## New Network Design Overview:

* **Building Structure:** Contemporary three-level office structure, encompassing a total area of 45,000 square feet.
* **Floor Allocation:**
  + First Floor: Houses Sales, Marketing, HR, and Logistics departments, covering 15,000 square feet.
  + Second Floor: Dedicated to Finance, Accounts, Administration, and PR, also spanning 15,000 square feet.
  + Third Floor: Hosts ICT and the Server Room, occupying 15,000 square feet.
* **Offices and Connectivity:** Around 60 individual offices amid open-plan spaces. Newly designed independent network with potential for integration with the existing network.
* **Client Categories:**
  + Each department: Supports 120 users with various devices.
  + Server Room: Manages 12 devices.
* **Wireless Clients:** Maximum capacity of 1,320 clients (accounting for 600 employees with 2 devices each and an additional 10% for guests/extra devices).
* **Public Client Support:** Dedicated guest network for internet access, segregated from the main internal network.
* **Server Needs:**
  + Required services include File, Domain, DNS, Web, Email, Database, Application, DHCP, Backup and Recovery, Network Management and Monitoring, VPN, and Print Servers.
  + Generally 1-2 units per service for redundancy and load management.
* **Internet and Domain Hosting:** Internet connectivity via various ISPs, domain likely maintained by an external provider, with the mail server being either in-house or hosted.
* **Network Overview:**
  + Current: Basic configuration with constrained capacity and old hardware.
  + Desired: Enhanced capacity, improved redundancy, advanced security, efficient network partitioning, modernized wireless access, and sophisticated network management.
* **High-Level Solutions:**
  + Strategies include augmenting capacity, bolstering redundancy, fortifying security, redesigning the network, upgrading wireless capabilities, and enhancing monitoring and management.
* **Network Design Outline:**
  + 7 separate networks/subnets for 6 departments plus a guest network.
  + VLAN implementation for each department.
  + Utilization of Cisco routers and switches, with a variety of cable types.
* **Future Upgrade Plan:**
  + Workstation growth: Anticipating a modest yearly growth rate of 10%, the network could be expected to support an extra 60 workstations in one year, summing up to approximately 660 workstations.
  + Connection speed upgrades: Annual reassessment of bandwidth needs, with potential upgrades to 10-gigabit Ethernet for central switches and more robust routers if necessary.
  + Wireless access point enhancements:
    - **Capacity**: Considering the growth in wireless device usage (BYOD culture and IoT devices), more access points might be needed for optimal performance.
    - **Technology**: Staying updated with wireless technology advancements, such as Wi-Fi 6E or newer standards, for improved speed, capacity, and reduced latency.