

StadiumCompany Story

The Discovery “Designing and Supporting Computer Networks” course uses the fictional StadiumCompany network upgrade story in the main text and media presentation and in Packet Tracer activities. StadiumCompany is a stadium management company that manages a large sports facility.



When the sports facility was built, the network that supported its business offices and security services provided state-of-the-art communications capabilities. Over the years, the company added new equipment and increased the number of connections without considering the overall business goals and long-term infrastructure design. Some projects went ahead without an understanding of the bandwidth, traffic prioritization, and other requirements needed to support this advanced and business-critical network. Now the StadiumCompany management wants to improve the customer experience by adding high-tech features and support for concerts, but the underlying network cannot support these additions.

The StadiumCompany management understands that they do not have sufficient network expertise to support the network upgrade. The StadiumCompany decides to hire network consultants to provide design, project management, and implementation support. The project will be implemented in three phases. The first phase is to plan the project and prepare the high-level network design. The second phase is to develop the detailed network design. The third phase is to implement the design.

After a few meetings, StadiumCompany hires the NetworkingCompany, a local network design and consulting firm to support the phase 1, high-level design. NetworkingCompany is a Cisco Premier Partner employing 20 network engineers who have various CCNA, CCDA, CCNP, CCDP, and CCIE certifications and significant industry experience.

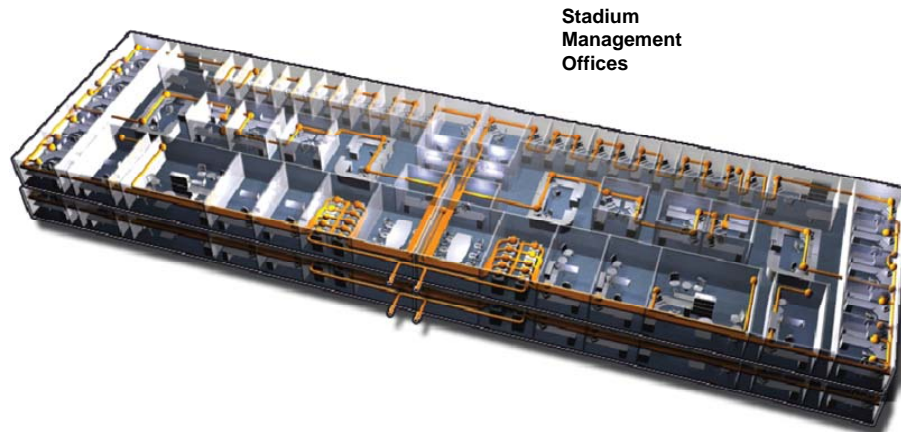
To create the high-level design, the NetworkingCompany first interviewed the staff at the stadium and developed a profile of the organization and the facility.

StadiumCompany Organization

The StadiumCompany provides the network infrastructure and facilities at the stadium. The StadiumCompany has 170 full-time people:

- 35 managers and executives
- 135 salaried personnel

Approximately 80 additional hourly workers are hired as needed to support events in the facility and security departments.



Stadium
Management
Offices

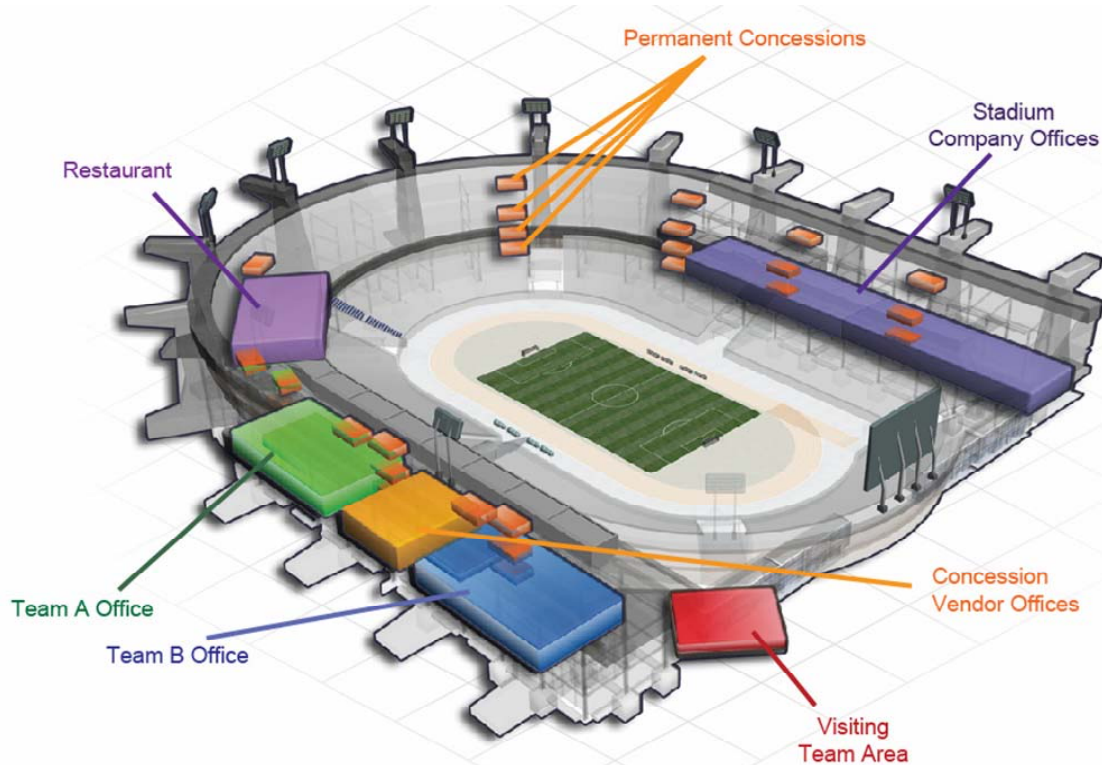
StadiumCompany Phones and PCs

All the managers and executives at the StadiumCompany use PCs and phones connected to a digital voice PBX. With the exception of the full-time grounds people and the janitors, all the salaried personnel also use PCs and phones.

Fifty shared phones for the security staff are distributed throughout the stadium. There are also 12 analog phones, some that support faxes and others that provide direct access to the police and fire stations. The security group also has 30 security cameras implemented on a separate network.

Existing Facilities and Support

The StadiumCompany provides facilities and network support for two sports teams (Team A and Team B), a visiting team, a restaurant, and a concessions vendor.



The stadium is approximately 725 feet wide by 900 feet long (approximately 220 meters wide by 375 meters long). There are two levels. Because of the size of the facility, multiple wiring closets connected with fiber-optic cabling are distributed throughout the stadium.

The Team A and Team B locker rooms and player lounges are on the first level of the south side of the stadium. The team offices are on the second level and measure 50 feet x 200 feet (approximately 15 meters wide by 60 meters long)

The office and locker room of the visiting team are also located on the first level.

StadiumCompany offices are in the north side of the stadium on both levels. The office space on the first level measures 200 feet x 60 feet (approximately 60 meters wide by 18 meters long), and measures 200 feet x 50 feet (approximately 60 meters wide by 15 meters long) on the second level.

Team A and Team B are in different sports leagues with different seasons. They both contract with the StadiumCompany for offices and services at the stadium.

Team A Organization

Team A has 90 people in the organization:

- 4 executives
- 12 coaches
- 14 support staff (including doctors, masseuse, secretary, assistants, finance and accounting)
- 60 players

Team A has 15 offices in the stadium to support their non-player staff. Five of these offices are shared. There are 24 PCs and 28 phones installed in the offices.

Team A also has a player locker room and a large player lounge and workout room. The non-player staff uses the facility year round. Players have access to the locker room and workout equipment both during the season and

the off-season. There are 5 phones in the locker room, and 15 phones in the player lounge. There are rumors that Team A recently installed a wireless hub in the player lounge.

Team B Organization

Team B has 64 people in the organization:

- 4 executives
- 8 coaches
- 12 support staff (including doctors, masseuse, secretary, assistants, finance and accounting)
- 40 players

Team B has 12 offices in the stadium to support their non-player staff. Three of the offices are shared. There are 19 PCs and 22 phones installed in the offices. They also have a player locker room and a large player lounge. The non-player staff uses the facility year round. Players have access to the locker room and workout equipment both during the season and the off season. There are 5 phones in the locker room, and 15 phones in the player lounge.

Visiting Team Support

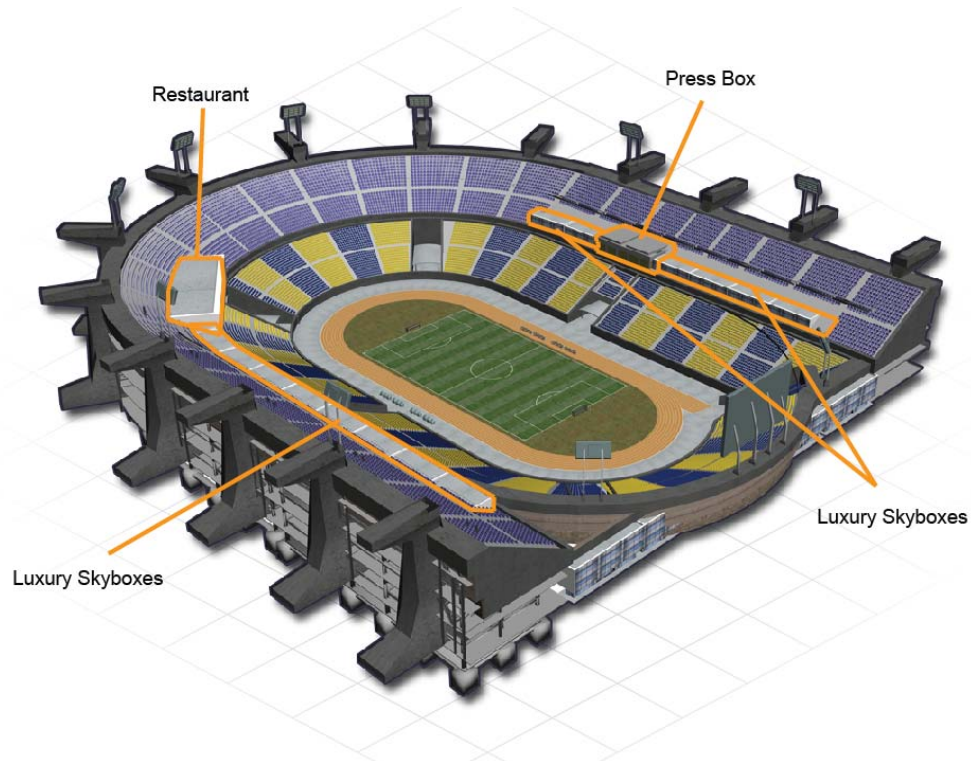
The visiting team locker room and lounge has 10 phones. Each visiting team requires temporary support on the game day and for a few days before the game. The visiting teams also contract with the StadiumCompany for office support and services at the stadium.

Concession Vendor

A concession vendor manages the concessions provided at games and events. There are five full-time employees. They use two private and two shared offices with five PCs and seven phones. These offices are located on the south side of the stadium between the Team A and Team B office space. Two part-time employees take orders from the luxury boxes during events. The concession vendor uses seasonal hourly workers to support 32 permanent concession stands and other services distributed throughout the stadium. At this time, there are no phones or PCs in the concession areas.

Luxury Restaurant Organization

There is one luxury restaurant at the stadium that is open year round. In addition to the customer and kitchen areas, the restaurant contracts for office space from the StadiumCompany. The four managers have private offices. The two salaried financial and accounting staff share an office. Six PCs and phones are supported. Two additional phones are used for reservations in the customer area.



Luxury Skybox Support

There are 20 luxury skyboxes. The StadiumCompany provides a phone in each skybox that supports local calls and calls to the luxury restaurant and the concession vendor.

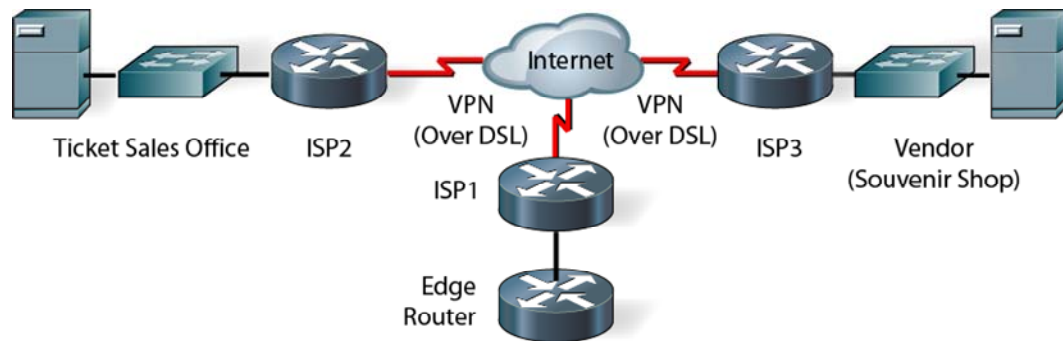
Press Area Support

The StadiumCompany provides a press box with three shared areas:

- The press print area typically houses 40 to 50 reporters during a game. There are 10 analog phones available in this shared area, and two shared data ports. It is known that one newspaper intern brings in a small wireless Access Point for games that she covers.
- The press radio area supports 15 to 20 radio announcers and has 10 analog phone lines.
- The press TV area typically supports 10 people. There are five phones available here.

Remote Site Support

The StadiumCompany currently has two remote locations: a ticketing office located in the downtown area, and a souvenir shop in a local shopping mall. The remote locations are connected using DSL service to a local Internet service provider (ISP).



The stadium is connected to the local ISP using ISP1, a managed services router owned by the ISP. The two remote sites have a connection to the same ISP supported by the ISP2 and ISP3 routers provisioned and managed by the ISP. This connection provides the remote sites access to the databases located on servers in the StadiumCompany management offices. The StadiumCompany also has a perimeter router named Edge Router that connects to the ISP1 router at the stadium.

StadiumCompany Plans

The StadiumCompany wants to add new services, such as video, to their network. They are also thinking about replacing the existing digital voice PBX. They would like better access to their existing security camera network. Two new remote sites are planned in the near future:

- A film production company that has been hired to provide video during and after the sporting events and concerts needs to connect to the stadium network to exchange files.
- Team A is expanding to a remote office location. They are requesting access to the same network resources that they use on the stadium LAN.