

BUSINESS MANAGEMENT (HL) INTERNAL ASSESSMENT

Research Question: Would the introduction of the motion detector CCTV cameras help reduce cost and improve efficiency at Pledge Protection (Asia) Pte Ltd?

Research proposal: 498

Executive summary: 200

Main report: 1995



PLEDGE PROTECTION

August 23, 2016

To Whom It May Concern

This letter of commitment is to certify that Pledge Protection (Asia) Pte Ltd is aware that Elizabeth Koh, Student of Hwa Chong International School, is doing research studies on my company.

I agree to disclose information about my company to the student.

The information disclosed to the student is strictly confidential and should only be made available to the Student, Teacher and the examination board.

Please feel free to call me should you need any clarification.

Yours Faithfully

Sam Wong
Director

Graded 'A' by the Singapore Police Force for 2016

Pledge Protection (Asia) Pte Ltd

105 Sims Avenue Chancery Lodge Complex #03-13 Singapore 387429

T 6844 5652 / 6745 0149 F 6841 2943 E sales@pledgeprotection.com.sg W www.pledgeprotection.com.sg

GST Reg.: 20-0509996-N Co. Reg.: 200509996N



Research Proposal

Rationale

Pledge Protection is a local security company established in 1999 and it offers a range of security manpower services. Residential estates, warehouses, events are some of the organisations they work with. Pledge Protection is experiencing an increase in costs from hiring manpower as there are new laws in Singapore regarding the higher minimum wage for security guards. Pledge Protection aims to reduce costs to stay competitive. The availability of the new technology, in particular the CCTV motion detector camera, has given Pledge Protection an alternative to using manpower. The technology that will be implemented should reduce the need for manpower required and improve their security operations, thus reducing the cost of hiring manpower and improving efficiency in their operations and hence the research question – ***would the introduction of the motion detector CCTV cameras help reduce cost and improve efficiency at Pledge Protection (Asia) Pte Ltd?***

Theoretical framework and syllabus covered

1.7 Organisational planning tools:

- Fish bone diagram – to find out the main branches and root causes of the problems that Pledge Protection has.

3.5 Profitability and liquidity ratio analysis:

- Profitability ratios – using gross and net profit to analyse the impact of the investment in the motion detector CCTV on the camera on the profitability of the company.

3.8 investment appraisal:

- Payback period – to find out the time period that Pledge Protection needs to repay the initial cost of investment.
- Average rate of return – to analyse returns on investment of the motion detector CCTV camera.
- Net present value – to find out whether or not Pledge Protection should invest in the motion detector CCTV camera or if the money was better off left in the bank.

Methodology

Primary research

- Interviews with the Director of Operations (Mr Sam Wong) – to gain deeper understanding about the problems present in Pledge Protection as well as the company's financial status to help assess the practicality of implementing a new technology
- Surveys to customers – to gain feedback on current services, their interest in upgraded services from Pledge Protection and their willingness to pay extra for the upgraded services
- Surveys to Employees – to find out the demographics of current staff and assess current work attitudes of staff as well as find out how the new technology will fit and improve their work operations if implemented
- Observations – to observe their day to day roles and find out how the new technology can fit into the work operations and make it more efficient

Secondary research

- Company website – to better understand the aims and objectives of the company, as well as its services and who their clients are
- Company's financial accounts – to further understand the costs incurred by resources employed by Pledge Protection

Anticipated difficulties

<u>Anticipated difficulties</u>	<u>Counter action</u>
Untargeted response from survey respondents	Phrase questions better to derive targeted response
The refusal to provide confidential data such as financial accounts by Pledge Protection	Ensure willingness to provide such data beforehand

Action plan

Date (by):	Activity Planned	Status
28/07/2016	IA title approval	✓
16/08/2016	Research proposal approval	Delayed
23/08/2016	Prepare Interview Questions	✓
30/08/2016	Interviews with the operations manager	Delayed
02/09/2016	Prepare Surveys to employees and clients	✓
06/09/2016	Surveys to the employees	✓
10/09/2016	Surveys to clients	✓
12/09/2016	Collect and collate primary research	Delayed
20/10/2016	Secondary research to be completed	Delayed
27/10/2016	Conclusion	Delayed
23/03/2017	First Draft	✓
24/03/2017	Final Draft	✓

(Word count: 498)

MAIN REPORT

Subject and level: Business Management Higher Level

To: Mr Sam Wong, Director of Pledge Protection (Asia) Pte Ltd

Title: Would the introduction of motion detector CCTV cameras help reduce cost and improve efficiency at Pledge Protection (Asia) Pte Ltd?

Date: 28th April, 2017

Research proposal: 455

Main report: 1978

I confirm that this work is my own work and is the final version. I have acknowledged the use of words and ideas of another person, whether written or oral.

Signed

A handwritten signature in black ink, consisting of a stylized, cursive script.

Acknowledgements

I would like to thank my business teacher, Dr Neelanjali, for generously providing her time and expertise to guide me on this IA journey. Her inputs and suggestions were of great help and I am sincerely grateful for her.

I would also like to thank Mr Sam Wong, operations director of Pledge Protection (Asia) Pte Ltd, for granting me this opportunity to do a case study on his firm, and more importantly for his generosity towards me by taking time to help me understand better about his firm.

Last but not least, I would like to thank my parents for their lasting support in whatever that I do.

Content Page

Executive summary	12
Introduction	13
Methodology	14
Main results and findings	
Employee survey	15
Client survey	18
Discussion and Analysis	
Fishbone Diagram.....	21
Investment appraisal.....	25
Profitability ratios.....	29
Conclusion	30
Recommendation	31
Bibliography	33
Appendices	34

Executive summary

Pledge Protection is a security company offering a variety of services. However, the recent rise in minimum wage for security guards has impacted the company by increasing cost of production significantly. The firm wishes to remain competitive and is looking for a solution. Hence this essay examines the research question: **Would the introduction of motion detector CCTV cameras help reduce cost and improve efficiency at Pledge Protection (Asia) Pte Ltd?**

This essay explores the research question and data collected by using both qualitative and quantitative tools to analyse the costs and benefits of investing in the technology, such as the fishbone diagram, investment appraisal and profitability ratios.

This essay finds that the implementation of the technology is appropriate because it replaces the inefficient manpower that is hired. It is also very feasible due to client loyalty and support. Pledge Protection is financially capable of investing in such technology. Moreover, the profitability of the firm is expected to increase after investment in the technology.

Therefore, this essay concludes that the introduction of the motion detector CCTV camera will indeed reduce cost and improve efficiency at Pledge Protection (Asia) Pte Ltd. It recommends the company should proceed and invest in this technology.

(200 Words)

Introduction

Established in 1999, Pledge Protection (Asia) Pte Ltd is a security company that provides a range of security services to a wide range of customers varying from residential estates, clubs, warehouses, escorts to name a few¹. Pledge Protection prides themselves in being a brand that sticks with their clients due to their quality service and excellent reputation. Pledge Protection aims to be the top security service provider within the industry.

Pledge Protection is now faced with the rising cost of hiring manpower due to new government regulation regarding minimum wage for security guards. Pledge Protection aims to stay competitive and cost efficient while maintaining or improving the quality of their service. The availability of the motion detection CCTV camera grants Pledge Protection the option to reduce the need for their manpower and potentially increase their efficiency. Pledge Protection has also indicated interest in investing in new technology to improve their cost efficiency. Thus, this has led me to my research question: **Would the introduction of the motion detector CCTV cameras help reduce cost and improve efficiency at Pledge Protection (Asia) Pte Ltd?**

¹ "Pledge Protection (Asia) Pte Ltd". Pledgeprotection.com.sg. Web. 15 July 2016.
<<http://pledgeprotection.com.sg/>>.

Methodology

A. Primary research

Conducted to investigate how Pledge Protection (Asia) Pte Ltd runs their business and the main problems that are present in the company. The primary data collected is analysed using a fishbone diagram for root cause analysis and to give suggestions of the action taken to overcome the problems. This includes surveys to employees and clients, an interview with Mr Sam Wong (operations director at Pledge Protection) and observational findings.

B. Secondary research

Conducted to measure the feasibility of the suggested solution presented in the earlier analysis of primary data. Data include Pledge Protection's present and projected profit and loss statements and cash flow statements. These will be used to calculate profitability ratios and investment appraisal to ensure the feasibility of the suggestion made and reliability of report.

C. Limitations

Surveys could only be done with limited amount of clients and employees thus results may not be fully representative of entire client and employee population. Projected accounts may not accurately predict future sales and cash flows due to unforeseen circumstances.

Main Results and Findings

1. Employee survey

Surveys were carried out with a total of 17 security guards from Pledge Protection to find out the demographics of employees, the motivation level of employees and the feasibility of implementing the motion detection CCTV camera.

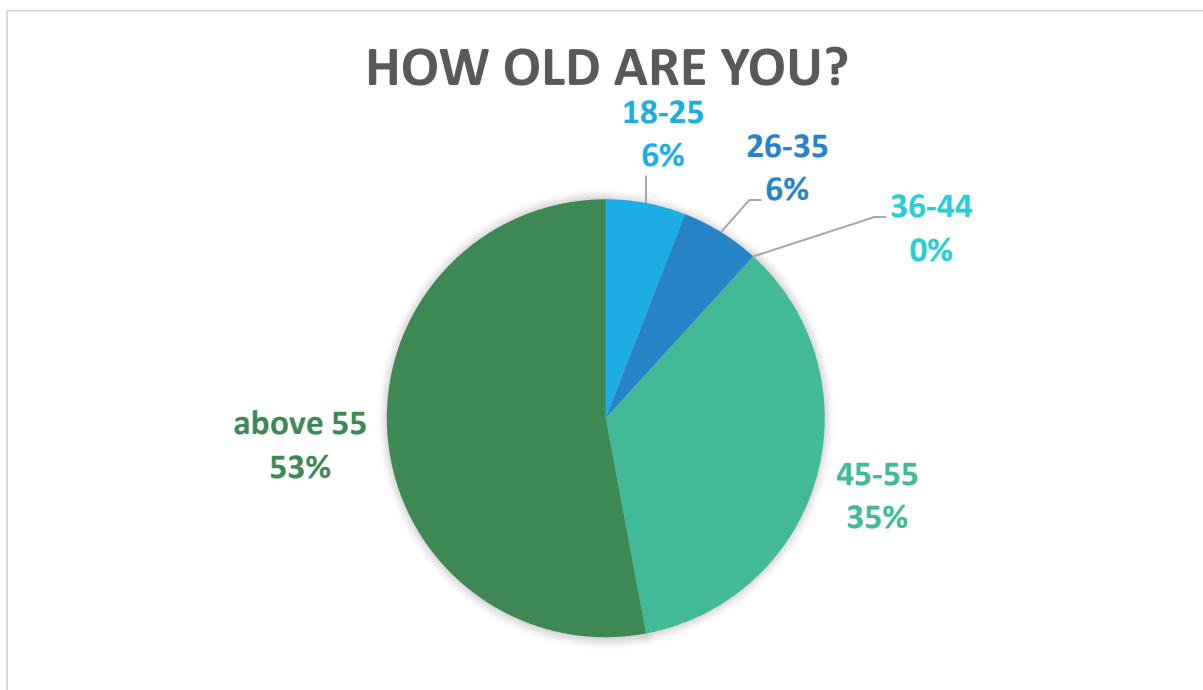


Figure 1: Age distribution of the security guards working at Pledge Protection Asia Pte Ltd²

More 50% of the employees are over 55 years old and 88% of the employees are over 45. This indicates that it is difficult for Pledge Protection to upgrade their employees and may suggest that staff there may be slow and inefficient.

² Refer to Appendix 1: 1.2 – Response from survey from employees (Question 2)

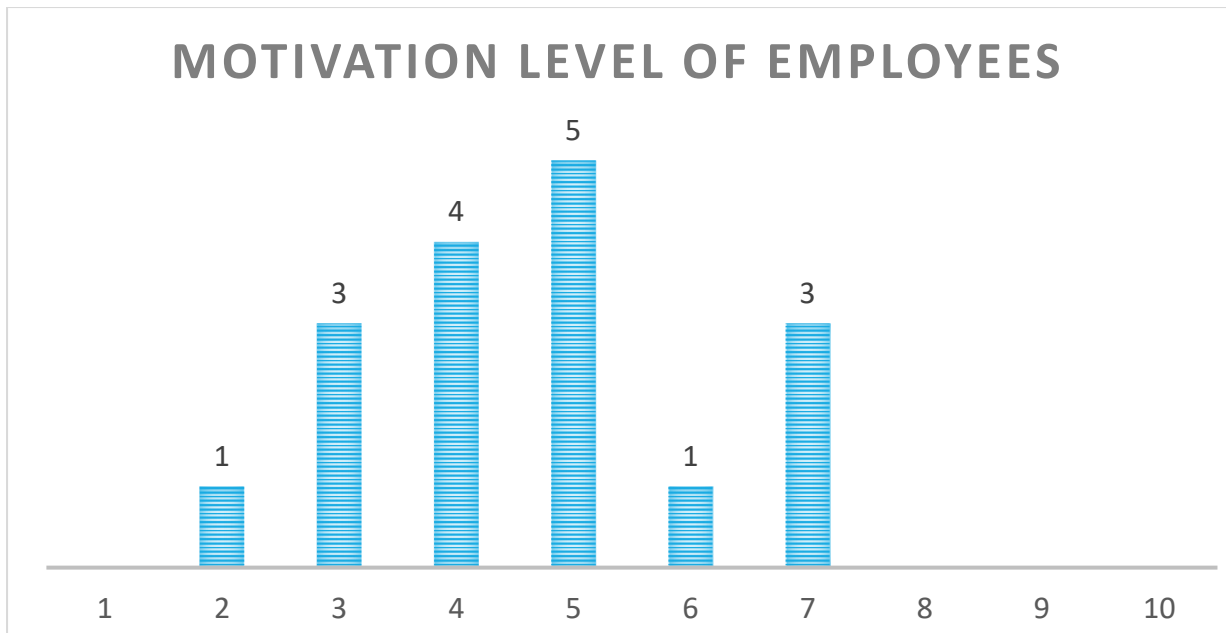


Figure 2: Motivation level of security guards at Pledge Protection³

Most of the employees are unmotivated to do work as 76% of the workers ranked their motivation 5 and below and thus the likelihood of having an inefficient team is high, increasing costs of operation.

Question: How would the implementation of the motion detector CCTV improve your day to day work? (Open ended)

- Slightly less than 50% (8 of 17) of the respondents did not know how the motion detection CCTV worked⁴
- Employees also indicated that the motion detector CCTV system would help them in their daily work – they can monitor the system less frequently
- Employees indicated that it would reduce reaction time to react to an attempted intrusion, making the operation more efficient

³ Refer to Appendix 1: 1.2 – Response from survey from employees (Question 3)

⁴ Refer to Appendix 1: 1.2 – Response from survey from employees (Question 5)

WOULD YOU LIKE TO UPGRADE YOUR SKILLS VIA TRAINING?

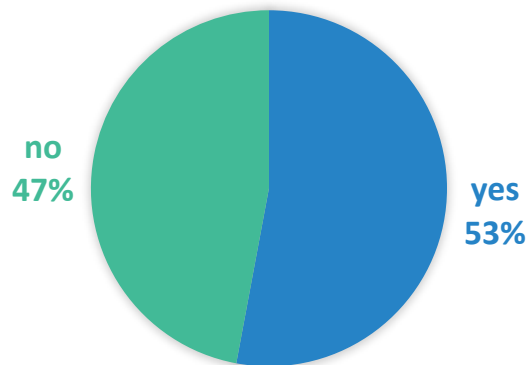


Figure 3: Willingness of Pledge Protection's employees to be trained⁵

Of the 17 respondents, 9 of the respondents (52%) indicated interest in upgrading their skills via training, while the other 8 respondents indicated that they did not want to be upgraded. This indicates that employees would respond well to training programmes and is an option available to Pledge Protection.

Overall, findings show that majority of the employees hired are old and unmotivated employees, which may indicate inefficiencies within the organisation. Yet these employees are willing to be trained.

⁵ Refer to Appendix 1: 1.2 – Response from survey from employees (Question 6)

2. Client survey

A total of 10 of Pledge Protection's clients were surveyed to find out how much they know about the motion detector CCTV camera, the current satisfaction level of services provided and the desire for improved security services by Pledge Protection. These clients were: Mr Tan, Mr Seow, Mr Phua, Mr Lee, Mr Li, Mrs Tan, Mr Toh, Mr Peh, Ms Yeoh & Mr Liao.

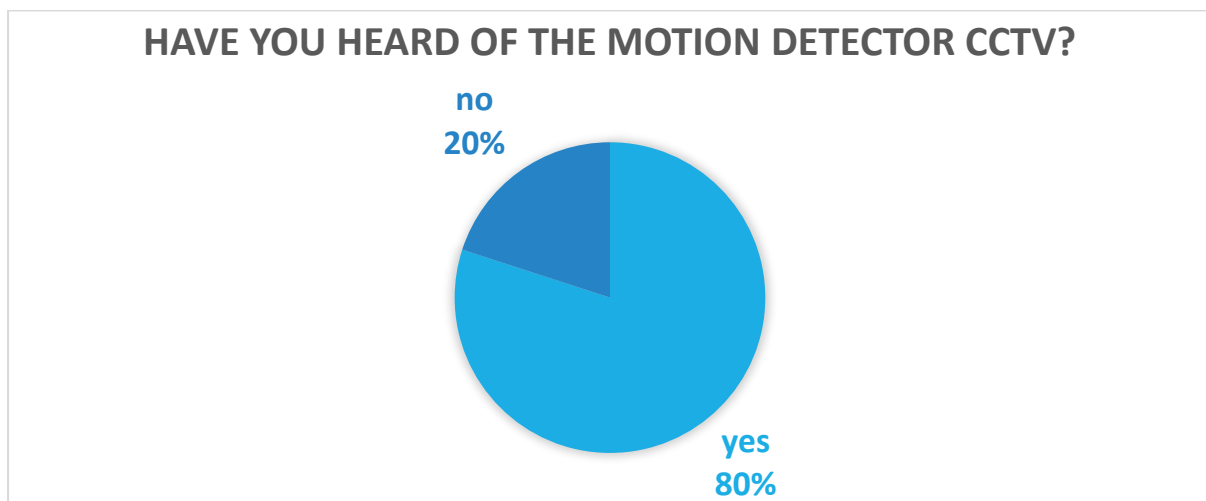


Figure 4: How many of Pledge Protection's Clients have heard about the motion detector CCTV⁶

Many of the clients are aware of the existence of the motion detector CCTV camera. The fact that most clients know about the technology will make the implementation of such a technology more appealing to them and feasible.

⁶ Refer to Appendix 2: 2.2 – Response from survey to clients (Question 3)

**ARE YOU INTERESTED IN PLEDGE PROTECTION IMPROVING
THEIR SERVICES BY BRINGING IN NEW EQUIPMENT SUCH AS
THE MOTION DETECTOR CCTV?**

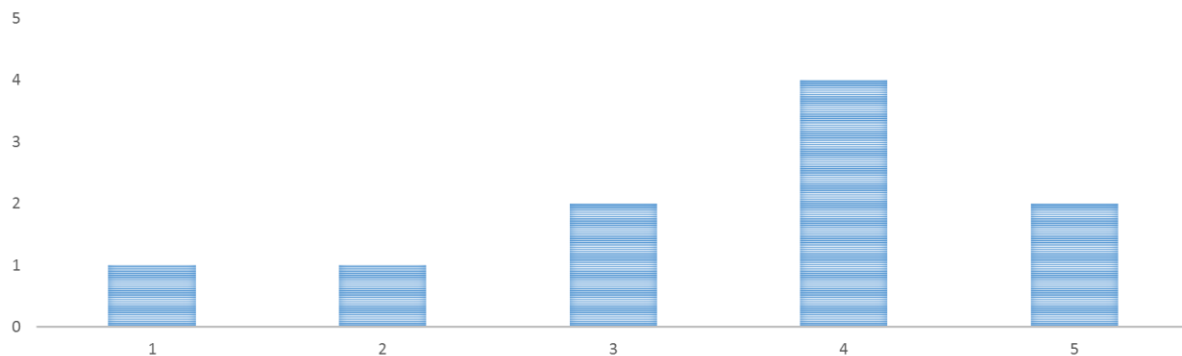


Figure 5: Interest level of Pledge Protection's customers in trying an improved service⁷

Findings show that majority of Pledge Protection's clients are keen to seeing improvements made to the security services and are interested in the quality of the product they are purchasing. The majority make up a good 80% of the clients, showing a strong interest in implementing new technology.

⁷ Refer to Appendix 2: 2.2 – Response from survey to clients (Question 4)

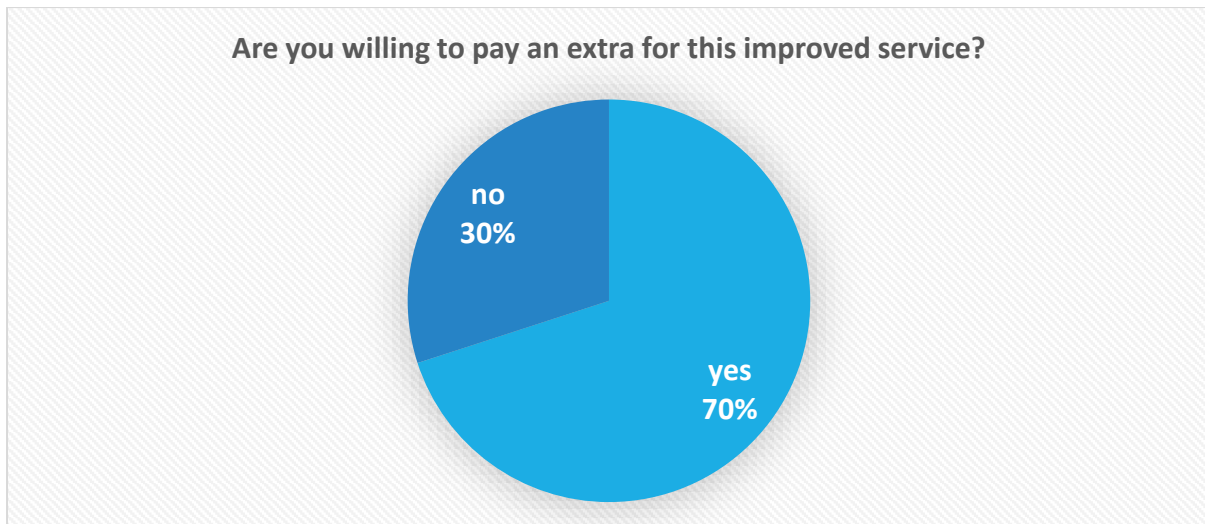


Figure 6: Willingness of clients to pay for an improved service⁸

70% of the respondents indicated that they are willing to pay an increased amount for the improved service that Pledge Protection will provide. This grants Pledge Protection the option to increase prices of their improved services if they want to recover the costs of investment faster. This shows that clients trust in Pledge Protection for quality services.

Overall, findings show that clients are generally satisfied with Pledge Protection's services and are keen to see improvements made to the technology used in their building security facilities. Most clients have heard of the motion detector CCTV and are even willing to spend the money to make these improvements happen. Overall, results show that implementing this new technology is very feasible.

⁸ Refer to Appendix 2: 2.2 – Response from survey to clients (Question 5)

Discussion and Analysis

Fishbone Diagram

The fishbone diagram is a graphical representation of the causes of the problems of a company⁹. It is a qualitative organizational planning tool used by companies to identify root causes. The main problem that is identified is the rising costs of production. This essay will be using the 4Ps – Policies, People, Paraphernalia and Procedures to identify the main problem branch.

⁹ Paul Hoang. Business & Management. 3rd ed., Melton, Vic, IBID Press, 2009.

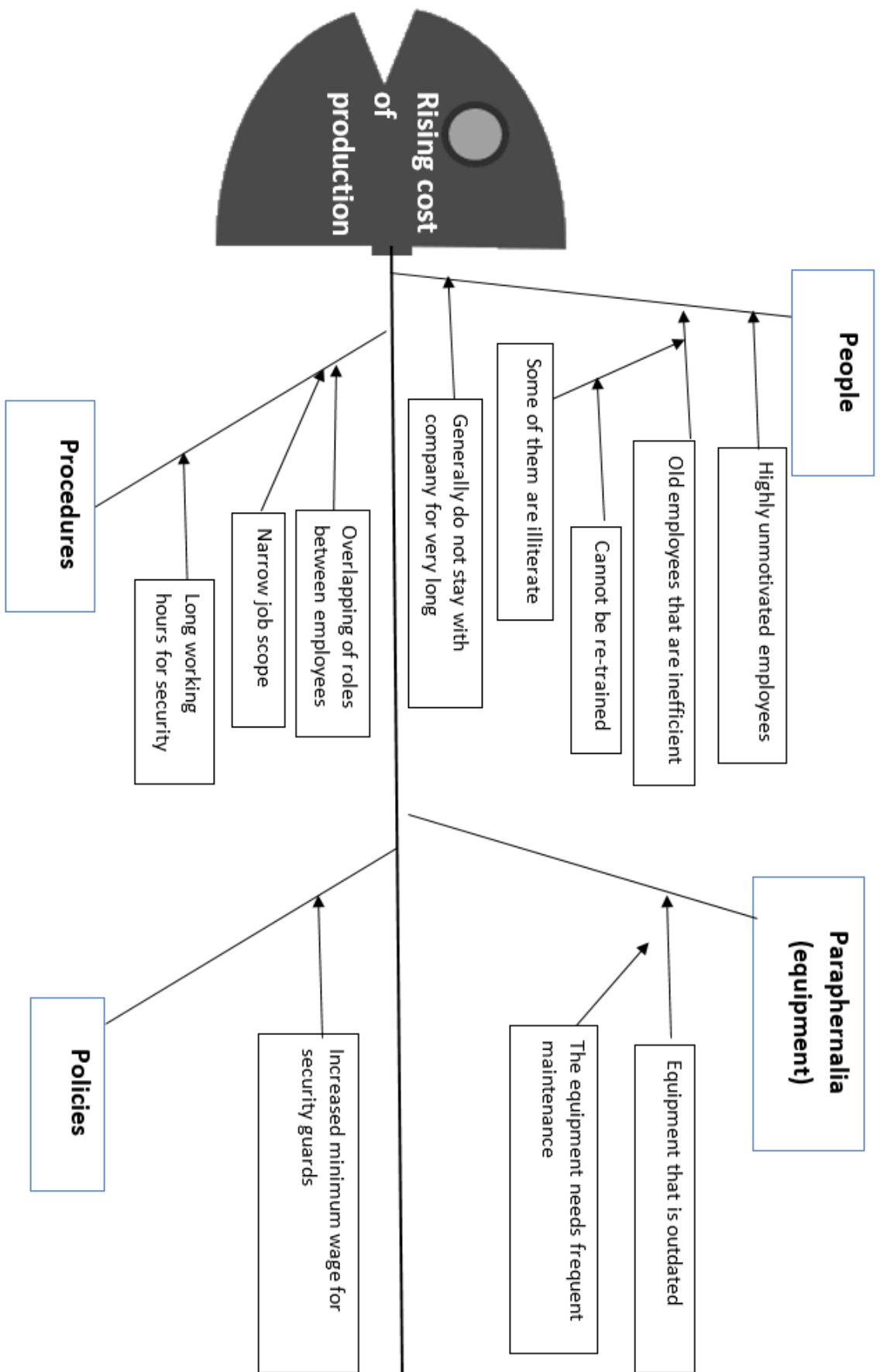


Table 1: Fishbone diagram analysis

Branch	Analysis
Policies	The increase in cost of production from the new minimum wage for security guards implemented by the Singapore government significantly impacts Pledge Protection ¹⁰ .
People	Findings show that although employees are generally willing to be trained, cannot be trained due to the fact that they are old and illiterate ¹¹ . The training will not benefit the company much as they generally do not stay with the company for very long ¹² . Furthermore, the company is not ready to invest heavily on them.
Procedure	The security guards are unmotivated due to long working hours and narrow job scope ¹³ . Another reason for the high cost of production would be the existence of overlapping of roles between the security guards ¹⁴ , which lead to inefficiencies.
Paraphernalia	The equipment that is used in the company is relatively outdated, most of these equipment could use some upgrading ¹⁵ . Purchasing of new equipment is a possible solution because the Pledge Protection's clients trust them and have heard of the motion detector CCTV that they intend to implement ¹⁶ .

¹⁰ Refer to Appendix 4: Interview with Mr Sam Wong (Question 1)

¹¹ Refer to Appendix 4: Interview with Mr Sam Wong (Question 1)
& Refer to Appendix 1: 1.2 – Response from employee survey (Question 2)

¹² Refer to Appendix 1: 1.2 – Response from employee survey (Question 1)

¹³ Refer to Appendix 3: Main observational findings (Point 2)

¹⁴ Refer to Appendix 3: Main observational findings (Point 5)

¹⁵ Refer to Appendix 4 : Interview with Mr Sam Wong (Question 5)

¹⁶ Refer to Appendix 2: 2.2 – Response from survey to clients (Question 2 & 3)

The fishbone diagram clearly shows that the main problem incurring costs unto the company is manpower. The staff hired are slow, inefficient and demotivated¹⁷, thus incurring higher costs. Yet Pledge Protection is bound by the new government legislation for higher minimum wage. The company, however, is not willing to invest more money on retraining or hiring better employees. Instead, they are interested in investing in technology like the motion detector CCTV camera to alleviate the need for manpower to reduce cost of operation in the long run. To justify the feasibility and profitability of the investment, an investment appraisal and profitability ratios will be constructed in the next section.

¹⁷ Refer to Appendix 3: Main observational findings – Point 2

Investment appraisal

Investment appraisal is the set of quantitative techniques used to calculate the financial costs and benefits of an investment decision¹⁸.

Here, all 3 investment appraisal tools are employed to justify whether Pledge Protection should invest in the motion detector CCTV camera or not.

1. Payback Period

To calculate how long it will take for Pledge Protection to recover their initial cost of investment using net cash flow obtained from company.

2. Average Rate of Return (ARR)

To calculate the average profit on the investment on in relation to the initial amount invested.

3. Net Present Value (NPV)

To facilitate decision making by comparing the present value of the investment and the net present value of the investment.

The following projected cash flows are obtained from the company.

¹⁸ Paul Hoang. Business & Management. 3rd ed., Melton, Vic, IBID Press, 2009.

Table 2: Projected cash flow for years 2017 – 2021¹⁹

Year	Net cash inflow
EOY0 (2016)	(260,000)
EOY1 (2017)	450,000
EOY2 (2018)	610,000
EOY3 (2019)	500,000
EOY4 (2020)	630,000
EOY5 (2021)	640,000

Table 3: Payback period and average rate of return

	Calculation
Payback period	$\frac{\text{Initial investment}}{\text{Contribution per month}}$ $= \frac{260,000}{450,000 \div 12}$ $= 6.9 \approx 7 \text{ months}$
Total profit	$\text{Total net cash inflows over 5 years} - \text{initial investment}$ $= 450,000 + 610,000 + 500,000 + 630,000 + 640,000 - 260,000$ $= \text{S\$ } 2,570,000$
ARR	$\frac{\text{total profit} \div \text{number of years}}{\text{Initial investment}} \times 100$ $= \frac{2,570,000 \div 5}{260,000} \times 100$ $= 197.69\% (2d.p)$

¹⁹ Refer to appendix 5: Financial Statements – Projected cash flow statement for year 2017 – 2021

Table 4: Net present values

	<u>Net cash flow²⁰</u>	<u>Discount factor</u>	<u>Present value</u>
2016	(260,000)	1.00000	(260,000)
2017	450,000	0.99780	449010.00
2018	610,000	0.99560	607318.95
2019	500,000	0.99341	496707.25
2020	630,000	0.99123	624474.27
2021	640,000	0.98905	632990.91
NPV			2,550,501
<u>Formula</u> $NPV = \text{Sum of present values} - \text{cost of investment}$ $NPV = 2810501.38 - 260,000 = 2,550,501$			

Analysis of calculations

1. Payback period

The payback period for the CCTV camera is 7 months, which is relatively short compared to the estimated lifespan of 5 years. However, the reliability of these estimates are subject to company's performance in future and other unforeseeable external factors. It is also uncertain whether or not cash flow will come in equally between the months of the year. Despite the above, it is certain that Pledge Protection will recover the costs of investments very quickly and is capable of investing in such machinery.

²⁰ Refer to appendix 5: Financial Statements – Projected cash flow statement for year 2017 – 2021

2. Average Rate of Return

The investment on motion detector CCTV cameras has an ARR of close to 200% according to the projected cash flow statement that the company has provided²¹. The high returns shows the high feasibility of making profits out of this investment. Though this calculation also ignores the timing of cash inflows and the depreciation of money, it takes into consideration all cash flow throughout the life of this investment. Thus showing that the investment in the motion detector CCTV camera will yield high returns for Pledge Protection.

3. Net Present value

The discount factor taken into account is 0.22% which is the current interest rate of Singapore²². The net present value for investing in the motion detector CCTV camera is high at 2,550,501 and is significantly higher than the initial investment of 260,000. This value can be compared with other technologies that Pledge Protection may consider to implement. However, this calculation is subjected to changes in the national interest rate and the high net present value could be due to the low interest rates.

²¹ Refer to appendix 5: Financial statements – Projected cash flow statement for year 2017 – 2021

²² "Singapore Average Overnight Interest Rate". *Trading Economics*, 2017, <http://www.tradingeconomics.com/singapore/interest-rate>.

Profitability ratios

Gross profit margin (GPM) and net profit margins (NPM) are calculated by the following formulas:

$$GPM = \frac{\text{Gross profit}}{\text{Revenue}} \times 100$$

$$NPM = \frac{\text{Net profit after interest and tax}}{\text{Revenue}} \times 100$$

Table 5: Profit margins for 2015 – 2016²³

	Calculation
Gross profit margin	$\frac{2,536,197}{11,271,507} \times 100 = 22.50\% (2d.p)$
Net profit margin	$\frac{1,661,009}{11,271,507} \times 100 = 14.74\% (2d.p)$

Table 6: Projected profit margins after introduction of technology for 2017 -2021²⁴

	2017	2018	2019	2020	2021
GPM	20.56%	22.87%	24.29%	25.14%	25.47%
NPM	12.38%	12.96%	14.63%	16.27%	16.32%

The profitability margins obtained from the company clearly show that the investment in motion detector CCTV cameras is likely to increase both gross and net profit margins, proving that the implementation of the technology reduces cost by reducing use of manpower and increasing overall efficiency within the firm.

²³ Refer to Appendix 5: Financial statement – Statement of profit and loss for year 2015 -2016

²⁴ Refer to Appendix 5: Financial statement – Projected profit margins for year 2017 - 2021

Conclusion

From the fishbone diagram, the main cause for the rising cost of the organisation is manpower. The inefficiencies within operating procedures between security guards and the new minimum wage level have caused Pledge Protection's production cost to increase. However, it is not feasible or practical to improve the efficiency of labour within the organisation because employees are largely illiterate. The most practical solution for Pledge Protection is to use better equipment to reduce the reliance on manpower. Additionally, the firm has shown interest in implementing the motion detector CCTV. After calculating the investment appraisal, it is clear that the implementation of this new technology is well within the financial means of Pledge Protection and has very high returns to investment. Additionally, when analysing the projected profit margins, the improving profitability ratios indicate that efficiency of the company will improve as the cost of production decreases with the implementation. **Therefore, the implementation of the motion detector CCTV camera will indeed reduce costs and improve efficiency at Pledge Protection (Asia) Pte Ltd.**

Recommendation

It is recommended that Pledge Protection should invest in the motion detector CCTV cameras as it is within the financial means of Pledge Protection. Furthermore, it is profitable to do so as it improves the overall efficiency of the company.

1. Pledge Protection should minimize their reliance and use of manpower as it is the main cause of rising costs. The investment in the motion detector CCTV should alleviate the need for manpower and reduce significant costs.
2. Pledge Protection should resolve inefficiencies within organization that is present in their operating procedures to further minimize the costs and improve the overall efficiency of the business.
3. Further research should be carried out to find out which brand and model of the motion detector CCTV is most cost efficient for the company.

Limitations

1. The reliability of the projected accounts is subjected to changes in the external business environment, which cannot be controlled by the company.
2. The calculations made in the report are limited in accuracy because they are made based on historical account of firm's performance and future performance of the firm is uncertain.
3. The lifespan of the machinery is estimated at 5 years and is subjected to how well the equipment is taken care of by the company.

Bibliography

1. "Singapore Average Overnight Interest Rate". Tradingeconomics.com. 2017. Web. 25 Feb. 2017. <<http://www.tradingeconomics.com/singapore/interest-rate>>.
2. Hoang, Paul. Business & Management. 3rd ed., Melton, Vic, IBID Press, 2009.
3. Survey conducted via google forms with 17 employees (security guards) of Pledge Protection on the 6th of September, 2016 (Appendix 1)
4. Survey conducted via google forms with 10 clients of Pledge Protection on the 10th of September, 2016 (Appendix 2)
5. Observations recorded on the 11th of December, 2016, from 10am – 12pm at UE BizHub East, Singapore. (Appendix 3)
6. Interview conducted on the 11th of July, 2016 with Mr Sam Wong, Operations Director of Pledge Protection (Appendix 4)
7. Financial statements for the years 2015 – 2016 obtained from Pledge Protection (Appendix 5)
8. Projected cash flow and profitability ratios for the years 2017 – 2021 obtained from Pledge Protection (Appendix 5)
9. "Pledge Protection (Asia) Pte Ltd". Pledgeprotection.com.sg. Web. 15 July 2016 . <<http://pledgeprotection.com.sg/>>.

Appendices

Appendix 1: Survey to employees

1.1: Sample survey

Hello, thank you for taking your time to take part in this survey. The purpose of this survey is to find out whether or not the implementation of motion detector CCTV cameras will benefit your day to day work. Rest assured, your personal identification will not be disclosed to anybody. This survey will not take more than 5 minutes and I thank you in advance for your participation in this survey.

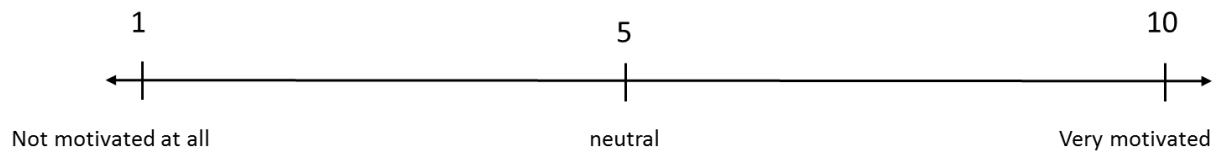
Question 1: How long have you been working at Pledge Protection?

- ☐ 0-2 years
- ☐ 3-5 years
- ☐ 6-10 years
- ☐ more than 10 years

Question 2: How old are you?

- ☐ 18-25
- ☐ 26-35
- ☐ 36-45
- ☐ 45-55
- ☐ more than 55

Question 3: On a scale of 1 to 10 how motivated are you to excel at your job?



Question 4: What are your earnings per month? (Open ended)

Question 5: How would the implementation of the motion detector CCTV improve your day to day work? (Open ended)

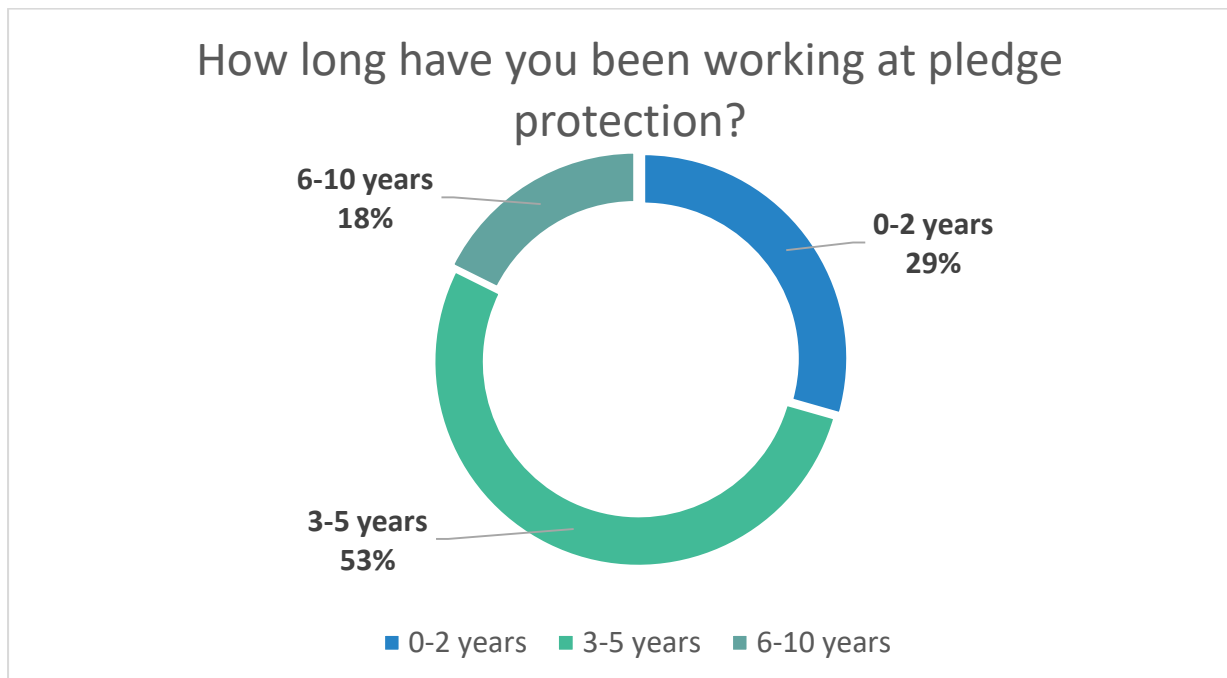
Question 6: Would you want to upgrade your skills via training?

- ☐ Yes/ No

1.2: Response from survey to employees

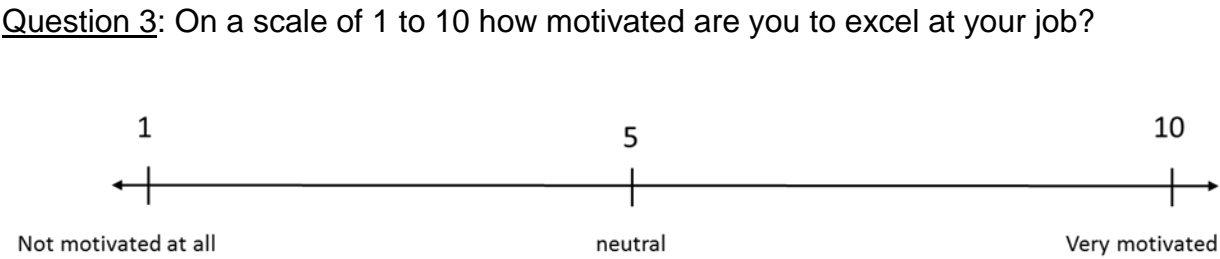
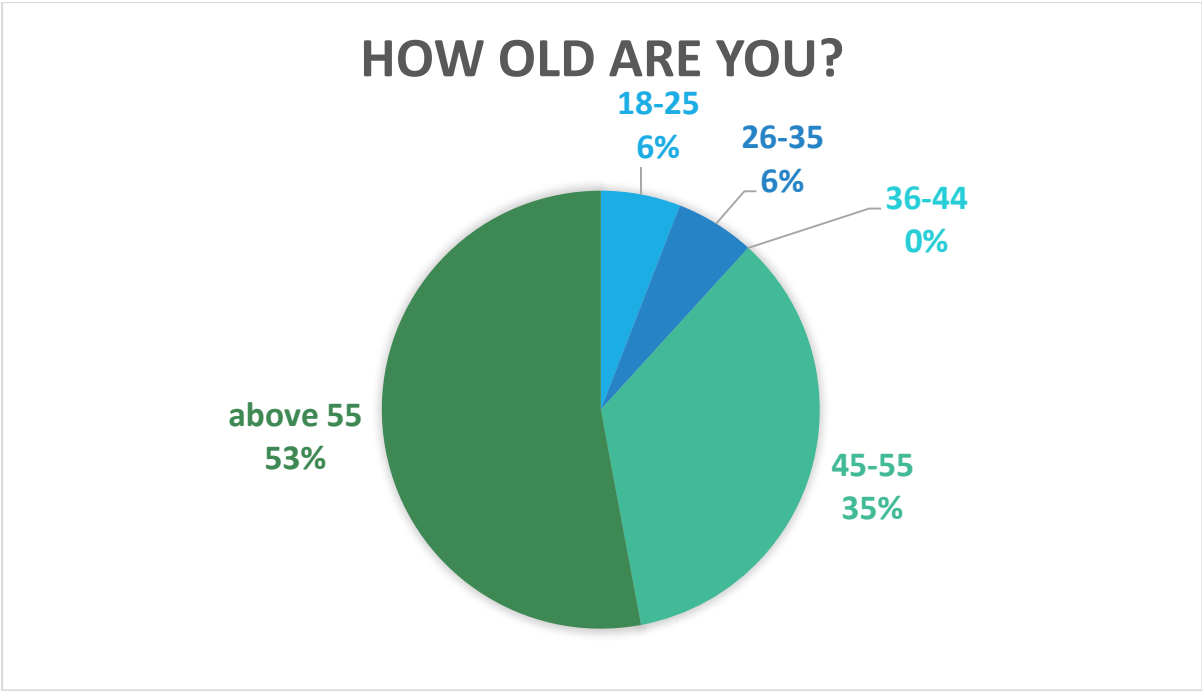
Question 1: How long have you been working at Pledge Protection?

- 0-2 years (5)
- 3-5 years (9)
- 6-10 years (3)
- more than 10 years (0)

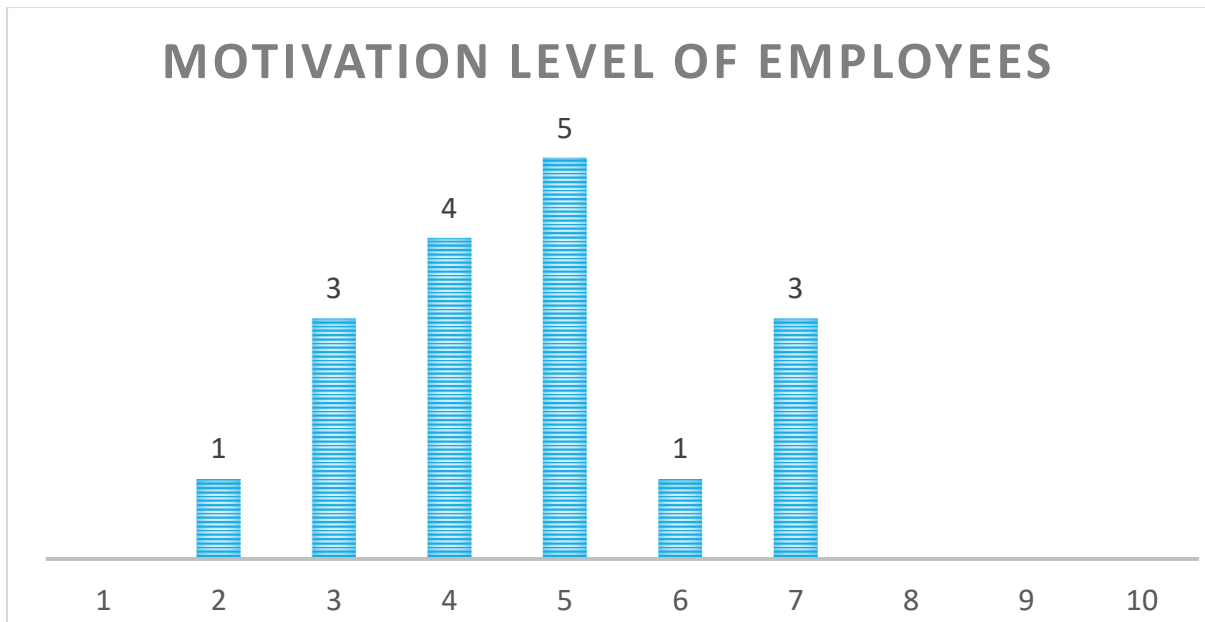


Question 2: How old are you?

- 18-25 (1)
- 26-35 (1)
- 36-45 (0)
- 45-55 (6)
- more than 55 (9)



Motivation	1	2	3	4	5	6	7	8	9	10
level										
responses	0	1	3	4	5	1	3	0	0	0



Question 4: What are your earnings per month? (open ended)

Answers ranged from SGD\$2200 – 2400

Question 5: How would the implementation of the motion detector CCTV improve your day to day work? (Open ended)

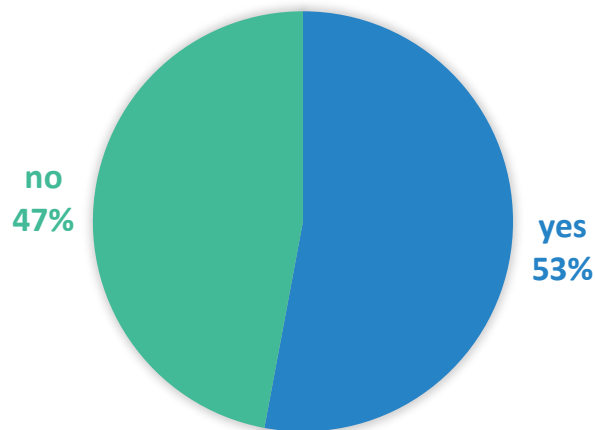
1	maybe less people needed for the operation
2	i don't know
3	the system would be more efficient because machines are more alert than humans
4	dont know
5	will help the warehouse quite a lot, the operation will need less people to finish
6	Im not sure, i'm new
7	Less manpower will be needed at certain stations so people can work less shifts
8	not too sure
9	makes my job easier because i dont have to watch the cameras all the time
10	can be alerted of intrusion faster and time is not wasted
11	i dont know how this works
12	less manpower for shift rotation

13	I dont need to look at the monitor so often
14	dont know how this works
15	can improve delay time from known intrusion to follow up action
16	dont know
17	people can work less shifts because less people needed at the same time

Question 6: Would you like to upgrade your skills via training?

- Yes (9)
- No (8)

WOULD YOU LIKE TO UPGRADE YOUR SKILLS VIA TRAINING?



Appendix 2: Survey to clients

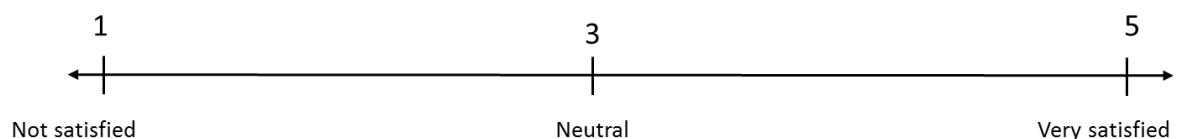
2.1: Sample survey

Hello, thank you for taking your time to participate in this survey. This survey is aimed at finding out about the satisfaction level of Pledge Protection's current client base and your willingness to see improved services in the future. This survey will not take more than 5 minutes and I thank you in advance for your participation in this survey.

Question 1: How long have you been using Pledge Protection services?

- ☐ 0-3 years
- ☐ 4-6 years
- ☐ 7-9 years
- ☐ 10 or more years

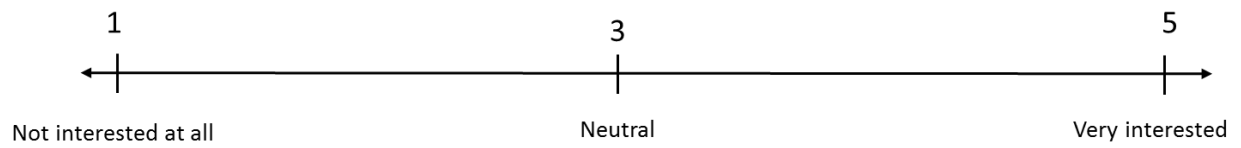
Question 2: How satisfied are you with their services?



Question 3: Have you heard of the motion detector CCTV?

- ☐ yes
- ☐ no

Question 4: Are you interested in Pledge Protection improving their services by bringing in new equipment such as the motion detector CCTV? (On a scale of 1 to 5)



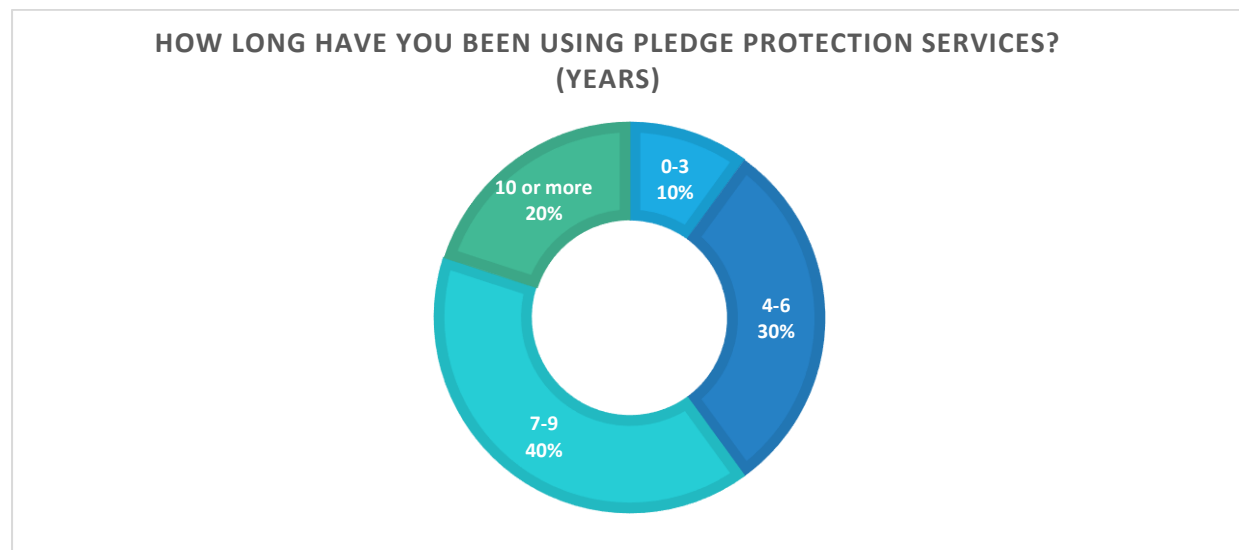
Question 5: Are you willing to pay an extra for this improved service?

- ☐ yes
- ☐ no

2.2: Response from survey to Clients

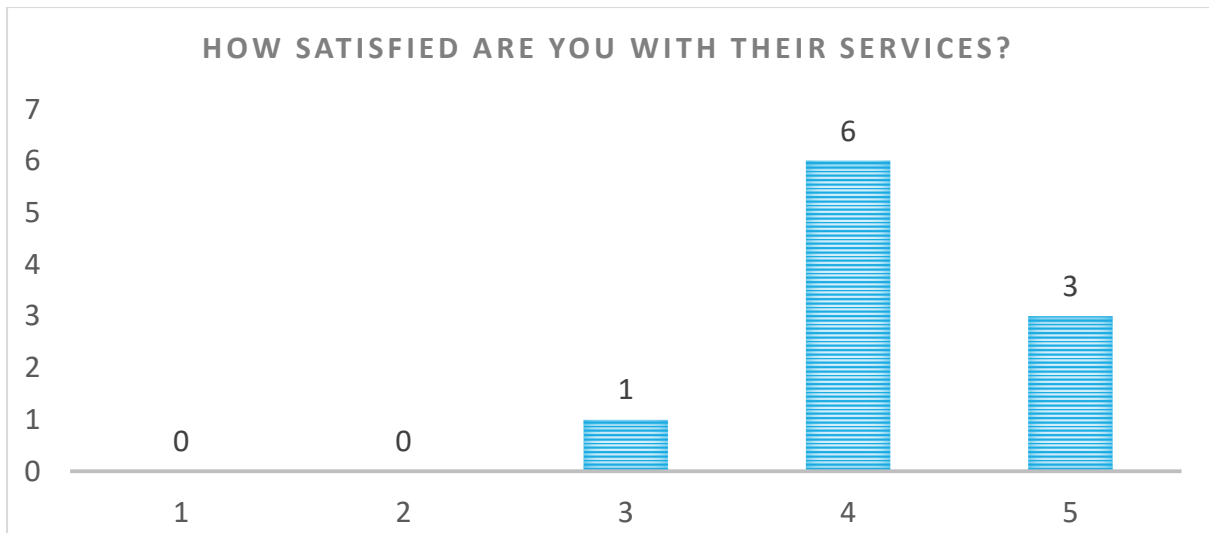
Question 1: How long have you been using Pledge Protection services?

- 0-3 years (10029)
- 4-6 years (3)
- 7-9 years (4)
- 10 or more years (2)



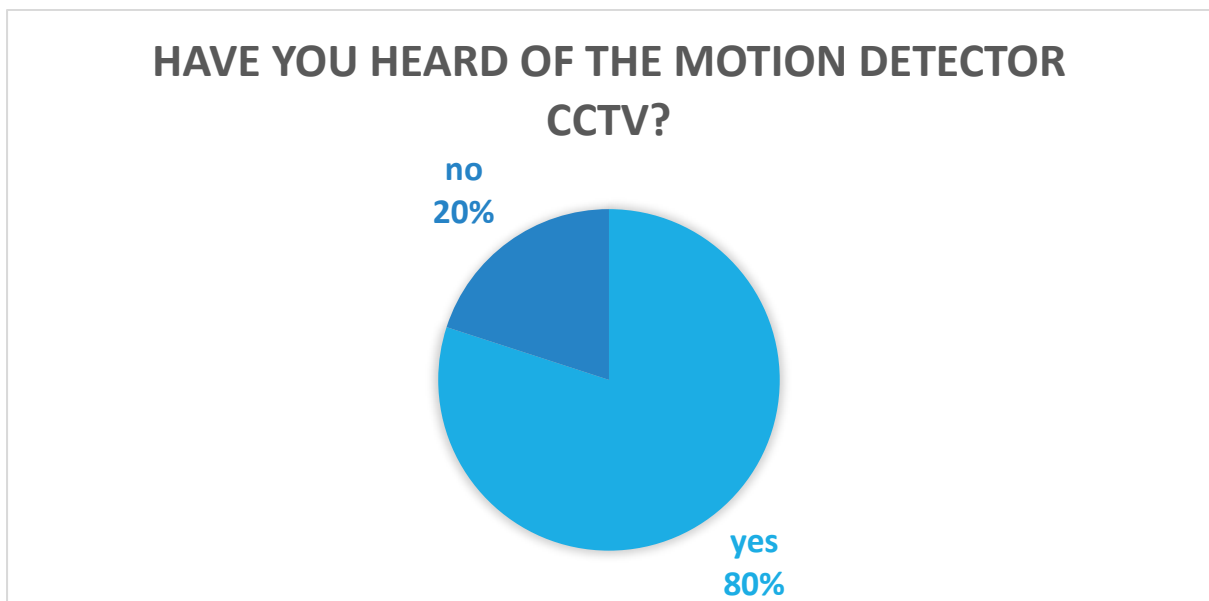
Question 2: How satisfied are you with their services?

1 (not satisfied)	2	3 (neutral)	4	5 (very satisfied)
0	0	1	6	3



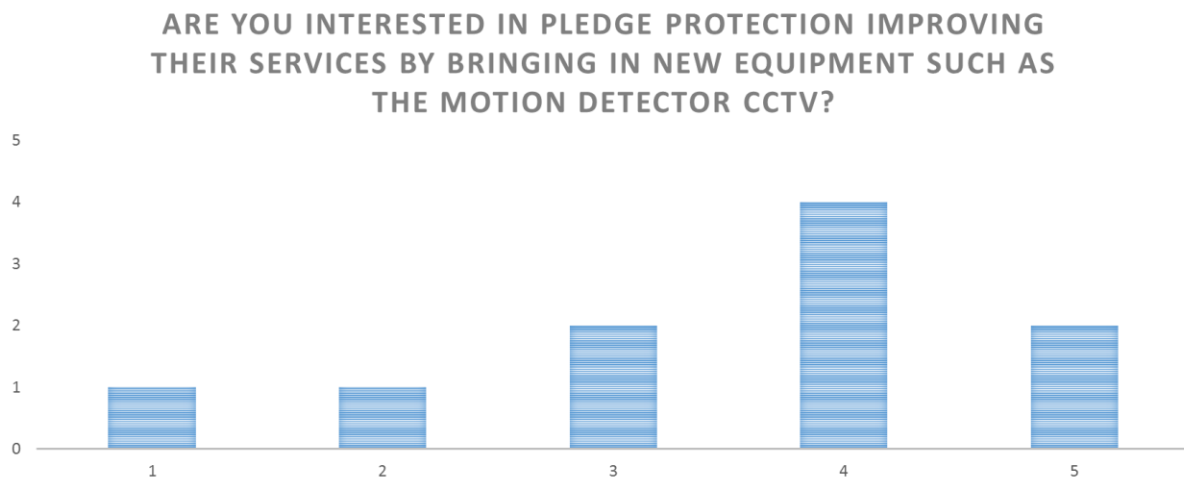
Question 3: Have you heard of the motion detector CCTV?

- ☐ yes (8)
- ☐ no (2)



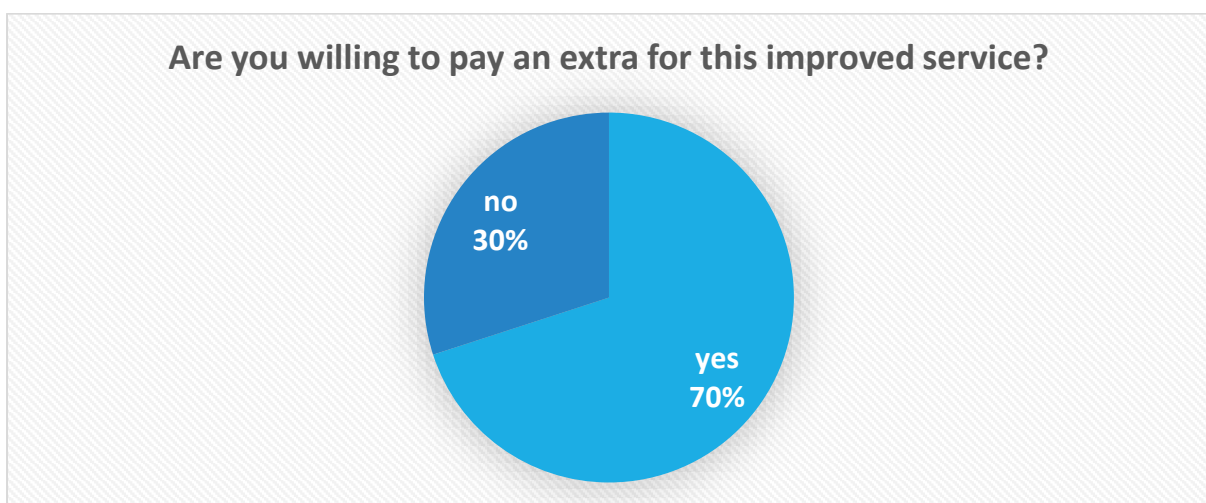
Question 4: Are you interested in Pledge Protection improving their services by bringing in new equipment such as the motion detector CCTV? (On a scale of 1 to 5)

1 (not interested)	2	3 (neutral)	4	5 (very interested)
1	1	2	4	2



Question 5: Are you willing to pay an extra for this improved service?

- ☐ yes (7)
- ☐ no (3)



Appendix 3: Main observational findings

Observations were recorded on December 11, 2016 from 10am – 12pm at UE BizHub East.

1. Security guards were placed in gantries that required identification for entry – residential and commercial buildings. The security set up was a regular cctv camera as well as one or two security guards on duty to verify the human identification.
2. The security guards on duty were old and unmotivated, though their job scope is narrow.
3. The security guard allowed entry for people that did not have gantry keys – delivery men, guests etc
4. The night shifts for security guards are long and tedious, the guards when interviewed, said that they often fall asleep on the job as a result of the odd and long hours.
5. The security guards, though on duty at the same time, had the same roles.

Appendix 4: Interview with Sam Wong, Operations Director of Pledge Protection

Q1: Good morning Mr Wong, thank you for taking your time to do this interview.

Currently, what are some of the challenges you face while operating your company?

A: Hello Elizabeth, there are a few main problems that are present in the company right now. One being the implementation of a higher minimum wage law. This has affected us quite significantly because it will incur extra costs on us. Along with that, our current pool of security guards are very lowly educated, they cannot be trained because most of them are old and illiterate. To attract in the younger people into the industry requires a much higher salary pay and they usually think twice before coming into the industry due to long 12-hour shifts. We also have many bad pay masters. Though payment usually takes about 45-60 days, our bigger clients may drag this process up to 90 days. This imposes liquidation damages by the clients. This is quite often unreasonable and the damage is heavy. Despite all these, Pledge Protection is determined to ensure quality service and remain competitive in the market.

Q2: How satisfied are your customers with your service?

A: I think that the clients we have trust us very much. My clients usually stay with me for long periods of time. It is also our company objective to have great relationships with our clients and ensure that they are satisfied with our services. So I would say that the general satisfaction is quite good.

Q3: How do you think the implementation of the motion detector camera will help your company?

A: If we introduce this technology, it would take a while to implement due to the fact that the manpower that is currently available is not trained. However, when the motion detection CCTV technology is eventually implemented, it will bring about many benefits for the company. One, the company can reduce the number of manpower that is needed for a single operation. The most evident example would be in the factory security department. The operation that needs 5 people now can be cut down to just 2 with the implementation of such technology.

Q4: Do you think that your company has financial means to fund this implementation of the motion detector CCTV?

A: Yes I believe so. Pledge Protection is a business that is always seeking out opportunities to improve our services, so we are always ready to spend on equipment that needs to be implemented.

Q5: Do you think that the current equipment is outdated?

A: The current equipment are not quite up-to-date, however they do need some repair works here and there and can be quite expensive at times. This is because we have had them for quite some time now.

Appendix 5: Financial statements

PLEDGE PROTECTION (ASIA) PTE. LTD.

(Registration No: 200509996N)

(Incorporated in the Republic of Singapore)

STATEMENT OF PROJECTED CASH FLOWS FOR THE FINANCIAL YEARS ENDING 30 JUNE 2017 TO 2021

NET CASH FLOW

<u>Year</u>	<u>Cash flow</u>
	<u>S\$</u>
2017	450,000
2018	610,000
2019	500,000
2020	630,000
2021	640,000

PLEDGE PROTECTION (ASIA) PTE. LTD.

(Registration No: 200509996N)

(Incorporated in the Republic of Singapore)

**STATEMENT OF PROJECTED PROFITABILITY RATIOS
FOR THE FINANCIAL YEARS ENDING 30 JUNE 2017 TO 2021**

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
GROSS PROFIT MARGIN	20.56%	22.87%	24.29%	25.14%	25.47%
NET PROFIT MARGIN	12.38%	12.96%	14.63%	16.27%	16.32%

*This statement has taken into consideration the investment in the equipment motion detector CCTV and is adjusted accordingly.

PLEDGE PROTECTION (ASIA) PTE. LTD.

(Registration No: 200509996N)

(Incorporated in the Republic of Singapore)

**STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME
FOR THE FINANCIAL YEAR ENDED 30 JUNE 2016**

	Note	2016 S\$	2015 S\$
Revenue	11	11,271,507	7,980,866
Cost of sales		(8,735,310)	(6,255,970)
Gross profit		<u>2,536,197</u>	<u>1,724,896</u>
Other operating income	12	876,301	717,766
Marketing expenses		(39,181)	(51,203)
Administrative expenses		(1,241,337)	(1,156,780)
Other operating expenses		(228,436)	(211,794)
Profit from operations	13	<u>1,903,544</u>	<u>1,022,885</u>
Finance costs	14	(11,236)	(13,478)
Profit before income tax		<u>1,892,308</u>	<u>1,009,407</u>
Income tax expense	16	(231,299)	(127,682)
Profit for the year		<u>1,661,009</u>	<u>881,725</u>
Other comprehensive income, net of tax			
Items that will not be reclassified to profit or loss		-	-
Items that are or may be reclassified subsequently to profit or loss		-	-
Total comprehensive income for the year		<u><u>1,661,009</u></u>	<u><u>881,725</u></u>