Developing Digital Application to Improve Business Process Sustainability in An Indonesian Fast Moving Consumer Goods Company

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Abstract. In the era of digital disruption, the main problem facing many companies is how they can keep up to date with technology and maintain their business sustainability. Manufacturing industry must immediately carry out digital transformation that leads to business process efficiency, better customer relationship management, as well as increased customer satisfaction and fast moving consumer goods industry was no exception. This paper aims to develop a mobile application development that specifically designed to serve consumers of an Indonesian Fast Moving Consumer Goods company. This company manufactures nutritional products for pregnant and lactating mothers. The mobile app is under development process and expected to be a digital communication hub between the company, the company’s Enterprise Resource Planning system and its customers as well as an innovative marketing toolkit for their sustainable business growth. Moreover, the app is designed to become an Omni-channel Retail application that allows consumers to get their products from the company’s various distribution channels, such as e-commerce, modern markets, traditional markets. This will streamline and integrate the shopping experience across channels.

1. Introduction
PT. ETH is a fast moving consumer goods company engaged in the field of Early Life Nutrition. PT. ETH produces formula milk as a companion to breast milk, formula milk as a companion to the growth and development of children, as well as additional nutrition for pregnant women. Marketing of PT. ETH is carried out through a network of traditional markets and modern markets. PT ETH attracts consumers by creating marketing campaigns which are promoted through various commercial advertisements on television, print media and social media. In an effort to support the company’s mission to create balanced nutrition for society, PT ETH consistently targets C and D segment of consumers who are middle-class economies. With the implementation of this strategy, the PT ETH managed to gain 40% of the milk growth market for children in Indonesia. PT ETH also noted that the overall sales of products were stable in the last 5 years.

However, PT ETH needs to be aware that sales stability has never guaranteed the company’s business continuity. Although initially it looks profitable, a stable number of sales will not be able to cover the operational costs of the company which will increase faster than expected each year. PT ETH needs to make a breakthrough strategy, direct business activities that keep up with technological developments and consumer characteristics.

In the current era of disruption, the main problem facing many companies is how they can sustain their business and grow sustainably. It's not enough to just be sustainable, the most fundamental challenge is how companies can embrace and engage consumers to achieve success in the
future. Because now digital technology has changed consumer habits drastically. With digital
technology, consumers are starting to move all transactions into their smart phones. Starting from
transferring savings, bill payments, purchasing phone credits, transportation tickets, culinary, selling,
shopping up to finding a life partner, all can be done via a smart phone. Therefore, people expect
consumer goods companies are able to present relevant content when they want it, where they want it,
and displayed on the devices they carry. This is supported by Nielsen's research and Google in 2017
regarding the interaction of Indonesian people with e-commerce. The research shows that 94% of
smart phone users tend to use mobile sites for commercial purposes [1].

The shopping trends of the Indonesian people in industry 4.0 era are constantly changing and
beginning to switch to digital [1]. PT ETH must immediately carry out digital transformation which
leads to better management of relationships with consumers, increased customer satisfaction,
consumer experience and increased effectiveness of business processes. If it is too late, then the
market share of PT ETH in Indonesia will be eroded and PT ETH will be unable to compete with other
companies that are move faster to adopt digital technology to understand their consumers' needs.

One of PT ETH's efforts to improve the effectiveness of business processes is to use the Sales
Force Automation application in their Enterprise Resource Planning (ERP) system through product
distribution process. This ERP system module was modified and transformed into mobile application
that is used by PT ETH sales agents to simplify the product distribution process to get to the network
of modern shops, such as hypermarkets, supermarkets, and minimarkets whether connected as a
national franchise or stand alone as regular stall. Furthermore, in order to increase the number of sales
and distribution efficiency, PT ETH encourages the volume of purchases by modern store networks by
providing promos and price discounts for certain purchase volumes. Distribution relationships between
PT ETH, official distributors and modern store networks are also managed through payment
procedures, where modern market networks get the convenience of being able to pay on time.

The ease of distribution facilities as mentioned above cannot be enjoyed by traditional market
players, such as grocery stores, small shops, kiosks or booths. Traditional market players generally
only make purchases as limited as their store needs. Individual store businesses that are owned and
managed will be difficult to compete with modern market networks, because traditional market players
do not have the advantage of modern market players, namely the volume of purchases.

However, traditional market players as the spearhead of PT ETH's product marketing should not
be abandoned. PT ETH needs to solve this problem considering that the marketing target of PT ETH
products is middle class consumers and 95% of the marketing channels of PT ETH are in traditional
markets. PT ETH needs innovative solution that can improve connectivity between consumers and
traditional market players. Therefore, PT ETH's business process transformation with the
implementation of digital processes involving consumers, distribution channels from e-commerce,
modern markets to traditional markets become a necessity.

2. Literature Review
By adopting digital technology, companies can listen to consumer desires, involve consumers in
business processes, introduce product innovations, open new marketing channels and at the same time
provide opportunities for companies to conduct business operations through data analytics and
automation [2]. The development of a mobile application specifically designed to serve consumers is a
must. The mobile application can be a liaison between companies and its customers and become a
marketing tool for sustainable products [3]. Mobile application should also act as an Omni-channel
Retail application that will enable consumers to get products from various distribution channels, e-
commerce, modern markets, traditional markets, online and at the same time get an integrated
shopping experience [4].

2.1. Enriching Customer Experience
Mobile application will bring companies with consumers so that consumers will be given
extraordinary experience [5]. Consumers will feel cared for and involved in companies business
process directly through the application. This can be achieved from the features contained in the
application, such as the search feature of the nearest store that sells products that makes it easier who
live in new environments to find their products. For example, PT ETH customers can use the mobile application's feature of the closest maternal and child health service that allows consumers to get the nearest health service according to the location of the consumer. Shop search services and maternal and child health services will add to the consumer experience in using the application and can increase consumer confidence.

2.2. Transforming Operational Process
Companies can take advantage of digital technology that has now been developed to transform operational processes so as to increase efficiency, productivity, and innovation in the business process [6]. The use of mobile application will make it easier for companies in gaining the advantage of digital operations [7]. For example, one of the features under development is the mobile application feature of a reminder. This feature allows customers to get a reminder that the usage period for one product is up and the time to change to another type of product.

2.3. Reinventing Business Model
Digital mobile application can be a new business model in selling products from companies. With mobile application, there is a product delivery feature from companies by stores to customers or consumers [8]. The old business model of traditional stores is to wait for consumers to come to their stores, but with the online purchasing feature found on the application, small shops get the opportunity to make business changes, namely by accepting online orders contained in the application from the company [9]. Through digital application, companies will transform a conventional business model into a business model that follows the development of digital technology [10].

3. Research Methodology
The research conducts in the corridor of supply chain management in Indonesian Fast Moving Consumer Goods and information system that considers several aspects distribution, marketing and system development. The system design is proposed in the following steps: system requirements, information flow, package overview, system architecture and design of the mobile-apps menu.

4. Result
The mobile application developed will entail a system requirement that supports the application to run properly. Likewise, the proposed mobile application must include a system requirement so that the mobile application will be able to do its job properly.

4.1. Information Flow
4.2. Information flow is the first step in starting a mobile application development. This is a vital role because a mobile application requires a lot of information and data that is accessed by users or more precisely consumers and that information is information provided by the company [11]. Poor information flow will result in a reduced user experience when they try the application for the first time. Not only that, the user wants the latest information from the company itself, so that the company is also responsible for providing information that is valid for the user [12]. Information flow from the use of my ETH application can be seen in Figure 1. Users will get valid information directly from the PT ETH ERP system database. The Database will provide users with sufficient data to help them get a different experience when using PT ETH mobile application, like getting information on a store that sells PT ETH products, how to get them and various useful information such as closest maternal and child health services.
6. **Figure 1.** Information flow design

7. Figure 1 illustrates that consumers who use my ETH application and how they will use a smartphone that is connected to an internet connection to get the latest information from PT. ETH, such as product information and service features provided. PT. ETH as the content provider will have the full role of the application will regulate how information is provided to consumers or users via their smartphone. If consumers want to purchase through my ETH application, they will get seller data information from large and modern markets to retailers or traditional stores. All information obtained by consumers through my ETH application, is processed and received by the web server and the ERP system. The web server will also receive information provided by PT. ETH is stored in a database and has a direct connection with Global Positioning System. When consumers want information from PT. ETH, the command received by the web server will be processed so that it can retrieve data from the ERP system database of PT. ETH and is given to consumers or my ETH application users on request.

7.1. **Requirement recording**

Supporting system requirements in order to run well is a vital part of making the system. After knowing how the system requirements have been made and the flow of information in PT ETH mobile application, a use case diagram is created that illustrates the requirements of PT ETH application system [13]. PT ETH mobile application system needs are described using two use case diagrams shown in Figure 2 and Figure 3, to illustrate the main features of existing mobile applications and web-service services.

8. **Figure 2.** Use Case Diagram for ETH mobile Application
The use case diagram in Figure 3 has a role to illustrate how my ETH mobile application processes orders given by consumers to access available features. My ETH mobile application will forward consumer orders and access the database to get information as desired by consumers. The database used contains information provided by PT. ETH to be accessed by consumers.

9. **Figure 3. Use Case Diagram for ETH Web Service**

9.1. **System requirement**
PT ETH mobile application uses Java Async Task to be able to connect with web service services, so users can send their requests [14]. The mobile application is designed under Android REST Service on functional web services for processing requests from users, updating databases and returning them in response to users [15]. Java Async Task in the application will handle data responses that are returned and updates the application interface according to user requests. While the database used has a server center on the PT. ETH headquarter. Therefore, the data will be automatically synchronized with PT ETH application. For example, when a user registers an account on the company's site, then in my ETH-application the user does not need to register again. Because user data already exists in the database.

10. **Figure 4. Flow of Information between ETH Apps, Database and Web Service**

11.1. **System architecture**
The system architecture of my ETH application built is shown in Figure 5. The ETH application development uses a framework with several additional libraries (external libraries) to implement the features it offers.
12. Figure 5. Flow of Information between ETH Apps, Database and Web Service

The library includes CameraKit, Alerter, Maps API, ImageSlider, Zxing, CardView and Webkit. The functions of each library are:
1. CameraKit: used to access the camera on a smartphone
2. Alerter: used to make notifications or reminders that will later appear on the smartphone status bar.
3. NearbyPlace: used to access the Maps API which will later use the nearby place feature for searching nearby places.
4. ImageSlider: used to make slideshow view on the application made.
5. Zxing: used to scan / scan barcodes embedded in an activity.
6. CardView: used to create a layout / display of a product catalog in the form of a card.
7. Webkit: used to display content in a browser window and apply it to the web browser feature.

Moreover, the internal library used in the application is SQLite. SQLite is used to store application user data and process other queries [16]. When PT ETH application is run, all the libraries used are translated into the Dalvik virtual machine language by utilizing the Linux Kernel features, such as memory management and multi-threading. In this case, the PT ETH mobile application will be able to run several available activities, such as doing a QR scan, call camera functions, provide notifications, and other features [17][18].

14. Discussion
The era of digital disruption is a new challenge for most companies to maintain their business. Various innovations are made so that the company is able to embrace and engage consumers in the business process to achieve success together [19]. One of the big companies preparing to face the challenge of digital disruption is PT. ETH. PT. ETH can prepare itself by developing applications on smart phone in the form of PT ETH mobile application. The tendency of consumers to switch to smart phone to conduct transactions also inspires the presence of purchasing features in my ETH application.

PT ETH mobile application aims to engage consumers in their business processes and provide a different experience using PT ETH mobile application. Consumers who want to become users of the application will create an ETH My Children account and can be done through the application or the website of PT. ETH. This system can run because PT ETH application is integrated with the database from ERP system database. Furthermore, this application is designed with several features that need to be taken into account, namely the reminder feature of the time of giving milk and the time of change of milk type according to the recommended age. Another feature is called "Sekitarku" or "My Surroundings", this feature will utilize the GPS location of consumers to provide advice on stores that sell the nearest ETH products within a radius of 10 Km. The "Sekitarku" feature also has the ability to notify the location of maternal and child health services within a radius of 10 Km.
Online purchases made in PT ETH-application is developed into 3 categories, that is, directly come to the store based on recommendations on maps, purchases from nearby stores and purchases using E-commerce. Purchases using E-commerce will connect users to the application with several e-commerce sites located throughout Indonesia. This certainly gives wider choices for consumers to choose products from the right place [20]. The purchase feature from the nearest store will help users get products from PT. ETH without going out of the house or office. This is a solution for parents who have children who do not want to be left behind or for busy parents. This feature runs when the user has decided to use the buy feature from the nearest store, and PT. ETH will broadcast to companion applications owned by shops under the auspices of PT. ETH Inter Delivery Service. The store that receives the broadcast has the choice to take it or ignore it, this is entirely left to the shop owner. Stores that receive one broadcast have the obligation to deliver the product to the address that has been filled by the consumer.

15. Conclusion
Digital innovation strategy will help business models and marketing of traditional shops so that they are able to keep up with business developments in the digital era. The use of my ETH application will help PT. ETH in gaining consumer trust in the era of digital disruption. Consumers who have a tendency to use smart phone in their daily lives, will try my ETH application. With the features of the ETH application, consumers will get extraordinary experience from the use of the application. This makes consumers who are also ETH-my application users feel they have a personal assistant to take care of the needs of early life nutrition products produced by PT. ETH.

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