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## ICT301 NETWORK MANAGEMENT AND SECURITY

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**ICT301 Network Management and Security**

# Project Background

## How is this project going to empower employees to exceed their sales goals

The beginning stage of empowering employees is to ensure that your business plan and day by day activities are in-accordance with your company's methodologies. This is because everybody's choice should support the objectives of the company's techniques. At that point, working with your manager to adjust your opportunities to the team's priorities, brings strategies down to a core level. When you have a good knowledge and understanding of the intricate details of your territory and customers, you naturally improve your sales goals.

**This way you can empower employees to exceed their sales goals.**(Anon., n.d.) (Anon., n.d.)

## Project Scope

Deliverables: Owner of the company Peter Smith wants us to prepare a report to achieve goals related to future proofing of their network and keeping client and organisational information secure.

Tasks: The sales employees shall be replaced to a more online sales model want to be able to better manage their inventory and wholesale customers to buy directly and see current stock levels from the website. Customers shall also be allowed to see when more stock is arriving. The company is interested in expanding to a business model which is efficient enough to utilize customer and sales data and the need of call centre and sales people staff should be reduced. The company wants better real time reporting from integrated data.

## Project Goal

The main aim of this project is to create a new system that will work together, and the system shall obey the rules including that of privacy. Also, the main goal of this project is to get more ROI.

## Strategic alignment of project

The alignment of the clients should be directly able to purchase from website and able to see when more stock will arrive. The information system should be aligned to become more integrated to share and manage information.

* More secure network
* Faster Network
* More ROI
* Online Sales System
* Customer access

# Network Security

The new Information Systems manager hired by Fencing limited for strategic goals, their project is about future proofing of network and keeping organisational and client information secure.

## Future Proofing of Network

The company should stick to modular Equipment, centralised management should be applied

Fencing Limited should buy Power over Ethernet technology as it gives a lot of flexibility with regards to where devices can live

The company should stay nimble on security “It's not about features or performance, so you can't really future-proof your network against future attacks. Make sure you can install new security quickly and efficiently.” (Mclaughlin, 2005)

**Few ways by which we can bring good quality network security:**

## Remote Authentication Dial-In User Service (RADIUS)

It is a protocol in which provides security against unauthorized access to network. It provides security by creating a centralized authentication of dial in users and authorizing their access to use network service. (Anon., n.d.)

If Fencing Limited applies this Service to their own business, it will help to keep unauthorized users out of the system.

## Data Execution Prevention (DEP)

Fencing Limited will adapt DEP which is a Microsoft feature that protects from attackers who use buffer overflow to execute malware.

## Cryptography

Scrambling information so it can’t be read by unauthorised and transforms information into secure form. Cryptography changes data into Ciphertext. We can adapt Cryptography in the system to keep data secure. Modern cryptography also includes changes the data into mathematical equations. Fencing limited can keep the data related to its sales, strategies and customer details safe via Cryptography.

## SSL & TLS

Secure Socket Layer (SSL) is used by web browsers to transmit sensitive data. SSL is part of TSL (Transport Layer Security) Fencing Limited should adopt SSL. All the conversation taking place that includes Fencing Limited will be unguarded. (Tyson, n.d.)

The TLS handshake layer manages which cipher (the sort of encryption algorithm) will be used, the authentication, and the key trade (in view of the open private key pair from the authentication). The handshake procedure is performed just once to build up a secure network connection for the two parties. (Leslie, 2018)

## Virtualisation

Managing and presenting without physical location regard. All employees in Fencing limited will be able to expand it resources. It reduces cost. It also provides uninterrupted server access to users.

## Firewall Security

In the world of firewall security, a firewall is a network device which blocks specific kind of network traffic, framing a barrier between a trusted and an untrusted network. It is closely resembling a physical firewall as in firewall security attempts to block the spread of PC attacks. (SECUREWORKS, 2016)

(As they have mentioned that the owner has limited technical knowledge, explanation of each firewall is given)

**A few types of Firewall security that Fencing Limited can adapt are:**

**Packet Filtering Firewall**

This kind of firewall has a list of firewall security rules which can restrict traffic in IP protocol, IP address as well as port number. Under this firewall management program, all web traffic will be permitted, including online assaults. In this situation, you need interruption prevention action, Additionally, firewall security, to separate between great web traffic and awful web traffic (people attacking your site).

**Stateful firewall**

This is like a packet filtering firewall, however it is smarter about keeping track of active connection, so you can define firewall management rules, for example, "just permit packets into the network that are a part of an already established outbound connection." You have solved the built-up connection issue portrayed above, still you can't differentiate among "great" and "awful" web traffic. You need intrusion to identify and block web attacks.

**Deep Packet inspection Firewall**

An application firewall really inspects the data in the packet and can in this way see application layer attacks. This sort of firewall security is like intrusion prevention technology, and, consequently, might be able to give a portion of a same functionality. (SECUREWORKS, 2016)

## Privacy

It will help Fencing limited to block sites, browsers, cable company, and ISPs from tracking your data and your browser history. Security: It shields you from other people accessing to your own data and other data. (Anon., n.d.)

# Access control and Authentication

Access control is a security method that directs who or what can view or use resources in a computing environment. It is a major concept in security that limits risk to the business or association. (Rouse , n.d.)

In this case study, the company wants that their wholesale customer to be able to see when more stock is arriving. Moreover, they should be able to purchase directly from website and view current stock levels. That means the wholesale customers have more access as compared to other customers.

**We can also use following options to keep access control and authentication:**

## Hash Algorithm

Creating unique fingerprint for a set of data so that only authorised person access that set of data. In fencing limited, the people using the data in system will all have different access to different set of data. For example, the people in administrating have different access as compared to people working in marketing. Having their fingerprint data access will help in separating access.

## Network Infrastructure

Working on a better Network infrastructure will benefit Fencing limited. Network infrastructure is the hardware and software resources of a whole network that enable network connectivity, communication, activities and management of a company's network. It gives the communication path and services between clients, process, applications, services and the internet.

The following is Network infrastructure we can follow for Fencing Limited:

Networking Hardware:

* Routers
* Switches
* LAN cards
* Wireless routers
* Cables

Networking Software:

* Network operations and management
* Operating systems
* Firewall
* Network security applications

Network Services:

* T-1 Line
* DSL
* Satellite
* Wireless protocols
* IP addressing (Anon., n.d.)

# Business Continuity

Fencing Limited enterprise like any other company should focus on its business continuity

Business Continuity in very simple words means the ability of a company to perform all the necessary functions even after a disaster. All the processes should be carried out whilst as well as after the case of emergency. The first step of making a business Continuity plan is always figuring out which functions are important. (Rouse , n.d.)

To be involved with business Continuity we should perform:

* + Business continuity planning
  + Business impact analysis
  + Disaster recovery planning

Business Continuity Planning

BCP is the process of:

* + Identifying exposure to threats
    - Pointing out main risks and threats in the Project of Fencing
  + Creating preventative and recovery procedures
    - Taking care of all the precautions for threats such as Data loss, etc.
  + Testing
    - Making sure software and the system for the supply from vendor to customers is functioning right

BCP consists of three essential elements:

* + Business recovery planning
  + Crisis management and communications
  + Disaster recovery

(Book’s reference Week 11 slides)

Inventory management system

It helps in tracking the supply of goods across the business chain. It shows the whole chain from order placement with vendor to delivering order to customer mapping the whole journey of the product. (Bose, 2019)

Fencing Limited sells supply to the construction, mining and manufacturing industries across Australia. Hence, the main tools that supply are safety equipment safety equipment, tools, plumbing, hardware, building supplies, etc. For example, the goods will be delivered to the loading dock of company.

For example, here we have

Customer 🡪 Order (via website) 🡪 See Current Stock Levels OR see when more stock will be available 🡪 Customer makes payment 🡪 Customer can track their order 🡪 Fencing Limited receives the order 🡪 Fencing Limited updates the information about new stock 🡪 Customer order ship 🡪 Order delivered to customer 🡪 Customer give feedback about their order

## Online Sales System

As the Fencing Limited wants its sales to be via the internet and customers be able to buy directly from website, we adapt here the Online Sales system.

Online Sales System: An Online Sales System is a system which helps the business to make sales until its done and delivered. It will help to get more customers from lead stage to invoiced stage. Errors will be reduced, and omissions will be eliminated.

In Fencing Limited, we can use Zendesk Sell. Zendesk sell is an online software to enhance productivity, processes, and pipeline visibility for sales teams. It performs roles like Sales Reps, Sales Operations, Sales Management, etc.

## Return of Investment

**Return of investment**: Return on Investment (ROI) is a performance measure used to assess the productivity of an investment. The outcome is expressed as ratio or percentage. The higher the percentage, the better the investment.

The main techniques Fencing Limited can adapt to increase ROI

Increase Revenue:

One approach to increase your ROI is to create more sales and incomes or raise your prices. If you can increase sales and incomes without expanding your expenses, or just increase your costs enough to in any case give a net gain in profit, you've improved your ROI. If you can raise your prices without diminishing your sales enough to dissolve profits, you've improved your ROI. Using your calculation of your present return, see approaches to improve your sales and incomes in manners that give you a more prominent profit than your present strategic policies.

Reduce Cost:

Another approach to improve your ROI is to decrease your costs. You won't need to expand your sales or raise your prices to improve the ROI on your investment. Divide your costs into overhead and production expenses to enable you to more expense reduction opportunities. Overhead expenses are non-production expenses such as rent insurance and telephones. Production expenses are the costs you bring about to make one unit of your item, for example, materials and labour. (Ashe-Edmunds, n.d.)

Fencing Limited should aim on getting at least 50% ROI. Getting 65% ROI should be the main target.

# Risk Management

Risk Management is the way toward identifying, assess and controlling threats to a company's capital and profit. These threats, or risks, could come from a wide variety of sources, including money related uncertainty, legal liabilities, strategic management errors, accidents and natural disaster. (Rouse , n.d.)

**Risk plan:**

* Manage the risk
* Monitor and review

**Risk management:**

* The process should be valuable for the organization.
* It should be an integral part of the whole organizational process.
* It must point if any uncertainty is there. Identify the risk
* Assess the risk
* It should be structured, organized and systematic.
* It must consider human factors, including potential errors.
* It should not be unadaptable to change.
* It should be continuously monitored and improvised.

**The types of risks Fencing Limited should consider are:**

strategic –decisions concerning your business’ objectives

According to main goals of Fencing Limited, the risk is:

* Unsecured network security while payment by customer
* Expensive and efficient software
* Customer should be able to view content on website decided by administrator
* Hire efficient website developers to not release confidential information
* Data loss of Fencing Limited
* Purchase good quality cloud storage
* Increase in competition from similar companies
* Keep thinking of innovative ideas and keeping products up to date

compliance –the need to comply with laws, regulations, standards and codes of practice

* The risk of not breaching any law, regulation, etc while increasing ROI
* Follow rules, laws and regulations
* If they hire security firm to patrol, they have to take care of not breaching privacy laws.
* Train security firm for patrolling well

financial –financial transactions, systems and structure of your business

* The new project for Sales goals might or might not be effective in the beginning in terms of profit
* Virus, Malware
* Purchase good quality Antivirus and Antimalware

And other operational, environmental and reputational risks. (Anon., n.d.)

## Conclusion

To conclude, we note that this report will help the owner of this company, Peter Smith, to make changes to the system of business in a more effective way and such that ROI increases. Moreover, provide good quality security against risks and threats and protect company data.

## Recommendations

* Whenever customer searches any order, they should be able to see similar products in the bottom of page
* Customer should be able to create their account in order to track their order and delivery status
* Customer should be able to get their membership to gain points to get benefits for their further purchase
* Admin can adapt off-site back up to keep data secure from hackers and from hardware failure as mentioned in case study that break ins with small loss has happened in past
* Having physical security like fencing, barriers and hiring Human Security guards in the workplace

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