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Assignment:

Identify an IT project and describe how you will implement the project from start to completion.

The project should be temporary and unique in nature as defined by PMBOK. And outline the following:

a. Project limitations (use STAR model)
b. Project objectives (use SMART technique)

INSTALLATION OF IP CCTV SYSTEM IN GiG BUS STATIONS

Client:	GiG Motors
Project Manager:	Ogah Ida
Group PBL 39:	1 Member
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STEP ONE:

THE PROJECT IDENTIFICATION AND DEFINITION

The GiG Motors Ltd is a popular public transport company in the transportation industry. Over time, the company has been faced with fraudulent activities and the antisocial behavior of some commuters and faceless individuals. The passengers have raised complaints about their missing items at the bus station and in most cases, it's difficult for GiG management to identify and recover those items. This occurrence of missing luggage and stealing is beginning to tarnish the image of the GiG transport business and the entire public transportation system in general. It is believed that the public transport system does not offer enough safety to passengers and their belongings. So, the purpose of this project is to address this security challenge in the GiG bus stations. The GiG Motors has requested the services of a technology company, IGTTS to install the IP CCTV system in three of their bus stations in Lagos city to monitor the activities of the commuters and employees on duty.

The implementation of this project is geared towards the restoration of safety in GiG bus stations. The business goals for this project is focused on:

a. encouraging more people to use GiG motors
   b. restoring confidence and safety of commuters
   c. guaranteeing the safety of goods at the bus stations

PROJECT DESCRIPTION

The GiG Motors has requested the services of a technology company, IGTTS to install the IP CCTV system in their bus stations to monitor the activities of the commuters and employees on duty. The project consisted implementation of a surveillance system in 5 GiG bus stations in the city of Lagos. The project uses 15 IP cameras and the required components for a functional CCTV surveillance system. In each bus station, 5 IP cameras, 1 DVR with internal SSD, and the necessary components were installed in each of the stations. The system has communication equipment capable of transmitting images and information from the monitored sites to the Central Management System. This system represents a part of a larger Integrated System Server that was deployed by IGTTS at the headquarters of GiG in Ikeja Lagos. All the different components of the overall system were integrated from the technical point of view, sharing parts of the overall CCTV architecture. IGTTS worked together with GiG technical staff to identify the strategic locations where the cameras were mounted.

The project was implemented to have a raw backup of the recorded information from each bus station. This security surveillance system can restore commuters' confidence in the public transportation system and become more attractive to the users. The system also allows a rapid intervention of the security personnel to detect commuters with criminal behavior in the bus stations. The impact of the project led to an increase in the company revenue as more passengers are willing to patronize the new system.

Generally, the most critical security issues in GiG transport mostly happened at specific periods. These were:

- Peak hours when buses are crowded
- In the less populated stations
- During the weekend when the number of passengers is lower

OBJECTIVE [SMART technique]

To use 6000 USD of the company revenue to purchase and install 15 IP cameras with a CCTV system in 3 GiG bus stations within the 3rd quarter of 2021 by installing 5 cameras in one bus station per month.

SMART:

Cost Specific, **S** [To use 6000 USD of the company revenue]
Achievable, **A** [to purchase and install 15 IP cameras with a CCTV system]
Measurable, **M** [in 3 GiG bus stations]
Time-bound, **T** [within the 3rd quarter of 2021]
Realistic, **R** [by installing 5 cameras in one bus station per month].

PROJECT CONSTRAINTS & LIMITATION [STAR model]

Scope:

This project will install 15 IP cameras in 5 GiG bus stations in Lagos city. The contractor will be responsible for the procurement and installation of the IP cameras and the required internet network infrastructure. The contractor will also be responsible for the installation and configuration of recording systems, IP cameras, and all applicable software. Extension of network cables and necessary infrastructure will be installed by the contractor. The complete system will consist of IP cameras, digital storage media, system control software, communications equipment, power supplies, and all ancillary materials necessary to provide a complete and functioning CCTV system. The contractor will not conduct electrical wiring but GiG will provide an electrician if the service is required. The installation shall not cover restricted areas.

Schedule (Time):

This project is expected to be completed within 90 days of the third quarter of 2021. The contractor is expected to spend a maximum of 30 days in each GiG bus station, (i.e. 20 for implementation, 6 days for testing, 3 days for the training of 3 technical teams, and 1 day for project launch).

Budget (Cost):

The overall cost of this project will be USD6000 and will be sourced from the company revenue. This cost will cover all the component costs and the labor involved in designing, installing, and deploying the system. However, an inflation rate of not more than 5% can be included with necessary support documents. Additional costs due to estimation error may also be charged. The contractor shall justify and deliver the value for money.

Risk:

During the project implementation stage, there are certain risks that this project might face and the contractor will work to mitigate those risks. These risks are:

- Increase in price of the components due to inflation.
- Failure of system installation can increase work schedule and the impact can affect the overall budget.
- Failure or poor network signal can slow down the process.
- Physical damage due to handling may occur. An insurance cover may be required.

Resources:

The implementation of this project is subject to revenue generation and funding from the sponsor. This project will require the input of the project sponsor, skilled personnel, materials, and installation area for the work to be done.

Quality:

To obtain high-quality output, high-quality cameras need to be deployed. For the project to be functional and serve its purpose, it is necessary to acquire quality installation components. Failure from any of the components can disrupt the whole system output. Also, to be able to monitor the system in real-time, a high-quality internet connection and regular power backup will be required to keep the system running without shutdown.

PROJECT AND PRODUCT REQUIREMENTS:

The implementing vendor is expected to follow the requirements as outlined in each of the sections **A** to **E** of this product requirement. The vendor is not allowed to change any of the conditions without the approval of GiG Motors.

A. General Description of the IP Camera
The camera shall:
1. be specifically designed for surveillance with high-performance, day/night, and IP network capability.
2. provide high-resolution HD1080P, and capable of providing video over IP LAN/WAN network.
3. provide automatic switching from color to monochrome operation as the light levels vary for enhanced night viewing.

B. Network Configuration Requirements
1. The camera will incorporate a network video server to encode high-quality streaming video at low bit rates for transmission over an IP network.

2. The camera video signals sent over the IP network can be received and displayed using any 2 of the 3 methods below:
    a. A computer web browser.
    b. The ONSSI Ocularis Enterprise client software.
    c. Via the ONSSI Mobile Application for Android and iPhone

3. The camera shall support Power over Ethernet (PoE) using UTP Category 6 cable with RJ45 connectors and an IEEE802.3af compliant switch, to make installation easier and more cost-effective. The camera can also be powered by a 24V AC or 12-48V DC Class 2 uninterruptible power supply (UPS) to allow continuous operation, even during a power failure. If existing camera locations exceed the Category 6 cable limitations Contractor shall install a coaxial cable to Ethernet adapters as needed.

4. The camera shall support streaming video as follows:
    a. In a unicast function that allows communication between a single sender and a single receiver over a network.
    b. In a multi-unicast communication that supports multiple connected receivers over a network.
    c. the camera should allow video streaming between a single sender and multiple receivers when used in a suitably configured network.

5. The CCTV shall network and storage shall be protected by a password.

6. The camera shall support snapshot mode that saves individual images from the video sequence.

7. The camera shall support the recording function to save video sequences to the computer's SSD. The saved images can be viewed from the computer hard drive using non-proprietary viewing software.

8. Have the ability to display separate system log entries that contain information about the operating status of the camera and its connection and an event log that displays the method of alarm triggering. System and event messages can be saved automatically in a computer file.

9. The camera function to synchronize the camera's time and date to the computer's time and date is required. The camera will also be capable of receiving a time signal from a time server using the time server protocol RFC 868 that can be called up automatically by the camera every five minutes.

C. Internet Network Requirement
1. The following specification is expected for the network configuration:
    i. Network Protocols:– RTSP, RTP/TCP, RTP/UDP, HTTP, DHCP, TFTP
    ii. Ethernet:– 10/100/1000 Base-T, auto-sensing half/full duplex, RJ45
    iii. Overall unit delay:– 120 ms (MPEG)
    iv. Power over Ethernet:– IEEE 802.3af compliant

D. Camera Adjustment & Mounting Requirements
1. The camera shall by default provide optional hardware to allow mounting on surfaces, walls, corners, or suspended ceilings.
2. The camera should fit directly on a 4S or 2S electrical box.
3. The following features are also required:
    a. Day/Night mode to enhance night viewing by increasing the IR sensitivity.
    b. Auto black to enhance contrast by compensating for reduced contrast due to fog, mist, or glare.
    c. Default Shutter to automatically eliminate motion blur caused by fast-moving objects.

E. Fixed Dome Camera And Vandal Resistance
The camera shall:
1. have a tamper or vandal resistance.
2. allow remote setup and adjustments over the IP network.
3. provide an adjustment cap for the lens to be used during setup.
4. allow autofocus and image sharpness field view to remain the same when the setup is complete.
5. provide a programmable camera ID and the position of the ID shall be selectable.
6. provide an onboard video motion detector

Project Deliverables:

Fully deployed IP CCTV system, Operator's Guide, Remote control, Project Documentation report, and Recommendations.