Chapter 12
Using Text Mining for Improving Student Experience Management in Higher Education

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EXECUTIVE SUMMARY

The objective of this case study is to illustrate how text mining of open-ended responses from a student survey could yield valuable information for improving student experience management (SEM). The concept of student SEM was borrowed from the notion of customer experience management (CEM), which aims for ongoing improvement of customer relations through understanding of the customer's point of view (Pine & Gilmore 1998). With the advance of text mining technology, textual data that were previously underutilized are found to be valuable in CEM. To illustrate how text mining can be applied to SEM, we discuss an example from a campus-wide survey conducted at Arizona State University. The purpose of this survey was to better understand student experiences with instructional technology in order for administrators to make data-driven decisions on its implementation. Rather than imposing the researchers' preconceived suppositions on the students by using force-option survey items, researchers on this project chose to use open-ended questions in order to elicit a free emergence of themes from the students. The most valuable lesson learned from this study is that students perceive an ideal environment as a web of mutually supporting systems. Specifically, online access should be augmented by use of laptops and availability of course materials, whereas virtual classes should be balanced by human interactions.

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ORGANIZATION BACKGROUND

Arizona State University (ASU) is the largest public research university in the United States under a single administration, with a 2009 student enrollment of 68,064 (ASU, 2009c). ASU is composed of four campuses spanning across the Phoenix Metropolitan Area (Tempe, West, Polytechnic, Downtown). In 2009 the total endowment supporting ASU is $407 million whereas the total assets of ASU Foundation worth $645 million (ASU, 2009b).

ASU was founded in 1885 as the Tempe Normal School by an act of the Thirteenth Territorial Legislature. Its name was changed to the Normal School of Arizona in 1901 and became Tempe State Teachers College in 1925. In 1945, the school was under control of the Arizona Board of Regents and was renamed Arizona State College. These changes resulted from expansions of the curriculum and degree offerings. By 1958 the school performed all the functions of a regular university. As a result, a statewide ballot led the school to adopt the current name Arizona State University. Although research endeavors preceded attainment of university status in 1958, the development of new academic programs and library holdings and the conferral of doctoral degrees in the 1960s led the Carnegie Foundation to grant ASU Research I status in 1994 (ASU, 2009d).

In 2002, Dr. Michael Crow became the university's 16th president. President Crow outlined his vision for transforming ASU into a "New American University," an open and inclusive source of learning opportunities for all types of. Crow has stated that ASU is in a unique position to evolve together with the city into one of the great intellectual institutions in the world. In order to build a New American University, ASU has undergone some radical changes over the last few years. Like many universities, ASU has added new buildings, hired new faculty and brought in new students. For instance, ASU admitted its largest and highest-quality freshman class ever in fall 2003 and has developed nationally recognized programs in a number of fields, including accounting, astrobiology, design science, creative writing, music, ecology and evolutionary biology, electron microscopy, nanotechnology, psychology, solid-state science, and supply chain management. In addition, ASU has embarked on an aggressive capital building effort. The university is adding one million square feet of research infrastructure, and is continuing its development and expansion of the West, Polytechnic and Downtown campuses (ASU, 2009a). More importantly, the core essence of New American University is open and inclusive. The preceding efforts might not yield the expected results if student experience is not well understood. Thus, under the leadership of Dr. Crow, the management style of ASU has become more data-driven, research-based, and student (customer)-oriented.

SETTING THE STAGE

Customer Experience Management

This case study illustrates the value of text mining of open-ended responses from student survey as a data source for improving student experience management (SEM). The concept of student SEM was borrowed from the idea of customer experience management CEM), which was introduced by Pine and Gilmore (1998, 1999). Before the introduction of this concept, American corporations were either production-oriented or market-oriented. Based on the belief that the process is as important as the product, Pine and Gilmore asserted that successful businesses are those that understand the customer's point of view so that ongoing improvement of customer relations is possible (Pine & Gilmore 1998). Pine and Gilmore (1999) differentiated between selling a product/service and selling an experience: "when a person buys a service, he purchases a set of intangible activities carried out on his behalf. But when he