The Making of a Successful Analytics Master Degree Program: Experiences and Lessons From an Asian University

Michelle LF Cheong, Singapore Management University, Singapore, Singapore

ABSTRACT

Singapore Management University’s School of Information Systems is a young school within a young and small university in Asia. Being young and small, establishing a successful analytics master degree program required extensive landscape research, assessment of its own strengths and weaknesses, having a committed team, and having a clear vision to meet the ever-changing needs of the industry. The Master of IT in Business (Analytics) program, established since 2011, has grown from an annual intake of 16 to 128 students in six years. This article attempts to describe the design process, challenges faced, decisions made, and the key actions taken, which resulted in an extremely successful analytics master program. The experiences and lessons drawn can become valuable references for other universities who are also planning to launch analytics master degree programs. The article also summarizes the 11 key takeaways which can be used as a strategic guideline.

KEYWORDS

Analytics Master Program, Asia, Challenges and Solutions, Lessons Learnt

INTRODUCTION

Higher education is considered a critical tool to stimulate economic growth for a country. Over the years, ASEAN nations have placed increased emphasis in training the skilled workforce to support social and economic developments of their countries (Gooch, 2012). In particular, Gopinathan & Lee (2011) described the strategies adopted by Singapore to become a regional education hub, by hosting prestigious institutions, establishing international partnerships, and setting up specialist research centers, all made possible by the heavy investments committed by the Singapore Government.

By 2016, Singapore has increased the number of universities to six, where for the longest time, there were only two, where National University of Singapore (NUS) was established in 1905, and Nanyang Technological University (NTU) in 1981. The QS World University Rankings 2015/16 has ranked NUS and NTU as 12th and 13th respectively (Top Universities, 2015), and the Times Higher Education Asia University Ranking 2016 ranked NUS and NTU as 1st and 2nd in Asia respectively (Times Higher Education, 2016). The constant quest for world class status and how universities in Asia did it were described by Mok & Hallinger (2013).

DOI: 10.4018/IJBIR.2017070101

Copyright © 2017, IGI Global. Copying or distributing in print or electronic forms without written permission of IGI Global is prohibited.
Singapore Management University (SMU) was setup in year 2000 as the third autonomous university after NUS and NTU. Over 17 years, SMU has established six schools with 9000 students across undergraduate, postgraduates and executive programmes, and entered the QS Asia University Rankings for the first time in 2016 at 60th place, which is considered a remarkable feat for a 16-year-old university then (Top Universities, 2016).

In line with the nation’s aspiration to be a regional education hub and the practical need to design, develop and offer the postgraduate professional education programs to support the nation’s economic growth, SMU’s School of Information Systems (SIS) started to design a Master of IT in Business (MITB) program in 2006, which focuses on training IT professionals to apply IT to solve business problems in different business domains. In 2011, the MITB program launched a specialized track in Analytics, called the MITB(Analytics) program. This paper aims to describe the design process, challenges faced, decisions made, and the key actions taken, which resulted in an extremely successful analytics master program. The experiences and lessons drawn can become valuable references for other universities who are also planning to launch analytics master degree programs. The paper also summarizes the 11 key takeaways which can be used as a strategic guideline.

LITERATURE REVIEW

The rise of data science is briefly described in a Forbes article published in 2013 (Press, 2013), which traces the timeline for the evolution of the term “Data Science” and its use, by listing the major publications, activities and conferences from 1962 to 2012.

By 2009, the world has reached a technological maturity level in terms of the critical mass of people with social network accounts, and the exponential rise in the use of mobile devices to support every other aspect of our lives. Massive amounts of data are created every second, and data analytics has become the next big thing which cannot be ignored. McKinsey has predicted that “By 2018, the US alone could face a shortage of 140,000 to 190,000 people with deep analytical skills as well as 1.5 million managers and analysts with the know-how to use the analysis of big data to make effective decisions” (McKinsey, 2011). It represents an unprecedented need and opportunity for universities around the world to start to offer bachelor and master degree programs to train data analytics professionals.

Data science, business intelligence and data analytics programs have sprung up all over the whole, especially in the US. Some programs are housed in a business or management school, while others are found in engineering, computer science, or information systems schools. Information Week (2013) listed the top 20 programs in 2013 where the split is about 50:50. The first master degree program in Analytics offered in the US is the M.S. in Analytics program offered by the North Carolina State University (NCSU) since 2007. By mid-2017, there are more than 175 master degrees in analytics and data science offered in the US alone (Institute of Advanced Analytics).

Depending on where the program is housed, the focus of each program differs, where programs offered in the business school tend to focus more on the business side of data science and lesser on the deep data analytics techniques. On the other hand, programs which are offered in the computer science or information systems schools tend to focus on the hardcore programming and machine learning techniques, and lesser on the business aspects. Gupta, Goul & Dinter (2015) presented three very comprehensive model curricula for three elective BI courses at the undergraduate, MS and MBA levels. In their paper, they differentiated the three courses in terms of their emphasis, where undergraduate BI curriculum will emphasize on the understanding of the BI tools and how they are applied in business context; while MBA BI curriculum will emphasize on understanding how BI implementations can benefit businesses, and gain necessary analytical skills for interpreting business data and managing BI projects; and MS BI curriculum will understand the BI techniques and develop BI applications to solve problems. All three curricula were guided by the methods used in IS2010 (Topi et al., 2010) and curriculum content coverage were guided by the Krathwohl’s Taxonomy (Krathwohl, 2002). Each
TOPSIS in Business Analytics
www.igi-global.com/chapter/topsis-in-business-analytics/107434?camid=4v1a

Exploration of Academic Risk Taking Among College Students
M. Keith Wright, Utpal Bose, Shohreh Hashemi and Diana Pence (2018).
International Journal of Business Analytics (pp. 17-29).
www.igi-global.com/article/exploration-of-academic-risk-taking-among-college-students/201451?camid=4v1a