

## **Artificial Intelligence Case Study - PG Integrated Logistics**

### **Executive Summary**

The present study has reviewed an organisation entity named *PG Integrated Logistics* based in Sydney. It has implemented an artificial intelligence that is based on robotic technology, which is the strategy for market expansion. The company is strategizing to expand in India in health care sector. The application of the given services and the risks involved with the expansion has been provided.

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## 1. Introduction

### 1.1 Context of the Organizational Entity

Artificial Intelligence (AI) includes groups of technologies, which covers several fields such as machine and deep learning, process automation, predictive analytics and language processing. In today's business world, AI is increasing the costs of human employment and it is used in many industries for different purpose (Zie *et al.* 2017). This has enabled in developing several business areas. The role of ICT head will be played in a large logistic organisation named *PG Integrated Logistics* based in Sydney. The company provides services in several industrial sectors that include the development of effective software for the health care sector, which will enable in giving services to the service provider. The service that will be experienced by the health care sector where the health care professionals can detect the internal health problem of an individual. The success of *PG Integrated Logistics* is highlighted because they are looking forward for attempting in the field of manufacturing Robots, which is their further expansion in the field artificial intelligence. Therefore, with the incorporation of the software in the robots the health care sector can detect the health information and can display it clearly to the service provider. Thus, this can prove to be a better implementation of artificial intelligence in the wide health care sectors all over Sydney and thereby provide quality health support to the service users. Thus, the important interest areas for *PG Integrated Logistics* in terms of further expansion are:

- To take the initiative in marketing the present integrated products and services into several market regions like India
- Interest in the expansion of Artificial intelligence other than health care sectors such as in automated vehicles, home automation, workplaces which will reduce human labour and provide security control.

### 1.2 Main Objectives and Purpose

The main objective of this present report is to initiate the management in making strategic decisions about proper planning for the company for future expansion so that they can take the opportunity in the market place over their competitors. This will enable the company in gaining competitive advantage, which is required for the company in maintaining market sustainability.

The purpose for carrying out this report is to provide suitable recommendation to the *PG Integrated Logistics* management in terms of enhancing and expanding their services by increasing the application of robotic technology.

### 1.3 Methodology Implemented in the study

The techniques and sources that are used in this study are mainly the existing information which is gathered from the peer reviewed journals and magazines that are about artificial intelligent. These

are the sources used in terms of analysing the feasibility of the study. In addition, by reviewing the following sources, an understanding about the integration of robots in health care sectors and its effectiveness can be understood.

### **1.4 Outline of the Study**

The present study is carried out for giving an understanding about artificial intelligence as well as robots and the integration of both in all together. Moreover, the opportunities that can be gained by *PG Integrated Logistics* due to market expansion have been illustrated. Besides, the benefits and limitations of further expansion of robotics solution that can be experienced by the company are also discussed. The risks and several measures are also discussed in terms of eliminating the risks are also discussed. Lastly, the report will state suitable recommendations, which will enable the management of the company in making effective planning for the upcoming five years.

## **2. Definition and current applications**

### *Artificial Intelligence:*

Artificial Intelligence (AI) can be defined as an area of computer science, which focuses on the designing of intelligent machines that work and react like humans but in a robotic form (Tredinnick, 2017). The activities that are carried out through artificial intelligence include learning, planning, and problem solving and speech detection.

### *Robotics:*

Willcocks, Lacity & Craig (2015) stated that robotics is an interdisciplinary area of science and engineering which deals with construction, operation, designs and use of robots under computer system that is controlled by the humans. The technology is used for developing machines, which can replace human and operate instead of human action for working under any situation.

### ***The current applications are:***

The application of robotics in technology in the health care sector can be used to disinfect patient rooms, medical personnel and reduce the risk for patients. It can reduce the workload of health care professionals and can display the health information in faster and accurate manner. It can be used in the laboratory in terms of taking samples and then analyse, transport and store them accurately. Moreover, it can be used in training emergency personnel in terms of responding to trauma.

## **3. Five different applications**

Logistics organisation focuses on the labour operations in terms of developing the organisational activity and handles the complex operation. Herein, the supply chain and logistic process is gaining great importance in the market place. *PG Integrated Logistics* implements the artificial intelligence in order to integrate the health care sector for reducing human labour and in detecting health related information in an accurate manner. The company is driving the innovation process by implementing

robotics in the health care sector so that they health the health care professionals to relieve medical personnel from the concerned tasks which intends them in using less time and make medical process more safe and less costly for the service users. Therefore, the key applications of health care automation within PG Integrated Logistics are:

- *Enhancing customer experience:* Due to competitive market place every business organisations are towards retaining and managing customers for sustaining in the market place. With the integration of artificial intelligence in health care sector will intend in improving customer experience. The customers will able to detect their health related information in easier way and in less costly manner. Even, critical surgery can be undertaken in tiny places, which will not give much pain to the customers (Thomason, J Venugopalan, Guadarrama, Saenko & Mooney, 2014). This integrated tactics will help the customers in gaining better experiences and will intent in taking services from that particular organisation. Therefore, the customer behaviour will enable the health care sector in proper utilisation of resources with adequate utilisation of capital. Thus, *PG Integrated Logistics* robots can be a potential driver that can in the logistics and resonate the quality of services.
- *Enhance supply chain planning:* Planning is considered as vital part that is carried out in the initial stage of supply chain and logistics management. With the implementation of supply chain, management strategy in the work can initiate in manufacturing the robots in an accurate manner with proper utilisation of raw materials and financial resources. Therefore, for making health care automation, the supply chain planning need to be carried out in an effective manner (Thomas *et al.* 2014). Other than that, the employees need to implement the machine learning for enhancing the overall process. Herein, *PG Integrated Logistics* can implement advanced technology for manufacturing the scenario. Therefore, it will initiate in developing a balanced supply chain, which will enable in gaining success in the field of artificial intelligence.
- *Projecting analysis:* It is essential in selecting right business for proceeding the business activities in an effective manner. Integrating proper business and forecasting the demand of the customers the business should execute the planning. Indeed, the selection of right business suppliers is also essential in terms of using quality resources in the manufacturing items. Moreover, selection if correct client is also important in terms of enhancing business sustainability and make the business profitable in the market place. Therefore, being proactive and concentrating on the details of supply chain management is essential for managing the work activity accordingly. Indeed, strong logistic management that includes processing and implementation of data need to carried out effectively in order to make

strong logistic management. *PG Integrated Logistics* can take the initiative towards machine learning as well as intelligent algorithms in terms of operating the automation in an accurate manner. As the entire process is carried out in a machinery form therefore the organisation needs to make sure in using quality technologies which will intend in proceeding the work in an effective manner. On the other hand, it can simplify the task and initiate the manager to gather relevant information.

- *Language Processing in terms of data integration:* Sliva, Reilly, Casstevens & Chamberlain (2015) stated that Natural Language Process (NLP) is the key components of machine learning process and artificial intelligence which initiates in decoding wide range of data. The data can be from different languages, which are tapped and decoded into simple language that is possible for human understanding. For example, detecting the location and responding accordingly can be easily done with the implementation of this tool. Herein, the implementation of Robotic Process Automation (RPA) can enhance the health care operation, as it will initiate in adding on diversity and integrity of supply chain system.
- *Automation in back office process:* The back office process enables the business in handling several areas and enhances the efficiency of business by increasing the productivity. With the implementation of automation in back office it will reduce human labour and at the same time enable the employees in segregating their work according to the first priorities. This will initiate in fostering the development as the entire work will be carried out in a systematic manner, which initiates in bringing more business output. Similarly, the back office task that is carried out in *PG Integrated Logistics* will help in recognizing the financial anomaly. The organisation can initiate in understanding the task according to the priorities. Thereby, the organisation will also be able in making effective financial detection and make sure in proper utilisation of money without facing any shortfall and wastage.

#### **4. Opportunities of expansion in AI**

*India as new market:* India is vast area that carries out different businesses in order to foster the economic condition of the country. The implementations of artificial intelligence and robotics can help the country in giving suitable solution in terms of reducing human labour. However, *PG Integrated Logistics* need to make sure in differentiating their product from other market. Thereby, in terms of gaining opportunity in the Indian market the company needs to manufacture their goods with quality equipments.

*Customs Brokerage:* The artificial intelligence process with the initiation of Robotic Process Automation (RPA) by *PG Integrated Logistics* tends to enhance the brokerage process by minimising the errors that can disrupt the entire process. Indeed, it gives the scope in maximising the cost

saving ratio. The integration of robotic automation can be an important assistance in terms of handling the customer declaration process, which tends to be complicated enough.

*Improve health care services:* It initiates in managing medical records and analysing several information like medical records and the history of patients. Indeed, the expansion of Robotic Process Automation (RPA) can be effective enough in managing data that are widely applied in the health care sector. It can also act like digital consultation where AI can give medical consultation based on the medical history of a patient. Qian, Lu, Miao, Ji, Jin & Song (2018) added that it is quite time saving method and gives accurate result by reducing human labour. Thereby, customers will be reliable enough in terms of taking services so that their health issues can be detected quickly. Other than that, the automating accounts payable and the receivable processes can enable in informing the patients about their payment details. The Robotic Process Automation (RPA) is also capable of adapting according to the changes. Thereby, it gives the scope on improving the care cycle as it enables in streamlining the work and at the same time help the patients in getting better health.

## **5. Advantages and disadvantages of AI application**

The expansion of the robots in the Indian market is undertaken after the analysis of its advantages and disadvantages of the application:

Advantages:

- There is less chance of committing any errors, as the chance of reaching to accuracy is more because it helps in reducing risk.
- It is also effective with daily application in the workplace where it can initiate in organising and managing data. Besides, it is also beneficial in terms of detecting the fraud users.
- It initiates in giving fast decision to the organisation
- As it works as a digital assistance it initiates in reducing human labour and increase efficiency in work
- At the same time, it minimises cost of training as well as operation

Disadvantages:

- It is of high cost because the machine work is quite complex and the cost of maintenance and repairs require high cost.
- It reduces human employment because the work is carried out by the machines where there is less involvement of humans
- Cannot detect sympathy and compassion: As it is cleared that machines are more effective in carrying out work than humans however, this cannot replace human connection, which initiates in making team.

## 6. Recommendations

The recommendation for *PG Integrated Logistics* in terms of developing in the next five years can be:  
*India:*

In order to give services in the Indian market it is essential for the business to carry out effective marketing which will aware the customers about the services that will be given. Thereby, attractive advertisement can be development according to the current market trend.

*Robotics:*

With the implementation of Robotic Process Automation (RPA) will initiate in gathering data and health related information of the patients by detecting their past health reports. In addition, it will reduce human labour and improve working efficiency. The services can be improved at the same time with the implementation of advanced technology.

## 7. Conclusion

Therefore, the investigations of Indian market have detected that there is large market opportunities along with potential market penetration. Besides, the competition in the Indian market in minimal. However, the company can face barriers in terms of infrastructure and policies, which can be the obstacles. The study also discusses the advantages and disadvantages that the company will get with the expansion in the potential market. Thereby, with the observation of the stated advantages as well as limitations have initiated that the introduction of artificial intelligence and robotics in the workplace will initiate in giving long term benefits. In addition, with the introduction of collaboration and the partnership initiative with the local entities can help in giving significant benefits as well as financial returns that is procured with the suitable implementation of the strategies. Furthermore, with the enhancement of present health care automation is within the capability of *PG Integrated Logistics*. Therefore, the key expansion risks and the integration of the counter strategies is quite vital in determining organisational success. This will initiate the organisation in gaining success and fulfilling the objectives within the next five years with the initiation of proper planning system.

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