



The Technology Processing of "4 Care" Home Care Application Based on Artificial Intelligence

Fifiana Teresia Lilianira^{1,*}, Tantri Yanuar Rahmat Syah¹, Semerdanta Pusaka, and Dadan Ramdhani¹.

¹Faculty of Economics and Business, Esa Unggul University–Jakarta

As a company that focuses on digital start-up, the information technologies systems are become a very important factor for the continuity of Four Care's business. In this study, we will explain the process flow that occurs from the front end to the backend of technology over Four Care applications. It will emphasize backend technology process as the core of this business.

Keywords: Home Care, Application Technology, Process 4 care

1. INTRODUCTION

As an application-based home care service provider, Four Care provides a variety of services that are at the same time an advantage in home care business competition [1, 2]. To provide maximum service, Four Care opens 24-hour service time, so that wherever and whenever consumers need a Four Care partner will always be ready to serve consumer needs [3, 4]. In addition, consumers can also choose the duration of service in accordance with needs with relatively affordable rates.

2. METHODOLOGY

A. Types of Four Care Services

The Four Care service focuses on four types of products such as Chronic Disease Care Services, Elderly and Toddler Treatment Services (Professional Care Giver), Post Maternity Services, and Physiotherapy Service. Here, Chronic Disease Care Services is a home care product for patients with diabetes and stroke and chronic disease. Elderly and Toddler Treatment Services (Professional Care Giver) is service product focused on providing surveillance services for children and the elderly. Here, the services we provide for elderly patients who experience a decline in physical, psychological, and barriers to activities while treatment services for children include the assistance of all the daily activities of the child at home [4, 5]. Post Maternity Services is a service products include services for mothers and babies, some services for mothers include; (1) Massage to all

housewife who rate will be determined based on the duration according to consumer demand; (2) Lactation, while the services for babies include; (1) baby massage; (2) baby sitting or baby-sitting; (2) baby piercing and; (3) Shave baby's hair. For baby-sitting, the tariff will be determined based on the duration per two hours [5, 6, 7]. While a Physiotherapy Service is physiotherapy service for physiotherapy services including development, maintenance, recovery with a promotive, preventive, curative, and rehabilitative to approach for patients in accordance with physiotherapy competencies. The physiotherapy services are divided into (1) Physiotherapy after stroke; (2) Physiotherapy after an accident or trauma; (3) physiotherapy for children with special needs such as speech, motion therapy and so on.

B. Supply and Suppliers

In making and developing platform technology, the work of a software engineer must be requires coordination with several functions that exist within the company [8]. To be able to become a supplier of PT. Rembaka Catur Sekawan as a company has several criteria as follows:

- i. Having no legal issues with the Republic of Indonesia.
- ii. Have legal status and have a clear company background as a service provider that uses IT-based platform technology, companies need suppliers who can help the establishment of this service. The types of suppliers we require are clear in Table I Supply and Suppliers.

*Email Address: fifieteresia@gmail.com

Table I. Supply and Suppliers

No	Product/service	Main Supplier	Alternative Supplier
1	Network equipment	PT. XDC Indonesia	PT. Cisco System Indonesia
2	Internet service provider	Biznnett	My Republic
3	Computer / Laptop	Windows / Linux	HP
		MacOS	ibox
4	Web hosting & Mail hosting service providers	Domain	ID Webhosting
	Cloud	Amazon Web Service	Rumalweb
	Git	GitHub	Google
5	Communication network	Telephone & Fax	AWS Code Commit
			Avaya

3. RESULT AND DISCUSSION

A. Four Care Application Process Flow

To get Four Care services, patients and their families do the service flow that we describe in Figure 1.

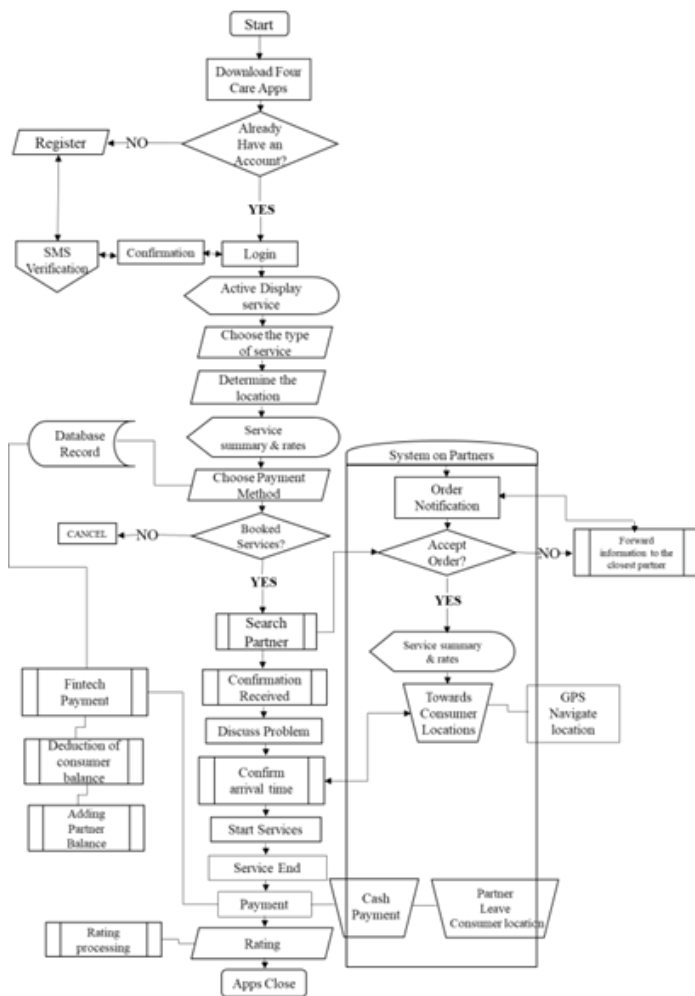


Figure 1. Four Care Application Service Process

B. Technology Process

As a company that focuses on digital start-up, information technology systems become a very important factor for the continuity of Four Care's business [9]. Here, the technology that will be used in the Four Care application, we will explain the process flow that occurs from the

front end to the backend where the technology that we will emphasize and become the core of this business is the backend literature [10, 11]. The discussion on the frontend view and database will be more focused on applications in users and partners application base. Here, backend side will emphasize the entire company's operations from recruitment to programming with artificial intelligence-based [12].

C. Front End Technology

Front end technology is broadly an application display which in this case we will divide into 2 categories namely consumer and Partner display. The front-end view is a consumers and partners focuses on several stages as we explain in Table II [13].

Table II. Display of Front End Users and Four Care Partners

FRONTEND TECHNOLOGY			
NO	PARTNER	NO	USER
1	Login	1	Login
2	Customer request	2	Register
3	Imap	3	Services request
4	Customer data (from backend AI)	4	Search partner
5	Service duration	5	Payment
6	Request patient information	6	Rating
7	Payment		
8	Rating		

Source: The table is processed by itself based on the Four Care application display plan

The consumer front end display includes a) Login. b) Registration. c) Request for service. d) Search partners. e) Payment f). Rating (see Figure 2)



Figure 2. Display Applications for Consumers

The partner front end display includes a) Login. b) Customer request. c) Imap. d) Customer data. (from AI backend) e) Duration of service. f) Request patient information. g) Payment. h) Rating (see Figure 3)



Figure 3. Applications Display for Partners

D. Back End Technology

In the Backend Four Care process, it will fully use artificial intelligence through an integrated and integrated application. Back end technology that will become a strength for the Four Care business Our Four Care back end technology focuses on the stages mentioned in Table III.

Tabel III. Back End Stage Four Care

BACKEND TECHNOLOGY		
NO	TYPE OF TECHNOLOGY	TECHNOLOGY PROCESS
1	End User Technology	a) Smartphone Android Application
		b) Smartphone Ios Application
2	Data Base Technology	a) Cloud Computing
		b) Data Mining
		c) Big Data and Analytic
		d) Artificial Intelligence (AI)
		e) Smartphone Storage
3	API (Application Programing Interface)	a) Google map
		b) Google place
		c) waze
4	Payment	a) OVO
		b) Gopay
		c) Firtech
		d) Bank
5	Customer Services	a) Social Media
		b) Website
		c) Call Center
		d) Chat Both

In this back end technology over Four Care focuses on superiority of data base technology where the main process is extracting data using statistical methods and mathematics to utilizing the latest artificial intelligence technology according to experts. The purpose of mining this data is to carry out filtration and extraction and identify data for certain information relating to a large database. One of the functions in data mining to obtain a prediction function from extracting data that will find certain patterns that can be known from the variables in the data. The obtained pattern can be used to predict other variables of unknown value or type. In this case it certainly helps Four Care to better understand its consumers. The next function is description features. The purpose of this description features to separately understand about the observed data. So by doing the data mining process, big data and analytical and artificial intelligence is expected to be able to know the behavior

of the data which is can be used to determine the tendency of the characteristics on data question. In this case, the characteristics of users of Four Care applications following the dummy form for the backend and artificial intelligence applications as shown in Figures 4 and 5.



Figure 4. Results of Consumer Information Data Processing in Partner Applications

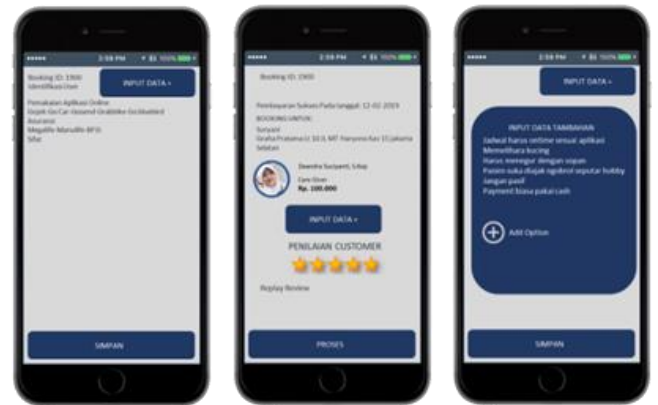


Figure 5. Result Support Data Input Consumer Information by Partners

4. CONCLUSION

To ensure the company continues to grow and maintain customer confidence in the products offered, the company will continue to develop technology both in terms of investment and the use of technology functions to continue to compete in the market and launch new features to add value to the product and increase the number of users divided into four stages as follows: (1) The preparation phase is the period where the operational division designs and analyzes the appropriate business process, implements technology and seeks partners to work together if needed. (2) The Launch Phase is the period in which the company releases the product to the market so that users can get it through predetermined channels. (3) After the product goes through a launch period, the company continues to monitor these features and conducts regular maintenance and evaluation to ensure the features can run well and continue to develop to achieve the best results. (4) This application technology process will continue to develop along with technological advances that are in line with the pattern of consumer activity that is also changing.

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