8-10-2022

Big Data & Analytics in Higher Education: Value Focused Thinking Approach

Ghazwan Hassna
Hawaii Pacific University, ghazwan.hassna@gmail.com

Big Data & Analytics in Higher Education: Value Focused Thinking Approach

TREO Talk Paper

Ghazwan Hassna
Hawaii Pacific University
ghazwan.hassna@gmail.com

Abstract

For the last decade, Big Data & Analytics (BD&A) has demonstrated great potential in helping business organizations in improving their operations and customer experiences, deliver better products and services, and make breakthrough discoveries (Baesens et al., 2016; Chen et al., 2012; D. Kaltcheva et al., 2014; Davenport, 2014; Hartmann et al., 2014; McAfee & Brynjolfsson, 2012). Given its business transformative potential, several universities across the world realized the need to integrate BD&A education into their curriculum and programs (Cegielski & Jones-Farmer, 2016; Gupta et al., 2015; Mamonov et al., 2015; Wilder & Ozgur, 2015; Wixom et al., 2014). Most universities in the USA started offering courses and degrees with a focus on providing prospective students with the required skills for the new data-driven economy[1] (e.g., master's degrees or graduate certificates, etc.). While the adoption rate of BD&A education has increased significantly by universities worldwide, especially business schools, it is not the case for the real adoption and utilization of BD&A to improve the core business functions and operating models of many higher education institutions (McGuirt et al., 2016). Many universities are now teaching their students how to utilize BD&A to transform business functions, but only a few are tapping into this potential to improve their own business and operating models (McGuirt et al., 2016). Universities should not only teach BD&A but should go beyond that into utilizing its potential to transform their own business functions and processes.

As Big Data and Analytics (BD&A) proliferates, some higher education institutions are poised to take advantage of a wealth of data-driven insights, but many are still missing this big opportunity. Those who have not started yet could be overlooking meaningful trends or making strategic and operational decisions without utilizing the benefits of solid data-driven insights. In this study, we aim to deploy *Value Focused Thinking* (VFT) approach to enhance our understanding of the strategic and organizational objectives for adopting and utilizing BD&A by higher education institutions. VFT is a method introduced by Ralph Keeney in 1992 to help decision makers in identifying the right values behind making their decisions (Keeney, 1992). Values are defined as the principles that are used to evaluate alternatives by decision makers. Objectives are statements of something that one desires to achieve. Keeney (1992) argued that articulating fundamental values and coming up with fundamental and means objectives can help better identify decision opportunities through creating better alternatives. Following the VFT approach will result in a means-ends objective network that represents the fundamental objectives for adopting and utilizing BD&A by higher education institutions and how they can be accomplished via attaining the means objectives.

The results of this study can be very important not only for the academic audience, but also for higher education leaders, administrators, and senior managers who are involved in setting the strategic direction of their academic institutions. The results can provide a framework for them to understand their fundamental values and plan the relevant BD&A initiatives that support their goals and objectives.

[1] As of the time of writing this paper, more than 350 master's degree in business analytics in the USA were listed on the "Study Portal" website. https://www.mastersportal.com/study-options/269779178/business-intelligence-analytics-united-states.html.

References (optional)

Baesens, B., Bapna, R., Marsden, J. R., Vanthienen, J., & Zhao, J. L. (2016). Transformational Issues of Big Data and Analytics in Networked Business. *MIS Quarterly*, *40*(4), 807–818.

Cegielski, C. G., & Jones-Farmer, L. A. (2016). Knowledge, Skills, and Abilities for Entry-Level Business Analytics Positions: A Multi-Method Study. *Decision Sciences Journal of Innovative Education*, *14*(1), 91–118.

Chen, H., Chiang, R., & Storey, V. (2012). Business Intelligence and Analytics: From Big Data to Big Impact. *MIS Quarterly*, *36*(4), 1165–1188.

D. Kaltcheva, V., Patino, A., V. Laric, M., A. Pitta, D., & Imparato, N. (2014). Customers' relational models as determinants of customer engagement value. *Journal of Product & Brand Management*, *23*(1), 55–61.

Davenport, T. (2014). *Big Data at Work: Dispelling the Myths, Uncovering the Opportunities*. Harvard Business Review Press.

Gupta, B., Goul, M., & Dinter, B. (2015). Business intelligence and big data in higher education: Status of a multi-year model curriculum development effort for business school undergraduates, MS graduates, and MBAs. *Communications of the Association for Information Systems*, *36*(23), 449–476.

Hartmann, P. M., Zaki, M., & Feldmann, N. (2014). *Big Data for Big Business ? A Taxonomy of Data-driven Business Models used by Start-up Firms*.

Keeney, R. L. (1992). Value-focused thinking: A Path to Creative Decision making. In *Journal of Multi-Criteria Decision Analysis*.

Mamonov, S., Misra, R., & Jain, R. (2015). Business Analytics in Practice and in Education: A Competency-based Perspective. *Information Systems Education Journal*, *13*(1), 4–13.

McAfee, A., & Brynjolfsson, E. (2012). Big data: the management revolution. *Harvard Business Review*, *90*(10), 60–66, 68, 128.

McGuirt, M., Gagnon, D., & Meyer, R. (2016). *2015-2016 Higher Education Industry Outlook Survey*.

Wilder, C. R., & Ozgur, C. O. (2015). Business Analytics Curriculum for Undergraduate Majors. *INFORMS Transactions on Education*, *15*(2), 180–187.

Wixom, B., Ariyachandra, T., Douglas, D., Goul, M., Gupta, B., & John, B. G. (2014). The Current State of Business Intelligence in Academia: The Arrival of Big Data. *Communications of the Association for Information Systems*, *34*, 1–13.