HTCS5602 Support Concepts and Principles

Assessment One

Report

By Aisalkyn Bainazarova

April 2021

Prepared for Lei Song

Table of Contents

[1 Introduction 3](#_Toc84282289)

[2 Analysis 4](#_Toc84282290)

[2.1 Question 1 4](#_Toc84282291)

[2.2 Question 2 5](#_Toc84282292)

[3 Recommendations and solutions 6](#_Toc84282293)

[3.1 Budget 6](#_Toc84282294)

[3.1.1 Question 1 6](#_Toc84282295)

[3.1.2 Question 2 11](#_Toc84282296)

[3.2 Network simulation 12](#_Toc84282297)

[4 Works cited 13](#_Toc84282298)

# Introduction

This report applies stakeholder analysis tools (Song, 2021, slide 5) to identify the stakeholders, their potential IT issues, and then provides recommendations by designing and budgeting a hardware and network system aimed at solving the IT problems of the stakeholders. The report gives two options for the devices listed respective budget options. The works cited are listed in section 4 of this report.

# Analysis

## Question 1

General Manager is a key player as he will particularly be interested in the outcomes of the project and will have the power to influence the means of reaching the project outcomes. For example, the General Manager will be able to approve or send for revision the project budget. He will be motivated to engage in the most efficient option of solving the IT problems faced by the company. His main IT issues would be related to being unable to access emails or cloud services, where all data is stored, due to the Internet connection or a laptop breakdown.

The HR team, including the HR Manager and team members at the Head Office, are the subjects to be kept informed. The Manager will have high interest and high power to influence the project, but the team members will have high interest and low power. They will be motivated by a flawless connection to SAP Cloud and powerful enough laptops to do their job efficiently. Thus, their main IT problems would be around slow or no connection to SAP HR (e.g., unable to login, no or sporadic Internet connection) as well as poor performance or a breakdown of a personal computer or a laptop (e.g., the device is too slow) which may hinder managing the compliance issues, calculating staff salary on time, or recruiting new employees.

The Finance team are also the subjects to be kept informed. Like the HR team, they will be motivated by a flawless connection to SAP Financial Management System through their personal computers, laptops, and mobile devices. Thus, their main IT problems would be around SAP connection issues as well as the personal computer, laptop, and mobile device performance. Peter Lee and Marama Tukaki could face issues related to an inability to login into SAP to manage Accounts Receivable and Accounts Payable respectively, unstable Internet connection, mobile devise not working properly or not connecting to SAP, etc. Samantha Lee might have similar issues as well as the Asset Management database not being accessible due to poor Internet connection or fixed asset register being too big for her personal computer to handle.

The Warehouse staff would also be the subjects to be kept informed. They will be motivated by flawless work of the personal computers and laptops, hand and barcode scanners, smartphones, and stable connection to the SAP Inventory Management System. Their main IT problems will be related to slow PC performance (for example, due to data overload), scanners not being able to read the barcodes, mobile phones not coping with data, or not connecting to the wireless network. In addition, slow or no connection to SAP will be another issue.

## Question 2

The outlet owner, or the pharmacist, would be a key player as he or she will have high interest and high power to influence the project. The pharmacist will be motivated by getting good quality products at a reasonable price. To ensure this, the outlet needs to have a good communication channel with the head office and warehouse and ensure the devices at the outlet are able to support flawless performance and connection with the server. Thus, the main IT issues faced by the owner would be around poor performance of the personal computer, laptop, switch, router, or server. Point of sale and integrated EFTPOS machines malfunction will also hider the usual operation of the outlet.

The shop assistant, and optional HR staff and Finance staff will represent the crowd needing minimal effort. They would not be interested in the project and will definitely have no power to influence it. The main IT problems they will face will be around malfunctioning or unresponsive system, not being able to access SAP (e.g., login or password issue), unstable or no Internet connection, a server being down, router malfunction, slow performance of the personal computer or a laptop.

# Recommendations and solutions

## Budget

### Question 1

The table below (PB Technologies Ltd, 2021) reflects the cost-efficient option for the hardware and networking devices for the head office and warehouse. The laptops have wide enough screens to accommodate multiple SAP details; the CPU and memory are sufficient to run day-to-day tasks. As noted in the business case, laptops have wireless capability to allow users to access SAP, cloud drives, and the Internet from anywhere.

It was designed to provide one personal computer and a wired barcode handheld scanner for the inward and outward team to use for their job. Nevertheless, it is possible to double these items without exceeding the budget limit of $20,000. A tablet personal computer and a wireless barcode handheld scanner are budgeted for Tane Bennett to roam around the warehouse and make sure inventory is in the correct place and move the inventory when needed.

The network equipment is not high-end but chosen to support other equipment such as laptops, personal computers, and smartphones. All network equipment is capable of handling a speed of up to one gigabit per second. This means the other equipment will be given a higher share of total connection speed where possible.

The server equipment is powerful enough to support multiple users at the same time and provide good connectivity to the Internet and cloud services including SAP, OneDrive, and Google Cloud. It is worthwhile to note that the server equipment parts like CPU, memory, and storage are not duplicated so there is a possibility of the server being down should one of these components fail.

Overall, all the equipment has been balanced to allow the users a smooth and relatively stable connection and performance.

|  |  |  |
| --- | --- | --- |
| **HQ & Warehouse** |  |  |
| **Total** |  |  |
| **$19,196** |  |  |
| **Item** | **Cost** | **Link** |
| **Laptop for GM 1x, WH Manager 1x, Logistics Manager 1x, HR 4x, Finance 4x, IT 3x Lenovo V15 IWL Business Laptop 15.6" HD AG 220nits Intel i3-8145U 8GB 240GB SSD Win10Pro 1yr warranty - WiFiAC + BT4.2, Webcam, TPM2.0, 4in1 Card Reader** | $14,329.00 | <https://www.pbtech.co.nz/product/NBKLEN4633770BS/Lenovo-V15-IWL-Business-Laptop-156-HD-AG-220nits-I> |
| **PC In-/Outward Goods MSI All In One PRO 16 FLEX N4000/4G/256GB/16in AIO No OS 1 Year warranty** | $638.89 | <https://www.pbtech.co.nz/product/WKAMSI4792735/MSI-All-In-One-PRO-16-FLEX-N40004G256GB16in-AIO-No> |
| **Hand/barcode scanner wired In-/Outward Goods Honeywell Voyager 1250G-2USB-1 kit, Single-Line Laser Scanner - Cable Connectivity - 584.20 mm Scan Distance - 1D - Laser - Single Line** | $97.75 | <https://www.pbtech.co.nz/product/BARHON0021/Honeywell-Voyager-1250G-2USB-1-kit-Single-Line-Las> |
| **Tablet PC for Tane Microsoft Surface Go 2 for Business Tablet - 10.5" 8th Gen.Intel Core m3 8100Y Processor 4GB Ram 64GB WiFi Intel UHD Graphics 615 Win10 Pro + Microsoft Surface Go 2 / Go (Black) Type Cover Keyboard** | $1,068.50 | <https://www.pbtech.co.nz/product/TABMST12006412/Microsoft-Surface-Go-2-for-Business-Tablet---105-8> |
| **Hand/barcode scanner wireless for Tane Datalogic QuickScan QBT2131 Cordless Bloetooth 1D linear imager USB BT BLK KIT** | $338.56 | <https://www.pbtech.co.nz/product/POSDAT0461/Datalogic-QuickScan-QBT2131-Cordless-Bloetooth-1D> |
| **Smartphone 11x (1x Finance, 3x Warehouse) Samsung Galaxy A01 (2020) Dual SIM Smartphone 2GB+16GB - Black** | $659.96 | <https://www.pbtech.co.nz/product/MPHSAM0130101/Samsung-Galaxy-A01-2020-Dual-SIM-Smartphone-2GB16G?type=ex-demo> |
| **Router Ubiquiti EdgeRouter ER-X Advanced Gigabit Router 5 x Gigabit RJ45 with 24V Passive POE Input and 1 x 24V Passive PoE Passthrough** | $113.85 | <https://www.pbtech.co.nz/product/NETUBI1209/Ubiquiti-EdgeRouter-ER-X-Advanced-Gigabit-Router-5> |
| **Switch 2x TP-Link TL-SG1005D 5-Port Gigabit Unmanaged Switch** | $67.98 | <https://www.pbtech.co.nz/product/SWHTPL1007/TP-Link-TL-SG1005D-5-Port-Gigabit-Unmanaged-Switch> |
| **Access point 2x Mimosa G2 Gateway Access Point 802.11n** | $76.00 | <https://www.pbtech.co.nz/product/NAPMMS690052/Mimosa-G2-Gateway-Access-Point-80211n> |
| **Modular plug Dynamix RJ-45 Plug 20pc Bag 8P8C Modular Plug (Flat, Stranded) 50 micron** | $6.28 | <https://www.pbtech.co.nz/product/ITPAPC0005/Dynamix-100x-RJ-45-8P8C-Modular-RJ45-Plug-Flat-Str> |
| **Cable Dynamix C-C5E-SOL R100 100m Cat5e Ivory UTP SOLID Cable Roll 100MHz, 24AWGx4P, PVC Jacket, Supplied as a Roll** | $75.00 | <https://www.pbtech.co.nz/category/peripherals/cables/cable-rolls/cat5e-cable-rolls> |
| **Server Supermicro X11SCL-F Barebone, 1x LGA1151, 4 DIMM, 4x 3.5" Fixed, 2x GbE, 400W Power Supply** | $640.00 | <https://www.pbtech.co.nz/product/BDLSPM34006/Supermicro-X11SCL-F-Barebone-1x-LGA1151-4-DIMM-4x> |
| **CPU Intel Xeon E-2224 Processor, 3.4GHz, 8MB Cache, LGA1151, 4Core/4Thread, 71W TDP** | $379.50 | <https://www.pbtech.co.nz/product/CPUITX22881/Intel-Xeon-E-2288G-Processor-37GHz-16MB-Cache-LGA1> |
| **Memory Supermicro Hynix 32GB DDR4 2933MHz 2Rx8 ECC UDIMM** | $310.50 | <https://www.pbtech.co.nz/product/MEMSPM432029/Supermicro-Hynix-32GB-DDR4-2933MHz-2Rx8-ECC-UDIMM> |
| **HDD Samsung PM883 Series 960GB 2.5in V4 TLC V-NAND Enterprise SSD, SATA 6Gb/s, 550MB/s read 520MB/s write, 1.3 DWPD Power Loss Data Protection, 3 Years Warranty, 7mm, OEM (No retail box)** | $389.00 | <https://www.pbtech.co.nz/product/HDDSAM883109/Samsung-PM883-Series-960GB-25in-V4-TLC-V-NAND-Ente> |
| **Conversion tray Kingston SNA-BR2/35 2.5" SSD to 3.5" standard bay Mounting Drive Brackets and Screws go for SSDNOW** | $5.69 | <https://www.pbtech.co.nz/product/ADPKIN2439105/Kingston-SNA-BR235-25-SSD-to-35-standard-bay-Mount> |

The option below (PB Technologies Ltd, 2021)represents a list of more powerful user hardware and more stable network equipment. Laptops with a more advanced CPU and more storage will allow better performance (e.g., applications opening and web pages loading faster) and more room for work files to be stored on the laptop.

The personal computers will have better performing CPU as well as bigger memory, this will ensure faster and smoother work – the users will be able to work with more applications at a given time. These will be coupled with omnidirectional scanners allowing faster and easier scanning of inward and outward goods. Moreover, two separate sets of personal computers have been budgeted for the inward and outward logistics team – this will allow them to work independently.

A better-performing tablet PC and wireless omnidirectional barcode handheld scanner were budgeted for Tane Bennett to allow smooth and fast work when checking the inventory.

Smartphones with bigger memory will ensure better performance for the users.

The network itself will be built around Cisco equipment like a router, access point, and switch. Using a single brand well-known supplier which is a leader in the segment is more preferred due to compatibility and vendor support. Cisco equipment is well known for its stable performance and is used by major companies around the world. All wired connections will be supported by category 6 copper cables with high-quality RJ-45 modular plugs.

Finally, a much more stable server will allow all users and customers to experience fast and always stable connectivity. This will be achieved by deploying a dual socket and dual-memory server with an RAID controller onboard for four storage drives configured under RAID 10 to ensure stable work.

|  |  |  |
| --- | --- | --- |
| **HQ & Warehouse** |  |  |
| **Total** |  |  |
| **$29,828** |  |  |
| **Item** | **Cost** | **Link** |
| **Laptop for GM 1x, WH Manager 1x, Logistics Manager 1x, HR 4x, Finance 4x, IT 3x ASUS X515EA-BR108T Laptop 15.6" HD AG 200nits Intel i5-1135G7 8GB 512GB NVMe SSD Win10Home 1yr warranty - WiFiAC + BT4.1, Webcam, HDMI1.4, USB3.2 Gen1 Type-C, MicroSD Card Reader** | $17,219.86 | <https://www.pbtech.co.nz/product/NBKASU515108/ASUS-X515EA-BR108T-Laptop-156-HD-AG-200nits-Intel> |
| **PC In-/Outward Goods 2x HP ProOne 205 G4 Business AIO 21.5" FHD AMD Ryzen3 3250U 8GB 128GBSSD DVDRW Win10Pro 3yr Onsite warranty - WiFiAC + BT5, Wired USB-Keyboard/Mouse** | $2,408.24 | <https://www.pbtech.co.nz/product/WKAHDT70980021/HP-ProOne-205-G4-Business-AIO-215-FHD-AMD-Ryzen3-3> |
| **Hand/barcode scanner wired In-/Outward Goods 2x Honeywell 1470G2D-2USB-1-R EMEA USB KIT: OMNI-DIRECTIONAL, 1D, PDF, 2D, BLACK SCANNER (1470G2D-2), FLEXIBLE** | $331.20 | <https://www.pbtech.co.nz/product/BARHON0021/Honeywell-Voyager-1250G-2USB-1-kit-Single-Line-Las> |
| **Tablet PC for Tane Microsoft Surface Go 2 for Home Tablet -10.5" 1.7Ghz Intel Pentium Gold 4425Y Processor 8GB Ram 128GB WiFi Win10 Home S Mode** | $1,108.50 | <https://www.pbtech.co.nz/product/TABMST12112811/Microsoft-Surface-Go-2-for-Home-Tablet--105-17Ghz> |
| **Hand/barcode scanner wireless for Tane Honeywell 1472G2D-2USB-5-R EMEA&ANZ USB KIT: OMNI-DIRECTIONAL, 1D, PDF,2D, BLACK SCANNER (1472G2D-2),CHARGE** | $412.85 | <https://www.pbtech.co.nz/product/POSHON01243/Honeywell-1472G2D-2USB-5-R-EMEAANZ-USB-KIT-OMNI-DI> |
| **Smartphone 11x (1x Finance, 3x Warehouse) Samsung Galaxy A02s (2021) Dual SIM Smartphone 3GB+32GB - Black** | $796.00 | <https://www.pbtech.co.nz/product/MPHSAM130200/Samsung-Galaxy-A02s-2021-Dual-SIM-Smartphone-3GB32> |
| **Router Cisco C1117-4P ISR 1100 4 Ports DSL Annex A/M and GE WAN Router** | $825.00 | <https://www.pbtech.co.nz/product/NETCIS4128889/Cisco-C1117-4P-ISR-1100-4-Ports-DSL-Annex-AM-and-G> |
| **Switch 2x Cisco 110 Series Unmanaged Switch, 8 Ports GbE RJ-45, Desktop, Limited Lifetime Warranty** | $161.98 | <https://www.pbtech.co.nz/product/NETCIS2894153/Cisco-110-Series-Unmanaged-Switch-8-Ports-GbE-RJ-4> |
| **Access point 2x Cisco WAP125 Wireless-AC/N Dual Radio Access Point with PoE** | $420.00 | <https://www.pbtech.co.nz/product/NAPCIS1125/Cisco-WAP125-Wireless-ACN-Dual-Radio-Access-Point> |
| **Modular plug Dynamix RJ-45-C6SR2-20 Cat6 RJ45 Plug 20pc Bag, 8P8C 2 Piece Modular Plug (Rounded Solid). 50 microng 8P8C Modular Plug (Flat, Stranded) 50 micron** | $20.06 | <https://www.pbtech.co.nz/product/NETDNX0058/Dynamix-RJ-45-C6SR2-20-Cat6-RJ45-Plug-20pc-Bag-8P8> |
| **Cable Dynamix C-C6-SOL R100 100m Cat6 Ivory UTP SOLID Cable Roll, 250MHz, 23AWGx4P, PVC Jacket** | $86.94 | <https://www.pbtech.co.nz/product/CABDNX2906/Dynamix-C-C6-SOL-R100-100m-Cat6-Ivory-UTP-SOLID-Ca> |
| **Server Supermicro 7049P-TRT Barebone, 2x LGA3647, 16 DIMM, 8x 3.5" Hot-Swap, 2x 10G RJ-45, 2x 1280W Redundant Power Supplies** | $2,849.00 | <https://www.pbtech.co.nz/product/SVRSPM74002/Supermicro-7049P-TRT-Barebone-2x-LGA3647-16-DIMM-8> |
| **CPU 2x Intel Xeon Silver 4210R Processor, 2.4GHz, 13.75MB Cache, LGA3647, 10Core/20Thread, 100W TDP** | $1,081.00 | <https://www.pbtech.co.nz/product/CPUITXBS42102/Intel-Xeon-Silver-4210R-Processor-24GHz-1375MB-Cac> |
| **Memory Supermicro Samsung 32GB DDR4-2933 2Rx4 ECC Registered DIMM** | $716.00 | <https://www.pbtech.co.nz/product/MEMSPM432129/Supermicro-Samsung-32GB-DDR4-2933-2Rx4-ECC-Registe> |
| **RAID Controller Microsemi Adaptec 8805E v2 Entry RAID Bundle, SAS/SATA, RAID 0/1/1E/10, 512MB Cache, 2x 50cm HDmSAS to HDmSAS cables** | $608.98 | <https://www.pbtech.co.nz/product/BDLADPAR02/Microsemi-Adaptec-8805E-v2-Entry-RAID-Bundle-SASSA> |
| **HDD Seagate 2.5" 300GB Enterprise Performance SAS 12Gb/s, 10K RPM, 128M, 512N** | $690.00 | <https://www.pbtech.co.nz/product/HDDSES30605/Seagate-25-600GB-Enterprise-Performance-SAS-12Gbs> |
| **Conversion tray Supermicro Hard Drive Tray, 1x 2.5" internal hot-swap mount in 3.5" bay** | $92.00 | <https://www.pbtech.co.nz/product/SVRSPM2200080/Supermicro-Hard-Drive-Tray-1x-25-internal-hot-swap> |

### Question 2

The personal computer for the inward goods, the laptops, and the smartphone are powerful enough to handle tasks like accessing SAP applications, cloud drives, and emailing applications.

The wireless router will be able to serve a small office such as that outlet.

|  |  |  |
| --- | --- | --- |
| **Outlet** |  |  |
| **Total** |  |  |
| **$3,097** |  |  |
| **Item** | **Cost** | **Link** |
| **Ethernet Cable 8Ware PL6A-15GRN Cat 6a UTP Ethernet Cable, Snagless - Green 20M** | $19.78 | <https://www.pbtech.co.nz/product/CAB8WR0824/8Ware-PL6A-15GRN-Cat-6a-UTP-Ethernet-Cable-Snagles> |
| **PC In-/Outward Goods MSI All In One PRO 16 FLEX N4000/4G/256GB/16in AIO No OS 1 Year warranty** | $638.89 | <https://www.pbtech.co.nz/product/WKAMSI4792735/MSI-All-In-One-PRO-16-FLEX-N40004G256GB16in-AIO-No> |
| **Laptop 2x Lenovo V15 IWL Business Laptop 15.6" HD AG 220nits Intel i3-8145U 8GB 240GB SSD Win10Pro 1yr warranty - WiFiAC + BT4.2, Webcam, TPM2.0, 4in1 Card Reader** | $2,047.00 | <https://www.pbtech.co.nz/product/NBKLEN4633770BS/Lenovo-V15-IWL-Business-Laptop-156-HD-AG-220nits-I> |
| **Wireless router TP-Link OneMesh Archer A6 Gigabit** | $129.00 | <https://www.pbtech.co.nz/product/NETTPL4560/TP-Link-OneMesh-Archer-A6-Gigabit-Wi-Fi-Router-MU> |
| **Hand/barcode scanner wired In-/Outward Goods Honeywell Voyager 1250G-2USB-1 kit, Single-Line Laser Scanner - Cable Connectivity - 584.20 mm Scan Distance - 1D - Laser - Single Line** | $97.75 | <https://www.pbtech.co.nz/product/BARHON0021/Honeywell-Voyager-1250G-2USB-1-kit-Single-Line-Las> |
| **Smartphone Samsung Galaxy A01 (2020) Dual SIM Smartphone 2GB+16GB - Black** | $164.99 | <https://www.pbtech.co.nz/product/MPHSAM0130101/Samsung-Galaxy-A01-2020-Dual-SIM-Smartphone-2GB16G?type=ex-demo> |

As a second option (PB Technologies Ltd, 2021) we recommend the personal computer with a better performing CPU as well as bigger memory, this will ensure faster and smoother work – the user will be able to work with more applications at a given time. Laptops with a more advanced CPU and more storage will allow better performance (e.g., applications opening and web pages loading faster) and more room for work files to be stored on the laptop. The omnidirectional scanner will allow faster and easier scanning of inward and outward goods.

|  |  |  |
| --- | --- | --- |
| **Outlet** |  |  |
| **Total** |  |  |
| **$6,105** |  |  |
| **Item** | **Cost** | **Link** |
| **Ethernet Cable 8Ware PL6A-15GRN Cat 6a UTP Ethernet Cable, Snagless - Green 20M** | $19.78 | <https://www.pbtech.co.nz/product/CAB8WR0824/8Ware-PL6A-15GRN-Cat-6a-UTP-Ethernet-Cable-Snagles> |
| **PC In-/Outward Goods 2x HP ProOne 205 G4 Business AIO 21.5" FHD AMD Ryzen3 3250U 8GB 128GBSSD DVDRW Win10Pro 3yr Onsite warranty - WiFiAC + BT5, Wired USB-Keyboard/Mouse** | $2,408.24 | <https://www.pbtech.co.nz/product/WKAHDT70980021/HP-ProOne-205-G4-Business-AIO-215-FHD-AMD-Ryzen3-3> |
| **Laptop 2x Lenovo ThinkBook 14S-IML Business Ultrabook 14" FHD Intel i5-10210U 8GB 256GB SSD NO-DVD Win10Pro 1yr Onsite warranty - Backlit Keyboard, FPR, TPM2.0, USB-C, WiFiAC + BT5** | $2,737.98 | <https://www.pbtech.co.nz/product/NBKLEN4642502/Lenovo-ThinkBook-14S-IML-Business-Ultrabook-14-FHD> |
| **Wireless router TP-Link Archer C4000 Gigabit Wi-Fi Router, MU-MIMO, Tri-Band Wireless-AC4000, 4 x GLAN, 1 x WAN, 1 x USB3.0, 1 x USB2.0, TP-Link HomeCare include Antivirus, Parental Controls and QoS, Powered by Trend Micro** | $348.99 | <https://www.pbtech.co.nz/product/NETTPL4000/TP-Link-Archer-C4000-Gigabit-Wi-Fi-Router-MU-MIMO> |
| **Hand/barcode scanner wired In-/Outward Goods 2x Honeywell 1470G2D-2USB-1-R EMEA USB KIT: OMNI-DIRECTIONAL, 1D, PDF, 2D, BLACK SCANNER (1470G2D-2), FLEXIBLE** | $331.20 | <https://www.pbtech.co.nz/product/BARHON0021/Honeywell-Voyager-1250G-2USB-1-kit-Single-Line-Las> |
| **Smart phone Samsung Galaxy A12 (2021) Dual SIM** | $258.99 | <https://www.pbtech.co.nz/product/MPHSAM131200/Samsung-Galaxy-A12-2021-Dual-SIM-Smartphone-4GB128> |

## Network simulation

Please refer to the Cisco Packet Tracer file for the network simulation.

# Works cited

PB Technologies Ltd. (2021, March). Retrieved from PB Technologies Ltd web site: https://www.pbtech.co.nz/

Song, L. (2021, March). *Stakeholder analysis slides.* Retrieved from www.moodle.unitec.ac.nz