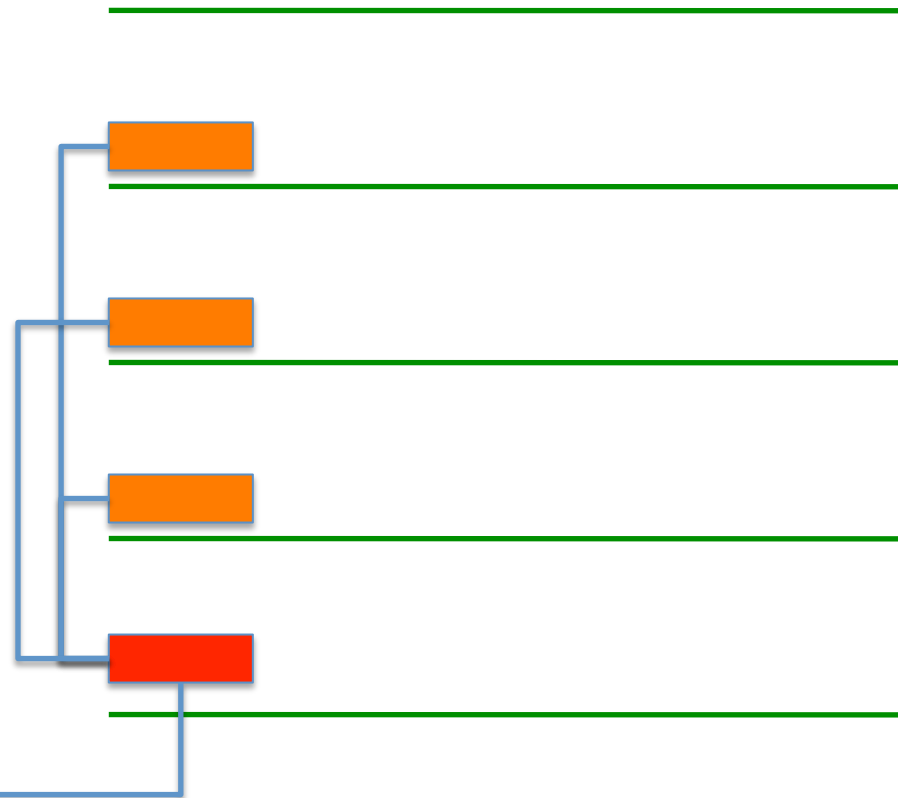
Buildings and Layer 2

- There is usually a correspondence between building separation and subnet separation
 - Switching inside a building
 - Routing between buildings
- This will depend on the size of the network
 - Very small networks can get by with doing switching between buildings
 - Very large networks might need to do routing inside buildings

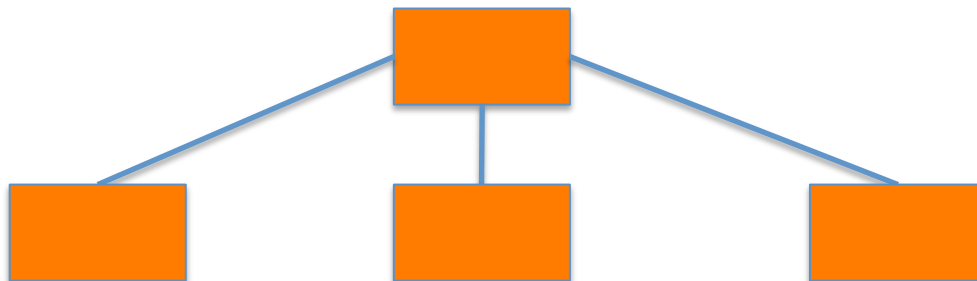
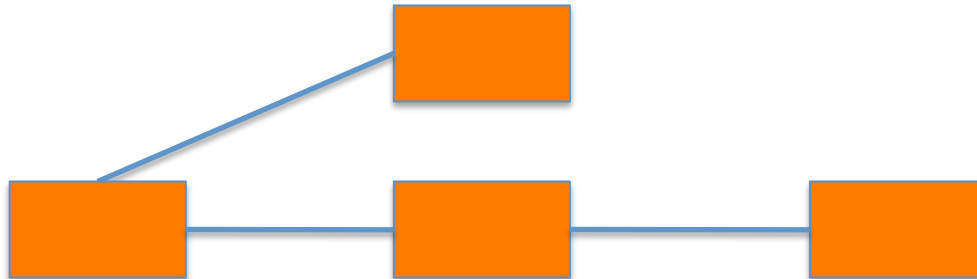
Layer 2 Network Design Guidelines

- Always connect hierarchically
 - If there are multiple switches in a building, use an aggregation switch
 - Locate the aggregation switch close to the building entry point (e.g. fiber panel)
 - Locate edge switches close to users (e.g. one per floor)
 - Max length for Cat5 is 100 meters

Building Network

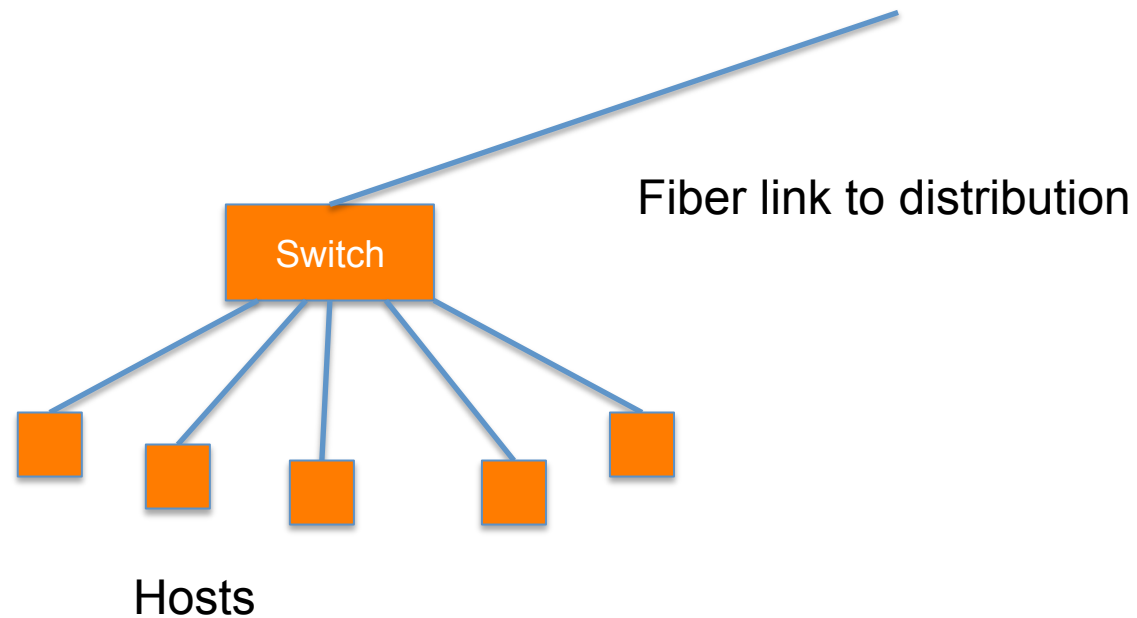


Minimize Path Between Elements



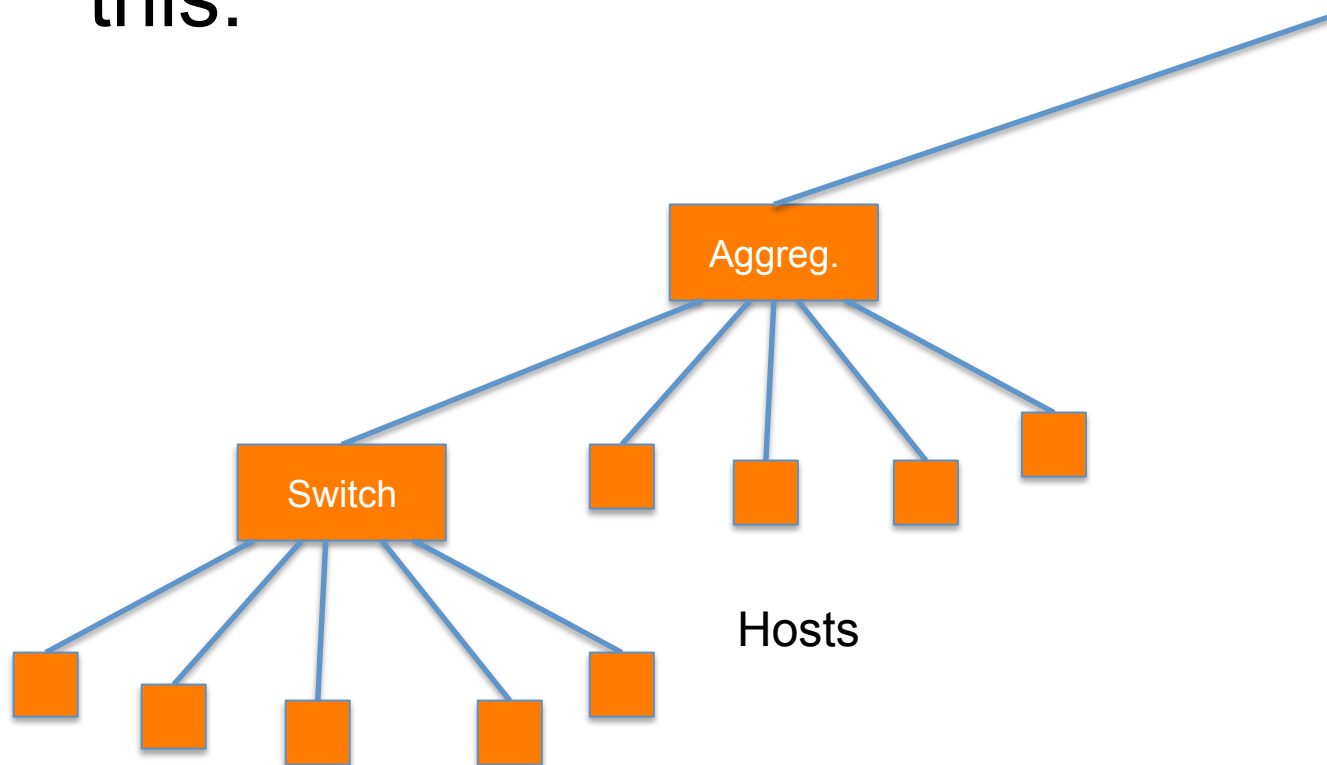
Build Incrementally

- Start small



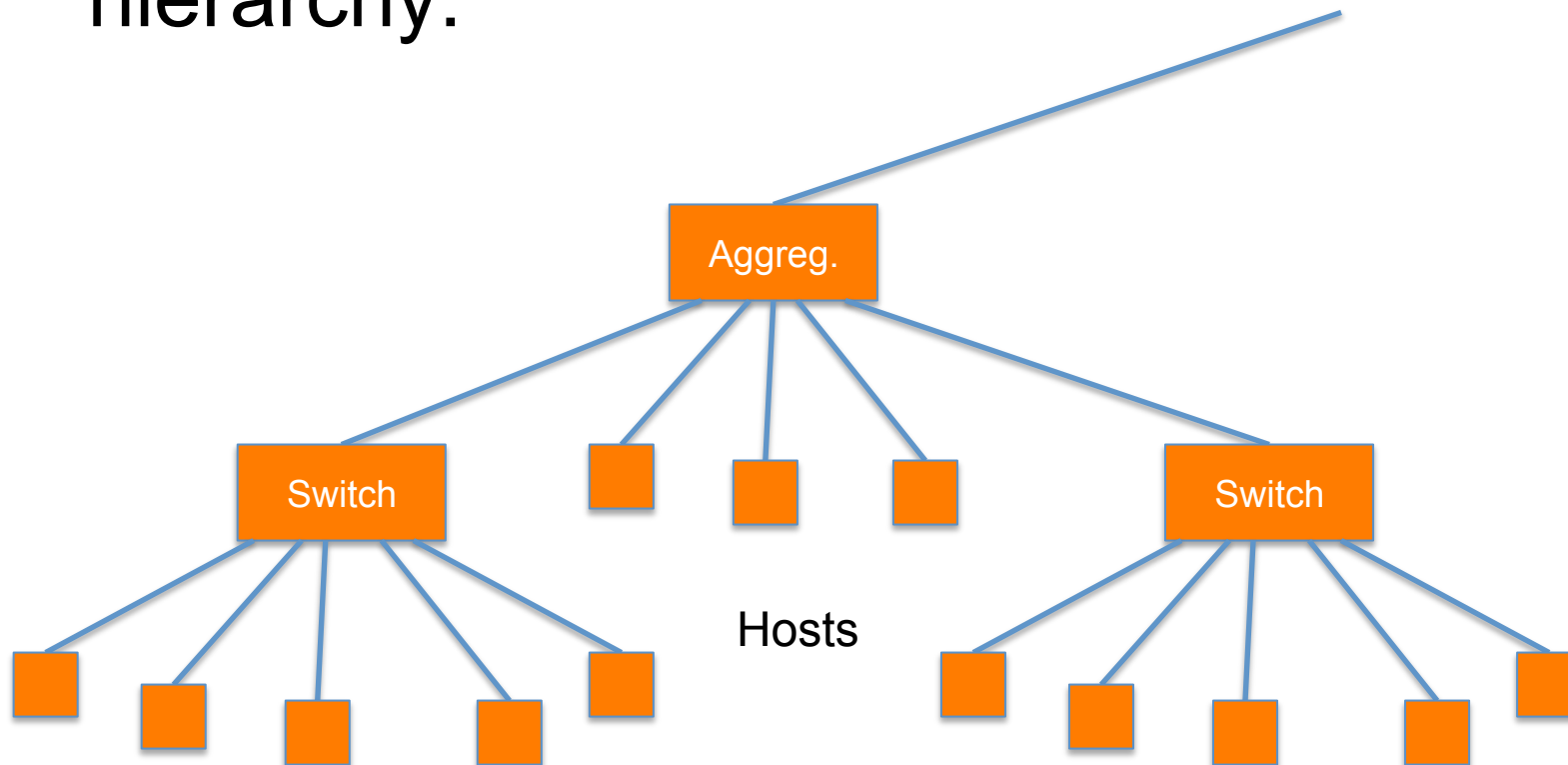
Build Incrementally

- As you have demand and money, grow like this:



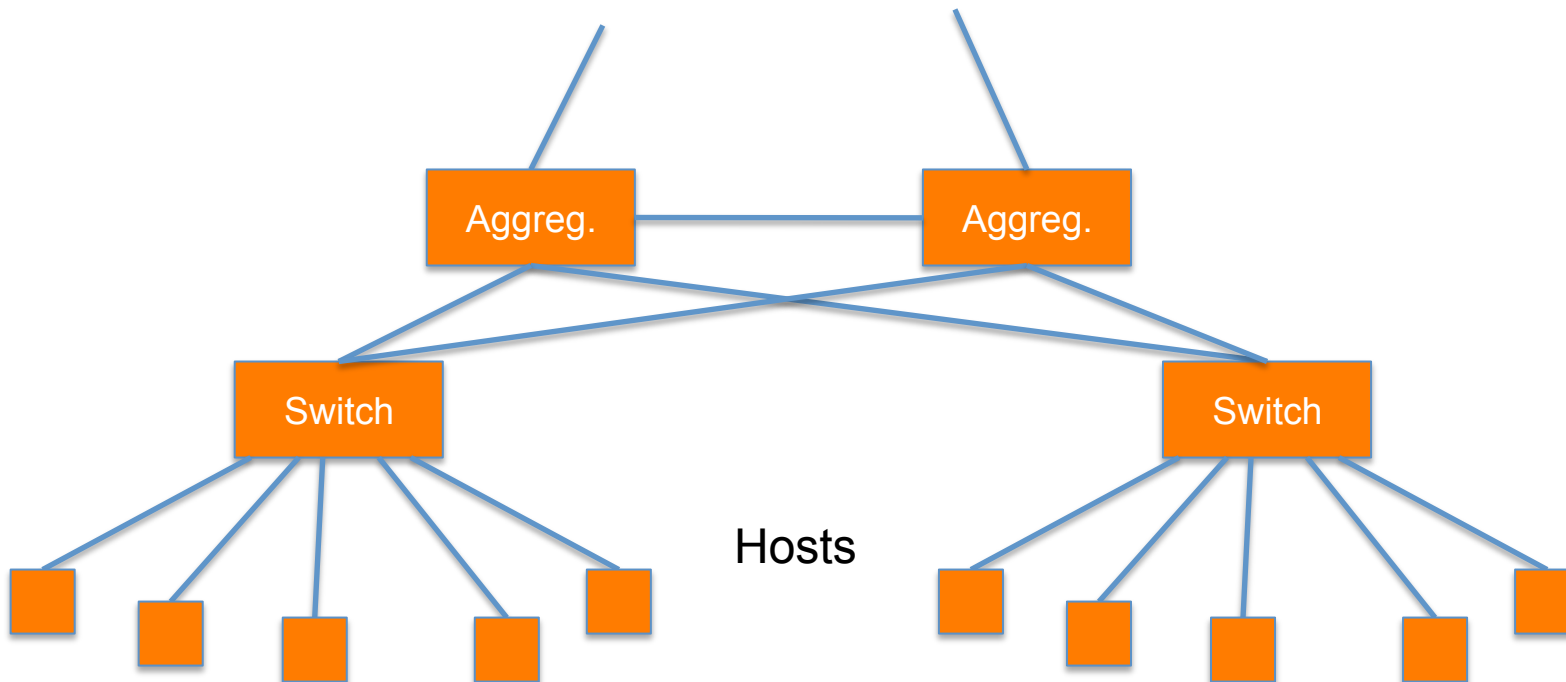
Build Incrementally

- And keep growing within the same hierarchy:



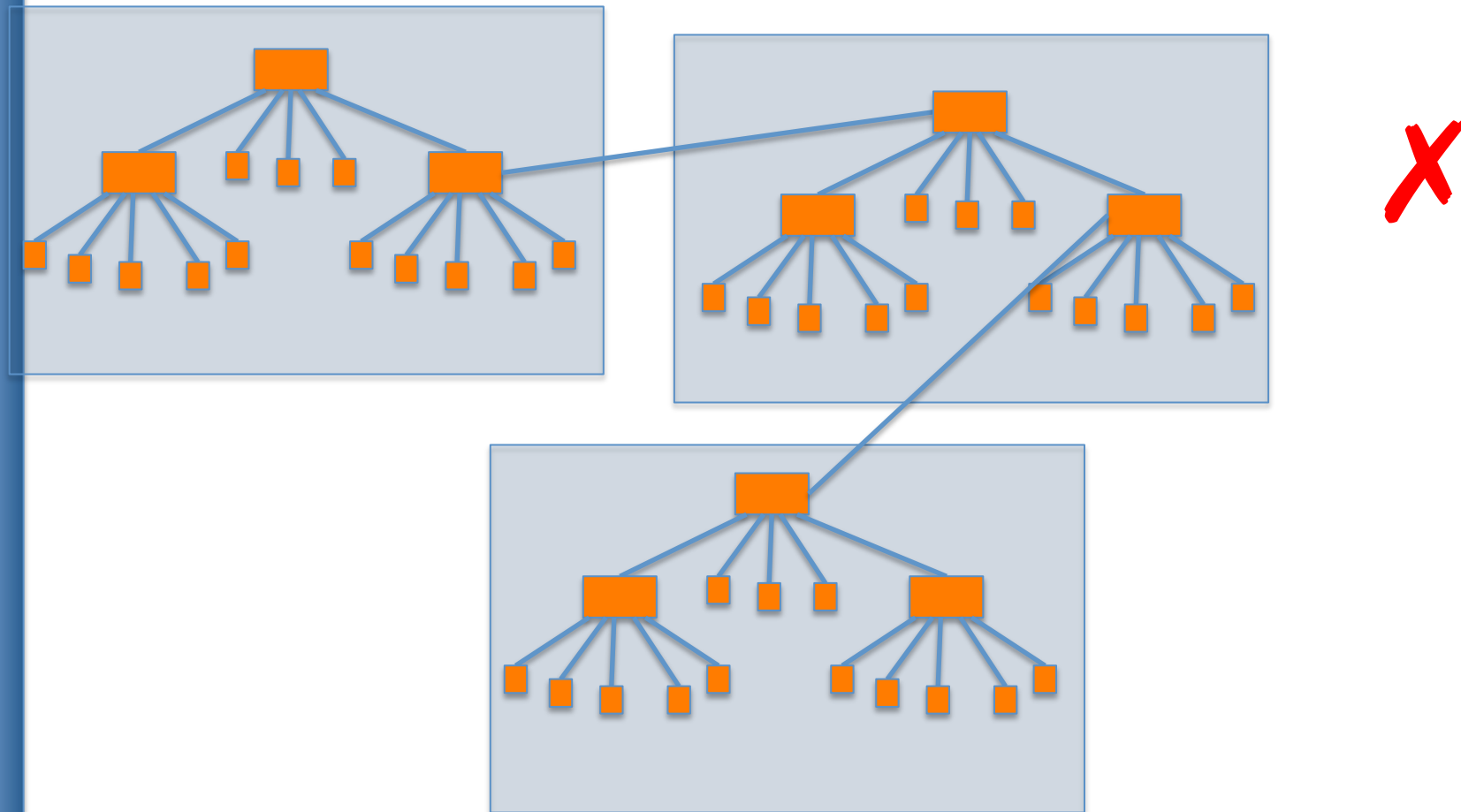
Build Incrementally

- At this point, you can also add a redundant aggregation switch

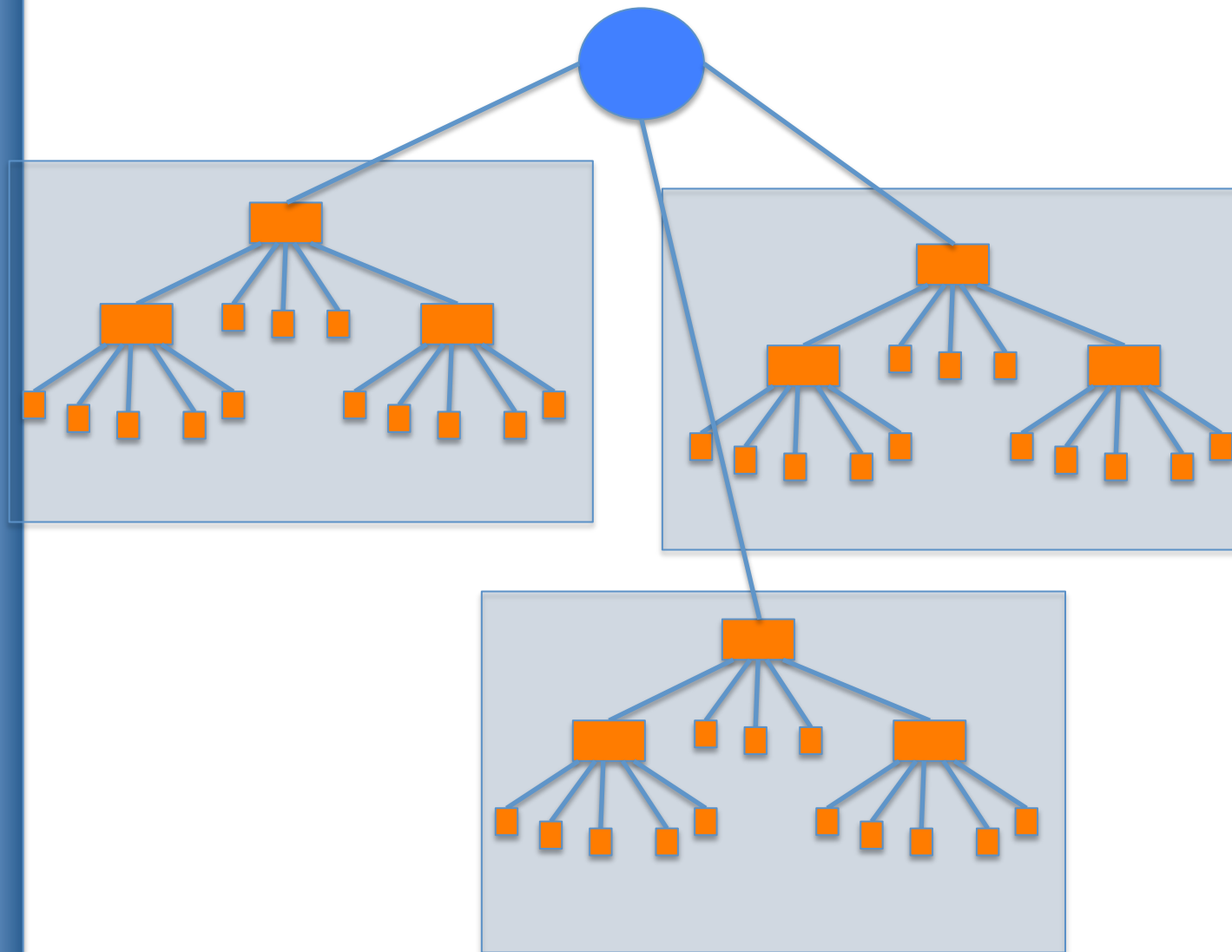


Do not daisy-chain

- Resist the temptation of doing this:



Connect buildings hierarchically



Questions?