

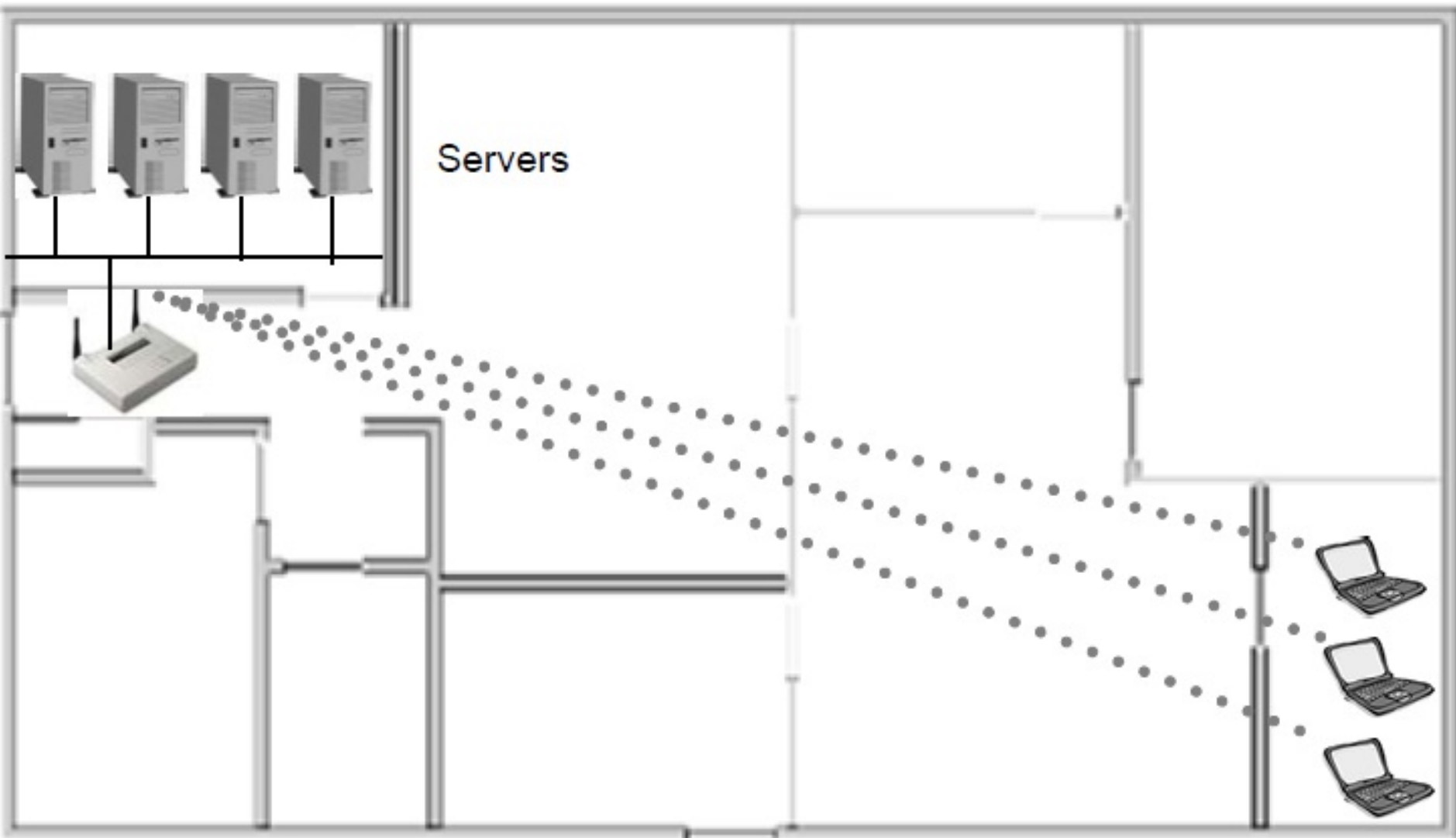
# Applications of Wireless LANs

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# Network Extension

- Wireless networks can serve as an extension to a wired network. There may be cases where extending the network would require installing additional cabling that is cost prohibitive. You may also cover that hiring cable installers and electricians to build out a new section of office space for the network is going to cost tens of thousands of dollars. Or in the case of a large warehouse, the distances may be too great to use Category 5 (Cat5) cable for the Ethernet network. Fiber might have to be installed, requiring an even greater investment of time and resources. Installing fiber might involve upgrades to existing edge switches.



Servers

Warehouse

Clients

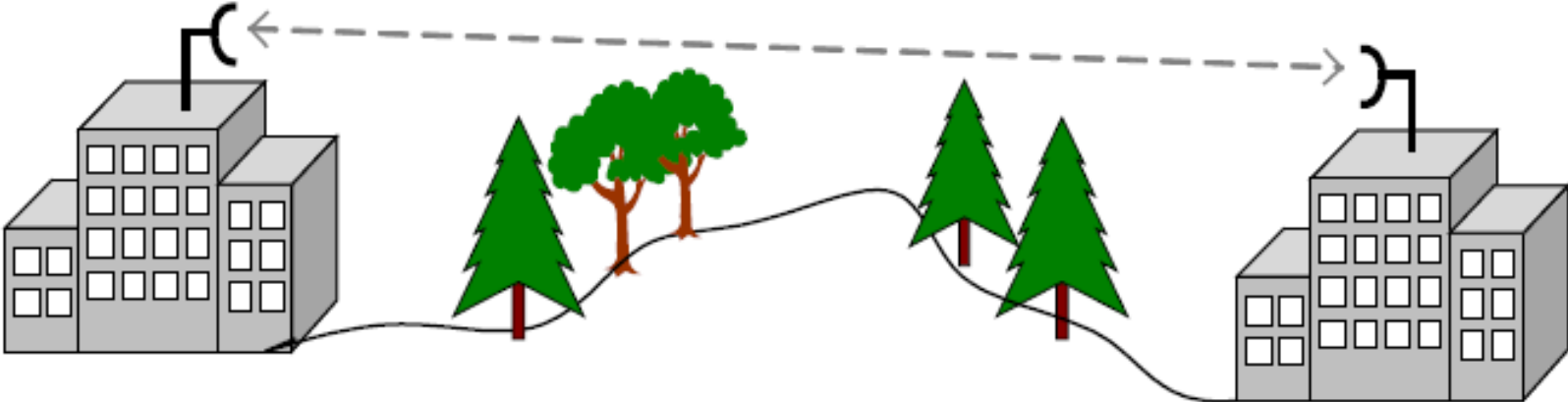
# Building-to-Building Connectivity

- In a campus environment or an environment with as few as two adjacent buildings, there may be a need to have the network users in each of the different buildings have direct access to the same computer network. In the past, this type of access and connectivity would be accomplished by running cables underground from one building to another or by renting expensive leased-lines from a local telephone company.

- Using wireless LAN technology, equipment can be installed easily and quickly to allow two or more buildings to be part of the same network without the expense of leased lines or the need to dig up the ground between buildings. With the proper wireless antennas, any number of buildings can be linked together on the same network. Certainly there are limitations to using wireless LAN technology, as there are in any data-connectivity solution, but the flexibility, speed, and cost-savings that wireless LANs introduce to the network administrator make them indispensable.

- There are two different types of building-to-building connectivity. The first is called point-to-point (PTP), and the second is called point-to-multipoint (PTMP). Point-to-point links are wireless connections between only two buildings, as illustrated in Figure PTP connections almost always use semi-directional or highly-directional antennas at each end of the link.

Building-to-building connectivity

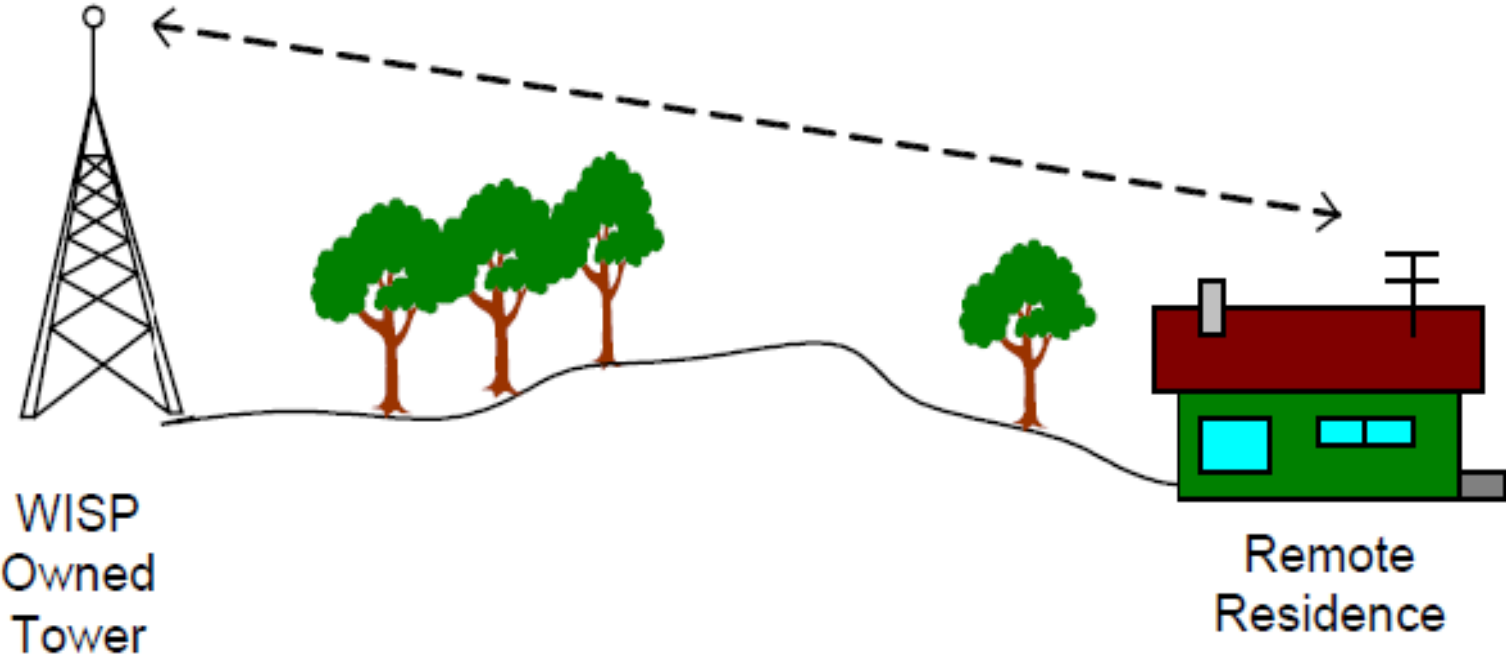


# Last Mile Data Delivery

- Wireless Internet Service Providers (WISPs) are now taking advantage of recent advancements in wireless technology to offer last mile data delivery service to their customers. "Last mile" refers to the communication infrastructure—wired or wireless—that exists between the central office of the telecommunications company (telco) or cable company and the end user. Currently the telcos and cable companies own their last mile infrastructure, but with the broadening interest in wireless technology, WISPs are now creating their own wireless last mile delivery service, as illustrated in Figure.



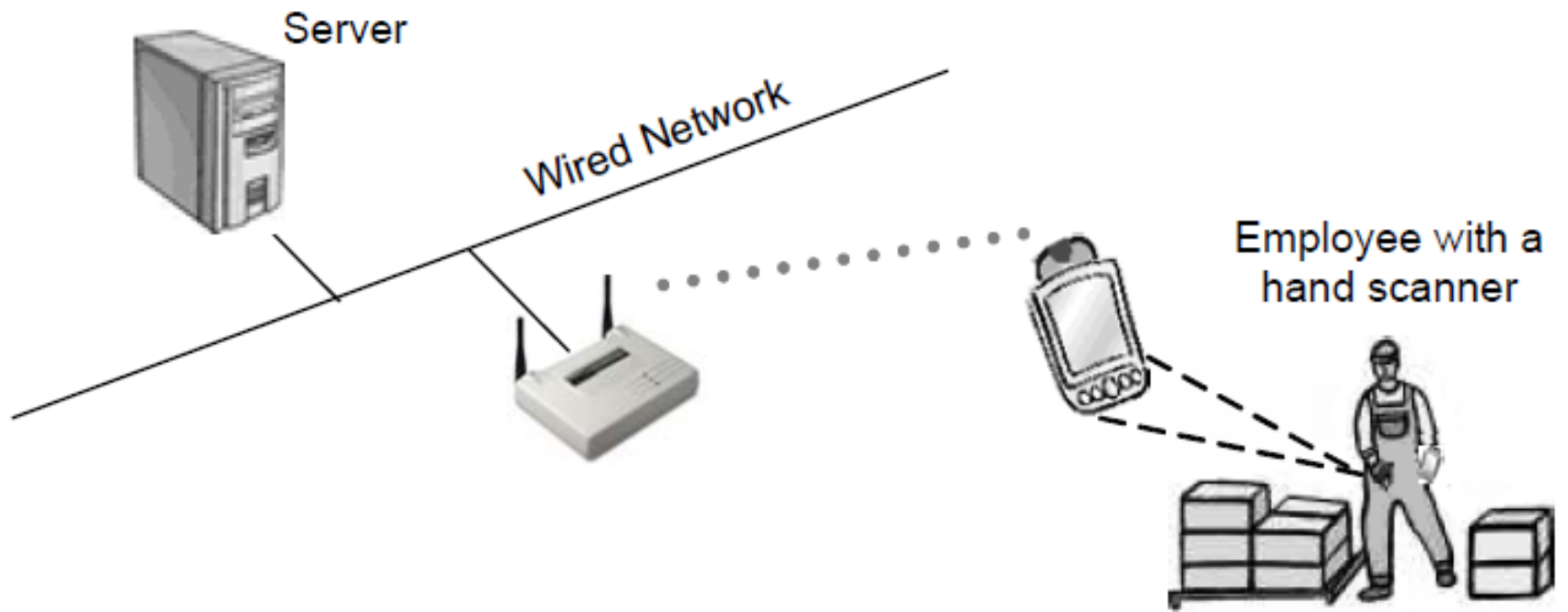
# Last Mile Service



# Mobility

- As an access layer solution, wireless LANs cannot replace wired LANs in terms of data rates (100BT at 100Mbps versus IEEE 802.11a at 54Mbps). What wireless LANs do offer is an increase in mobility (as can be seen in Figure 1.5) as the trade off for speed and quality of service.
- In warehousing facilities, wireless networks are used to track the storage locations and disposition of products. This data is then synchronized in the central computer for the purchasing and shipping departments. Handheld wireless scanners are becoming commonplace in organizations with employees that move around within their facility processing orders and inventory.

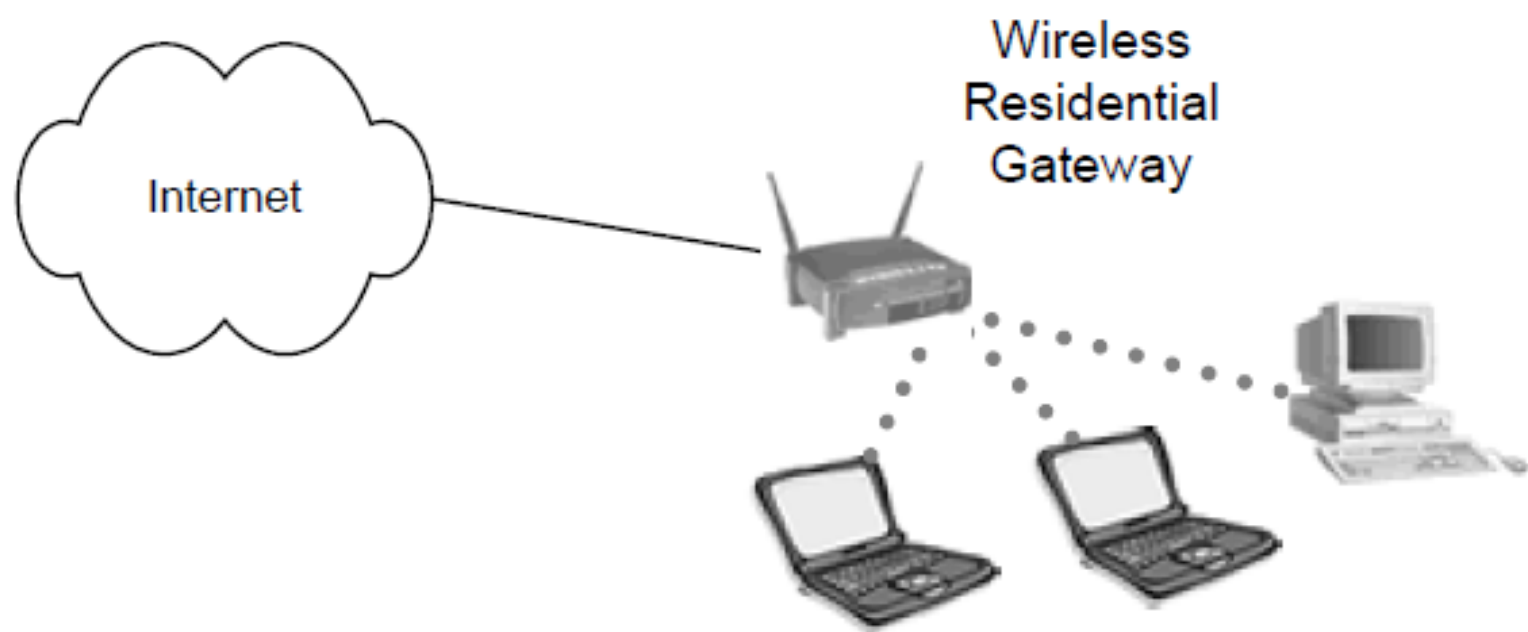
# Mobility



# Small Office-Home Office

- As an IT professional, you may have more than one computer at your home. And if you do, these computers are most likely networked together so you can share files, a printer, or a broadband connection. This type of configuration is also utilized by many businesses that have only a few employees. These businesses have the need for the sharing of information between users and a single Internet connection for efficiency and greater productivity.
- For these applications – small office-home office, or SOHO – a wireless LAN is a very simple and effective solution.

## SOHO Wireless LAN



# Thank you

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