# Management Decision Problem

## Improving Broadband Connectivity in Old San Juan

## Problem Description

Old San Juan, the historic district in the capital of Puerto Rico, faced significant challenges in providing broadband connectivity to both tourists and residents. The area’s network infrastructure was outdated, and restrictions on laying fiber-optic cables limited the ability to upgrade using traditional methods. To resolve these issues, the city implemented a broadband Wi-Fi network using Facebook Terragraph technology.

## What is Facebook Terragraph?

Facebook Terragraph is an advanced technology designed to provide high-speed Wi-Fi connectivity in urban areas. It leverages millimeter wave (mmWave) technology and compact devices to create a broadband network without the need for extensive fiber-optic installations.

Key benefits of Terragraph:

- Eliminates the need for costly and time-consuming fiber-optic deployment.

- Ideal for areas with outdated or restricted infrastructure.

- Delivers high-speed internet access for residents and tourists.

## Why Terragraph is Suitable for Old San Juan

Old San Juan’s historic buildings and 500-year-old heritage impose strict limitations on infrastructure upgrades. Terragraph’s compact devices can be installed on streetlights and buildings without disrupting the historic aesthetic. This makes it an ideal solution for enhancing internet connectivity in the district.

## Key Issues Addressed by Terragraph

### 1. People

- Training local technical staff for network operation and maintenance.

- Providing residents and tourists with reliable internet access.

- Educating the community on the benefits of the upgraded network.

### 2. Organization

- Coordinating between the local government and Facebook for project execution.

- Ensuring compliance with historical preservation regulations.

- Establishing policies for public Wi-Fi usage.

### 3. Technology

- Deploying Terragraph devices in strategic locations for optimal coverage.

- Delivering a stable, high-speed network despite urban challenges.

- Resolving technical issues related to mmWave signal propagation.

## Conclusion

Terragraph has proven to be an effective solution for Old San Juan, enabling the city to provide modern internet connectivity without compromising its historic integrity. The success of this project highlights the importance of innovative technologies and collaborative efforts between governments and technology providers.