The Academic MIS Model Used in Higher Education to Resolve Typical Problems in Indonesia: A Case Study

Veronica S. Moertini, Parahyangan Catholic University, Indonesia
Tety Yuliaty, Parahyangan Catholic University, Indonesia
Wisnu Rumono, Parahyangan Catholic University, Indonesia
Buddy S. Tjhia, Parahyangan Catholic University, Indonesia

ABSTRACT

In response to education regulations for quality assurance (QA), universities in Indonesia strongly require an integrated management information system (MIS), such as Academic MIS (AMIS). In developing AMIS, the main issues that must be addressed are the urgent need for implementing university QA standards (even though departments have already implemented their best practices for years and show reluctance to change), changing requirements, and the need for a quick delivery system despite the fact that AMIS is very large in scope. This paper contributes to modeling AMIS, which is suitable for universities in Indonesia. This research has been conducted at one of the best private universities, Parahyangan Catholic University. Having measured the quality of AMIS using several key business measures, results indicated that the proposed model successfully resolved the issues at stake.

Keywords: Academic Management Information System (MIS), Higher Education in Indonesia, Integrated Higher Education MIS, Quality Assurance MIS, University QA Standards

INTRODUCTION

In attempting to raise and improve educational quality, the Indonesian government has established educational regulations and put them into effect at educational institutions. One of the recent regulations, (Republic of Indonesia, 2005), states that higher education institutions (HEIs) in Indonesia must implement quality assurance (QA). From the information system point of view, implementing QA standards requires data and information that must be complete, correct, consistent at all organization units and also up to date at any time. Therefore, HEIs in Indonesia need an integrated management information system (MIS) that supports the processes in implementing the standards, captures the required data and generates reports.
The MIS should integrate the system of academic, finance, human resources, and logistic as defined in the QA standards. This means that each system, such as the Academic Management Information System (AMIS), has to be centralized so that it could be further integrated into one large system with other systems, forming the university’s integrated MIS.

At the early stage of the research, we found several core issues and problems that must be addressed: the urgent need of implementing university QA standards—although departments have already implemented their “best practices” for years and show reluctance to change; the need of a quick delivery system, despite the fact that AMIS is very large in scope; and the ever changing requirements, although any MIS generally requires “fixed requirements” to be defined at the front (see section of Issues and Problems of Case Study for detailed discussion). All of these combined raise a considerable challenge in developing AMIS.

Besides that, in any case, an integrated AMIS must be developed to start supporting QA implementation. Otherwise, the situation would be like the “chicken and egg” problem: QA could not be implemented as there is no sufficient information for evaluation, while AMIS could not be developed as standard procedures implemented by all of the departments simply do not exist.

Research contribution: Despite the issues and problems faced by many (perhaps most) universities in Indonesia, the study of literature pointed out only a handful of research results which discuss about integrated MIS development suitable for HEIs, while none discusses a model that addresses the peculiar issues involved (see Literature Study section). Therefore, this research is intended to contribute to finding a model which comes as the based solution for the integrated higher education AMIS. Such integrated AMIS is very large in scope, which requires a considerable amount of work producing satisfactory results in every stage of the development. The steps that led to finding the model, theories and concepts adopted in formulating the model, as well as system evaluation results are presented accordingly to justify the “soundness” and appropriateness of the model proposed.

The research is conducted in a case study of a university, namely Parahyangan Catholic University (Unpar), which is one of the best universities in Indonesia. Unpar has 17 undergraduate departments and 10 graduate study programs, and currently accommodates 9,668 students.

The paper is organized as follows: literature study, issues found, key business measures, system requirements, development strategies, AMIS model (includes integrated MIS architecture, general concept, database schema, global function packages, and department and sub-system configurations), results and conclusions.

LITERATURE STUDY

According to Suwardi and Permatasari (2007), a higher education (HE) integrated MIS has multiple scopes, manages many activities from various areas (academic, human resources, financial, etc.) and maintains the data consistency across areas at any time.

Related Methods of HE Integrated MIS Development

We found only a limited amount of literature that discusses the HE integrated MIS. Suwardi and Permatasari (2007) proposes a general concept of HE integrated MIS by using system interfacing. Lovrekovic, Ruzic-Dimitrijevic, and Nikolic (2007) defines three basic concepts to improve HE business performance, namely reengineering business processes, applying internet services and technologies and involving knowledge management concepts. Pollock et al. (2004) provides an analysis of the rollout of an ERP system in one particular institution in the UK, focusing on the development, implementation and the use of both generic and university specific functionality. Okunoye, Frolick, and Crable (2008) discuss the fact that many HE institutions have begun to adopt ERP and find that in order to succeed
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