104

Int. J Sup. Chain. Mgt   Vol. 11, No. 3, June 2022

Supply Chain Management Information Systems Model for Educational Management for ASEAN University Network Quality Assurance at Institution Level

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Abstract—**The purposes of research to design and to evaluate supply chain management information systems model for educational management for ASEAN University Network Quality Assurance at institution level.The sample group in this study consisted of ten experts consisted five experts on supply chain , three experts on information technology and two experts on curriculum. The research findings show that supply chain management information systems model for educational management for ASEAN University Network Quality Assurance at institution level comprises five main components, namely, main components, suppliers , university , customers and consumers. Evaluation results by the ten experts show the that supply chain management information systems model for educational management for ASEAN University Network Quality Assurance at institution level. is appropriate at the high level and can be appropriately applied in actual work settings.**

Keywords— *supply chain, Information System s model, Educational management, asean university network quality assurance at institution level*

1. Introduction

Education system is the process whereby individuals acquire knowledge and other qualifications that promote their social survival. Therefore, a consideration of education quality should be based on educational goals, e.g., qualifications of graduates, which should include knowledge, skills as prescribed by the curricula. Since testifying these qualifications requires time, and good effective sustainable administrative management, it is important to assure guardians, stakeholders that students who are graduated from a particular institution will be decent, competent and happy in society that progresses in line with the pace of globalization. To answer all the questions of education quality, it should be set up as principles or elements which a comparison can be made to inform development, supervision, examination and assessment of quality. Therefore, the standards of higher education, as announced herein, are the requirements of education quality for all higher education institutions and student educations to utilize as goals or a directional framework to develop sustainable quality of the institutions, and to use in self-assessment every year, or for a specified period of time, in order to learn whether educational administration has achieved its goals. These standards are also important for educational service areas or host units to employ as goals in supervision, examination and assessment of quality as a whole to inform quality improvement planning .[7] The awareness of the supply chain management information system model for education management can be practical as a method . To accomplish work procedures, actions and affairs within the organization. It starts from planning, providing accurate information at the time of need, practicing and maintenance, distribution or destruction by giving priority to information exchange and information technology will be derived to play a role in changing work processes to be more computerized in order to style occupied custom of information technology not only carrying supply chain and information technology to work but also be able to determine the organization inevitably include It is very important at the progress level. The ASEAN Quality Assurance Network (AUN-QA) is an ASEAN university network that is a collaboration of higher education institutes between member countries consisting of the National Association of East Asia, South Chiang Mai or ASEAN with the aim of establishing to promote educational cooperation which is an essential mechanism for creating a foundation for society and regional unity. From the status declared directly above; consequently, the researchers are concerned in emerging information technology for quality assurance in research management for asean university network quality assurance . [1] The researcher had an idea to design and to evaluate

105

Int. J Sup. Chain. Mgt   Vol. 11, No. 3, June 2022

Supply chain management information systems model for Educational management for ASEAN University Network Quality Assurance at institution level for add value and increase satisfaction of consumers.

2. Research Methodology

1 Analyze and synthesize document and research studies related of. Supply chain management information systems model for Educational management for ASEAN University Network Quality Assurance at institution level

2. Defind research framework of Supply chain management information systems model for Educational management for ASEAN University Network Quality Assurance at institution level as drawn from article 1

3. Design Supply chain management information systems model for Educational management for ASEAN University Network Quality Assurance at institution level.

4. Create the questionnaire for assessing the suitability and sent to the experts in order to ask their opinions on appropriateness of Supply chain management information systems model for Educational management for ASEAN University Network Quality Assurance at institution level

5 Evaluate Supply chain management information systems model for Educational management for ASEAN University Network Quality Assurance at institution level. The statistics utilized in this study were means ($\overline{X}$.) and standard deviation(S.D.) following the weighing criteria of appropriateness of the design using five rating scales of Likert.

3. Results

3.1 Research results about Supply chain management information systems model for Educational management for ASEAN University Network Quality Assurance at institution level as followings
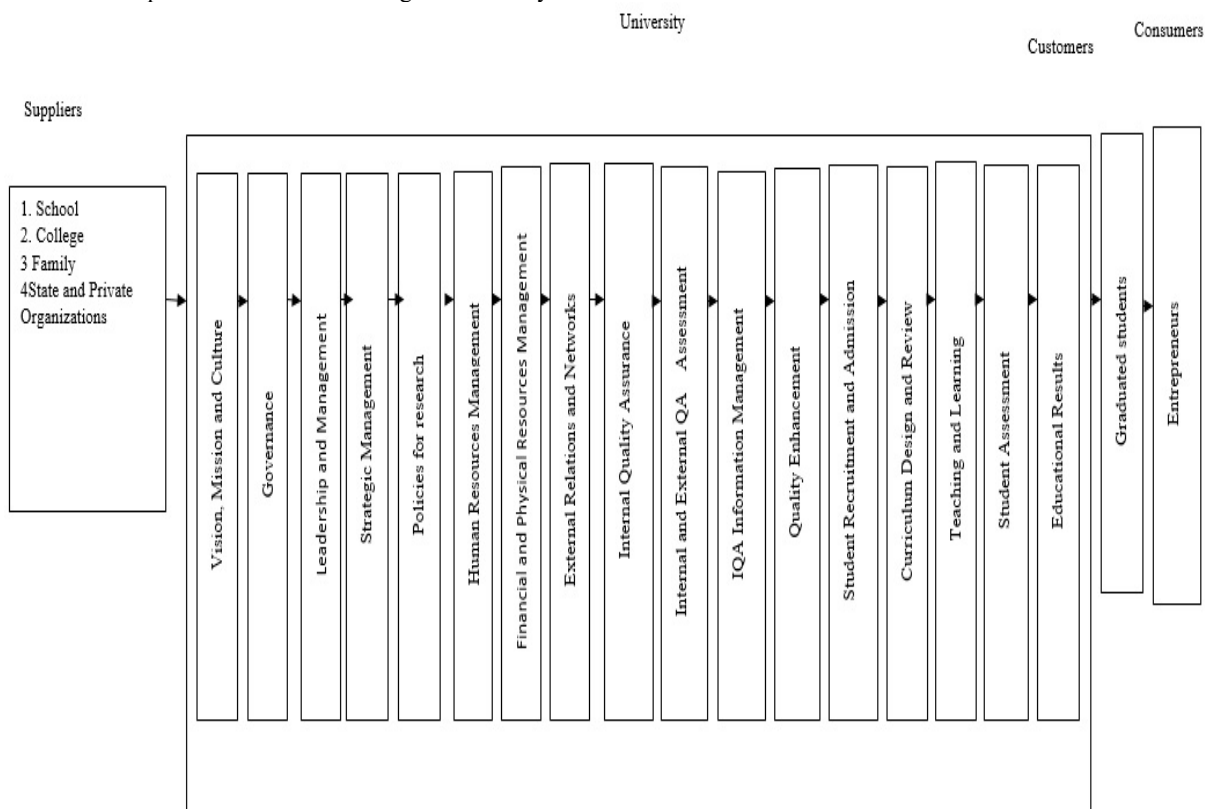

Fig 1 : Supply chain management information systems model for Educational management for ASEAN University Network Quality Assurance at institution level

Table 1: Stakeholders each process is related to the following activities:

Stakeholders	Activities in supply chain	Needs for data
1. **Suppliers** 1. School 2. College 3 Family 4State and Private Organizations	- Sending graduated high school students. - Sending self-supported students. - Giving funding support for study. - Giving educational scholarships.	-quick responses.
2. university Development and Evaluation 1 Vision, Mission and Culture	1 Senior leaders ensure that the vision and mission meet stakeholders' needs and to their satisfaction. 2 Senior Leaders foster culture including a set of values to align with the vision and mission of the institution. 3 The vision, mission and culture are articulated, cascaded and demonstrated for implementation. 4. Review of the vision, mission and culture is carried out to meet stakeholders' needs and to their satisfaction.	- To be filed and stored systematically to prevent the loss of information.

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 1 Vision, Mission and Culture 2 Governance	5 The vision, mission and culture, and their development processes are improved to meet stakeholders' needs and to their satisfaction. 1 Governance system including board, council, senate and/or advisory committee is established to set strategic directions given the specific context of the institution, and to ensure accountability, sustainability and transparency as well as to mitigate potential risks. 2 Decisions from governance bodies are translated into action plans, policies and guidelines for implementation 3 Review of the governance system of the institution is carried out. 4 The governance system of the institution is improved for institutional effectiveness and	- Correct and complete evaluation reports. -quick responses.

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 2 Governance 3 Leadership and Management	better risk management. 1 Senior Leaders establishes management structure with defined roles and responsibilities, decision-making, communication and reporting to achieve the vision, mission and culture; and strategic goals of the institution. 2. Senior leaders involve in communicating and engaging stakeholders in driving the vision, mission and culture; and strategic goals of the institution. 3 Review of the leadership and management structure of the institution is carried out. 4 The leadership and management structure of the institution are improved for	- To facilitate speedy and accurate data - To facilitate speedy and accurate data

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 3 Leadership and Management 4 Strategic Management	management effectiveness and to achieve desired levels of organizational performance 1 Strategy planning is carried out to fulfill the vison, mission and culture as well as the strategic goals of research. 2. Strategic plan is cascaded and translated into long and short-term action plans for implementation. 3. Key performance indicators and targets are established to measure the performance of strategic goals of the institution. 4 The strategic planning process as well as key performance indicators and targets are improved to meet the strategic goals of the institution.	- reduction of time wastage. - To be easily accessible

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 5 Policies for research	1 System to formulate policies for research is established. 2 Process to monitor the compliance of policies is documented, communicated and implemented. 3 Review of policies for research is carried out. 4 Policies for research are improved for institutional effectiveness and to meet stakeholders' needs and to their satisfaction.	- reduction of time wastage.
6 Human Resources Management	1 Human resource planning (considering succession, promotion, redeployment, termination, and retirement) is carried out to fulfill the needs for research 2. Recruitment and selection criteria including ethics and academic freedom for appointment	- To be easily accessible.

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 6 Resources Management	deployment and promotion are determined and communicated. 3. Competences including leadership skills of various staff categories are identified and established. 4. Training and developmental needs of	- reduction of time wastage.

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
	staff are identified and activities are implemented to fulfill them. 5. Performance management system including rewards, recognition and coaching/mentoring schemes is implemented to motivate and support research. 6 Review of the human resource plans, policies, procedures, and schemes is carried out. 7. The human resource plans, policies, procedures, and schemes are improved to support research	- To be easily accessible.

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 7. Financial and Physical Resources Management	1 System to plan, implement, audit and improve the financial resources of the institution to support its vision, mission and strategic goals in research is established and implemented. 2 System to plan, maintain, evaluate and improve the physical facilities and infrastructure such as teaching and learning facilities, laboratories, equipment and tools etc. to meet the needs of research is established and implemented. 3 System to plan, maintain, audit and improve the IT facilities and infrastructure such as computers, networks, backup, security and access rights to meet the needs of research is established and implemented.	- reduction of time wastage. - To be easily accessible.

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 7. Financial and Physical Resources Management	4 System to plan, maintain, evaluate and improve the academic resources such as library resources, teaching aids, online databases, etc. to meet the needs of research is established and	- reduction of time wastage.

Stakeholders	Activities in supply chain	Needs for data
	implemented 5 System to plan, implement, evaluate and improve the environment, health and safety and access to people of special needs is established and implemented.	
8. External Relations and Networks	1 Plan for external relations, networks and partnerships is established to achieve the vision, mission and strategic goals of the institution. 2 Policies, procedures and agreements to foster external relations, networks and partnerships are implemented. 3 Review of the external relations, networks and partnerships is carried out.	- To be easily accessible.

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 8. External Relations and Networks	4. External relations, networks and partnerships are improved to achieve the vision, mission and strategic goals of the institution.	- reduction of time wastage.
9 Internal Quality Assurance (IQA) System	1 Structures, roles and responsibilities and accountability of IQA are established to meet the strategic goals and quality assurance of the institution. 2. Strategic QA plan encompassing strategies, policies, stakeholders' engagement and activities as well as QA promotion and training is established to meet the strategic goals and quality assurance of the institution. 3. The strategic QA plan is cascaded and translated into long and short term action plans for implementation. 4 System to document, review and communicate QA policies, systems, processes and procedures is implemented.	- To be easily accessible.

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 9 Internal Quality Assurance (IQA) System	5 Key performance indicators and targets are established to measure the performance of the quality assurance in the institution. 6. The strategic QA planning process and key performance indicators and targets are improved to meet the strategic goals and quality assurance of the institution.	- reduction of time wastage.
10 Internal and External QA Assessment	1 Plan for internal and external QA assessment is established. 2. The internal and external QA assessment is regularly carried out by trained and independent staff and/or experts. 3 The findings and results of the internal and external QA assessment are reviewed. 4. The internal and external QA assessment processes are improved to meet the strategic goals of the institution.	-quick responses

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 11 IQA Information Management	1 Plan for IQA information management including collection, processing and reporting data and information to and from stakeholders in supporting research is established. 2 IQA information including data analytics is relevant, accurate and readily available to stakeholders in a timely manner that aid decision making while assuring integrity, confidentiality and security of them. 3 Review of IQA information management system, and the quantity and quality of data and information as well as the integrity, confidentiality and security of them is carried out. 4. The management of IQA information and their plans processes and policies are improved to support research.	- reduction of time wastage.

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 12 Quality Enhancement	1 Plan to continually enhance institutional quality including policies, systems, processes, procedures and resources to seek best practices in research is established. 2 Criteria for selecting comparative and benchmarking information and partners to improve performance are established. 3. Comparative and benchmarking information to enhance QA practices and encourage innovation is carried out. 4 Review of the process for selection and use of comparative and benchmarking information is carried out. 5 The process for selection and use of comparative and benchmarking information is improved to continually seek best practices in research	- reduction of time wastage. - To be easily accessible.

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 13 Student Recruitment and Admission	1 Plans, policies and communication for student admission to various programmes are established. 2. Criteria to select quality students for each programme are established 3. Procedures to monitor the implementation of the recruitment and admission of students are in place. 4 Measures are established to monitor student recruitment and admission. 5 Student recruitment and admission are improved to ensure that they remain relevant and effective	- reduction of time wastage. - To be easily accessible.

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 14. Curriculum Design and Review	1 System to design, develop, monitor, review and approve curricula for all study programmes and courses with input and feedback from stakeholders is established. 2. System to formulate and align expected learning outcomes of the programme and its courses to the stakeholders' needs is established. 3 Syllabi and delivery plans of the programme and its courses are documented, communicated and delivered based on the expected learning outcomes. 4 The management of intellectual property is improved to protect the university and research staff, and public interests. 5 The curriculum design and review process, and curricula are improved to ensure that they remain relevant and up-to-date to meet the changing needs of the stakeholders.	- To be easily accessible. - To be easily accessible.

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 15 Teaching and Learning	1 System to select appropriate teaching and learning activities that are aligned to the educational philosophy and the achievement of the expected learning outcomes is established 2. System to engage, assign and approve academic staff deployment based on merit, qualification, expertise and experience is implemented 3. Teaching and learning activities enhance life long learning and are constructively aligned to the achievement of the expected learning	- To be easily accessible. - reduction of time wastage

110

Int. J Sup. Chain. Mgt   Vol. 11, No. 3, June 2022

Stakeholders	Activities in supply chain	Needs for data
	outcomes 4. Teaching and learning activities are monitored and evaluated for quality and improvement. 5. The educational philosophy and teaching and learning activities are improved to achieve the expected learning outcomes, quality of teaching and learning and life-long learning.	

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 16 Student Assessment	1. System to plan and select appropriate types of student assessment during the course of study is established 2 The student assessment is constructively aligned to the achievement of the expected learning outcomes. 3 The student assessment methods and the results of the assessment are reviewed to ensure validity, reliability and fairness and the achievement of the expected learning outcomes. 4 The types of student assessment and assessment methods are improved to ensure their validity and reliability towards the achievement of expected learning outcomes.	- To be easily accessible.

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 16 Student Services and Support	1. Student services and support; and student monitoring system are planned. 2 Student services and support; and student monitoring system are implemented to meet the needs of stakeholders 3 Review of student services and support; and student monitoring system is carried out. 4 Student services and support; and student monitoring system are improved to meet stakeholders' needs and to their satisfaction.	- To be easily accessible.
17 Educational Results	1 The pass rates and dropout rates of all study programmes and courses are established, monitored and benchmarked for improvement 2 The average time to graduate for all study programmes is established, monitored and benchmarked for improvement	

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation Educational Results	3 Employability of graduates of all study programmes is established, monitored and benchmarked for improvement. 4 The satisfaction levels of stakeholders on the quality of graduates are established, monitored and benchmarked for improvement.	- To be easily accessible.
Customers Graduated students	Having work performance skills	- To facilitate the filing and storage of large amount of information for accessibility.
Consumers Entrepreneurs	Employing graduated students with desirable characteristics including good virtues and morality, good knowledge and	To stored systematicall-y to prevent the loss of data

111

Int. J Sup. Chain. Mgt   Vol. 11, No. 3, June 2022

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation Educational Results	3 Employability of graduates of all study programmes is established, monitored and benchmarked for improvement. 4 The satisfaction levels of stakeholders on the quality of graduates are established, monitored and benchmarked for improvement.	- To be easily accessible.
	intellectual skills, good human relationship skills, good responsibility, good numerical analysis skill, good communication skill, and good information technology usage skills, etc [8]	

2.4 Explanation on elements of Supply chain management information systems model for Educational management for ASEAN University Network Quality Assurance at institution level

1 Suppliers

The suppliers mean the organizations that supply raw materials to the manufacturer. Raw materials in this case are students who graduated from high schools or two-year colleges, or students who receive special quotas for admission. They can apply for admission via the computer system.

2 University

The manufacturer means the university that produces graduated students. It performs the duty to transform raw materials, or entering students, into the finished products of qualified graduated students. The university will perform its duty of student development and evaluation.

3 Customer

Customers mean finished research from the university.

4. Consumers

The customers mean entrepreneurs or the end-of-process component of the model. They include the society in general and entrepreneurs who sended finished research from the university. Finally, the end product of product will add value for customers with supply chain.[1],[2],[3],[4],[5],[6],[7],[9],[10],[11],[12]

Table 2: Results of appropriateness evaluation of Supply chain management information systems model for Educational management for ASEAN University Network Quality Assurance at institution level

No.	Items	$\overline{X}$	S.D.	Suitability
1	Main elements	3.70	0.64	High
2	Suppliers	3.70	0.88	High
4	University	3.80	0.63	High
5	Customers	3.70	0.67	High
6	Consumers	3.80	0.42	High
	Total	3.74	0.65	High

From table 2, that ten experts agree that Supply chain management information systems model for Educational management for ASEAN University Network Quality Assurance at institution level is highly appropriate . The overall rating mean of 3.74 and standard deviation of 0.65.

4. Discussion

Supply chain management information systems model for Educational management for ASEAN University Network Quality Assurance at institution level is considered to be high appropriate and the design was relevant to Chansamut and Piriyasurawong has studied supply chain and information system about educational [1] In addition, with the study of Chansamut, recommended that supply chain and information technology . [2][3],[4],[5],[6],[7]

5. Conclusion

Supply chain management information systems model for Educational management for ASEAN University Network Quality Assurance at institution level is considered to be high appropriate. The overall evaluation result shows the overall rating mean of 3.74 suggesting that It can be appropriately applied in actual work settings.

5. Recommendations

Supply chain management information systems model for Educational management for ASEAN University Network Quality Assurance at institution level should be conducted on the creation of required database for developed the model.

112

Int. J Sup. Chain. Mgt   Vol. 11, No. 3, June 2022

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