*Information system review and evaluation*

*<ASSIGNMENT 1>*

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ABSTRACT

Nowadays, using information technology in different enterprises and organizations has been developing and growing dramatically. The utilization of information technology significantly influenced and improved the productivity and efficiency of organizations. Computer-based information systems are sets of inter-related procedures using information technology infrastructure in a business enterprise to generate data, desire decisions, process data into information, and make decisions. It has become a critical strategic imperative for organizations competing in the global economy(Tan & Gallupe, 2006). This report will explore the vital role of the application of information systems in industry development and business processes carried out in Amazon by a case study. Also, the protection of information resources will be discussed.

# introduction

Currently, in the development stage of the enterprise, data is an essential component of a modern economy, and it contains much raw information that needs to be interpreted meaningfully. Therefore, a Computer-based information system is used in an organization which is a system that could collect, process, and store data by computer and deliver information to achieve a specific goal. Amazon is selected as a case study for in-depth research on the impact of information systems applications implemented by Amazon company. Amazon is a technology company with several business forms, such as e-commerce, cloud computing, digital streaming, and artificial intelligence. Also, it is famous as the world's leading digital retailer(Amazon, 2006). Three information systems applications used in the Amazon business information system will be discussed: Amazon's automated recommendations formula, Fulfillment by Amazon service(FBA), and payment system using Netscape Secure Commerce Server by amazon. Amazon's automated recommendations formula is a system used to recommend customers what to purchase according to their preference and browse history. It is a core part of the customer relationship management system used to collect all customers' details in a database and store the information on their profiles to improve customer satisfaction. This system could analyze customers' interests and hobbies from the shopping history to recommend products to make the system high interactive. Amazon fulfillment service is a significant part of the business information system. It provides Amazon sellers outsourcing shipping to Amazon and providing Amazon logistic networks to sellers to save their time and improve efficiency. Netscape Secure Commerce Server(Hammond) is a security application that could provide customers with a safe payment environment. The selected information systems applications will be referred to discuss the following questions.

# Bussiness transformations

Business transformation is a general term of changing how enterprises work fundamentally. It will help businesses become more efficient and competitive. The aim is to reduce cost, increase revenue and improve customer satisfaction. These include changing digital transformation, physical transformation, and management transformation. The digital transformation and physical transformation implementation at Amazon will be discussed following.

## Digital Transformation at Amazon

Amazon business is an example of digital transformation from digital customers to B2B world. Now it has extended its platform to the B2B space, which could improve the customer's satisfaction and provide individuals and businesses a particular marketplace where they could purchase goods from Amazon and its third-party company. A portion of the commission will be charged by Amazon service, but provide AWS service, ingrate ordering, purchasing system, and shared payment system. Also, it could let the manufacturer quickly chat with the purchaser to discuss the problem about the goods through the Amazon service platform. Since 2015, Amazon has provided more than 2.25 million products and a more comprehensive market to B2B companies(Kasana & Chaudhary, 2014). Under this model, the company's market has been further expanded.

### The necessity of implementing digital transformation at Amazon

In today's e-economy era, the industry needs to be competitive when new digital technology and new business models occur. Therefore, digital transformation is necessary for an industry to change its business running model to improve competitiveness. According to the research, the size of b2b market is valued at 7.2 to 8.2 trillion in America (*Amazon Business*, 2022). Amazon business found a large vacancy in b2b market, and there are many business opportunities. Therefore, Amazon has started to process digital transformation to expand the customer-friendly platform to the B2B market and provide technology to b2b sellers. Some core technology such as the customer relationship and payment systems were provided to the platform to create a safe and friendly shopping environment. Under this mutually beneficial mode, Amazon's marketplace expands further with a better customer shopping experience. Also, many small industries and third-party sellers could have a platform to sell their products and create profits.

## Physical Transformation at Amazon

Amazon is a huge e-commerce information technology company, and most business is conducted online. While other businesses develop their virtual business, such as Walmart and Target, it starts to be completed by other businesses and enter the bottleneck period of the e-economy business. To solve this problem and create a new business model, it starts to transform its business physically. According to the report, Amazon plans to open two 30000-square-foot physical stores in California and Ohio. Also, it believes that the future trend of the retail industry is a hybrid business model of online and physical shopping(Jindal et al., 2021). Amazon started its physical retail and opened its first physical book store in 2015. After several years of development, the scale of physical bookstores has reached 25. When it finds the success of physical transformation, it starts with different retail models such as Amazon go(convenience store) and Amazon fresh ( grocery supermarket). It is followed by the 'just work out' model, which makes a big success.

### The necessity of implementing physical transformation at Amazon

By developing physical store mode, Amazon will be more competitive with other technology company that only has digital business. Also, the physical transformation could help amazon gain more customers to improve the customer relationship system in order to bring a better shopping experience. Furthermore, the market of Amazon further expands with diversified businesses to meet customers' needs.

# business process

The business process is a series of activities that let an organization achieve its goal step by step. Three business processes will be discussed below: Amazon's automatic recommendation process, fulfillment process, and payment security management. Amazon's automatic recommendation process is a part of marketing business process, and payment security management is under the management information system business process. Both are a business process from a single functional area in Amazon. While Amazon's fulfillment process is a bit complicated, a cross-functional business process.

## Singel -functional process

Amazon's automatic recommendation process could advise customers of their preferences and give them some suggestions about what items they are looking for. By utilizing a customer-based collaborative filter and item-to-item collaborative filter (Nelson, 2019), the system will analyze the customer's preference by reviewing its recent browse or purchase history and recommend a list of similar products. Also, the system will match the two visitors with the same purchase history and exchange purchase information with each other to achieve recommendations. The flow chart below presents the process of Amazon's automatic recommendation process.

Diagram

Description automatically generated

Figure 1 Amazon automatic recommendation process

The payment security process is a significant part of management information system process. When shopping on Amazon website, the security system could encrypt data such as payment details, credit card numbers, phone numbers, and addresses to prevent customer privacy leaks. Then the security system will derive information from the billing agreement, which is the data stored in payment information, and track each repeat purchase made by the buyer. After that, Customer authentication is required before purchasing, and customers will receive an instant payment notification to notify the payment request. Also, when purchasing from a third-party seller, the payment detail is not shared to protect their information, and sellers will receive the fund after authorized payment. The flowchart below presents how the amazon payment security process works during purchasing.

Diagram

Description automatically generated

Figure 2 Amazon's Payment security process

## Cross-functional process

Amazon's fulfillment process is a cross-functional process. The fulfillment process starts with a customer purchase order, and the sales department receives the order delivered to the buyer. The flow chart below illustrates the Amazon fulfillment process step by step. At first, the customer browses the item and places an order on the website. After the order is paid and confirmed by the billing department, the amazon fulfillment center will receive the order, and the picking department can check the order and pick goods. Then the picked items will be sent to the packing department. At last, the packages will be sent to the carrier department and delivered to customers(Sun et al., 2020).

Chart, box and whisker chart

Description automatically generated

Figure 3 Amazon fulfillment process

## Identify Amazon fulfillment process and its value for customers

Amazon fulfillment process is a service that could provide logistics networks, storage, and online shopping systems with trusted customer service to help customers shopping online or other third-party businesses sell their goods through this platform. The customer in a business process is a person or an organization who uses this process to solve a problem or achieve a goal. The customer could be a person who shops on the Amazon website or a third-party business that sells products through this platform in the Amazon fulfillment process. The inputs in a business process could be a process supplier who provides a product or service and transfer it to output through the business process. The input of the fulfillment process is the Amazon fulfillment department which includes the picking, packing, and shipping department. The outputs in a business process are the products or value. The fulfillment process's outputs are products that customers receive, profits the company earned, and good customer relationships. Resources in a business are a type of input consumed in this process. The resources in the fulfillment process include storage, people hired, information system support, customer service, logistic network. The flow chart below presents the key components in the Amazon fulfillment process, and the table below presents the customers, input, output, and resources within this process.

Diagram

Description automatically generated

Figure 4 Key components in Amazon fulfillment process

Table 1 Essential components in Amazon fulfillment process

|  |  |
| --- | --- |
| **Essential components in the Amazon fulfillment process** | |
| **Customers** | * The customers who shop on the Amazon website * Businesses want to sell products through the Amazon platform | |
| **Inputs** | * Amazon fulfillment department * Amazon shopping platform | |
| **Outputs** | * Customers received products they purchase * Business and amazon platform earned profits * Good customer service results in good customer relationships | |
| **Resources** | Storage, people hired, information system support, customer service, logistic network | |

Amazon's fulfillment process impacts the customers' experience directly. Once customers have purchased a website item, the fulfillment process works. Each customer wants to receive his order as soon as possible after he pays. Customers could get a better shopping experience with a fast delivery process. Also, excellent return goods management will increase the customer's satisfaction. Amazon also improves its competitive advantages at the same time to gain more customers.

# EThicality, legality & privacy in Amazon

## Ethicality in Amazon fulfillment process

According to the fairness approach, each employee should be treated fairly in an industry. At the same time, some ethical issue was found with Amazon's fulfillment center. Amazon is the world's largest online retailer, with a large number of employees working in its warehouse. The employees who work in the fulfillment center are a core part of its fulfillment process. However, some abuse happened in the warehouse. According to the investigation, an employee's salary working in Amazon fulfillment center is 9% less than the industry average. Also, the employees who worked here were pushed to work extremely hard with little rest time to achieve their daily targets (Choi et al., 2016).

## Legality in Amazon payment security process

By using amazon service, including payment service, the customers require to agree with applicable law and the laws of the state of Washington. Furthermore, the dispute of any sort will be governed by this agreement and have legal effect.

## Privacy in Amazon automatic recommendation process

In the amazon automatic recommendation process, all the collected information is under the regulation of privacy policy guidelines. For data collection, personal information and shopping history will be collected by Amazon to make a recommendation. According to the customer's preference, the system will recommend the matched items and present them on the website. The collected data is relevant and not excessive with this business process. For data accuracy, the system will real-time update and save data when the customer login his account. For data confidentiality, Amazon will not access user content for any purpose without agreement. Also, the third-party sellers have no access to personal information protected by Amazon(Zhang et al., 2014).

# unintentional &deliberate threats to information system in Amazon

Amazon is one of the most influential technology companies globally, and it has collected and stored tons of data in its database. It uses many different methods to protect its data. Most customers are concerned about their privacy information security when shopping online, and Amazon has been working on investing new features in protecting customers' data. Some unintentional and deliberate threats to its information system in Amazon are listed below.

* Information extortion
* Theft of information
* Identity theft
* Compromises to Intellectual Property

## Theft of information occurs in amazon

An insider-threat accident happened in amazon, and the customer's personal information and home address were shared with a third-party company by an employee from Amazon. Now, this employee is fired and refer them to law enforcement("Amazon Fires Employee Who Leaked Customer Names, Emails," 2022). The cyber security team worries most about insider treats instead of the threats from outside. Because most companies believe their employees are entirely loyal to the company, some employees use this weakness to earn money. Eliminating this risk from happening again, amazon has implemented new security software to monitor the employee's device and control the remote access from all endpoints, including smartphones. The employees' devices will be monitored to check their review history at the workspace. Also, the insider treats awareness security training is conducted regularly to develop employees' security awareness. More comprehensive enforcement policies about third-party company access are established to protect the enterprise.

## Identity theft occurs in amazon

A now-departed employee at Amazon has revealed that Amazon customers' service systems are at risk of identity theft on the social media platform. His account was compromised at three different locations, and Amazon's customer service representatives leaked his personal information. The attacker asked Amazon customer service for their details by impersonating a customer, even attempting to obtain the last four digits of a credit card number("How Amazon's Customer Service Could Open You Up To Identity Theft," 2022). Amazon provides a service called GuardDuty to detect identity theft. This guard could detect some unusual data unknown IP addresses and use integrated treats intelligence to identify potential threats and take action immediately, including sending alert emails and freezing the account. At the same time, customer service will be in touch with customers as soon as possible.

# Personal reflection

Before starting this assignment, I only understood the different fundamentals of information systems and the topics within it literally. I do not have an in-depth understanding of its utility value and effection in an actual enterprise. I selected Amazon as my case study because I am interested in the e-economy company, and Amazon is a large technology company with different types of business. After researching the business information system of Amazon, I could understand the knowledge such as business processes, business transformation, threats to information systems, etc., better. By doing this assignment, I learned how to research different information through the internet or books and find the critical point to utilize in my case study. Also, I could integrate collected information and draw the flow chart to show the process clearer. Becoming a self-learner to explore new knowledge helps me study business information systems more confidently. A more comprehensive business information system model needs to be carried out for further study when exploring a case study.

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