DESIGNING A HOLISTIC AND STRATEGIC MODEL FOR INDONESIA PRIVATE HIGHER EDUCATION

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Abstrak

The idea of this research is to create a holistic governance planning concept for Indonesian private universities, as well as architectural designs by elaborating Total Quality Management (TQM) with a higher education quality assurance system approach established by the National Accreditation Board for Indonesian Higher Education. Education (APT 4.0) is combined with the implementation of value creation-based private university strategies such as branding, R&D, technology, collaboration, customers, and public relations. In this study, the TOGAF ADM approach will be implemented to build the Enterprise Resource Planning (ERP) architecture for Holistic Governance of Private Universities in Indonesia using the Design Science Research (DSR) method. And when we made the ERP design, we chose three main entities (Main activities, Support, and Strategy), which resulted in 20 sub-entities, then determined the design of each entity in the form of graphs and flows. Furthermore, this research will design a network concept and a Blueprint for the Holistic Governance Design of Indonesian Private Universities.

According to the findings, the architectural design must be carried out with a common objective, based on the consistent implementation of Good Governance, the commitment of all university management and the academic community, the business processes that exist within the organization are actually understood, and able to identify the requirements of existing private universities completely and appropriately. Finally, the ERP model provides direction in developing a design for the university's Academic and Non-Academic Information Systems for data, applications, business, and technology.

Keywords: *Holistic management, governance, ERP, architecture, blueprints*

INTRODUCTION

Education is one of the attempts to improve the life of a society, and the existence of a culture is the pillar of a country's and state's future life. The education industry is presently striving to

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enhance higher education quality through more professional management. Some education experts even remark that education has transformed into a very good service sector that has never known of the term crisis. Some countries also monetize the increase in foreign money from the education industry, which is produced from income from international students. This argument is supported by data and facts demonstrating that an increasing number of international universities are providing learning services in Indonesia. As a result, competition among overseas higher education institutions is increasing

According to the World Trade Organization, education is one of the approved service trade sectors, which are organized into 12 categories. Government Regulation No. 60 on Higher Education, issued in 1999, regulates the Indonesian higher education system as the official institution in charge of educating people in conformity with existing educational standards [1][2].

According to the Law on Higher Education Number 12 of 2012, the Ministry of Education of the Republic of Indonesia defines higher education as a level of education organized by universities based on Indonesian national culture, and it is planned to work hard to create a learning atmosphere and learning process so that students can use their potential to acquire spiritual strength, self-control, intelligence, noble character, and skills that are shared by the community, and state [3]

Government Regulation No. 60 (PP) 1990 concerning Higher Education System Regulations regulates the implementation of higher education in Indonesia. As a result, higher education is one of the institutions that is officially responsible to develop students in accordance with the goals of national education, which is to fulfill the community's demand for experts and trained employees with various levels and types of competencies. The next generation of achievements has an essential key role in the aspirations of national development, and they must be maintained and developed of any kind periods [1][2].

Within the history, the current private university management model might be contrasted to the service business model. Governance of educational institutions, as well as management of other economic institutions, must be appropriately presented, with a focus on education as a "service product" to be delivered [1][3][4]. Internal stakeholders in private universities include students, professors, staff, foundations, providers, and other educational institutions. Furthermore, the university's external stakeholders include the government, professional organizations, and other social organizations. In Indonesia, a total of 4,444 universities are governed by the government with state universities and by the community through private institutions.

The private higher education service industry is now under competitiveness. Conceptually, the service industry emerged as a result of rapid changes in other factors, such as political changes related to globalization and new technological changes, which directly increased competition in the education service industry, thus requiring professional management in higher education administration [4], where the management of higher education institutions, particularly private universities, derives the share of the income from students. According to the American Institute of Fiscal Studies (AIFS), higher education governance is the key to success in building sustainability [5][6], and some countries have succeeded in making educational activities a source of foreign exchange [6][7], as evidenced by the increasing number of international universities in Indonesia c.

The number of private institutions in Indonesia is decreasing as a result of many quality-improvement policies (table 1). Various management strategies for educational institutions have been attributed to service business models that must be managed professionally while emphasizing education quality as a "service product." Private institutions are striving to

increase the number of students enrolled (in order to secure the long-term sustainability of their operations) while simultaneously enhancing the quality and standards of education services [1][5]. This is the issue for private institutions in terms of achieving quality and competitiveness through supporting quality, creativity, and innovation. [1] conducted a study in South Sumatera-area private universities on students' perceptions of educational service delivery performance, special abilities, competitive advantage, and student confidence.

As a result of several quality-improvement regulations, the number of private institutions in Indonesia is declining (table 1). Various management methods for educational institutions have been associated with service business models that must be managed professionally while maintaining prioritizing the quality of education as a "service product." Private universities are under effort to generate the number of students (in order to ensure the sustainability of their operations) while also improving the quality and standards of education services [1][9]. This is the challenge for private institutions in terms of generating excellence and competitiveness through supporting quality, creativity, and innovation. [1] conducted a study on students' perceptions of educational service delivery performance, special abilities, competitive advantage, and student confidence at South Sumatera-area private universities. The research found a relationship between service quality standards, particularly those relevant to academic services, and human resources. The findings revealed a correlation between service quality standards, particularly those associated with academic services, and human resources.

A close interaction and connection with the sector of industry and business is also an essential element in quality assurance and educational level. The condition also serves as an encouragement for redesigning the university management structure with a framework that is continuously integrated based on performance indicators shown in quantity and quality [10][11[12]. As a result, private universities must expand their investment in human resources, physical facilities, and infrastructure, as well as enhance the commitment of the whole academic community to national quality and recognition standards. As a result, quality management in education should participative approach in order to enable all information/communication within an institution [13].

The importance of a strong link and match with the world of industry and business is also an important component in ensuring the quality and level of education. This circumstance also provides as the incentive for redesigning the university management structure with a new paradigm that is integrated on a continual basis based on performance indicators indicated in quantity and quality [10][11[14]. Therefore, Private universities must increase their investment in human resources, physical facilities, and infrastructure, as well as strengthen the commitment of the whole academic community, including achieving national quality and accreditation standards. As a result, the implementation of quality management in education should focus on empowerment in order to enable all information/communication inside an institution [14][15]. These aspects are expected to be consistent with the TQM function, which prioritizes strengthening customer/stakeholder loyalty through the services produced.

Table 1. The Development of Private Universities in Indonesia

PROVINCE	YEAR				
	2015	2016	2017	2018	2019
Aceh	107	108	111	102	109
North Sumatera	266	267	273	240	243
West Sumatera	100	102	100	100	105
Riau	75	77	78	79	81
Jambi	38	39	40	38	39
South Sumatera	106	104	104	106	108
Bengkulu	16	18	16	17	19
Lampung	78	77	81	82	85
Bangka Belitung	15	16	16	16	18
Riau Islands	30	31	31	34	36
DKI Jakarta	315	318	315	291	295
West Java	381	380	385	389	401
Central Java	248	256	271	263	272
DI Yogyakarta	106	108	106	106	110
East Java	329	328	320	337	354
Banten	109	118	121	117	119
Bali	57	61	63	59	63
West Nusa Tenggara	53	54	55	54	55
East Nusa Tenggara	50	52	52	53	57
West Kalimantan	43	44	44	46	50
Central Kalimantan	22	22	23	25	26
South Kalimantan	46	46	46	46	49
East Kalimantan	54	50	51	52	57
North Kalimantan		5	7	8	9
North Sulawesi	49	52	49	51	55
Central Sulawesi	34	35	34	34	35
South Sulawesi	206	213	209	206	210
Southeast Sulawesi	37	38	37	38	40
Gorontalo	13	13	13	14	15
West Sulawesi	17	17	16	17	18
Maluku	26	27	27	27	30
North Maluku	16	17	17	18	19
West Papua	22	19	19	19	21
Papua	40	42	41	45	48
Indonesia	**3104**	**3154**	**3171**	**3129**	**3251**

Source: PDDIKTI The Republic of Indonesia's Ministry of Education, 2020

The findings of research [1] that have implications for service quality standards, particularly those related to academic service quality standards and human resources (in this case, the quality of lecturers and staff), is a concern for private institution managers who must not only pay attention to administrative elements of governance, but also formulate a strategy to improve academic quality, which will have an impact on the level of user satisfaction. It is where we will integrate components of TQM with aspects of academic performance, since in TQM, the process of academic activities (Tri Dharma Perguruan Tinggi[3]) does not contain an assessment of the effect or formulation of the Holistic Model of Private University Governance.

Universities differ from other organizations in that they have different environments and circumstances. Even in some developed countries, Enterprise Resource Planning (ERP) technology has been widely used for academic purposes [16][17], where Faculty and staff

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typically interact with core institutional activities via ERP, and students require more information and a better E-learning environment. In a summary, it indicates that systems are, by definition, important to the institution's goal. Furthermore, these organizations are government organizations that do business for both profit and non-profit objectives, which may result in ERP systems with varying inclusions in these organizations, particularly with a significant level of implementation failures.

[18] tempted to consider non-profit educational institutions as various organizations that differ from non-profit organizations in terms of complexity of objectives, limited similar concept of output, autonomy and dependence from the larger society, dispersed authority structures, and internal fragmentation The university structure, according to [18] [19], is designed to satisfy the demands of various stakeholders, therefore the decision-making process is fundamentally different from that of other corporate organizations. Furthermore, the fundamental assumptions driving ERP system design and university operation may not always be consistent [19]. In general, business-oriented information systems may not be immediately applicable to universities [20]. This kind of thinking may also be applied to the process of creating and implementing such a system in a university context.

The purpose of this research is to design a holistic model of PTS management based on the Architecture Enterprise model of TOGAF ADM (The Open Group Architecture Framework Development Method) [21], which will afterward undertake out a reconstruction of activities that synergizes institutional management based on TQM with the synergy of academic activities across several private universities in Indonesia.

LITERATURE REVIEW

Since an organization's performance is characterized by its ability to respond to environmental factors, every external change must be reported. All improvements result in a rise in organization performance, with the purpose of maximizing the organization's capacity to respond to external modifications in the conduct of members of an organization [15][22]. Based on [22], there are two factors that drive change, namely external factors such as technological changes and the increasingly integrated international economy as well as internal organizational factors which include two main things, namely (1) changes in organizational hardware (hard system tools) or commonly referred to as structural changes, which includes changes in strategy, organizational structure and systems as well as (2) changes in organizational software (soft system tools) or cultural changes which include changes in human behavior in organizations, human resource policies and organizational culture.

Every adjustment cannot strengthen either one structural or cultural feature as a variable; both aspects must be addressed continuously for the greatest results [13]. Therefore, decision makers tend to focus entirely on structural changes since the outcomes of these changes are clearly apparent, whereas cultural changes are typically overlooked because the implications of these changes are not as visible [22]. To be efficient in managing transformational culture, considerable ability to standardized design issues and opportunities must be attained. It indicates that in order for organizational reforms to be more effective in producing a more adaptive and flexible organization, activities must be focused on impact behavior and organizational processes [15].

While Holistic Management was originally a registered trademark of Holistic Management Global [23], it has become a resource management approach developed by [13]. The Holistic Management decision-making framework contains six essential processes that support resource management [13][22].

The Holistic Organizational Effectiveness (HOE) is a modern technique to evaluating and constructing organizational effectiveness that examines how effective an organization is at carrying out and generating the things and circumstances required to achieve the targeted outcomes. HR behavior, structure, culture, leadership, ethics, employee development, and employee engagement are often included when evaluating organizational performance [4][22]. In this aspect, HOE takes a comprehensive approach to assessing an organization's performance and efficiency. According to [13], the main drivers of Holistic Organizational Effectiveness (HOE) are 11 criteria.

Since [5][6][14] proposed that higher education has five dimensions, one of which is the scientific component, which is defined as the university's fundamental goal of developing and promoting science, technology, and culture to the community. Institutions, according to the educational dimension, do more than just teaching; they also educate. The social aspect suggests that there must be a harmonious social interaction on and off campus in universities, with potential benefits for the community's economy. The business aspect is characterized as a university with customers that engages with other institutions; hence, business model management is also one of the benchmarks to win the competition [12][20]. As a consequence, all of these qualities simply illustrate how university quality standards should result in a quality of market (stakeholder) satisfaction[3], because public fulfilment guarantees the institution's long-term sustainability [1][10]. Service quality standards must be evaluated both internally and externally. The internal aspect is concerned with how university administration might practice good corporate governance. Whereas the external side is how stakeholders evaluate the institution, the internal and external sides are in reality interconnected and cannot be separated.

The quality of higher education may be identified in its alumni, as can the output of services delivered by customers (stakeholders); nevertheless, what quality criteria are anticipated by consumers must be determined. Stakeholders (parents) have placed strain on universities to guarantee that students have good jobs in terms of life insurance and/or are able to develop their own jobs [3][6]. This is intrinsically linked to the university's capacity to generate wealth [23][24]. As is generally known, the competitiveness of a country may be achieved by integrating the strategic competitiveness of each corporate institution. The process of creating value - added is within the scope of the organization [24][25]. The Indonesia Ministry of National Education identifies competitiveness as the ability to produce better, faster, or more substantial results. The abilities under consideration are as follows: (1) the capacity to expand market share, (2) the ability to engage with the environment, (3) the capability to maintain and enhance performance, and (4) the ability to build a competitive advantage over other organizations. It implies that competitiveness is described as labor output, which is defined as productivity [26].

Therefore, higher education serves more than only a social role of improving the intellect of the general public. The main problem is that higher education institutions have become a part of a business that competes aggressively for student recruitment. Another issue that emerges is the assumption or mindset of potential students and the general public that they want to be ready to work or search for opportunities as quickly as possible to minimize their education, even if they have completed general education at the highest level [12][24]. The issue suggests

a risk to trustworthiness in higher education management. As a consequence, higher education institutions must identify and analyze factors related to the quality of education services that might promote credibility in the outcomes of the "investment" made to receive higher education. The strategy is designed to create opportunities by providing long-term opportunities, to prevent threats, and to eliminate and improve management exposures [27]. Because of competition, a strategy is essential, and the right strategy is how to win the competition, arguing that the formulation of a competitive strategy is to integrate the organization with its context [28][29][30][32].

[32][33] discovered that students' perceptions of education take into consideration many parts of the service marketing mix, such as pricing, product, site, and promotion, in terms of delivery system. It is the most important aspect of student recruitment. Alumni interaction, collaborative publicity with universities/other educational institutions, online publications, and mainstream media such as newspapers and television are the most powerful platforms for the promotion parameter. The services provided to stakeholders at higher education institutions are academic services and their accompanying facilities [9][11]. The better the services offered by the university, the stronger the quality, which will have an influence on the institution's highly competitive advantage and, in response, will have an impact on increasing student satisfaction. Universities must attempt to provide benefit (value creation) for their students in order to establish long-term relationships with consumers [23][33]. It may be accomplished by enhancing the quality of the individuals who are directly involved in all aspects of higher education. The behaviour of those who are directly involved in the delivery of services has a significant impact on the quality of services provided as well as the image of the university itself [34]. Another thing that may be undertaken is to improve the physical facility and service process quality. University buildings, equipment/equipment on campus, logos, and so on are examples of physical facilities. The work activities including procedures, tasks, schedules, processes, or activities distributed to students are included in the service delivery process.

According to the research [34][35], students were affected in their decision of universities by their parents, friends, the location of the place of education, and the cost. When students enter and attend college, they have a perception of the benefits of education and services they receive, as well as the sacrifices made (service value), and this influences their decision to continue studying or not, as well as their willingness to provide recommendations to colleagues / relatives / prospective students.

Based on [3][9], in general, universities have relatively the same resources and are easy to move or exchange, so higher education competitiveness can generally be increased by determining high potential profits and learning how to use those resources to develop and implement strategies, which is required in accordance with the characteristics of the higher education industry. According to [4], the criteria of higher education unique talents might change and can be utilized as a trigger to encourage new students to select the educational institution. This special ability can take the form of information technology, assisting graduates in finding jobs, completing additional educational facilities, and so on. [1][26] mentioned that the quality of higher education products cannot be imitated by other institutions (distinctive capability), both tangible and intangible.

Meanwhile [1][12] mentioned that distinct capacity includes non-repetitive patterns in the use of assets that allow for the coordinated application of a specific knowledge set. Three aspects are important in this regard: first, the concept is based on a set of technological and organizational skills, as well as complementary assets; second, the demand for coordination of application through the implementation of iterative procedures: communication,

interaction, and information exchange in order to create synergies; and third, the ability to create value for customers in the form of providing products that can satisfy consumers and cannot be imitated. Because they provide higher value to customers, they are the fundamental components for competitive advantage.

It is also stated by [1][3][15] that in order to improve the competitiveness of education, especially higher education institutions in Indonesia, a new policy called the five pillars of higher education development in Indonesia has been formulated and implemented, namely: a) encouraging higher education providers to improve education quality; b) providing autonomy in higher education administration; c) requesting that higher education administrators pay attention to accountability issues; d) accrediting all higher education providers; and e) conducting frequent evaluations to ensure that education implementation goes as planned.

Universities that adopt a defined strategy will perform well; if universities use price as a competitive weapon, they must have a cost advantage strategy in order to create a sustainable competitive advantage [1][3]. Formal and structured interpretation Universities must place an emphasis on products and services that create trust in students. [14][36] emphasized the importance of trust and commitment in the context of consumer relationships. The lack of trust and commitment can be seen as a major problem in marketing strategy in terms of consumer involvement, as well as the primary problem that can lead to the breakdown of an effective relationship between seller and customer.

METHODOLOGY

The purpose of this study is to create a web-based model architecture for the Holistic Management of Private Higher Education, that will be used to analyse the quality of academic and non-academic service implementation in Indonesian private universities. The TOGAF ADM technique will be applied in this research. This architectural framework can be used as a method or reference by Indonesian private universities in designing Enterprise Architecture (EA), to create a blueprint for information system architecture based on the organization's priority needs [21][36], so that the implementation process is more scalable and systematic in order to achieve the organization's strategic goals. In this method, holistic variables (a mix of TQM indicators, academic activities, and university governance) will be the entities required to develop this EA. The approach is used to analyse the effectiveness of enterprise architecture development by organizations [2][7][16][16]. As illustrated in Figure 1, these principles include Enterprise, Information Technology, and Architectural.

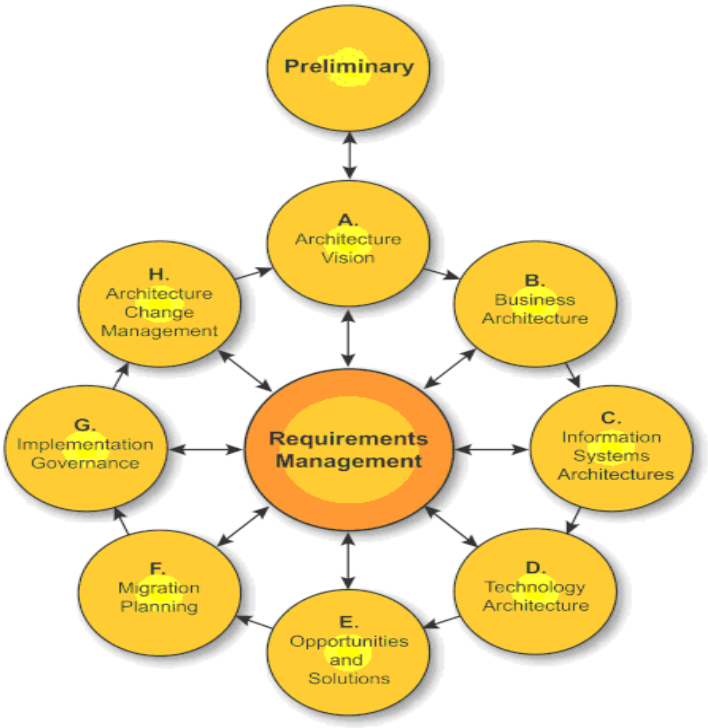

Figure 1. Cycles of TOGAF ADM

Source: [21]

The application architecture design focuses on the application model to be constructed and emphasizes how application needs are prepared utilizing the Application Portfolio catalogue [21]. Application Communication, Application and User Location Diagrams, and other techniques can be implemented. The Technology Architecture stage follows after defining the information system architecture. This step constructs the required technology architecture, beginning with establishing the sort of technology potentially required through the use of the Technology Portfolio Catalogue, which contains software and hardware [7][21].

This stage will also explore the options for technology selection. Environment and Location Diagrams, Network Computing Diagrams, and other techniques are applied. At the opportunities and solutions stage, the emphasis is on the benefits of enterprise architecture, which incorporates business process management, data management, system architectures, and technology architecture, so that stakeholders might select and choose which architecture to execute [16]. We will use the Project Context Diagram and Benefit Diagram approaches [21] to model this stage in the design. At the migration planning stage, an assessment will be performed to determine an information system's migration plan. At this phase, the modelling often adopts an evaluation and decision matrix of the organization's primary and supporting needs for the adoption of information systems. The implementation governance stage next generates suggestions for the administration of the finalized operational governance, which involves organizational management, information technology management, and architectural governance [2][21][37]. The final step, design architecture change management, determines the architectural management plan of the new system by monitoring technological developments and changes in the organizational environment, both internally and externally, and determining whether to undertake out the next enterprise architecture design development cycle [17][21].

This study applied a holistic management approach that combined the Total Quality Management assessment instrument in ISO 9001:2015 with the Indonesia Higher Education Accreditation (BAN-PT) version of the Internal Quality Assurance system approach (APT 3.0), with a focus on marketing, finance and asset management, governance and strategic, input, process, output, and outcomes of the Tri Dharma Higher Education activities at Universities in Indonesia. Whereas the following samples will be obtained from private universities in Indonesia, these will be taken on purpose by setting the sample criteria as follows: 1) Private universities with at least B (very excellent) institutional accreditation; 2) Private universities with a student body of at least 1000 students. The sample size will be 75 responders from Private universities leaders selected from 30 private institutions in Indonesia, based on the sample size determined by these parameters. The holistic governance model, on the other hand, will also identify any holistic factors (a combination of TQM indicators and Tridharma University[4] activities) that impact the quality and governance of private institutions as indicated by the APT 3.0-based Indonesia universities accreditation rating status, as seen in Figure 2,

Figure 2. Indonesia Private University Holistic Governance Value Chain
Sources: [1][32][38]

Several business functions of institutions in this study are presented as [32][33]in carrying out its operational activities of private universities, characterized by three paradigms (both ISO 9001:2015, APT 3.0, and value creation methods) and models [1][12][28][30] by introducing elements of Value Creation.

[4] In Indonesian universities, there are three commitments known as the three missions of higher education which consist of education and teaching activities, research, and community service where all three are a form of responsibility of the entire academic community.

TOGAF Specifications

The TOGAF Architecture Development Method (ADM) is applied to analyze the data and design of this Information System [21]. The preliminary stages are as follows:

a. Initial stage: framework and principles

The Open Group Architecture Framework (TOGAF) was used in this study, along with the Architecture Development Method (ADM) methodology, to create a blueprint for Academic and Non-Academic Information Systems.

a. Phase of requirements management

The following are the specifics of ADM management requirements:

Phase A: Vision for Architecture

Define the scope, business objectives, organizational profile, organizational structure, vision, and mission of the organization, and obtain permission, as well as design out all strategies to be implemented.

Phase B: Business Architecture

Describe the current business architecture, objectives, and inequalities between the business architectures.

Phase C: Information System Architecture

ER-Diagram, Class Diagram, and Object Diagram are some techniques that may be implemented.

Phase D: Technology Architecture

The approach is designed to establish the fundamentals of the technological platform, which consists of seven areas: operating systems, data management, applications, hardware, communications, user computing, and security.

The following are the stages in question, as detailed in the value network analysis results:

1. Support activities: University

a) Admission

b) Asset, facility, and infrastructure management

c) Finance and funding

d) Student Affairs and Alumni: The presence of alumni management and job recruiting, as well as communication and participation from student parents, which are served as references and assessments of increasing student quality or difficulties encountered in the lecture process.

e) Public Relations;

f) Collaboration; and

g) General Administration.

2. Primary activities:

a) Infrastructure: Financial management, which is integrated with all academic operational activities.

b) Human resource management: It involves the management of lecturers and personnel, including both permanent and non-permanent lecturers, honorary and contract staff.

c) Technology development: Carry out ICT development by carrying out activities related to the Technical Management unit, such as information technology management for operational activities, laboratory management, and administration, as well as for programs.

d) The Higher Education Tridharma, which consists of education, research, service, and support.

f) Internal and external quality assurance system: SOPs and general administration

f) Study Tracer: includes alumni data, alumni user satisfaction, and alumni achievements.

g) Governance of Higher Education: vision, mission, organizational structure, and the Main Performance Index of Study Programs, Faculties, and Institutions

3. Strategic activities:
a) Technology employed: e-learning, curriculum, Academic Information System, and Ledger.
b) Institutional Development (Intellectual Capital)
c) Management and Governance: organizational structure and key performance indicators Institutions and divisions
d) Human capital development: lecturers, staff, and employees
e) Branding and Promotion: admission, academic and non-academic, students, alumni
f) Cooperation and collaboration: universities in the country and abroad, business and industry, NGOs, and the government
g) outputs: alumni, research, service, publications, research works, intellectual property rights, and patents
h) result: alumni satisfaction, user satisfaction, community contribution, student performance, faculty and staff achievements, awards.

DISCUSSION

Indonesian Private Universities' Holistic Governance Design

Various instruments were used while distributing questionnaires, which are the framework for creating the architectural design for holistic governance at Indonesian private universities, in the formulation of the holistic governance design for private universities. Table 2 will subsequently represent the business entities and data that will be utilized in developing the architectural design:

Table 2: Business Entities and Data Entities Matrix

No	Business Entities	Data Entities
1	Entity for New Student Admission	New Student Prospective, Registration Fee Administration, Entrance Exam Schedule, Entrance Exam Results, New Student Registration Entities, Marketing
2	Academic Activities Management Entity	Entities: Study Room, Curriculum, Lecturers, Academic Calendar, Students, Courses, Old Student Re-registration, Trustees, Study Programs, Lecture Schedules, Attendance List, Exam Schedule, Exam Minutes, Grades, Scholarships, MBKM[5]
3	Entitas Pelepasan Akademik	Entitas Ijazah dan Transkip Nilai, Entitas Alumni, Entitas Industri
4.	Academic Administration Entity	Tuition, semester credits, student seminars, Thesis/thesis/dissertation exams, community service/internships/internships, Legalization, Practicum, Training, Graduation, Judiciary, Alma mater jacket, New Student Registration, Professional Exams, Use of other facilities and infrastructure, Library, Student card, Salary,

[5] Merdeka Belajar Kampus Merdeka is the Merdeka Learning program on the Independent Campus, which is a program of the Ministry of Education and Culture of the Republic of Indonesia based on Permendikbud no 3 of 2020 concerning national standards of higher education in Indonesia, one for all universities in Indonesia that can give students the right to study three semesters outside the study program to master various knowledge to prepare for entering the world of work.

5	Entity: Tracer Study and alumni	Alumni data, Alumni users, Alumni jobs, Further studies, alumni
6	Cooperation Entity	Partnerships with domestic universities, its government, non-governmental organizations (NGOs), international institutions, businesses, and micro, small, and medium-sized enterprises (MSMEs), as well as collaborative documents
7	Public Relations Entity	Promotion, Community Service, Media and Information
8.	International Office Entity	States, Institutions, Professors, Foreign Lecturers, and Industry Professionals
9.	HR Entity	Entrepreneurs, Lecturers, and Educators Postgraduate Studies, Professional Certification, Education, and Other Forms of Learning Domicile address, birthplace and date, ranking, position equalization Lecturer performance, educational performance, employee performance, university leadership performance, attendance, promotion, duties, salaries, allowances, rewards, punishments,
10.	Governance Entity	Vision, Mission, KPI, Work Program, Supervision, Job evaluation, Quality Assurance, audit
11.	General Administration entity	equipment, supplies, cleaning, maintenance, secretariat, security
12.	ICT Entity	Academic and non-academic systems
13.	Study Program Entity	Entities: Curriculum, Scheduling, Lecturer/Tendik Training and Education, Accreditation, Examinations, Seminars, Grades, KPIs, Monitoring, student affairs, lectures
14.	Faculty Entity	Lecturer Education, Lecturer Training, Academic Activities, monitoring, KPI, Teaching Materials, E-learning
15.	Quality Assurance Entity	Key Performance Index, Internal Quality Audit, Internal Quality Assurance Standard, External Quality Assurance Standard, SOP, Education and Learning Quality,
16.	Research and Community Service Entity	Research, Service, Publications, Seminars, Training, Mentoring, Intellectual Property
17.	Student Entity	Student Activities, Achievements, Student Activity Units
18.	Career Center Entity	Student Careers, Business and industry cooperation, alumni, job information
19.	Business Incubator Entity	Lecturer innovation, student innovation, training, mentoring, exhibitions, collaboration between business and industry
20.	Library Entity	Books, repositories, Teaching Materials, Thesis/Thesis, Dissertations, Journals, Magazines, e-books, working Papers

Architecture and Design of Holistic Governance of Indonesian Private Universities

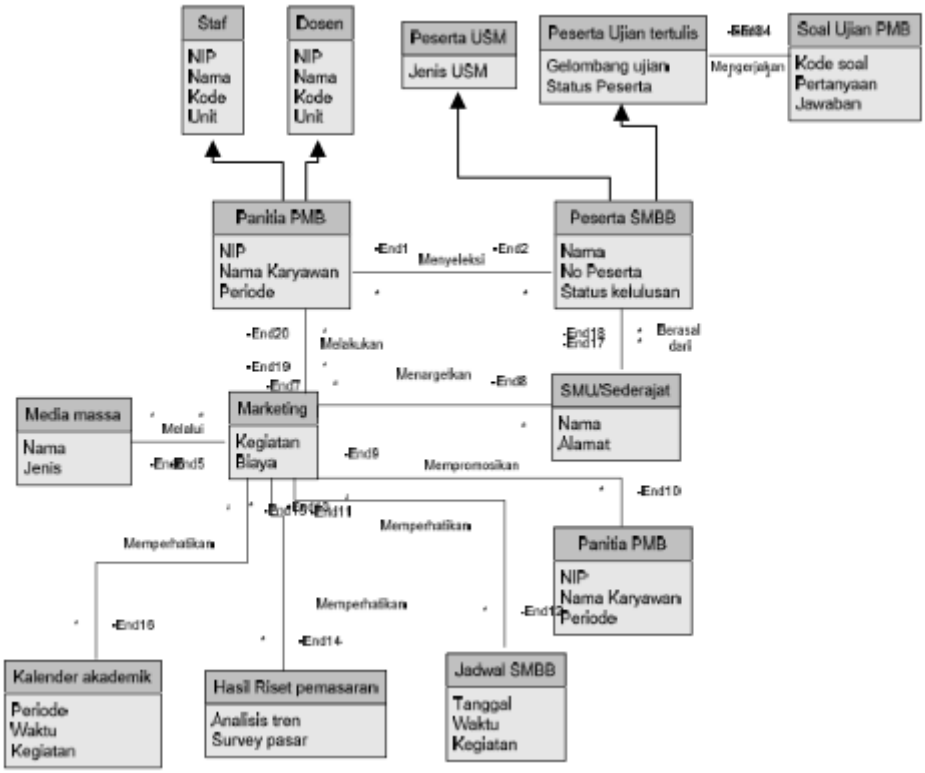

Figure 3. Academic Management Entities (Primary Activities)

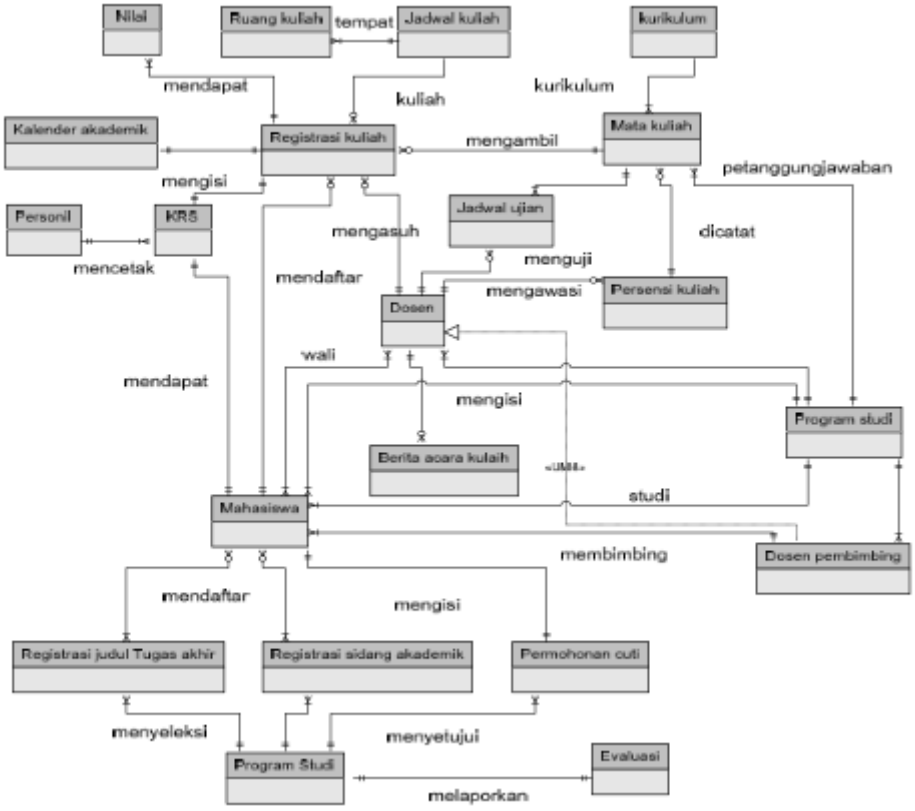

Figure 4. Non-Academic Management Entities (Supporting Activities)

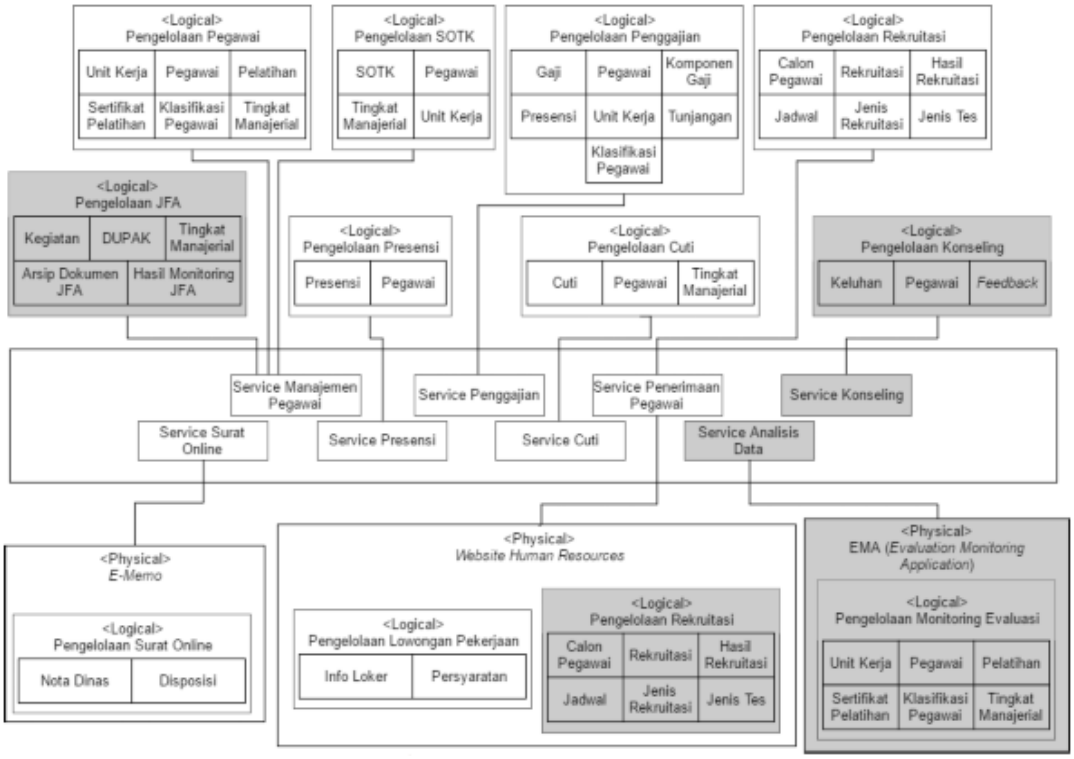

Figure 5. Strategy Activities Governance Management Entities

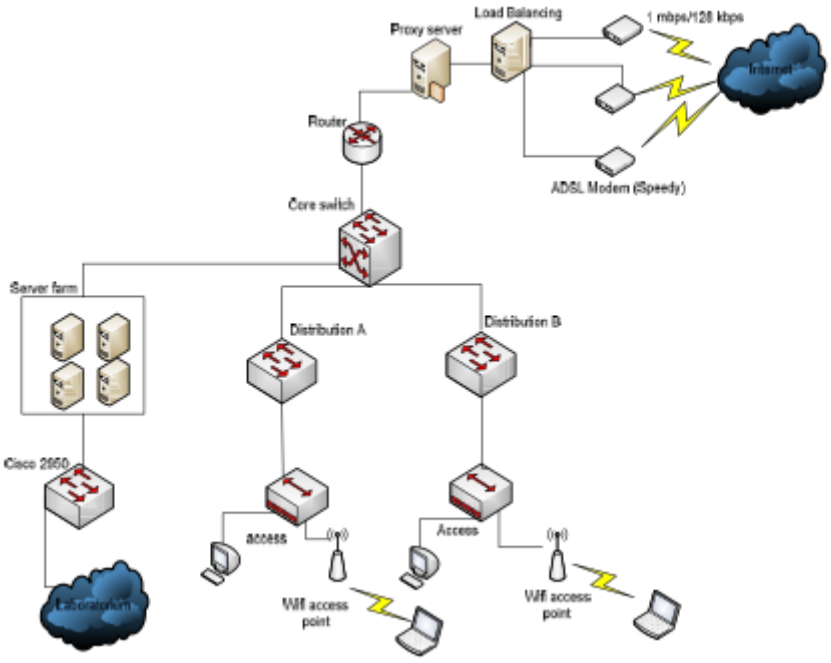

Figure 6. Proposed Holistic Governance Network for Indonesian Private Universities

Blueprint Draft on Enterprise Architecture

The Blueprint Document for the development of Holistic Management of Private Universities describes the scope of development of Private Higher Education which will be carried out in accordance with the strategic plan [22] [31][35]in that has been set. In summary, the components that will be developed are as follows:

1. Infrastructure and hardware

a. Integrated campus computer network at the core, distribution, and access levels
b. Increased Internet connection capacity
c. Infrastructure for network access and computing
b. Facilities for intensive computing (high performance computing)
c. Video conferencing facilities
d. Multimedia-based learning content development studio

2. Information systems, applications and electronic services

a. Information systems for data processing (academic and administrative)
b. Applications for productivity and specific purposes
c. ICT services (email, web, Academic and non-academic information system, etc.)

The targets in infrastructure development represent important criteria that characterize the condition of infrastructure and can be evaluated objectively[37]. The targets are set as follows.

1. Network connectivity

Criteria	Indicators	Measurement
Sectional Interconnections	Every component of the unit is connected.	Ping test across campuses
On-campus building connectivity connected	Every buildings that require a network connection are connected	Ping test across buildings

2. Internet Connection

Criteria	Indicators	Measurement
Bandwidth capacity per person	5 Kbyte/sec	Speed test

3. Accessibility to computer network resources

Criteria	Indicators	Measurement
Access to computers (ratio of number of computers to users)	1:20 (at the exact campus it can reach 1:10)	Survey of the number of people
Wireless network facilities are available.	Wireless coverage extends to at least 80% of public places on university	Coverage test

In contrast to infrastructure development, the development of information systems implies that changes are necessary to the system's bureaucratic procedures. The success of aligning information systems with organizational and bureaucratic structures is also an evidence in strategic planning [29][35]. The following are the information system innovations that will be matched with the organizational structure:

1. Information system integration and operationalization

Criteria	Indicators	Measurement
Aligning academic and administrative activities with ICT	Increased efficiency and/or productivity	Performance comparison before and after
Data flow in bureaucratic procedures should be as smooth as possible.	SOPs on data processing in several bureaucratic procedures are available: • Academic • Research • Student activities • Finance and budget	SOPs document evaluation
Connections between information systems	Fulfillment of a variety of data requirements (coming from different data sources)	Report document evaluation or information system functionality tests

2. The availability of supporting applications

Criteria	Indicators	Measurement
Mapping between academic activities and specific administrative requirements with the required application	Availability of application requirement maps in all units	Document evaluation
Operationalization of supporting applications	Application installation and configuration	Test functionality
Software license compliance	The level of compliance with the use of Open Source software > 90%	Usage survey

3. operationalization of online services

Criteria	Indicators	Measurement
Availability of online services that are general and applicable to the entire community	• E-mail (including mailing lists) • Web hosting • Repository • E-learning • Blogs • Clouds • Virtual office (paperless office)	Test functionality for each service services
User satisfaction level with online services	Minimum 90%	User satisfaction survey

Meanwhile, the following objectives and goals will be established for the relationship/interconnection of work between units in Private Universities:

1. Development of governance structures for private higher education

Criteria	Indicators	Measurement
ICT Governance has been established.	Chairman's Executive Order on Information and Communication Technology	Document evaluation
Compilation of SOPs for ICT services	Documentation of SOPs at the unit level	Document evaluation

In terms of financial resources, the emphasis is on funding to ensure the long-term sustainability of ICT development projects. There are two forms of funding: sources of finances for normal (operational) activities and sources of funds for developmental projects. Routine funding comes from the normal budget, but development funding might come from either the routine budget or other sources [28]. The following are the goals for increasing human and financial assistance.

2. **Human resources capacity to carry out ICT development**

Criteria	Indicator	Measurement
Sufficient number of ICT HR	Number of ICT technical staff in each unit	Document evaluation
Sufficient technical competence of ICT HR	Certification of expertise possessed by ICT HR	Document evaluation
Appointment of officials with the role of CIO	Decree of the Chairperson and a description of his duties	Document evaluation

Based on the research findings in previous studies [1] , the relationship between the holistic governance strategy of private universities in Indonesia. These criteria indicate that the strategy is a way/steps to achieve the vision and mission of the university that has been set in its goals and achievements [24][25].

Institutions must maintain high goals as educational and teaching institutions in order to carry out their vision and mission. Academic institutions must take into account the relationship between graduates' competency needs for industry and society, exposure to new technologies for understanding a science, and preparing and modifying the education system and teaching methods to be able to respond to changes and developments in science and technology.

Moreover, it is a blueprint for how aspects of higher education must collaborate and integrate in order to increase the change and success of services so that they may be successful in realizing their vision and carrying out their mission [32]. Academic program effectiveness, human resources (HR), infrastructure, and academic atmosphere and environment are critical components that must be focused in governance. Enhance the efficiency of these characteristics demands the use of practical strategies such as robust governance. In the long term, the road to success will be outlined in the form of a grand design (blueprint) for private universities, therefore every educational institution must be able to construct the framework [36].

CONCLUSION

The enterprise architecture design model in this research strongly supports the application of TOGAF ADM as a method for designing enterprise architecture. Each level of ERP may be completed successfully if the organization's existing business processes are adequately and accurately identified and acknowledged. The enterprise architecture modelling facilitates the construction of Private Higher Education Academic and Non-Academic Information Systems for data, applications, business, and technology. The establishment of the Holistic Governance information systems model implies that changes must be made to the system's bureaucratic procedures. The success of synchronizing information systems with organizational and bureaucratic structures is also an indication in self-improvement, as well as the capacity to create value creation in order to improve institution competitiveness.

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