Analysis and Design of Enterprise Architecture in The Implementation of Digital Transformation at Village Tourism of Kampung Patin Kampar Regency using TOGAF

Fahmi Iqbal Firmananda[1]✉, Zulfan Ependi[2], Hanantatur Adeswastoto[3]
Program Study of Digital Bussiness, Universitas Pahlawan Tuanku Tambusai, Riau 28412, Indonesia [1][2]
Program Study of Civil Engineering, Universitas Pahlawan Tuanku Tambusai, Riau 28412, Indonesia [2]
DOI: 10.31004/jutin.v7i1.21332

✉ Corresponding author:
[fahmiiqbalfirmananda@universitaspahlawan.ac.id]

Article Info	Abstract
Keywords: *Keywords:* *Catfish* *Digital Transformation EA* *MSME'S* *Shredded Fish* *TOGAF*	The development of information technology helps the community, entrepreneurs and MSMEs. This research was conducted in Kampung Patin, Kampar Regency. This research aims to create an Enterprise Architecture (EA) TOGAF design for MSMEs in Kampung Patin, we all know this digital transformation is useful in increasing the business value of the surrounding economy. there is a special implementation in utilizing this role, building financial applications, raw material stock applications because these MSMEs are able to produce 34,000 tons to 45,000 tons of catfish every month. The processing of catfish is like regional souvenirs, namely: catfish meatballs, catfish nuggets, catfish batagor, catfish fillets, and catfish skin crackers. innovation like this alone is not enough to require technology and digital transformation in running a business and promoting processed catfish. the results of the study were designed in the form of an enterprise architecture blueprint for UMKM Kampung Patin as an internal guidebookincrease the effectiveness and efficiency of digital transformation in these MSMEs.

1. INTRODUCTION

In the latest developments, society is in a transitional period with the development of information technology. Changes and rapid development of technology are not an obstacle for people to transform, technological developments make it easier for people to get information that was previously manual until now it has become digital. Business and industry players are asked to play an active role in running the business wheel to survive in this era of digital transformation.

Entrepreneurs are defined as perpetrators or MSME owners who have an important role in boosting the economy, especially in their own region, because entrepreneurs create new MSME-based jobs. MSMEs carry out buying and selling activities to increase income for the community and local government.

UMKM Kampung Patin is located in District XII Koto Kampar, Kampar Regency, Riau Province. The village of Kampung Patin is a tourist spot for Kampung Patin, based on the results of interviews with local residents, every month this village is able to produce 34,000 to 45,000 tons. This catfish has high nutritional quality for growth. The processed catfish products are in the form of several processed foods such as catfish meatballs, catfish nuggets, catfish batagor, catfish fillets and catfish skin crackers. The preparations are in the form of food seasonings such as shredded catfish. Innovations are not enough in the development of a business that requires digital transformation in providing information to the wider world.

In the marketing process, digital transformation alone is not enough to run the business. Some obstacles such as humans, lack of understanding in product marketing, lack of basic human resources. According to Anggraini 2013, an obstacle experienced by business actors is the human factor in thinking patterns and ways in and out in marketing a product, then there is a shortage of human resources. Solutions needed such as enterprise architecture are structures that are used as a benchmark in digital transformation strategies. According to (Bernard, 2005) Enterprise architecture is a work and practice in the world of management that has high value in improving performance, integrating with business strategies, and the technology used. Enterprise architecture, namely in the form of a logical, comprehensive and holistic approach in designing and implementing systems and components simultaneously. In the implementation of Enterprise Architecture, it is hoped that it will be able to help MSMEs in digital transformation.

2. METHODS

2.1. Research Location
The Location of this research is ini Kampar district, Riau Province

2.2. Conceptual Method
The method used in this study uses a research method based on the TOGAF ADM concept, namely input, process and output. In the research conceptual model used to describe MSME businesses in designing Entreprise Architecture. The input component consists of identifying problems with UKM Patin Fish as souvenirs, limited supply of raw materials and production of goods. Packaging products are not yet known globally, financial management is not well recorded, there is a lack of innovation in product packaging and a lack of selling power in competition for similar products. The process component process consists of processes related to this research. then in the third stage, namely the output component process consisting of the research results it produces Blueprint Company Specific.

3. RESULT AND DISCUSSION

3.1. Fase Preliminary
In this early stage, the design of a catalog form is based on a business need or strategic business objective of the MSME. This preliminary contains the principles used by the business architecture phase, data architecture phase and applications. The preliminary phase aims to determine the appropriate architectural capabilities through a descriptive principle CA catalog to support the design of the EA.hould you need sub-headings, use this style as the level-1 sub-heading. The paragraphs following the sub-heading level-1 should be formatted in this way.

No	Architectures	Principle	Description
1	Business Architecture	Product Improvement	Product improvement continues to increase customer interest in the products offered
		Product Quality Improvement	Improving product quality by using quality ingredients, processed with production standards and packing unique and neat items
		Product Innovation	Innovation of a product is the ability of a business actor to form an idea, ideas, and create a product that can generate economic value.
2	Data Architecture	data accuracy	Data be must available
			Held accountab e the truth
		Data Integration	Data owned by Kampung Patin can be connected between users to support their business and avoid data redundancies

		Accessible Data	Data can be easily accessed by users according to their authority
		Application Usability	The application used has that functionality high, user friendly and good documentation
3	Application Architecture	Application Security	Application security is required by setting the level user authority
		Application Accessibility	as a whole on an ongoing basis because the application can function with the available platforms
		Technology changes	In supporting business operations, technological changes are needed to suit the business needs of MSMEs
4	Technology Architecture	Technology Security	The technology used must be maintained in order to avoid risks that might occur
		Interoperability	A user interface on the system must be able to be used to interact and function with other systems, used now or in the future without restrictions

Table 4.1 Fase Preliminary

3.2. Architectures Vision

The architecture vision phase is the first stage in the design cycle of an EA, based on the TOGAF ADM method. This phase describes what business values are owned by top level management (Top Level Management). Artifacts that will be produced in this phase include Value Chain Diagrams and Solution Concept Diagrams picture explained in the below.
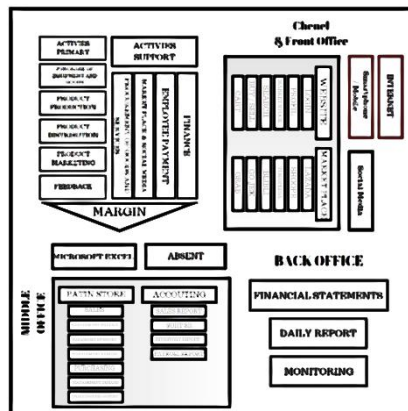

Figure 4.1 Value Chain Diagrams and Solution Concept Diagrams

3.3. Architectures Business

The Business architecture phase explains about MSMEs in carrying out their business functions in achieving targets and how to communicate well. The following will describe the business Driver / Goal / Objective in business relations explained in the table below.

No	Driver	Goal	Objective
1	Increasing the efficiency and effectiveness of the use of raw materials	Able to meet raw materials for product manufacture consistently	Maintain consistent and stable quality of raw materials and selection of vendors
		Structured financial records	Using financial applications in the recording process
2	Increase profits	Able to carry out product standardization Product standardization is met	Product standardization is met
		Increase market share, products are well recognized by customers	Sales media optimization
3	Improve product quality	Innovate according to customer interests	Improve the management of the number of product stocks in warehouses. Innovate according to customer interests. There is a grouping of sales data based on product and consumer categories, making products the company's characteristics.

Table 4.2 Architctures Business

3.4. Architectures Data

In the Data Architectures Phase, one of the outputs from the data architecture application is explained in the table below.

No.	Description	Type of Data	Data entity
1.		Data Transactional	Number
2.		Data Transactional	Invoice
3.		Data Primary	Customers
4.	Aplication Management Finance and Sales	Data Transactional	Sales
5.		Data Transactional	Discount
6.		Data Transactional	Promotion
7.		Data Transactional	Report

Table 4.3 Architectures Data

3.5. Archictures Information System

In the Architectures Information System Phase, it explains how the Information System targets to achieve the goals of MSMEs. What is described is 2, namely the Data Architecture and the Data Architecture dissemination diagram, which describes the relationship between entities. The following is a picture of the application communication diagram between applications.
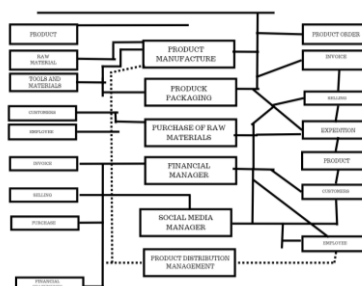

Figure 4.2 Application Communcation diagram between applications

3.6. Architectures Aplication

In the Architectures Application Phase, it explains how the form of the application will be needed in the future. The output in this phase is the Application Portfolio Catalog described in the following table:

No	Application Physical Component	Description
1.	Warehousing Management Application and Vendor Application	Used to manage goods in the Warehouse and manage vendors
2.	Financial Management and Sales Application	Used to manage finances and sales
3.	Website	Used as a medium for sales and marketing of MSMEs
4	Social media	Used as social media sales and marketing of MSMEs

Table 4.4 Architectures Aplication

3.7. Architectures Technology

At this stage describes the design of the technology architecture that is needed and that will be developed to realize the architecture Vision in defining the hardware, software, and network infrastructure needed to integrate the information system architecture artifacts developed in the following Technology Portfolio Catalaog table:

No	Name Product	Vendor		Type	Description
1.	HP PC ALL IN ONE PAVILION 27 i7-12700T	HP		PC	Used as a tool to manage, and work on documents
2.	Printer Epson Ink Tank Eco Tank 15160	Epson		Printer	Used as a printing scanning or document copy
3.	UPS ICA CT1682B 3200VA 1600W KOMPUTER	ICA		UPS	Used to help maintain the stability of the electric current to and from the device when the power goes out. This keeps the condition of the electronic components of the device stable
4.	ISP Router	TP Link		Router	Used as a media connection between the user and the ISP provider
5.	UniFi Access Point Lite 6 (U6-LITE-US)	UBIQUITE		Acces point	Used This network device allows Wi-Fi devices to connect to a wired network. They form a wireless local area network (WLAN).
6	Google Drive	Google		Mail Server	Used as online data storage media with premium capacity
	Gmail	Google		Mail Server	Used for sending and receiving email functions. internally or externally
	Apache	MySql		Mail Server	Used for database providers that are integrated with website-based server applications
	Major	Linux		mail server	Used as an open source based operating system
	MX Linux	Linux		mail server	Used as an open source operating system for Apple vendors
7	Database Server	Mysql		Web Server	Used as a software database provider to communicate with applications
	Phyon	Php		Web Server	Used as a programming language in website use
	IdCloudHost	Domain		Web Server	Used as a computer program in storing IP

Table 4.5 Architectures Information System

4. CONCLUSION

Based on the results of the EA design for the UMKM in the Patin Village, it produces a "Blueprint Company Specific" with a target in revenue and digital transformation in the field of information and communication technology. The objectives given from the results of this study are application design proposals covering financial applications, buying and selling transactions, managing raw materials, managing finished materials. The application is a marketplace as a sales medium. And carrying out digital transformation using social media as an electronic medium for disseminating information that easily brings increased business value. with a website and the addition of social media, warehouse management applications, and financial management applications to increase the effectiveness and efficiency of these MSMEs.

5. REFERENCES

Anggeraini, Yentri, Abdurrachman Faridi, Januarius Mujiyanto, and Dwi Anggani Linggar Bharati, 'Literasi Digital: Dampak Dan Tantangan Dalam Pembelajaran Bahasa', in Prosiding Seminar Nasional Pascasarjana (PROSNAMPAS), 2019, II, 386–89

Bernard, A. (2005). An introduction to Enterprise Architecture (2nd ed). United States of America: Author House

Bernard, S. A. (2020). An introduction to holistic enterprise architecture. Author House

Chen, Ying-Yu Kerri, Yi-Long Jaw, and Bing-Li Wu. "Effect of digital transformation on organisational performance of SMEs: Evidence from the Taiwanese textile industry's web portal." Internet Research (2016).

Danuri, M. (2019). Perkembangan dan transformasi teknologi digital. INFOKAM, 15(2).

Group, T. O. (2020). Togaf introduction. Retrieved fromhttps://pubs.opengroup.org/architecture/togaf91-doc/arch/

Muhammad Hasan, dkk (2021). Transformasi Digital UMKM Sektor Kuliner di Kelurahan Jatinegara, Jakarta Timur, JBK, vol 17 Issue 2

Putri, S.M., & Sumitra, I.D. (2020). The effect of using a digital wallet for small business the effect of using a digital wallet for small business. IOP Conference Series: Materials Science and Engineering, 879, 1-6.

Rafiah, K. K., & Kirana, D. H. (2019). Analisis adopsi media sosial sebagai sarana pemasaran digital bagi UMKM

makanan dan minuman di jatinangor. Jesya (Jurnal Ekonomi dan Ekonomi Syariah), 2 (1), 188 198

Rahmania A.A, Irfan Darmawan, (2019). Transformasi Digital bagi UMKM dengan Perancangan Enterprise Architecture Menggunakan TOGAF ADM, TIARSIE Vol.16 ISSNp 1411-2248 ISSNe 2623-2391

Reid, T. N., MacDonald, E. F., & Du, P. (2013). Impact of product design representation on customer judgment. Journal of Mechanical Design, Transactions of the ASME, 135(9), 0910081-09100812.

Ruswanti, E., Herlambang, B., & Januarko, M. U. (2016). The effect of brand, design, and price on intentionto purchase mediated by quality perception at sport shoes X. Journal of Economics, Business & Accountancy Ventura, 19(2), 249-258 Kubu Raya. Jurnal Khatulistiwa Informatika, 5(2).

Rosa, A. S., & Shalauddin, M. (2011). Modul Pembelajaran Rekayasa Perangkat Lunak (Terstruktur Dan Berorientasi Objek).

Rozaq, A., Lestari, K. F., & Handayani, S. (2015). Sistem Informasi Produk Dan Data Calon Jamaah Haji Dan Umroh Pada Pt. Travellindo Lusiyana Banjarmasin Berbasis Web. Jurnal Positif, 1(1), 1–13.

Saputra, R., Widodo, A. W., & Brata, A. H. (2018). Pengembangan Sistem Rental Kamera Online. 2(6), 2221–2226.

Sarwono, J., & Prihartono, K. (2012). Perdagangan Online: Cara Bisnis Di Internet.