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Assessing an Information Systems Master's Curriculum Program:

Revisiting the ACM's MSIS 2006 Model Curriculum

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ABSTRACT

The field of Information systems continues to change dynamically with the painful impact for reacting to those changes felt by both undergraduate and masters' level programs. The purpose of this paper is to report the results of a comparative self-study of one MSIS program as a measure to assess its competitiveness among a set of other comparable, competitive and aspirant masters' programs. The focus of the study is determine the viability of one specific master's curriculum used currently to prepare students for professional careers in information systems in order to meet the marketplace challenges created by the ever-evolving information systems business needs. The fundamental methodology used in this study is based on that which was employed in a previous study conducted to assess the 'fit' of 86 MSIS programs with the MSIS 2000 Model Curriculum (Vijayaraman, et.al.) Findings will be presented that reflect shared learning objectives, curriculum content, currency, and relevancy necessary to assess whether changes to the current curriculum are necessary to establish a more competitive position among the three categories of comparable, competitive and aspirant university MSIS programs. One benefit that resulted from this initiative is the recognition that there has been relatively little research directed at assessing the overall direction of current MSIS programs and the need to revisit the need for a new MSIS model curriculum. The last endorsed MSIS model curriculum was published in 2006 (Gorgone, et.al. 2006), almost 10 years ago. It is the hope of presenting the results of this study that a discussion can begin to address the challenge of maintaining a viable MSIS curriculum that meets the current and future demands of the business community.

Keywords

MSIS programs, IS curriculum, Information Systems.

INTRODUCTION

Most Information Systems departments subscribe to governance whereby curriculum changes are the purview of a committee comprised of faculty who determine course content that is consistent with a set of prescribed learning objectives based on how faculty perceive the relevance of and timeliness of the subject content and the current direction of information systems and technology research, skill set demands by the business communities. Quite often there is a cycle wherein the odd and even academic years are alternatively used to assess the curriculum and/or assess the student's learning outcomes of the program's curriculum. The IS Department used for this study is required to conduct an assessment of its current Masters of

Science in Information Systems (MSIS) program. In preparation for this project, the IS Department used the results of the learning outcomes assessment from the 2014-2015 academic year for launching the curriculum assessment. The learning outcome assessment report was completed at the end of the Spring, 2015 semester and was based on the findings from direct measures developed by faculty who have used these measures for the last eight years; coupled with a survey directed by the department's advisory board of graduates and businesses who have hired those graduates from the previous two years. The report is provided for those interested under separate cover. A sample of the direct and indirect outcomes is shown in Appendix A (to provide objectivity anonymity, these explicit references of the program of study will be provided in the final draft of the paper).

Direct assessment measures are based on two primary goals: (1) preparing students for senior level IT positions, and (2) the focus on design, development and management of IT. The four common core courses used to measure the learning outcomes that support these goals include (1) the analysis and design of databases, (2) data communications, (3) systems development, and (4) information systems management. The learning outcomes that are measured are as follows:

1. Commitment to IT/IS Professionalism
2. Modeling Skills
3. Technical Knowledge & Skills
4. Creating IT Solutions
5. Analytical Skills
6. Planning/Resource Management Skills
7. Integration Skills

Comprehensive exams, semester projects, and presentations are used for evaluating student learning outcomes. These measures are provided directly from faculty evaluations of student performance. Aggregate measures are used as indicators of to the degree of learning outcome achievement. The target level of achievement is for 80% of the students to receive 80% or better on all direct measures.

The insights provided through the indirect measures gave the first indication that more than a cursory review of the curriculum was warranted. Thus began the serious issue of acknowledging that a comprehensive study would be conducted during the 2015-2016 academic year. The Masters' Programs Committee was tasked with conducting a comparative study of MSIS programs using three different sets of IS programs identified by the three AACSB peer university MSIS group categories of 'comparable', 'competitive' and 'aspirant' programs. The following provides definitional reference for determining the basis for those programs, which were included in the peer categories (To provide objectivity, the list of those institutions will be provided in the final draft of the paper):

1. Comparable Peers

A list of schools considered similar in mission and assumed to be appropriate for performance comparison. A minimum of six comparable peers is provided.

2. Competitive Groups

A list of schools which are so directly competitive that conflict of interest considerations exclude their personnel from the review process of the applicant. The list may be of any number. Only those schools should be included where the direct competition for students, faculty, or resources is so compelling that the appearance of a conflict of interest is present.

3. Aspirant Groups

A list of schools that provides developmental goals for the applicant represents management education programs or features that the applicant hopes to emulate, and place the vision and strategy of the applicant in context. The list may be of any number.

Early in the Spring, 2015 semester, a Masters' program committee member contacted Dr. John Gorgone, Co-Chair and Editor of the MSIS 2006 Model Curriculum and Guidelines for Graduate Programs in Information Systems article published January, 2006 to inquire about any initiative to revise the 2006 MSIS Model Curriculum. The reply to the inquiry was that he was retired and was no longer working on curriculum. He forwarded to the request to Dr. HeikkiTopi at Bentley University who might have more insight into the latest plan to revise the 2006 MSIS Model Curriculum. Dr. Topi replied that "...there is an ongoing project to revise it significantly. The plan is to launch the new curriculum (MSIS 2016?) at the end of 2016. I've enclosed the ISWorld announcement regarding this at the end of the message. I have also attached a couple of papers that you might find useful. These have been written based on panel discussions that took place in preparation for the current

revision.” The two articles provided by Dr. Topi were based on the findings of panel discussions and three MSIS programs from institutions represented by the articles’ authors.

The status of the new project to revise the MSIS 2006 Model Curriculum provided a compelling incentive to conduct a comprehensive study of the department’s current MSIS curriculum that used a different approach, one in which the department’s current MSIS curriculum would be mapped to the building blocks used in the 2006 MSIS Model Curriculum designed jointly by the Association for Information Systems and the Association for Computing Machinery. The rationale was to use the standards using the underlying fundamentals and philosophy used in the development of the curriculum guidelines. Those building blocks include:

1. **Foundations**—prerequisite business & information systems skills.
2. **Common Core**
 - A. **Technical Courses**—IT infrastructure, Analysis, Modeling, Design, Enterprise Models, Emerging Technologies.
 - B. **Managerial Courses**—Project & Change Management, IS Policy & Strategy, Human-computer Interaction.
3. **Integrated Capstone**—synthesizes common core components for the integration of information systems across an organization.
4. **Career Tracks**—offers flexibility to accommodate individual student needs.

The basis of the self-study addresses the degree of relevancy and timeliness of the curriculum for graduates to train them to be academically competent, sufficiently skilled in technology and management principles, and cognizant of value of life-long learning to handle the demands of private and public sector businesses. An MSIS program should be equally dynamic in that content should change to accommodate the ever-changing market conditions. This will assure that the students graduating from these programs are highly marketable.

The study will examine one specific MSIS curriculum and map the current courses to those of the three categories of peer institutions' information systems curricula and determine the degree of similarity/dissimilarity the program of study curriculum exhibits compared to the others included in the study. This mapping will provide for an assessment as to the viability of the current program relative to the others. In addition, a survey of the local business community will be used to validate the study’s findings. This study will enable the Masters’ Program Committee to use empirical findings make recommendations for changes to the current curriculum in order to remain a competitive MSIS program

BACKGROUND

One of the studies conducted in 2000 collected data from all colleges where they were an MS program in IS and compared it to the MSIS 2000 model curriculum. We are attempting to do the same study but with a different twist, which is comparing our curriculum with the three groups: comparable, competitive and aspirant which would be unique. Additionally we will compare our curriculum to the latest Model Curriculum as published by The ACM in 2006. We will research the comparable schools and collect the information either online or sending them an email.

An evaluation study of the current status of Masters of Science programs in IS was done by surveying 86 Masters of Science programs in IS and when the findings were mapped to the MSIS 2000 model curriculum structure to study their fit with the MSIS 2000 model curriculum, it was found that some matches and mismatches with the MSIS 2000 model curriculum were noticed (Vijayaraman & Ramakrishna, 2000). Their results indicate the fit to be somewhat mixed. One of their findings was on the credit hour requirements seem to be met by a majority of the existing programs but there is considerable deviation in the required courses. Their recommendation was that schools should do such research and then information gathered from such research should be disseminated in a timely manner so that schools can use the information to keep their programs current and competitive and relevant to the changing market conditions.

The question is, should we do such periodic research and evaluation of academic programs, specifically information systems programs in colleges and universities across the world? And the answer is, yes. It has been studied in the past that information systems programs face quite a range in enrollment and this is tied to the job market. Enrollment increases when the job market is hot and decreases when the conditions are reverse. Another phenomenon that affects information systems enrollment programs is global outsourcing (George & Valacich, 2000). They examined the role of local outsourcing and its effect on job opportunities for information systems graduates in United States and Europe. They concluded that although global outsourcing does affect the job opportunities but the field of information systems is still strong and will continue to

strengthen. We must periodically evaluate to ensure the quality of the information systems programs stay high and keep up with the growing and dynamic requirements by the private sector and the industry in general.

Another study on images of information systems in the 21st century takes the approach of Metaphors to help explain many of its central concepts from systems development methodologies to Human-computer interaction (Gallupe 2000). This paper describes five metaphors for the field of IS and use of these metaphors proposes a set of challenges for IS researchers and Practitioners.

Educators being practitioners, should take cognizant of these metaphors such as; looking at the field of information systems as a “game”, as an “orchestra”, as a ‘machine’, as a “garden”, and finally looking at information systems as a ‘journey”. According to the author, all these metaphors provide insights into major challenges that face the field of IS and provide a different perspectives of IS and as such extend these metaphors to use in their work, which is in their classroom teaching students or in their research and service and thus contribute to the ever changing field of information systems.

One of the support areas for information systems programs across colleges and universities are the resources that are available to educate our graduates, which are library resources. A study that analyzed websites of North American schools of information and library science (ILS), found that schools are expanding and investing in newer areas (Markey, 2004). Some schools offer one-time courses and others had were offering courses concentrations, specializations and certifications. The author concludes that new educational trends are primarily user-centered and it is important for library educators to engage in exercises that enable them to understand where the field of IS is going which will enable them to make appropriate decisions about their own schools programs. It is clear from this analogy that educators also should keep up with the trends in business & industry and assess what skill sets are in demand and according graduate students with such varied and timely skill set enabled individuals so that they are in high demand and to do this requires a continues assessment and tweaking of their IS programs.

Other information systems programs also have adopted the practice of assessing their content and structure by mapping their course content to the MSIS and ACM model curriculum (Wang, Lee, Pierce, and Zhu, 2007). The authors applied the model to assess and enhance their Masters of Science in Information quality program and also took into account the demand from industry so that their students can not only solve current but also future information quality problems.

METHODOLOGY

AACSB international confirms that the following are VCU's comparable peer, competitive, and aspirant groups:

Comparable Peers:

University of Alabama - Birmingham
University of Arkansas
University of Central Florida
University of Cincinnati
University of Louisville
University of South Florida

Competitive Group:

George Mason University
George Washington University
James Madison University
Old Dominion University
The College of William & Mary
University of Richmond
University of Virginia
Virginia Tech University

Aspirant Group:

Florida State University
Georgia State University
Pennsylvania State University

University of Maryland
University of South Carolina

AACSB validated definitions for each group (peers, competitors, aspirants)

MSIS 2000 MODEL

The model MSIS 2000 curriculum was sponsored by Association for Computing Machinery (ACM) and the Association for Information Systems (AIS). It is endorsed by the leading information systems organizations (Gorgone and Gray, 2000)

ACM CURRICULUM MODEL

We will study these three groups and their IS programs and compare them to VCU's IS programs and come up the 'gaps' and strategies to address these gaps keeping in mind the requirements of the ACM's Model Curriculum

The methodology involves the following:

Collect the following information

- program description
- course descriptions
- contact info for the MSIS committee members

Create a spreadsheet with the info about each school to see:

- the correlation of the courses (to find what is common and what unique)
- where the dept is housed (school)
- How old the dept is
- Student body
- How many faculty
- Faculty qualifications (IS, MBA, or other)
- When last time revised curriculum
- What provoked the revision
- What changes were made
- When, what, and why the last new classes were implemented
- Who helped in the revision (whether they consult with their advisory board, etc.)
- How they assess their program, validation, etc.

ANALYSIS

Finding their old model curriculum

Contact the school's model curriculum development team and ask:

- What they are working on
- Help with the revision
- How they come up with the revision (what the process looks like, how do they identify the new trends, who is involved, etc.)

Finally:

- Map our curriculum to the findings (other universities and model curriculum)
- Present to the dept. advisory board and ask for their input (expectations, content, etc.)

SURVEY METHODS

COMPARISON TABLE

CURRENT TRENDS

CONCLUSIONS AND RECOMENDNATIONS AND FUTURE RESEARCH

Relevance of the current curriculum to the community

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