

A Big Data Model for Education Sector

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Abstract. Managing a rapidly expanding amount of data involving Information Architecture has long been a goal in many Higher Education institutions. Many have long standing data warehouses and have used analytics tools. As the competition for gifted students becomes more intense while the cost of education makes the pool of potential students more limited, many institutions are taking another look at how they are analyzing potential students and managing the experience that students have while they are enrolled. Analytics play a critical role in performing a thorough analysis of student and learning data to make an informed decision on future course offerings and their mix to cater to the potential and existing students. Big Data systems position Information Technology to see the education becomes more holistically than any other areas for improving the decision making process. Predictive analytics and forecasting models in a Big Data environment enable institutions to make right investment decisions for higher institutional impact and also make the new very high knowledge environment.

Keywords: Big Data, Education, Computational Intelligence

1. INTRODUCTION

With the high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight, decision making, and process optimization can be tap to fully utilized in ways that have the potential to transform service design specifically meet education sector needs, in a timely manner. The strategy will deliver on elements of the Information Communication Technology Strategic Planning³. Big data allows for more focused and evidence-based policy design and service implementation that in turn allows student to interact with the University in a personalized and seamless way. As awareness of the benefits of big data increases there is likely to be an increase in public debate regarding the balance of benefits versus the challenges associated with the technology especially Malaysian Public Education Sector agencies. Many key areas that big data analytics may influence are explored⁴.

Many organizations deploy the integrate database application systems in order to manage their business operation¹⁶. There are potential savings in time and money if agencies implemented smarter data management practices that were conscious of the needs of big data analysis. Data sources from differing organizations and operational areas would be of greater benefit to multiple agencies and for multiple purposes if there were greater transparency. Personalization of services through big data analytics may produce value by revealing a clear picture of an individual student or University group.