

CHAPTER II COMPANY BACKGROUND

2.1. Company Profile

Universitas Multimedia Nusantara (UMN) is a private university founded by the Information Media Foundation on November 25, 2005, based on the Decree of the Minister of National Education No. 169/D/O/2005. The Media Information Foundation, which later changed its name to the Multimedia Nusantara Foundation, was founded by Kompas Gramedia, a leading business group engaged in mass media, publishing, printing, bookstores, hotels, and educational services (RIP UMN 2011–2030, 2011).

UMN is a private academic university with scientific programs in business, communication, media, and technology based on information and communication technology (ICT). At the beginning of its establishment, UMN had seven study programs, including the Undergraduate (S1) Program of Communication Science, the Undergraduate Program of Management, the Undergraduate Program of Accounting, the Undergraduate Program of Visual Communication Design, the Undergraduate Program of Information Systems, the Undergraduate Program of Informatics Engineering (which later changed to Informatics), and the Undergraduate Program of Computer Engineering. From 2016 to 2019, UMN opened six new study programs, including the Undergraduate Program of Architecture, the Undergraduate Program of Film, the Undergraduate Program of Engineering Physics, the Undergraduate

Program of Electrical Engineering, the Associate Program of Hotel Operation, and the Master Program of Technology Management.

Vision of UMN

Universitas Multimedia Nusantara becomes an outstanding university in ICT at both national and international levels, which produces graduates that are internationally-minded and highly competent in their field equipped with an entrepreneurial spirit and noble character.

Mission of UMN

To participate in educating the nation and to promote the welfare of the nation through providing higher education by implementing Tridarma Perguruan Tinggi (University's three main purposes) (Education, Research, and Society Services), in order to improve the quality of human resources of Indonesia.

Located in Gading Serpong, Tangerang, Banten, UMN has more than 9,000 students from various regions in Indonesia and more than 8,000 graduates. Most UMN students come from families with middle-upper economic backgrounds. Some of them are students outside Java who are studying at UMN with local government funds. UMN also accepts international students through the Dual Degree Informatics program and the Indonesian Language for Foreign Speakers (BIPA) program. This program

has brought in many international students, mostly from South Korea. UMN continues to provide various scholarship paths for outstanding students and students who have financial difficulties, including the grief scholarship that is given to students who have lost their parents as their main breadwinners.

In more than ten years since its establishment, UMN has succeeded in significantly developing education and governance quality. Several study programs and UMN itself as an institution have succeeded in achieving an A accreditation rating after going through a series of accreditations carried out by the National Accreditation Board (BAN-PT).

Table 3. UMN's Accreditation Rank for Programs and Institution

Year	Accreditation for	Achievement
2016	Universitas Multimedia Nusantara	A
2016	Bachelor Program in Visual Communication Design	A
2016	Bachelor Program in Communication Science	A
2016	Bachelor Program in Accounting	A
2016	Bachelor Program in Management	A
2016	Bachelor Program in Information System	B
2016	Bachelor Program in Informatics	B
2016	Bachelor Program in Computer Engineering	B
2018	Bachelor Program in Engineering Physics	B
2018	Bachelor Program in Electrical Engineering	B

2018	Bachelor Program in Architecture	B
2018	Bachelor Program in Film	B
2018	Associate Program in Hospitality	C
2020	Master Program in Technology Management	Good

Source: *Indonesian National Accreditation Board (BAN-PT)*

Strategy and Business Model

All tertiary institutions in Indonesia are bounded by the Tridharma mission, which emphasizes the implementation of education, research, and community service. The challenges and dynamics are the same: how universities are able to produce graduates who are in accordance with the needs and at the same time are able to contribute to society, produce research and other activities that contribute to the development of science and the progress of society.

Unlike state universities, as a private university, UMN has its uniqueness in carrying out its business processes. This can be seen from the financial independence, differences in the character of the governance bureaucracy, and the speed in developing its business processes.

Table 4. UMN's Business Model Canvas

<p>8. Key Partners</p> <ul style="list-style-type: none"> - Strategic Alliances <ul style="list-style-type: none"> a) Kompas Gramedia b) Alliance with other HEIs c) Companies and industries as graduates' employers and partners in research and education. 	<p>7. Key Activities</p> <ul style="list-style-type: none"> - Main: <ul style="list-style-type: none"> a) Higher Education (Associate, Bachelor, and Postgraduate program) b) Research c) Community outreach - Support: <ul style="list-style-type: none"> a) Marketing and admission b) Quality Assurance and Accreditation support c) Clerical support for education d) Human resources management e) Facilities and infrastructure management f) Information Technology Management g) Learning method development h) Research and community outreach management i) Student and alumni management j) Relationship and network development - Others: <ul style="list-style-type: none"> a) Bahasa for Foreigners (BIPA-business unit) 	<p>2. Value Proposition</p> <ul style="list-style-type: none"> - Performance: <ul style="list-style-type: none"> a) High-quality education process: Accreditation b) Real industrial case problem solving/research c) Community outreach solves the real need of the community - Brand/status: <ul style="list-style-type: none"> Affiliated with Kompas Gramedia - Newness: <ul style="list-style-type: none"> a) Unique and better reputation program b) The new developed learning method and equipment - Getting the job done: <ul style="list-style-type: none"> a) Graduates are easier and faster in getting the first job b) The graduate profile is relevant to the need of stakeholders and society - Convenience: <ul style="list-style-type: none"> Infrastructures, social, and technology that create a convenient learning atmosphere - Price: <ul style="list-style-type: none"> Competitive tuition fee 	<p>4. Customer Relationship</p> <ul style="list-style-type: none"> - Personal assistants are available - A systematic approach to various high schools - Various support to students from academic or support departments - Alumni support by <i>Career Development Center (CDC) Department</i> - Alliance and partnership support with various external institutions - Public relation management 	<p>1. Customer Segments</p> <ul style="list-style-type: none"> - Business: private higher education institution - Potential customers: <ul style="list-style-type: none"> a) Domestic scale with a small number of international student studying Bahasa at BIPA b) Middle-up economic background c) High school graduate from academic/vocational institution for associate and bachelor program d) University graduate for master program - Some business units are targeting alumni, professional, and young entrepreneurs for business incubator clients. - Educational, business, and research partnerships from companies and universities. - Society and government by contributing to social development, community outreach, and innovation.
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	<p>b) Business incubator and c) Production house</p> <p>6. Key Resources</p> <ul style="list-style-type: none"> - Physical: <ul style="list-style-type: none"> a) Buildings and infrastructures b) Class, laboratories, and studios c) Equipment d) Server, ISP, and internet network - Intellectual: <ul style="list-style-type: none"> a) Brand: Universitas Multimedia Nusantara and Kompas Gramedia b) Networking: Kompas Gramedia, universities, and industries c) Intellectual Property - Human: <ul style="list-style-type: none"> a) Lecturers b) Support staff: engineers, librarians, HR, IT, accountants, etc. - Financial: <ul style="list-style-type: none"> Tuition fee, IP right, research project, etc. 	<p>compared to similar universities</p>	<p>3. Channels</p> <ul style="list-style-type: none"> - Website and social media for public information and promotion purposes. - Marketing program and direct approach to high schools - Education and research partnership through industry and campus network - "Campus visit" events that allowed a potential student to have a closer look into UMN and the programs - On-site customer services that are ready seven days a week. 	
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<p>9. Cost Structure</p> <p>Value-Driven: A private university that is developing its capacity and reputation.</p> <ul style="list-style-type: none"> - Fixed Costs: Salary, rent, and maintenance costs. - Variable Costs: Operational cost and fee - Economics of Scale: Quantity of students, research project, and funding - Economics of Scope: Capacity and reputational development 	<p>5. Revenue Streams</p> <ul style="list-style-type: none"> - Asset Sale: <ul style="list-style-type: none"> a) Main: Higher education services that depend on the number of active students b) Minor: Facilities for rent, partnership, and production house sales
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Source: Researcher's Analysis in 2020

Roadmap & Strategic Planning

UMN's long-term development plan is reflected in the document of the Universitas Multimedia Nusantara Development Master Plan (RIP UMN). The UMN RIP becomes the direction for the development and target of UMN's strategic achievement, shown through the five-year development stages. The development direction is illustrated in the following four stages:

1. Phase I (2011-2016)

Goal: *To become a university with a superior learning process (Excellent teaching)*

2. Phase II (2016-2021)

Goal: *Excellent teaching with strong industry collaboration*

In particular, the attainment of this stage is measured by:

- UMN is the primary choice in workforce recruitment to meet HR needs, both domestically and abroad
- As a community empowerment center, especially in ICT-based fields
- Diversification of significant sources of income through continuous learning
- Achieve the best institutional accreditation
- Achieve “A” Accreditation for all study programs
- Producing large-scale startup companies in the ICT field

- Development of new faculties (hospitality and engineering) and postgraduate master's programs
- Independent financial strength for infrastructure investment needs (mainly buildings)
- Development of new building facilities
- The number of active students reaches 9,000

3. Phase III (2021-2026)

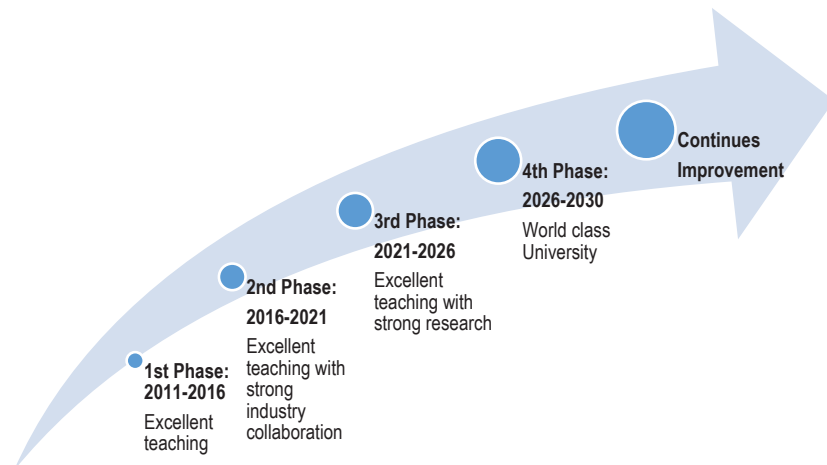
Goal: *Excellent teaching with strong research*

In particular, the attainment of this stage is measured by:

- Establishment of excellent research centers in the fields of ICT and international standard new media
- Increase in the number of intellectual property rights and patents
- Development of new study programs (Faculty of Engineering and Informatics and Faculty of Business)
- Obtaining international accreditation for all study programs gradually
- Development of a doctoral postgraduate program
- The number of active students reaches 14,000

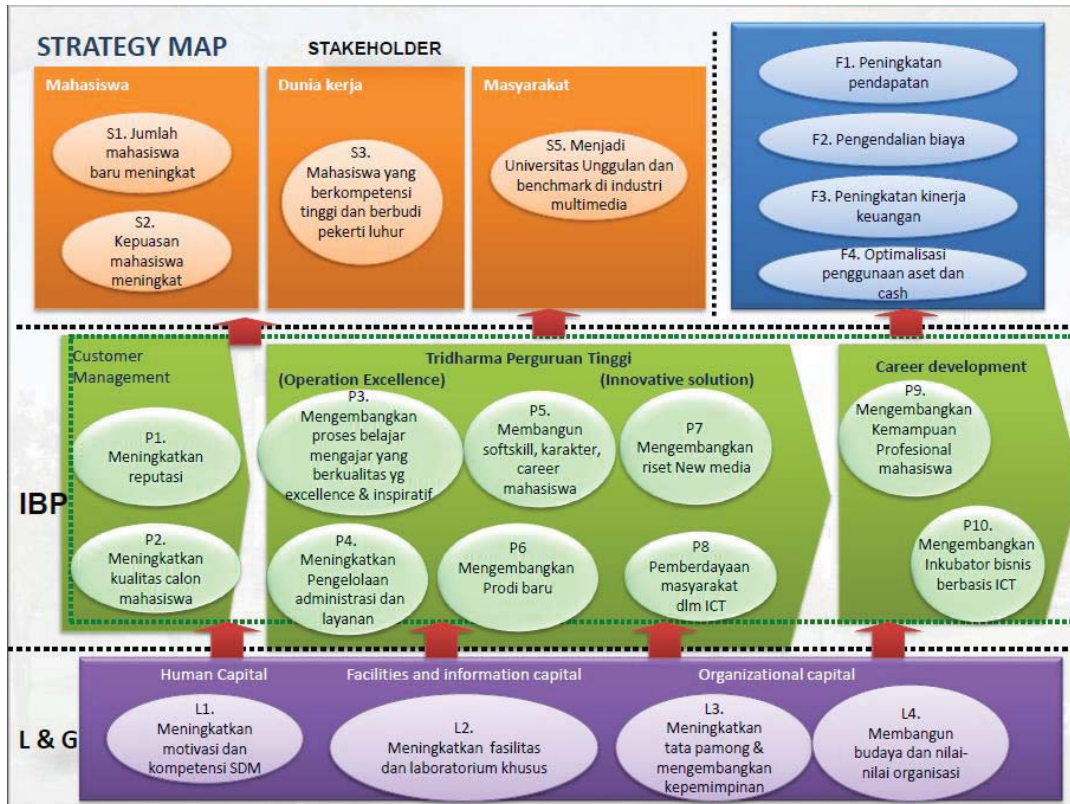
4. Phase IV (2026-2031)

Goal: *World Class University*



Source: UMN's Road Map of 2011
Figure 6. UMN's Road Map

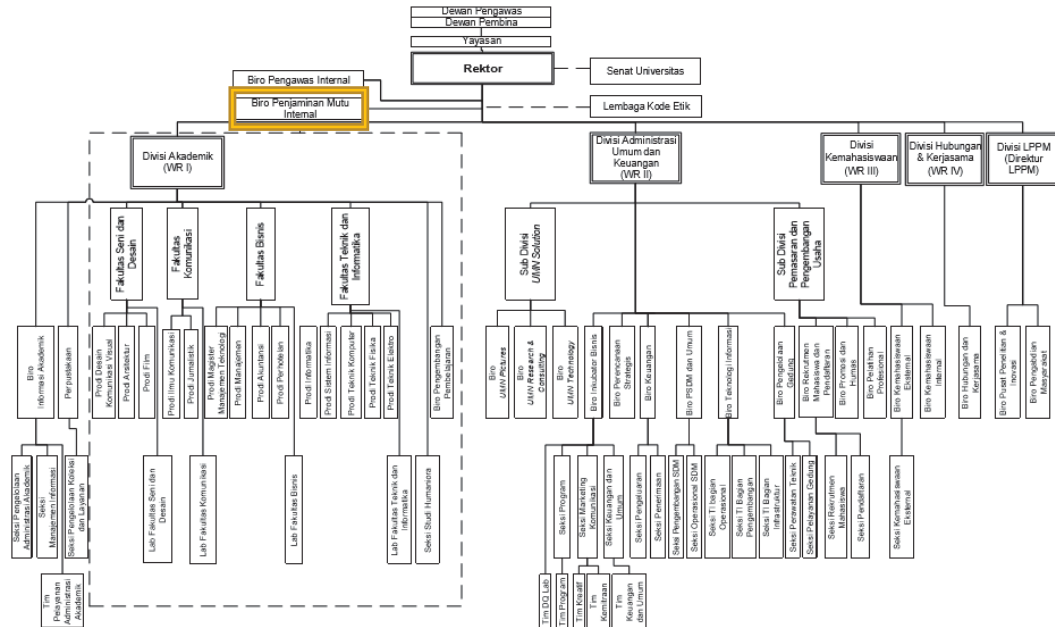
UMN uses Balanced Score Card (BSC) mapping to help all organizations map and communicate the vision and direction of strategic development (RIP UMN) into various forms of more measurable achievements. The Balanced Score Card (BSC) is a tool developed by Robert S. Kaplan and David P. Norton to help organizations translate a broad and abstract vision into more measurable outcomes according to each section's tasks. The Balanced Scorecard encourages every component of the organization to take the necessary steps to lead to the same vision and strategy (Kaplan & Norton, 2005).



Source: UMN's Road Map of 2011
 Figure 7. UMN's Balanced Scorecard

STRUKTUR ORGANISASI
UNIVERSITAS MULTIMEDIA NUSANTARA

Lampiran 1:
SK No. : 200/SK-R/VI-2019



Source: UMN's internal source
Figure 8. UMN's Organizational Chart

Based on various descriptions of the needs, policies, and strategic plans of Universitas Multimedia Nusantara, the Digital Transformation project's scope will target the Internal Quality Audit process managed by the Internal Quality Assurance Bureau.

Table 5. UMN's KPIs' that are relevant to Digital Transformation Project

Component	Key Performance Indicators (KPI) that are relevant
Business Model Canvas	<ul style="list-style-type: none"> - Point 2: Value Proposition – Performance - high-quality education process: accreditation - Point 7: Key Activities – Support – Quality Assurance and improved accreditation result
UMNs Strategic Development Plan	<ul style="list-style-type: none"> - Phase II (2016-2021): gained the best accreditation for the institution and “A” accredited for all programs - Phase III (2021-2026): gained international

	accreditation for study programs gradually
UMNs Balanced Scorecard	<ul style="list-style-type: none"> - S5: To be a leading and benchmark university in the multimedia industries - P1: Increase institutional reputation - P3: Develop an excellent learning process - P4: Increase administrative service and management - L3: Increase governance and leadership development - L4: Develop organizational culture and value

Source: Researcher's mapping 2020

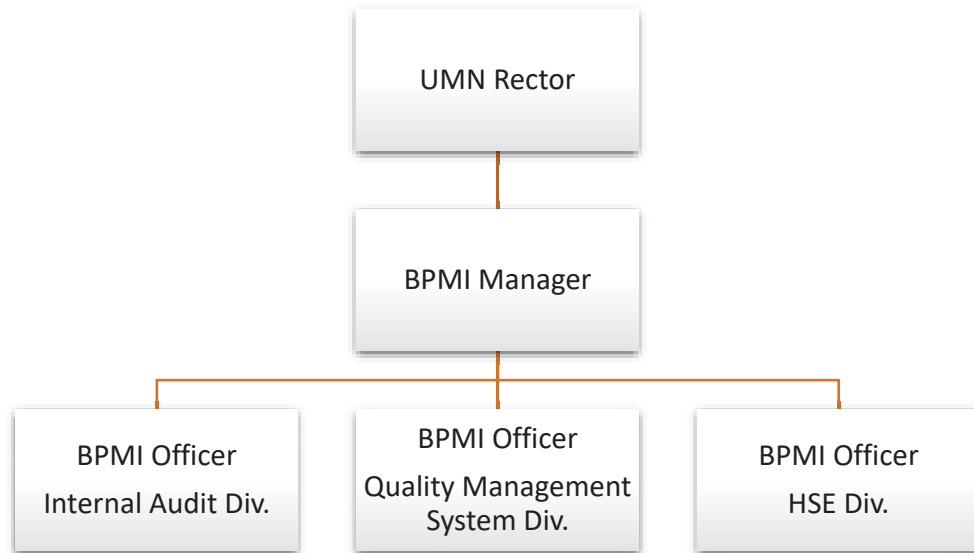
Digital Transformation Project Focus: Internal Quality Assurance Bureau and Universitas Internal Audit System

UMN Internal Quality Assurance Bureau (BPMI) was formed in 2012 through the UMN Rector's Decree No. 013/SK-R/VIII/2012 concerning the Establishment of the Internal Quality Assurance Bureau at Universitas Multimedia Nusantara. In the UMN organizational structure, the Internal Quality Assurance Bureau is directly under the UMN Rector.

Based on the purpose and job descriptions, the UMN Internal Quality Assurance Bureau is in charge of quality control in Universitas Multimedia Nusantara. This covers academic and non-academic areas such as human resources, information technology, and infrastructure. In more detail, BPMI UMN was assigned to:

- a. Develop quality assurance standards consisting of a quality statement, quality policy, quality standards, and quality procedures
- b. Planning, coordinating, monitoring, and evaluating the implementation of quality assurance
- c. Make a report on the implementation of quality assurance as evaluation material.

In its journey of supporting and following the development of UMN, the UMN BPMI organization continues to experience organizational development. The organizational pattern and function of BPMI UMN in 2019 is described in the following pattern:

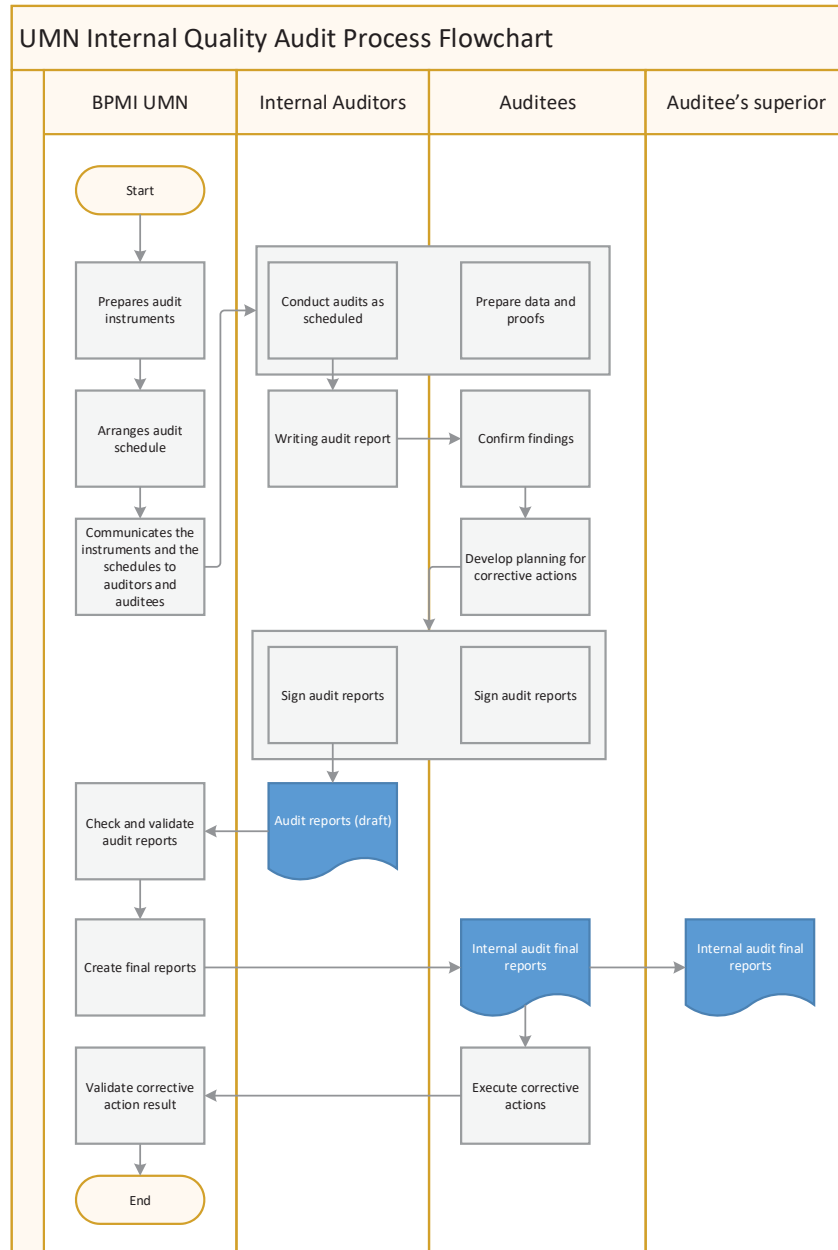


Source: Internal Source of BPMI UMN
Figure 9. BPMI UMN internal organization chart

One of the functions in the BPMI UMN structure is the Internal Audit Division which has the task of managing monitoring of standard implementation; scheduling the internal quality audit process, and coordinating the implementation of internal quality audits. The internal quality audit process is carried out annually and is imposed on academic units (Faculties and Study Programs) and their supporting departments. Internal audits for Faculties and Study Programs are carried out to confirm the implementation of academic standards, while internal audits for non-academic departments are carried out to confirm the implementation of work standards and procedures.

a. The current pattern of Internal Audit at UMN

The general mechanism of the internal quality audit process is as follows



Source: UMN's Internal Quality Audit Standard Operating Procedures

Figure 10. Flow Process of BPMI's Internal Quality Audit

The implementation of the internal quality audit process described in the chart above is a face-to-face audit attended by auditors, auditees, and BPMI UMN, who ensures the audit process's quality. Audit work forms are made in Microsoft Office format, distributed to auditors via Google Drive, and filled out by each auditor in the form of soft files. BPMI Officer checks the final version of the audit working papers, prints them, and circulates them back to the auditee and auditors for signature. The final validated version will then be scanned for physical and digital storage and uploaded to the BPMI UMN document management system.

BPMI UMN recorded every finding and entered it manually in the google calendar to make an easier confirmation with the auditee when the deadline for repairs was up. The officer then will make a list of audit results in a separate file that provides information on whether a finding has been resolved or is still in the stage of completion. Simultaneously, the Officer prepares the final audit report and distributes it to the respective supervisors of the auditee and the UMN Rector as a management review tool.

One complete internal quality audit activity for a study program lasts three days which is equivalent to approximately 15 hours of audit work. Meanwhile, the internal quality audit activity for the academic support department varies from one to three days depending on the department size.

With a total number of 13 study programs and four faculties in 2019, the total time required to complete an audit in an academic department can be equivalent to 51 working days with a total of 255 audit work hours. The total length of audit days in one year of the audit cycle will be around 65 working days, with a total of 325 audit work hours after adding the time required for internal quality audits in the support department. This time does not include validation activities, report preparation, and follow-up activities to confirm audit findings improvement activities for each study program or department.

2.2. Problem Analysis

2.2.1. SWOT Analysis

SWOT analysis related to Digital Transformation at Universitas Multimedia Nusantara

Table 6. SWOT Analysis of UMN

Strengths	Weaknesses
<ul style="list-style-type: none"> - Having a study program, researchers, and laboratories that are related to informatics. - Having IT infrastructures that are ready to support digital transformation - Have reputation and top-down support for organization digital transformation - The top management commits to quality - Multimedia identity and brand - Talents (students) are available - There are integrated applications and IS that ready to be developed 	<ul style="list-style-type: none"> - Some processes are still in manual - The number of programmers is not in balance with the number of digital transformation projects - There is a priority in the implementation of a digital transformation project - Strategic planning for digital transformation is unavailable
Opportunities	Threats
<ul style="list-style-type: none"> - Sufficient technology to support digital transformation - Several applications are ready to be a benchmark/sample - Opportunities to gain support from partners' universities in developing QMS - There is no application that exactly suitable to the needs. Improvements are positively opened. 	<ul style="list-style-type: none"> - Policies change due to government regulation. - A rapid change in technologies.

Source: Researcher's Analysis of 2020

2.2.2. External Analysis of Universitas Multimedia Nusantara

Table 7. PESTLE Analysis of UMN

Politic	<ul style="list-style-type: none"> - The current political situation is stable. The next election that has potential in regulation or policy changing is still in 2024. - The government supports a broad of digital technology innovation that supports economic growth. - In the education sector, the government prioritizes developing the human capital quality through vocational education and the "Freedom of
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	<p>Learning” program.</p> <p>Digital transformation projects in the higher education sector are equivalently relevant with government projection and vision.</p>
Economy	<ul style="list-style-type: none"> - The global and national economic growth was having a contraction in 2020 due to pandemics. Indonesian economic growth was decreased in the first quartile of 2020 (2.97%) compared to 2019 (4.97%). The third quartile growth projection was predicted -2.9% to -1% and believed in a recession condition. - Contrary to the primary trend, the higher education sector became one of four sectors that enjoy growth in the 1st quartile of 2020 (5.9%). It was projected to be survived by the 4th quartile (3.8%-6.2%). (source: Indonesian Ministry of National Development Planning/National Development Planning Agency report 2020)
Social	<ul style="list-style-type: none"> - Public perception and the need for higher education access are still high. Higher education's gross participation index was increased from 29.93% in 2017 to 30.28% in 2019. (source: Statistic Indonesia 2019)
Technology	<ul style="list-style-type: none"> - Technology adoption in higher education is increased in 2020. Covid-19 pandemic pushed the global society to implement distance learning using web conference providers massively. - Web development technology and android based applications giving further technology development and usage to support distance activities.
Legal	<ul style="list-style-type: none"> - Indonesian Higher Education Management is supported by Law no. 12 of 2012 and Ministry of Education and Culture Regulation no 3 of 2020 about National Standard of Higher Education. Both regulate every higher education institution in Indonesia about education quality management system. - Law no 11 of 2008 regulates Information and Electronic Transaction. Other regulations relevant to the use of digital technology are drafted Law of Personal Data Protection that is still in progress.
Environment	<ul style="list-style-type: none"> - Universitas Multimedia Nusantara is located strategically in the suburban areas (Gading Serpong) with a well-maintained infrastructure that is useful in supporting mobility. - Other modern supporting facilities were also developed to attract new students, lecturers, and staff.

Source: Researcher’s Analysis of 2020

2.2.3. Value Stream Analysis

One method of analysis for optimizing the process through a comprehensive mapping of the process's components is value stream analysis. Identifying and understanding a complex system and systematically making improvements is a challenge for many organizations. Value stream analysis is one of the widely used tools in various fields and has successfully helped to map the potential improvements (Toivonen & Siitonen, 2016).

The capacity of a process is an amount of valuable work coupled with the waste inherent in the process (Ohno, 1988). The value stream mapping (VSM) analysis approach describes the details of the flow of a process, identifies what forms of waste are present at each stage of the process, and then makes systematic improvements. The Toyota Production System introduces seven classifications of waste ("young") which consist of:

- a. *Waste of overproduction*
- b. *Waste of time on hand*
- c. *Waste in transportation*
- d. *Waste of processing itself*
- e. *Waste of stock on hand (inventory)*
- f. *Waste of movement*
- g. *Waste of making defective products*

The waste classification that was first introduced by Taiichi Ohno was then developed into various value stream mapping (VSM) frameworks based on the needs and differences in the character of the problem or process. (Vavruška et al., 2014) use VSM analysis to determine parameters that can be used in mini-audits of an information system. (Gracanin et al., 2014) combines the cost-time profile approach with VSM analysis to see the mapping of costs and processing times.

Another approach is taken by considering the flow of information and the character of the industrial revolution 4.0. In this phase, the increasing use of digital technology and the increasingly dynamic organization between a company's processes require a different VSM approach. The value stream mapping 4.0 considers the digitization of the production process, which utilizes a lot of internet technology, automation, and deep integration with customers through various digital information access (Meudt et al., 2017). This development demands a close integration between process data and information technology systems, including the flow of data in the process value stream (Meudt et al., 2017).

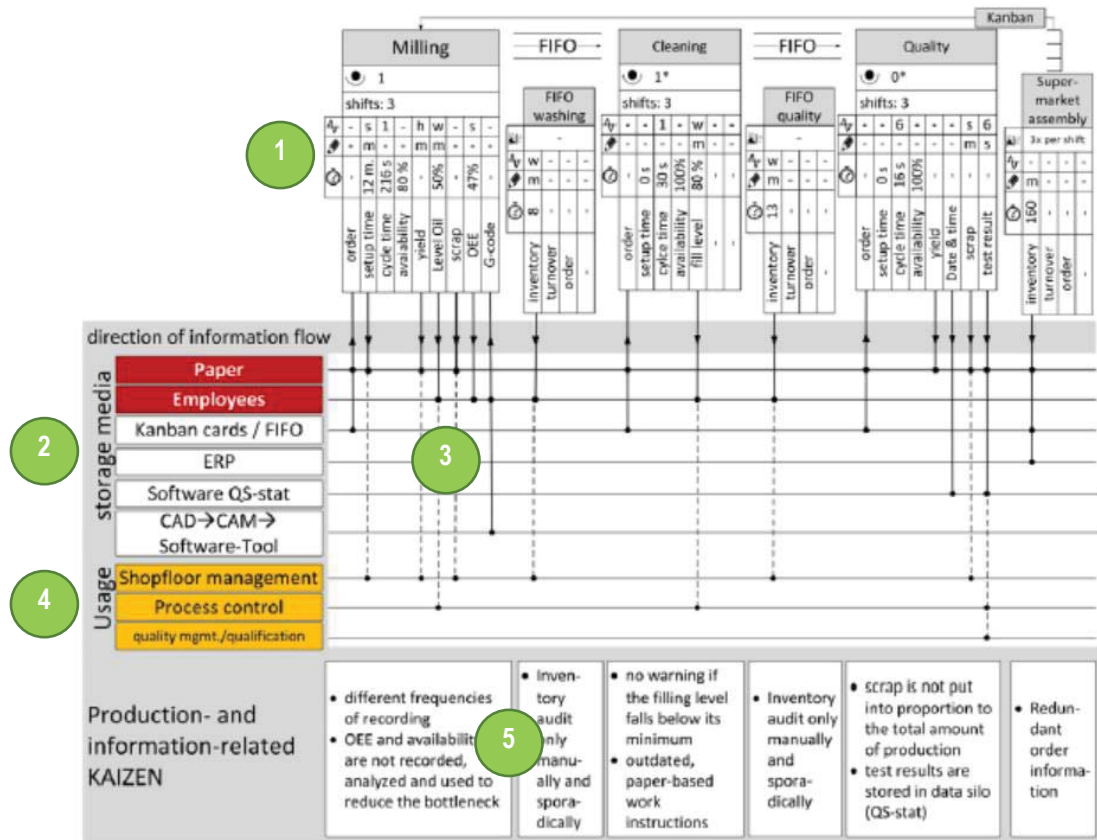
Value stream mapping 4.0 introduces a new waste classification related to information flow in addition to the seven commonly used traditional wastes. The classification of information logistical waste (ILW) consists of cycles of three main classification groups related to data generation and transfer, data processing and data storage, and data utilization. The main idea

is to identify and map a process based on a value stream mapping framework. VSM 4.0 adds an analysis of new forms of waste (information logistical waste) that are commonly found in a process that uses a lot of digital technology.

The stages in implementing VSM 4.0 include:

1. *Classic Value Stream Mapping*
2. *Listing all storage media being used*
3. *Connecting data point between KPI's, their data storage, and usage information*
4. *Determining the usage of data*
5. *Determining the type of waste associated with the production process*
6. *Carry out potentials and sphere activities rating*

After the sixth step is carried out, it determines which process has the most remarkable development potential and is prioritized for improvement.



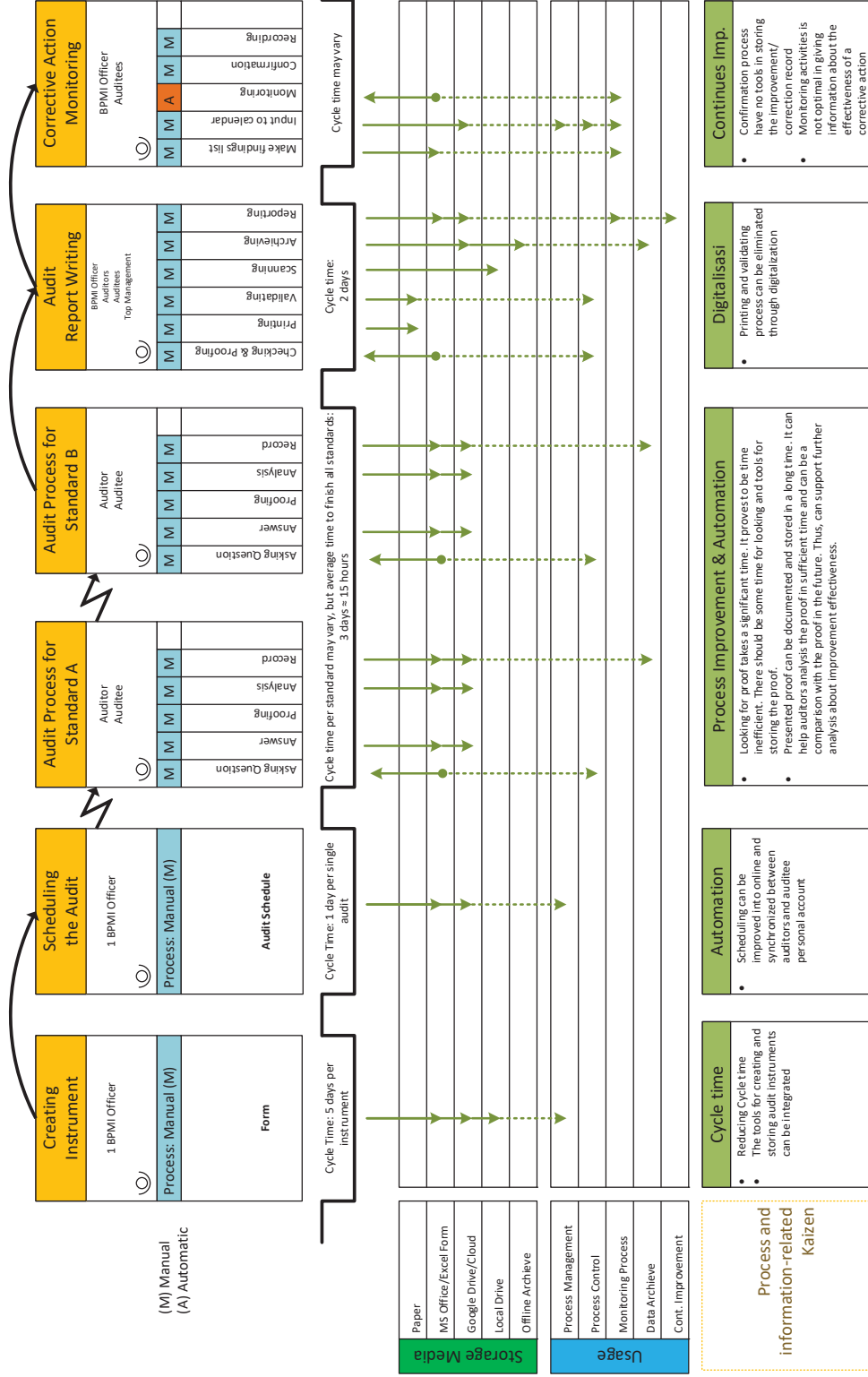
Evaluation of information logistic of process learning factory CiP.

	Milling	Cleaning	Quality control
Data point	7	2	5
Used data point	4	1	2
Planned data point	9	5	8
Data availability (DA)	78%	40%	63%
Data usage (DU)	44%	20%	25%

The bold values (DA and DU) are calculated by using the formula of DA and DU (shown on the previous page). E.g. the value of DA from process Milling, $7/9 = 0,778 = 78\%$ and DU from process Milling, $4/9 = 0,44 = 44\%$.

Source: Value Stream Mapping 4.0: Holistic examination of the value stream and information logistic in production
 Figure 11. A Step by Step Value Stream Mapping 4.0 Analysis

The UMN internal quality audit process is relevant to the mapping of VSM 4.0. Many components of the UMN internal quality audit process involve the flow of information and internet technology in its implementation. The use of this framework is expected to help map parts of a process or activity that can be further developed. Based on the value stream mapping framework 4.0, the following is the value stream analysis for the Digital Transformation project of the UMN internal quality audit process:



Source: Researcher's Analysis of 2020

Figure 12. UMN's Internal Quality Audit Value Stream 4.0 Mapping

Step 1: Classic value stream mapping

The flow of the internal quality audit process is mapped down to its activity components and the process duration and activity frequency are also identified. The process flow starts with the activities of making audit instruments, preparing an audit schedule, implementing the audit process, preparing audit reports, and monitoring the improvement of audit findings. Process flow components, processing time, and activity frequency are potential waste that can be improved.

Step 2: Determine data storage usage

Through process flow mapping, it is possible to identify the types and types of data storage used during the internal quality audit process. The forms of data storage include paper, MS Office / Excel, Google Drive (Cloud), local drives, and conventional archiving.

Step 3: Analysis of data storage utilization by Key Performance Indicators of each process

After the data storage is identified, the use of activity data is also identified. In general, audit activity data revolves around process management activities, process control, monitoring activities, storage, and continuous improvement.

Step 4: Determine the use of data in each process

At this stage, analysis is carried out to map how each activity utilizes forms of data storage during the process and how the data generated during the process is used or utilized. It can be seen from the chart that most of the audit activity makes use of cloud data storage to store and distribute data and information. MS Office and MS Excel programs are the most dominant software used as the basis for audit activities. The use of paper is very minimal and only occurs in the audit result validation process where the BPMI Officer still prints the audit report to request a signature. This process has the potential to be digitized and used as material for further development.

The use of data appears to be more dominant in reporting activities and in the follow-up of audit findings. Submission of evidence data during the audit has the potential for further development because it is still running less systematically and takes up a lot of audit time. The process of confirmation of repair activities and monitoring of data after repairs have not been optimized as materials for analyzing the effectiveness of the results of improvements.

Step 5: Determine the potential for continuous improvement of processes and information flow

Based on the analysis of the first to the fourth stages, several potential improvements can be taken for each process/activity, among others:

Table 8. Potential Improvements of UMN's Internal Quality Audit Process

PROCESS	FOCUS	CHANCE FOR DEVELOPMENT
Develop internal quality audit instruments	Cycle time	Shortening process cycle since form development process is still manual using MS Office
Develop audit schedule	Automation	The scheduling process and distribution more automated and integrated with both personal account of the auditor and the auditee
Internal quality audit	Process improvement and automation	- Optimization in searching audit proof. - Providing the recording media for audit proof
Making an audit report	Digitalization	- Eliminating the printing process and manual signature
Monitoring improvement process	Continuous Improvement	- Providing the media for recording improvements and monitoring the effectiveness of monitoring results.

Source: Researcher's Analysis of 2020

Next, based on the mapping data, the data availability rate, data usage, and digitalization rate are calculated. Data availability shows the potential for data availability that can be used to get certain information from each existing data point. Ideally, data access is available for each data point. Data usage shows the usefulness of data. Ideally, the organization is able to make use of available data to contribute to a function. Digitalization rate shows the level of data utilization through digital technology (beyond the use of conventional tools such as paper and so on).

Table 9. VSM Internal Audit Measurement Data

	Instrument	Scheduling	Audit Process	Reporting	Cont. Imp.
Data point	1	1	4	6	3
Used data point	1	1	2	4	3
Planned data point	1	1	5	6	5
Data Available	100%	100%	80%	100%	60%

Data usage	100%	100%	40%	66%	60%
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Source: Researcher's Analysis of 2020

Step 6: Ranking of potential improvements and priority of activities

From the table in step 5, several conclusions are drawn:

1. Most of the data available for planned data points are entirely available, except for the continuous improvement process (60%). It means that the process still needs to access particular data to ensure that continuous improvement activities have the right decision-making.
2. Low data usage is found in the internal audit process, report preparation, and continuous improvement. It means that some data may not be useful/contribute to the activity's KPIs.
3. The digital rate of the internal quality audit process is relatively high. There are only two data points that still use paper as a data storage tool of all existing data points. It indicates that the DTP project in the internal quality audit process can focus on increasing the digital maturity level or developing the process itself.

2.3. Problem Statement and Objectives

The Ideal Situation

An internal quality audit purpose is to self-evaluate the internal business process and then find opportunities to develop its quality. The focus should be aimed at first to the process improvement before going to evaluate the quality gap (Kettunen, 2014). This study indicates that any tools used to improve the internal quality audit should accommodate internal quality audit purposes and effectiveness.

The ISO 9000 standard is a typical Quality Management System framework that helps an organization implement continuous improvement and build its performance. Due to its broadly used, the ISO 9000 characteristics and principles have been adopted in many organizations even without taking the certification. Although it provides advantages in cultivating quality culture, the adoption of ISO 9000 standard in any internal audit process causes a significant increase in bureaucracy, especially in the number of documents and evidence generated from the daily process (Cunha & Figueiredo, 2005). Any tools used in supporting the internal audit process should increase the ease of process and efficiency of the unavoided process in collecting, storing, and evaluating the evidence and data.

Based on the benchmark with other prominent universities in Indonesia, conducting the internal audit took 1.5-2 months, including the data

filling and submission, the desk evaluation, and the management review. For example, the internal audit of Universitas Gadjah Mada (UGM) in 2019 was held from the end of August to the middle of October for more than 260 study programs¹.

The Today's Situation

Although using some digital technology and cloud data storage such as Microsoft Office, Google Calendar, and Google Drive Cloud in conducting the internal quality audit, the audit process in Universitas Multimedia Nusantara still has opportunities to be improved. The internal audit process took three to six months in total, depending on each audit process's efficiency. The audit instrument creation and editing process take days to be completed and exposed the auditors to confusion or mistakes in choosing the most updated version of the instruments. The audit schedule is also created manually, significantly depends on the QA Officer, and provides less flexibility in the arrangement between auditors and auditees. Administrative activities in searching, providing, and storing the data and evidence are also ineffective and frequently spend too much time with invalid data or evidence in return. The evidence is also unavailable to be compared between periods, and no systematic storage available for recalling the data and evidence for external audit purposes. The audit report and continuous improvement

¹ <https://kjm.ugm.ac.id/language/id/timeline-pelaksanaan-ami-ugm-2019/>

activities are recorded in the local QA database without sufficient access and monitoring from the auditee department and top management. The management review is done by manual reporting and has no real-time monitoring system.

UMN internal audit in 2019 took more than three months to be delivered for 27 study programs and departments. Some audit processes were unable to be delivered in a limited period and scattered until the end of the year.

Problem Statement

Based on the results of the internal audit ideal situation, UMN's external and internal analysis, value stream analysis, and various data on the observed functions, this Digital Transformation Project will focus on:

Propose an information system that increases the internal audit process's efficiency, supports the internal quality audit in assessing the organization's real condition, ensures the accomplishment of findings, and provides effective root-cause analysis. The information system also has to be easy to use, reduces the time needed to perform complete audits, and protects the user from making unnecessary mistakes.

Research Objectives

Responding to the problem statement of this study, the research objectives of this research are:

1. To analyze the external and internal factors of Universitas Multimedia Nusantara to better understand the capability and the environment of higher education quality management systems.

The external analysis will be approached using OT analysis and PESTLE analysis. The internal factors will be analyzed using SW analysis and Value Map Analysis.

2. To compare and chose the most suitable Maturity Model to be used in a development framework of the Digital Transformation Project.

The researcher will do a comparative study about several maturity models and chose one to be used as a framework in the digital transformation project related to the problem.

3. To determine the current maturity level and condition, the future state, and analyze the gap between.

The indicators and parameters of the chosen framework will be used as a reference in determining the maturity level and developing the survey instrument. The current maturity level and condition will be determined through a survey targeting the internal auditors and auditees of UMN. The future state will be determined through a structured interview or discussion with the

top management representatives. The gap that exists will be analyzed to provide a detailed step-by-step development of the digital transformation project.

4. To propose an information system model and the development plan needed to close the maturity gap.

This model should cover the need in increasing the efficiency of the internal audit schedule, shorten the internal audit process, increase user experiences in storing data and evidence, increase user experiences in assessing the auditee, help to ensure the closing of findings, and provides information about the effectivity of corrective action to the top management.

Based on the gap analysis, the researcher then proposes technical features and an information system model to fit the future demands. This suggestion will be supported by a feasibility study and time projection of the digital transformation.