

Enterprise IT Applications: The Engine for Student Success

The national focus on improving community college student completion rates is not a recent phenomenon. Origins of the success agenda can be found in the mid-1980s, applying then-current persistence and involvement theory¹ to the student of the public, two-year, nonresidential college.² In trying to understand low retention rates, this literature considered the unique academic, social, and economic challenges of community college students. Over time, with little improvement in persistence and completion, calls for greater accountability and affordability intensified at local, state, and national levels.³ Coincident with these calls—and with ever-increasing recognition of the personal, social, and economic value of the associate’s degree⁴—came more research focused on producing a positive impact on community college student outcomes through significant practice and process change—especially change related to increasing access and success equity in higher education.⁵

The continued research and encouraging findings created stimulation for privately and publicly funded entities to collectively form national reform movements for student success. For example, Achieving the Dream (<http://achievingthedream.org/>), which began as a national initiative in 2004 and now includes over 200 community college members, has identified a variety of strategies to improve retention and completion and close achievement gaps. Moreover, highly respected organizations such as the American Association of Community Colleges (AACC, <http://www.aacc.nche.edu>) and the Center for Community College Student Engagement (CCCSE, <http://www.ccsse.org/center/>) have for many years facilitated exploration, development, and employment of high-impact practices. More recently launched is the AACC Pathways Project, which intends to help community colleges design and implement guided academic and career pathways at scale. Manifesting out of these monumental efforts is a litany of prescriptions for improving student retention and completion. For example, early-alert programs identify at-risk behaviors and apply interventions designed to keep students on-track; academic and career advising models provide an integrated, proactive, and personalized approach to student support; comprehensive academic planning encourages students to begin with the end in mind; first-year experience classes help students prepare for the transition from high school to college; and accelerated, often co-curricular, learning programs reduce time in college preparatory classes.

Among the many promising practices for success, the guided pathways approach is currently receiving much attention. This model promotes measurably increasing student success by developing clearer programs of study, as well as by giving students the support, services, and tools to choose a program early—preferably during college entry and admissions processes—and then to map a pathway for completing the program. Essentially, the pathways approach is about providing the systems and support for students to “choose a program, enter the program, complete the program, and make a successful transition to subsequent education or employment.”⁶ It’s simple: select, enter, and complete. However, the reality is not so simple. Implementing pathways requires curricular, technological, and process-level change at institutions that have long operated on an *a la carte* model, one that often attempts to be all things to all students. The model frequently includes the presentation of a mind-bending array of options via some combination of printed media, self-service web-based systems, and hopefully, dialogue.⁷ Students are frequently required to make uninformed choices on academic program, course selection, and more. All too often, these decisions put them on a path to dropout or, perhaps in the best of the worst cases, to elongated time and cost to completion.

Successful implementation of pathways will require the full focus and support of the entire campus community. For example, at Columbus State Community College, the pathways model is a centerpiece of a strategic priority to increase student success. Our plan intends to relentlessly provide each student, from start to finish, with the support and services needed to develop an individual pathway to success. However, to effectively develop and bring pathways to scale, significant institutional change is required, including technological change. If all 40,000 students at a large community college are to develop career and academic plans that include progress tracking, intrusive advising, pro-active intervening, anytime accessing of success services, and more, a primary engine of successfully implementing success-focused, scalable change is the sophisticated IT infrastructure and enterprise applications. Unfortunately, this engine was often built decades ago.

In “Top 10 IT Issues, 2017: Foundations for Student Success,” Susan Grajek and the EDUCAUSE IT Issues Panel discuss “Next-Gen Enterprise IT” (Issue #9), noting that the enterprise applications used in, or built by, colleges and universities are “often older than today’s college students.”⁸ Furthermore, and of significant consequence, at the core of higher education



By MICHAEL BABB and JENNIFER ANDERSON



shutterstock.com/Thinkstock © 2017

enterprise systems is an ERP (student information, human resources, finance, and payroll systems) with primary technologies and design principles born near (or even way before) the inception of the 21st century. This issue exists at the comprehensive university, at the small liberal arts college, and at the community college and is occurring in the context of significant change. Institutional change is moving ahead, and the IT organization is trying to keep up. This often includes laying newer technologies—like those needed for pathways, early-alert, and other proactive student services—on top of older core technologies. The result is that IT enterprise application teams are forced to somehow, somehow integrate and interface these disparate systems. The integration can include some sort of extract, reformat, transfer, and load process, with batch jobs executing at timed intervals. If one piece fails, the entire “system” breaks. These adjunct systems provide essential functions like relationship management, workflow, document management, event planning, and more. They also create considerable expense and the need for specialized resources to support them.

Issue #3 in the EDUCAUSE 2017 Top 10 list is the need for data-informed decision making. This issue represents an additional confounding factor in the context of aging IT systems. While there is ever-increasing demand for data and information to plan and evaluate student success interventions, the reality is that the data needed for informed decision making is not always readily available. The focused use of data is a guiding principle of Achieving the Dream, AACC, and similar organizations. However, much like other IT-dependent systems, community college institutional research offices depend on outdated and unconnected technology. The aforementioned layers of IT systems add additional complexity, since the data needed to evaluate a particular intervention may reside in many disconnected systems or in no systems at all, which is the case when the intervention is being tracked locally on someone’s desktop spreadsheet. Larger institutions may have had the resources to develop operational data stores or data warehouses that alleviate some of the issues, but these may also have been too narrowly focused on a particular area and

not organized holistically so that all data resides together. This greatly adds to the challenge that community colleges face in measuring progress and determining “what works” for specific students. This information is vital for institutions facing tight budgets and difficult decisions about resource allocation.

The way forward for IT is . . . what? If IT and its enterprise applications are to be an engine powering the 21st-century community college, then consequential, complex, and costly work lies ahead. A myopic focus on the ERP and its replacement may be insufficient, since the current suite of applications supporting essential functions likely extends well beyond this system. More productive may be an exhaustive approach that enables movement toward an enterprise applications architecture that, first, supports the 21st-century community college. Next-gen enterprise IT includes applications and architectures that align with the institution’s strategic priorities. A well-conceived architecture increases institutional capacities and capabilities to scale success priorities by providing a framework for coherently moving to next-gen enterprise IT. The framework includes standards and guiding principles for moving toward an intentional, truly integrated structure of applications that offer the support and services needed by our students to complete their goals. It also furnishes the data and the tools to make highly consequential decisions—decisions that significantly advance the success agenda that started several decades ago. ■

Notes

1. Vincent Tinto, *Leaving College: Rethinking the Causes and Cures of Student Attrition* (Chicago: University of Chicago Press, 1987); Alexander W. Astin, “Student Involvement: A Developmental Theory for Higher Education,” *Journal of College Student Personnel* 25, no. 4 (July 1984).
2. John P. Bean and Barbara S. Metzner, “A Conceptual Model of Nontraditional Undergraduate Student Attrition,” *Review of Educational Research* 55, no. 4 (1985).
3. William Zumeta, “Public Policy and Accountability in Higher Education: Lessons from the Past and Present for the New Millennium,” in Donald E. Heller, ed., *The States and Public Higher Education Policy: Affordability, Access, and Accountability* (Baltimore: Johns Hopkins University Press, 2001); National Commission on Accountability in Higher Education, *Accountability for Better Results: A National Imperative for Higher Education* (Denver: State Higher Education Executive Officers, 2005).
4. Walter W. McMahon, *Higher Learning, Greater Good: The Private and Social Benefits of Higher Education* (Baltimore: Johns Hopkins University Press, 2009).
5. For example, see Thomas Bailey and Vanessa Smith Moresst, eds., *Defending the Community College Equity Agenda* (Baltimore: Johns Hopkins University Press, 2006).
6. Thomas Bailey, “The Need for Comprehensive Reform: From Access to Completion,” *New Directions for Community Colleges*, no. 176 (Winter 2016).
7. Thomas R. Bailey, Shanna Smith Jaggars, and Davis Jenkins, *Redesigning America’s Community Colleges: A Clearer Path to Student Success* (Cambridge, MA: Harvard University Press, 2015).
8. Susan Grajek and the 2016–2017 EDUCAUSE IT Issues Panel, “Top 10 IT Issues, 2017: Foundations for Student Success,” *EDUCAUSE Review* 52, no. 1 (January/February 2017).

Michael Babb (mbabb6@csc.edu) is Vice President and Chief Information Officer at Columbus State Community College. **Jennifer Anderson** (jander02@csc.edu) is Director of Institutional Effectiveness at Columbus State Community College.

© 2017 Michael Babb and Jennifer Anderson