Abstract: To be able to become a music school institution that is superior to other music schools, assistance is needed from implementing SI / IT in its business processes. Both in the main activity and supporting activities. Enterprise Architecture Planning is very helpful in making planning for implementing IS / IT better, so that the application of IS / IT in the company's business processes can run according to the company's vision and mission. Zachman Framework is one method that can be used to help do Enterprise Architecture Planning. Zachman Framework will map the entire system in the company based on 6 different points of view along with 5W + 1H. Therefore, this research is expected to provide input to companies to implement IS / IT in accordance with business processes. The results of this study are in the form of proposals for the formation of applications that will be applied in the company's business processes, both the main activities and supporting activities.

Key words: Zachman Framework, Enterprise Architecture Planning, Business Process

1. Introduction

The development of technology and information that is increasingly rapidly affecting people's lifestyles. From what is done manually to automatically and by using a machine. This technological progress is put to good use by people from all groups. Changes in the environment and the needs of businesses are changing rapidly which forces executive management to have up to date information every time, so they can manage their business more effectively. Companies must be able to make information available at the organizational level, not just at the business unit level. Optimizing information at the organizational level requires the integration of all information held by business units (Utomo, 2014).

Computer media is currently used by almost everyone in all fields, both increasing the ability of computers in terms of physical form, facilities, software and hardware that support so that, it can be said that computers are now the most important thing in data processing. The increasing need for data and information in business functions carried out by a tertiary institution is a driver of the utilization of information systems (Supardi, 2016). Computer media is currently used by almost everyone in all fields, both increasing the ability of computers in terms of physical form, facilities, software and hardware that support so that, it can be said that computers are now the most important thing in data processing.

Enterprise is a group of organizations that have some general goals / principles and / or a basic line. Cantata Music School is an enterprise engaged in the field of music education. It said enterprise because it has 5 branches that are divided into 2 major cities in Indonesia, and 10 official partners in various cities in Indonesia. In contrast to music courses, the Music School teaches better and more beautiful music playing techniques that are based on deeper theoretical teaching and a tiered examination. The School of Music generally has several business units such as: general affairs, finance, staffing, planning and information systems, publishing and publication, as well as the main activities for admission of new students, academic operations and graduation.

2. The problem identification

To be able to reduce the problems of existing business processes and be able to compete and excel with other companies, the Music School Institute should apply more and integrated IS / IT in various fields of business process activities in the company. In modern organizations, The use of information technology in IT plays a very important and significant role, very large investment funds are spent by organizations in building their IT systems to compete in the global market (Gunawan, et al, 2019) & (Kotusev, 2018).
The importance of data integration in a large scale company called enterprise has been discussed in various references. The availability of well-formatted data in a well-managed data source is also the goal of organizational development. Realizing this requires an accurate selection of strategies and planning (Lankhorst, 2015). The focus of this research is to discuss about enterprise architecture using the Zachman Framework which produces Data Architecture, Application Architecture, and Technology Architecture.

The problem with this Music School lies in inter-branch data integration, besides the absence of data integration, the system is out of sync with each other. One of them, in the initial process of procuring the exams conducted every semester, it always starts with manual inputs that are not integrated with one another. In addition to the system at each branch, the system for partners is still carried out by manual input in the administration of examinations and printing of certificates held, so the input data is always different in each semester.

3. Enterprise Architecture Using Zachman Framework

Architecture is the structure of components where each of them is interrelated and the principles and coherence in design that always evolves at any time (Saputra, 2015). Enterprise is a part of the real world that is implemented into a database. Usually this enterprise is a form of management of the organization (Nogueira, et al, 2015). Availability of well-formatted data, in one data source well managed is also the goal of organizational development. To realize this it is necessary to choose an accurate strategy and planning (Irfanto and Andry, 2017).

Enterprise information system architecture itself can be seen from aspects and perspectives using the Zachman Framework. The Zachman Framework was introduced as a standard that has been used by successful organizations worldwide. Examples: Johnson and Johnson, Federal Express, Hewlett-Packert, Microsoft. The major of this research is to discuss about enterprise architecture using the Zachman Framework which produces Data Architecture, Application Architecture, and Technology Architecture (Slameto, et. al, 2012).

Zachman Frameworks is a framework created to get a broad corporate architecture. Zachman's framework is simple, and is logical which can help manage the infrastructure information of a company.
Using Zachman Frameworks, the company is modeled by answering six questions namely: What? How? Where? Who? When and Why? These six questions are viewed from six different points of view. Zachman Framework sees an information system seen from six main aspects, namely: Data, Function, Network, People, Motivation, and Time as well as six different perspectives, namely: Planner, Owner, Designer, Contractor, Subcontractor, and Functioning Enterprise. These different aspects and perspectives are represented in a 6x6 matrix, i.e., columns represent aspects while rows represent different perspectives to explain the scope of the company to be modeled (Tyas, and Tarmuji, 2013).

We chose the Zachman Framework because it is easy to use in this Music School Institute which belongs to the category of medium-sized companies that have branches and hundreds of employees spread all over Indonesia.

4. Research Methodology

4.1. Types Of Research

This research was conducted using a descriptive method, because when conducting research related to data, analysis and interpretation of the meaning or description of the data obtained from sources.

4.2. Data Collection Procedure

Figure 2 is an overview research methods on Cantata Music School.

![Figure 2: Research Methods (author)](image)

This research methods the required data in several ways, namely:

- Literature Review, Researchers gather information related and needed for research.
- Observation/Interview, Interviews were conducted with workers from the Cantata Music School who understood and understood the business processes contained in the company. Observations were made at Cantata Music School, North Jakarta. This aims to be able to analyze the needs of information systems architecture design in the company.
- Mapping Zachman Framework

The framework used is the Zachman framework, which consists of: 1) Planning perspective (Objective / Scope): setting context, background, and objectives, 2) Owning perspective (Business
Model / Owner's View): establishing the conceptual model of the enterprise, 3 ) Designer's perspective (System Model / Designer's View): determine the information system model while bridging what the owner wants and things that can be realized technically and physically, 4) The builder's perspective (Technology Model / Builder's View): sets are used in overseeing technical implementation and physical, 5) Perspective subcontractor (Detailed Representations / Out of Context View): establish roles and referrals for those responsible for building information systems, and 6) Functional perspectives (Functioning Enterprise / Functioning System): represent user perspectives and tangible manifestations implementation results.

5. Demonstration of Resulting Architecture and Chosen Technologies

In this part is demonstrated the resulted technological architecture and specific technologies designed for the project related to the required principles.

5.1. Existing Application

There are a number of applications available at Cantata Music School to support ongoing business processes, including:

1. Administrative system for registering new students and has risen to the next grade
2. Logistics System, intended for data collection in and out of goods in the form of books and ballet needs.
3. Examination System, intended for examination purposes starting from the data collection of student examinees integrated with the administration system to check whether students have made payments or not, students who have paid school fees then have the right to take the exam by directly appearing on the announcement of the exam schedule and continuing on the next step is to print certificates for students who pass the exam.
4. Cantata web profile, introducing Cantata through a personal website accompanied by available promos, locations, telephone numbers, branch locations and partners, etc.

5.2. Solution Application

The following are the suggested applications from the author to the Music School Institute to support business processes based on the existing Value Chain.

Main Supporting Applications:

- Mobile CTStudent is a mobile application that is intended for students who are registered with the Cantata Music School Institute to get updated information about student data schedules, study, study length, teacher information, grades, activity information, promo information, number of attendance, consultation, exam announcements, finance and registration. This system is cloud based which means it can be accessed anywhere and anytime.

- CTeach Cellular, is a portal aimed at teachers where there are scheduled teacher meetings, class cancellation requests, class transfer applications, online chat with students, and contact lists of students and teachers.

- Web Profile is an application that supports Marketing / Sales which is one of the main business processes of the Cantata Music School Institute. Introducing products and services sold through the website, accompanied by attractive promos, programs, and many other things. The system’s recommission is in the form of system development or features on the website in the form of online registration, cantata services that are connected via email, online chat about questions, and registration of partners who want to join the cantata.

- CalcuCTSystem is an application that supports data collection services transactions carried out by customers when extending and paying school fees based on bills of payment for levels of study and majors, recording purchase of books made by students, and calculation of teacher calculations in teaching.
Supporting Application:

- SBScanner is an item detection application by scanning barcodes located in every item in the office. To detect the initial purchase, duration of use, and condition of the item.
- Teacher Grading is an attendance recap application intended for teachers who teach, and updates if the teacher is absent and will be replaced by another teacher.
- SMC Mobile Partner, application as a communicator for partners and Cantata to facilitate communication and service between the two parties.

5.3. Application Development

Web profile is one of the systems that have been used by companies, which is intended in application solutions it is suggested that there needs to be a system development that strongly supports business processes that are of concern to the company.

The following is a display of the web profile owned by Cantata Music School.

![Cantata Music School Web Profile Home Display](image)

**Figure 3: Cantata Music School Web Profile Home Display**

![Education Program Page Views On The Cantata Profile Web](image)

**Figure 4: Education Program Page Views On The Cantata Profile Web (author)**
In figure 3 and figure 4 it appears that the web profile is focused on introducing business products offered, existing promos, branch contacts, locations, Cantata partnerships (figure 5) and other introductions on music programs, study levels, and existing events.

Based on interviews conducted with the company, there is a desire from the management to develop the system in the form of features that facilitate registration for new students, registration for partners who want to join and some service features to help complaints from customers.

From the recommended system development suggestions, the following is the development of features applied to the web profile of the cantata:

- Changes in the appearance of the website, so it is more interesting to see.
- Additional online registration features, so prospective students who want to register for a music school can easily enter their data first without having to first go to an existing branch.
- Cantata service, in the form of questions or complaints to be conveyed and connected via E-mail.
- Online Chat, this feature is connected in real time to the School of Music so that customers can communicate better with the school.
- Partner Registration, if there are companies that want to join as Cantata partners, the company data can be registered online first, and then can be followed up by the company.

5.4. Hardware and Connectivity

For prototype solution was chosen standard server on Intel core I5 2.4 GHZ, dengan Mikrotikrouterboard RB 750 G

Specification:

- Dedicated internal memory is 8 GB, 2GB swapfile, direct attached disk memory 1TB, Intel core i5 Xeon(R) CPU E5-2420 0 @ 2.4GHz
- Internet connection speed is 10 Gb/s
- Server has dedicated IPv4 address and a hostname.
5.5. Operation System
The operating system chosen is a minimum of Windows 8 which can support the system itself. Design Windows 8 UI applications, which can be made from any programming language, such as: HTML / CSS, JavaScript, C, C++, C#, etc.

5.6. Perspektif Planner
In the first part of the perspective of the planner who is also often referred to as contextual architecture that explains one of the business processes at the Music School in the form of student admission and payment in general

1. What
This column describes the data presented from the planner's point of view. From the analysis of these data consists of: a) Registration Data is the identity data of prospective students, b) Data File is the data requirements for acceptance of new students, c) Upload Registration Data is the payment of registration from prospective students, d) Payment Registration is payment data that has been received from the Administration, e) Announcement is information on the announcement of admission of new students, f) Students are data of students who have registered at the School of Music g) School payments, are uploaded data that has already made school payments, h) Payment Data is data on student payments received financially, and i) How (Process). This column explains the process of accepting new students and paying school fees based on conditions

2. How
This column explains the analysis of the process of accepting new students and paying existing schools at the Music School effectively and efficiently which is an important part of the business process at a Music School.

3. Where
This column describes the location or place of the Music School which is easily and safely accessed, bearing in mind that the prospective students and students at the Music School are mostly children.

4. Who
This column describes the human resources that play an important role in the process of school admissions and payments, namely: a) the Principal receives reports, b) Administration manages prospective student data, c) finances processing financial payment data, d) Prospective Students make registration, and e) Students make school payments.

5. When
This column discusses the event or schedule of admission of new students and school payments will be made or includes: 1) Acceptance of new students each year, 2) School payments are made no later than the specified date.

6. Why
This column describes the vision and mission of the Music School that distinguishes it from music courses.

5.7. Prespektif Function Enterprise
In this point of view will describe the details of the functions and a detailed explanation of the new student admission information system and school payments making it easier for users and managers to run the system.

1. What (Data)
In this column, a draft is produced from data on admission of new students and school payments to
music schools, for example: a) Registration Form, and b) School payment card.

2. How (Process)

In this column will show an example of the results of a print out of the application that will be made
from the new student admission information system and school music payments.

3. Where (Location)

This column explains the need for network infrastructure that will be used in the new student
admission information system and school payments at music schools.

4. Who (People)

This column discusses users who will use the system of new student admissions and school
payments.

5. When (Time)

This column discusses the system design, design and implementation schedule. The schedule of
activities can be completed with Gant Chart, etc.

6. Why (Motivation)

This column discusses the standard operation procedures (SOP) in using the new student admission
information system and school payments (Payment Order) in music schools. It is expected that with a
good SPO, system development activities can run optimally.

6. Evaluation

From all data contained in this report, then that conclusion based on the analysis of business
processes at the music school, it can be concluded that in the current development where technology
has been highly developed, competition is getting tougher, more and more new Music Schools are
 popping up in various places with different and unique concepts requiring Music Schools to take new
steps to survive. The lack of business processes greatly affects the progress of the company, both in
the recruitment of new students, promotions and so on. Manual data collection has a very big risk for
the Music School which has a large number of students by utilizing technological developments to
support company performance.

7. Conclusion

For further development in the future, the researcher or writer will provide some suggestions that may
be useful and can help the Music School business process. Here are our suggestions:
• Utilizing technological developments in supporting company performance.
• To be able to implement the IS / IT as a whole that is related to the transaction process,
  registration and data logistics, it is expected that the company will employ some workers who
  have good skills in IS / IT
• Needs for future IS / IT workers are recruited.
• Improved systems that support business processes to be more effective and efficient.
• The need to develop themselves and take advantage of technological developments in
  supporting company performance.
• The need for opinions and criticism from customers and employees to improve the company.
• Observe developments in other Music Schools.
8. References


JEL Classification: M15