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NASPA Student Affairs Administrators in Higher Education

Turning More Tassels

HOW COLLEGES AND UNIVERSITIES ARE IMPROVING STUDENT AND INSTITUTIONAL PERFORMANCE WITH BETTER ADVISING

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FOREWORD

RESEARCH CONTINUES TO SHOW that a college degree can significantly boost an individual's earning potential. For example, the Georgetown University Center on Education and the Workforce found that workers who hold a bachelor's degree earn 84% more than those who have only a high school diploma. Many of today's college students understand the value of a degree and pursue higher education as a way to improve their life circumstances. Institutions could do more to help students navigate the often complex college environment. It is now more important than ever for students to have sophisticated and timely advising, as the job market that awaits them is ever changing, the skill sets that they need are evolving, and their education costs are steadily rising.

Higher education institutions have a structure that, when intentionally and effectively deployed, can provide many types of support, all of which are needed to prepare students for life after college. Faculty and other professionals can work together to help students fully understand their academic options, connect their classroom learnings with other college experiences, and prepare for a career. However, some college students do not have that type of experience. A 2017 Gallup study reports that just over half of Americans would change at least one of their education decisions if they could. The report also shows that one in three Americans would have studied a different major. These types of postcollege reflections indicate that it is time for institutions to reconsider the process for helping students make informed choices.

The report that follows describes how four institutions are transforming their delivery of advising. The authors provide a robust discussion of how these colleges repositioned their resources, adjusted multiple processes, and used technology to give students a more holistic advising experience. The report shows how these important decisions and others can lead to positive academic benefits for the students and financial returns for the institutions.

As today's college students seek help to earn a credential, make meaningful connections, and develop the skills necessary to become employed, they need the best possible advising delivered in the most optimal ways at the most critical times. Institutions have to advise students at this level of excellence, because their success during and after college depends on it.

Amelia Parnell, PhD
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PREFACE

A LARGE BODY OF RESEARCH correlates postsecondary student success with high-quality academic advising. One scholar has even concluded that "good advising may be the single most underestimated characteristic of a successful college experience."[1] Helping students navigate the college experience, whether by providing advice on how to sequence courses or how to adapt to campus life, frees up time and energy for students to focus on learning and progressing toward graduation.

At the same time, the success of advising solutions can, in many circumstances, be limited by poorly organized resources, underinvestment, and the ineffective use of data—all common problems at postsecondary institutions. These factors contribute to an environment where less than 60% of full-time students earn a degree within six years and less than 30% of students earn an associate's degree within three years. For first-generation college students and students of color, the probability of success is even lower.[2]

The research related to innovations and reforms in advising has segmented institutions on the basis of their attitudes toward advising and their use of technology. The research has also helped to provide a taxonomy of advising technologies and implementation tools.[3] It has specifically explored the cost and funding streams of Integrated Planning and Advising for Student Success (iPASS) implementations. However, there are not many studies that look beyond the first year and explore the long-term economics of iPASS implementations.

In addition, there has been limited assessment of long-term student outcomes—such as retention and graduation rates—driven by advising reforms. The more rigorous studies that highlight outcomes also tend to focus on specific technology tools.

For example, a randomized control trial conducted at 17 institutions that implemented InsideTrack's coaching tool found that about 63% of coached students (regardless of age, gender, or ethnicity) were still enrolled after six months, compared with 58% of students who weren't coached.[4] As another example, experimental research at Austin Community College found that students who used Degree Map—a web-based, interactive tool for planning courses, tracking progress, and evaluating degree options—were 2.4% more likely to continue for three terms than those students who did not use Degree Map.[5] The research into long-term outcomes from advising solutions that combine both technology-driven tools and institutional changes is still nascent.

To help fill the research gaps and further the field's understanding of the return on investment (ROI) from broad-based advising reforms—those that affect all students in a particular class—we set out to do the following:

- Demonstrate the full set of institutional investments—including technology implementations as well as changes in personnel, physical space, organization structures, and processes—that maximize return
- Generate further empirical evidence related to student outcomes, such as retention rates and graduation rates
- Elevate insights from institutions at a variety of stages of reform, since previous reports primarily focused on institutions at earlier stages of reform
- Contribute to an understanding of the factors that can limit reforms' efficacy

Boston Consulting Group focused on Florida State University (FSU), Georgia State University (Georgia State), Montgomery County Community College (MCCC), and the University of Texas at Austin (UT Austin) to assess the ROI of broad-based advising reforms. Using the framework discussed later in this report, we evaluated ROI through these three lenses:

- **Improved Academic Outcomes.** We ascertained whether these institutions increased student retention and graduation rates, improved course success rates, or decreased the number of semesters needed to earn a degree.
- **Improved Economics.** We assessed whether these schools increased revenue while reducing operating costs—a particularly important outcome in an era of declining enrollment and dwindling public subsidies for postsecondary education.
- **Improved Access.** We analyzed whether these institutions' advising programs were able to serve a larger and more diverse set of students. In particular, we assessed whether the institutions that we studied were able to reduce the gap in graduation rates between students of color and the overall student population.[6]

This report presents key findings on the ROI of the broad-based advising reforms that were implemented at the four institutions we studied and highlights the unique aspects that helped these institutions improve access and academic outcomes, often at lower annual costs. The report also highlights four key takeaways for higher education leaders to consider as they devise and redefine their own student success strategies. This report is BCG's second publication that investigates the ROI of student success interventions in higher education. (See *Making Digital Learning Work: Success Strategies from Six Leading Universities and Community Colleges,* a BCG and Arizona State University report, March 2018.)

Our study was fueled by the following questions, around which our findings are framed:

- Which advising reforms did the institutions in our study undertake? What motivated the schools to pursue these reforms?
- Why should institutions invest in advising reforms? What kinds of academic and economic returns can institutions expect?
- What are the drivers of academic and economic returns? How can institutions maximize these returns?
- How should an institution organize its people, processes, and technologies to ensure a successful implementation given its unique institutional context?

We hope that these findings and lessons will encourage other institutions to consider opportunities to introduce academic advising reforms on their own campus.

NOTES

1. Richard J. Light, *Making the Most of College: Students Speak Their Minds*, Harvard University Press, 2004.
2. Institute of Education Sciences, "National Center for Education Statistics," "Fast Facts," accessed November 5, 2018.
3. For example, see *Crossing the Finish Line: Vetting Tools That Support Student Success*, EdSurge HigherEd, March 2017.
4. Eric P. Bettinger and Rachel B. Baker, "The Effects of Student Coaching: An Evaluation of a Randomized Experiment in Student Advising," *Educational Evaluation and Policy Analysis*, March 2014.
5. *Learning Brief: Designing and Implementing a Transformed Advising Model—Austin Community College,* Civitas Learning, 2014.
6. Students of color are those who have identified as American Indian, Black and African American, Hawaiian and Pacific Islander, Hispanic, nonresident alien, and mixed race.

INTRODUCTION

For US colleges and universities, the quest to deliver a rewarding, high-quality postsecondary education has never entailed such high stakes. After decades of stagnant improvement, institutions are facing growing calls for accountability and performance. At the same time, persistent achievement gaps and the rising cost of higher education necessitate a laser-like focus on student completion. Colleges and universities today must strive to deliver student outcomes despite a cacophony of external challenges, including declining enrollment, shrinking state funding, and students with increasingly diverse needs and demands on their time. These challenges have compelled some institutions to seek new strategies—particularly for core functions such as academic advising—to ensure student success.

Consider Montgomery County Community College (MCCC), a two-year institution in Blue Bell, Pennsylvania. To better address the needs of its students, 70% of whom attend school part-time, MCCC embarked on a journey to transform campus planning and advising resources. In 2012, the college increased the number of advising touchpoints and extended them to the point of student admission. It also supported a cadre of professional advisors to engage on an expanded set of topics, including career and financial planning. New analytics and technology tools enabled student monitoring and tracking in real time and connected the advisors more closely to the faculty. Today, an MCCC student experiences a markedly different journey from enrollment through graduation.

BCG recently studied MCCC and three other exemplary institutions to better understand the return on investment of broad-based postsecondary advising reforms—those that affect all students in a particular class. These reforms—some of which were implemented as part of the Integrated Planning and Advising for Student Success (iPASS) initiative[1]—helped simplify students' paths to a degree. The reforms also enabled postsecondary institutions to engage students early and often in a dialogue that was tailored to each individual's diverse needs. And, thanks to a suite of technology tools, such as those for workflow automation and predictive analytics, the reforms allowed advising interactions to be easily and proactively initiated.

Our study found that broad-based advising reforms significantly improved student outcomes for a relatively low annual incremental investment. Specifically, the reforms contributed to an increase in on-time graduation rates of as much as 21 percentage points.[2] At the same time, the reforms required a relatively modest and sustainable annual incremental investment of less than $100 per student—an

amount that was largely driven by investments in additional advising personnel rather than technology infrastructure.

This report identifies the drivers of academic and economic returns for the institutions in our case study. On the academic side, the primary drivers of returns include simplifying students' paths to a degree or credential by using tools such as major maps (or degree maps) and increasing right-time access to advising using early-alert systems and other institutional processes. The primary drivers of economic returns include strategically allocating advisors' time and differentially lowering advising ratios for higher-need students. We also document the critical motivations for change and the strategic choices that each school made in designing and executing reform.

In addition, our study surfaced a common set of enabling factors. The first is the creation of an empowered, cross-functional student success team that helps to surface issues and generate buy-in for initiatives. The second factor is the selective use of data and analytics to strategically drive action. And the third factor is the use of software tools to inform the creation of simplified paths and keep students on track.

Throughout this report, we outline recommendations that are broadly relevant to any institution seeking to implement or expand advising reforms.

NOTES

1. IPASS refers to a 2015 grant initiative spearheaded by Educause to provide strategic assistance to 26 two- and four-year higher education institutions. For select institutions, iPASS helped to introduce a combination of changes in institutional processes and structures, technology-driven tools, and attitudinal shifts to transform existing advising systems. This initiative was funded by the Bill & Melinda Gates Foundation and the Leona M. and Harry B. Helmsley Charitable Trust.

2. Graduation rates are defined as the proportion of students who graduate in four years from four-year institutions or in two years from two-year institutions.

INSTITUTIONS' MOTIVATIONS AND REFORMS

Before we delve into the findings from our research, it is helpful to first know how we selected the institutions in our study. (See the sidebar "About Our Study.") It is also important to understand what motivated the institutions to reform their advising programs and the types of changes that they implemented.

Revenue and Enrollment Pressures

There is a myth that institutions that reform academic advising do so in resource-rich environments with strong enrollment pipelines. On the contrary, the institutions that we studied were compelled to change in order to respond to intense revenue and enrollment pressures. For example, MCCC partnered with Foundations of Excellence, which reviewed its first-year experience during the 2005–2006 academic year. Then, during the 2007–2008 academic year, MCCC brought in an external advisory team of student success coaches from Achieving the Dream, a nonprofit focused on increasing student success. Leadership felt a sense of urgency to act given the declining enrollment in Pennsylvania's community colleges and the state's reduction in funding for higher education.

A Moral Imperative

Revenue and enrollment pressures were by no means the only motivators of advising reforms. The institutions we studied also cited a moral imperative, articulated by senior leaders and disseminated across the college or university communities, to improve student outcomes, social mobility, and satisfaction. At FSU and MCCC, leaders relied on survey results that showed below-average student engagement and satisfaction with advising to galvanize change. At Georgia State, increasingly limited admissions standards at other state universities motivated a concerted effort to grow and diversify its student enrollment. As a result, about 80% of students could be defined as at risk by some measure. Georgia State's advising reforms were introduced in large part to address the needs of this student population. At UT Austin, the president established an ambitious goal to increase four-year graduation rates by 20 percentage points (pp) in five years, starting with the 2012 academic year. In every institution we studied, the advising reforms were intended to help guide students through their academic careers and empower them to achieve long-term academic success.

What the Reforms Looked Like

Strategies to promote student success take many forms depending on the institution. (See the appendix for a detailed breakdown of the advising reforms for FSU, Georgia State, MCCC, and UT Austin.) However, the

reforms implemented by these institutions fit broadly into three categories.

Organizational Changes to Support Students. The institutions we studied established professional advising teams to provide counseling and coaching. This type of reform was exemplified by FSU's satellite model: the school centrally trained professional advisors and then assigned them to specific colleges. FSU also instituted two new practices: dedicating full-time employees to areas such as career counseling and enrollment and establishing cross-functional working groups to oversee the efforts.

Tools and Policies to Streamline Students' Paths to a Degree. To reduce unnecessary degree or graduation requirements and to clarify the course sequence that students should follow for on-time graduation, the institutions we studied used tools such as

ABOUT OUR STUDY

This report is the result of research carried out by Boston Consulting Group from July 2017 through January 2018. Our project, which was supported by a grant from the Bill & Melinda Gates Foundation, examined the return on investment (ROI) of broad-based advising reforms in various institutional contexts.

Our study focused on four institutions of higher education: Florida State University (FSU), the University of Texas at Austin (UT Austin), Georgia State University (Georgia State), and Montgomery County Community College (MCCC) in Montgomery County, Pennsylvania. These institutions share a strong track record of implementing both organizational and technological changes to enhance their advising programs for large, socioeconomically diverse student populations. We selected these schools from a starting list of 86 exemplary institutions that we subsequently narrowed down using input from experts and criteria for size, scale, target population, and graduation rates. It is important to note that these schools have been enacting reforms for at least five years and, therefore, represent a relatively more advanced stage of reform implementation.

- **FSU** is a large, four-year public research university. Since 2000, FSU has implemented major maps (designed in-house) and a satellite model of centrally trained professional advisors. FSU also recently engaged the research and technology company EAB to provide a deeper level of insight into student performance. To this end, the university implemented a risk-alert system and replaced some in-house tools to provide new calendar and note-taking functionalities. In addition, FSU developed targeted programs to support students who are most likely to withdraw or transfer. FSU serves 36,000 undergraduate students; about 31% are low income.
- **UT Austin** is a large, four-year public research university. UT Austin created a central team focused on student success initiatives. It also developed a predictive model in-house to identify first-year students who are most in need of support from targeted programs, including its signature University Leadership Network program. The team implemented a Graduation Help Desk to remove administrative barriers to graduation, and the team introduced peer mentors in weekly small-group learning sessions for all incoming students to provide quasi-group advising for all freshmen. Today, UT Austin's advising model remains a federated one that delegates many of the responsibilities for execution to its colleges. The university serves 42,000 undergraduate students; about 27% are low-income students. Notably, the university exists in a unique enrollment environment: it must automatically admit a fixed percentage of graduating seniors from each public high school in Texas, and a

centralized calendars and major maps. Also referred to as academic maps, degree maps, and degree playbooks, major maps are term-by-term sample course schedules that specify milestones, courses, and special requirements that are necessary for completing a major in a timely fashion. The schools also redefined degree requirements and implemented "metamajors," or clusters of individual majors under one academic umbrella. Georgia State uses the latter. Each freshman class is organized into cohorts of 25 students called Freshmen Learning Communities that are oriented around common academic interests, such as science, technology, engineering, and math; business; policy; education; and social sciences. These metamajors simplify first-year students' decision making and limit excess credit accumulation.

Technology Investments to Proactively Steer Interventions and Support Programming. To

long waitlist of transfer students supports a constant oversupply of potential students.

- **Georgia State** is a large, four-year public research university in Atlanta, Georgia, that has seven campuses. Since 2008, Georgia State has invested in transforming its academic advising system with four goals in mind: bring about a broad, cross-functional mindset shift toward using data as the foundation for problem solving; centralize student success functions; increase the number of centralized, professional advisors; and robustly use predictive analytics to enhance student engagement. At the time of our study, Georgia State served 29,000 students, about 51% of whom were low income. Following integration with what is now called Perimeter College, Georgia State now serves 45,700 students. Georgia State has selectively extended specific advising elements (for example, low student-to-advisor ratios, predictive analytics, and metamajors) to Perimeter College. Our study focuses on Georgia State and excludes Perimeter College.

- **MCCC** is a two-year comprehensive college in Blue Bell, Pennsylvania. Starting in the 2012 academic year, MCCC undertook a series of advising reforms, including extending student-staff touchpoints (by using enrollment coaches, for example); increasing the frequency of advising touchpoints and the number of topics covered; and implementing a suite of technology tools, such as Colleague, Illume, and Starfish Early Alert. MCCC's cadre of professional advisors predated these reforms. MCCC serves 18,000 undergraduate students; about 70% are part-time, approximately 60% are seeking degrees, and 26% are low income.

At each institution, we conducted in-depth case studies that included qualitative interviews with leaders and practitioners. In total, we interviewed more than 100 stakeholders, including presidents and provosts, directors of critical departments (such as student success, finance, and IT), and faculty and professional advisors and other support staff. We also conducted quantitative analysis of both student data to assess changes in outcomes and revenue and expenditure data to construct an economic picture of institutional reforms. Finally, we reviewed relevant internal materials—such as minutes from meetings of the board of directors, memos, and committee findings—to paint a complete picture of the reform journey.

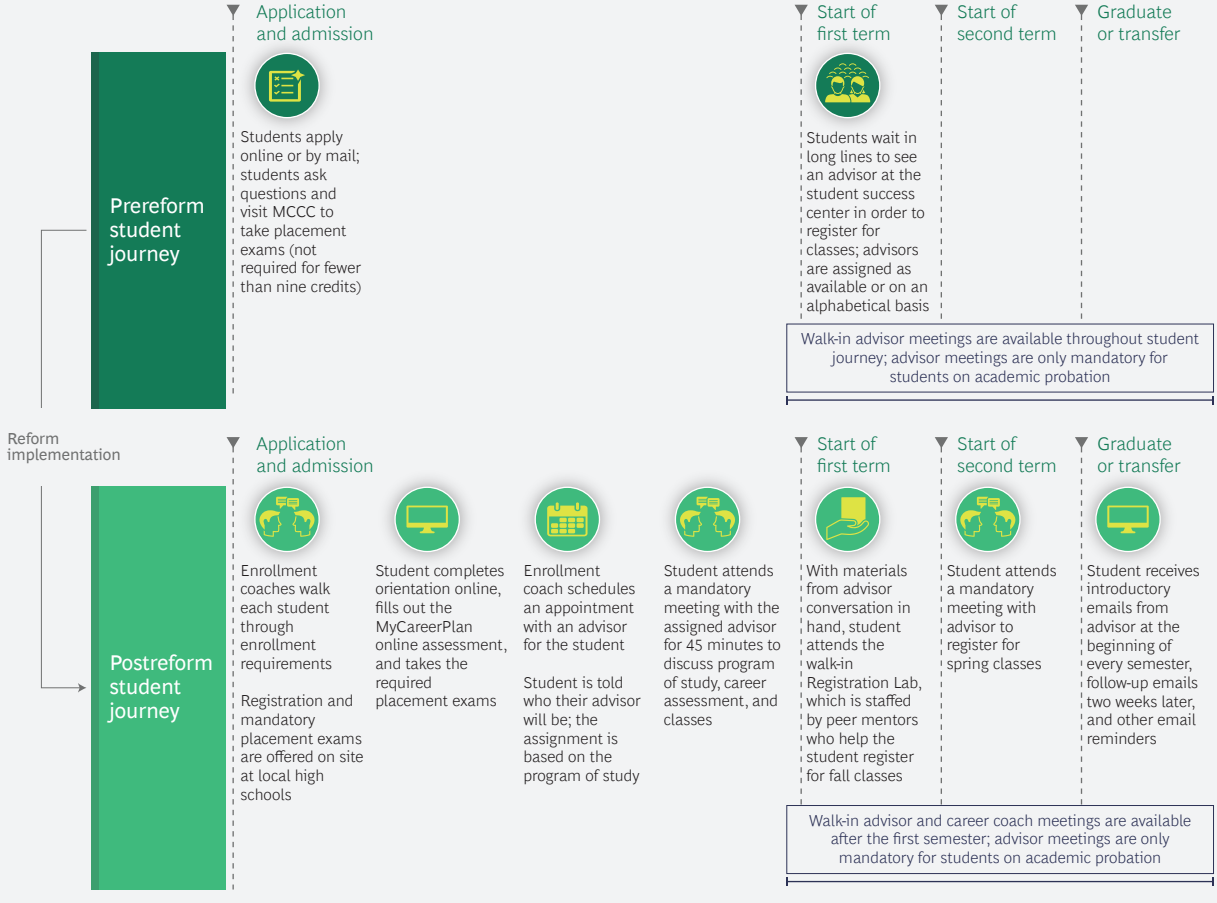
Taking a case study approach enabled us to synthesize promising practices regarding how to implement high-quality advising in various institutional contexts. It also permitted us to construct a detailed picture of institutional economics, reflecting variations in enrollment, funding, leadership priorities, and investments in technology or professional development.

differing degrees, the institutions we studied implemented software to perform functions as diverse as degree mapping, advisor scheduling, career assessments, and automatic advisor alerting (which notifies a student's advisor as soon as the student is off track).[1, 2] For example, at MCCC, Colleague, an enterprise resource planning solution from Ellucian, provides advisors with a centralized platform that contains information relevant to each of their advisees—such as whether a student has completed his or her preregistration checklist and the status of each student's progress in his or her required course sequence. Advisors can also use the platform to set up a time to discuss a student's intended path of study and course load. MCCC also uses Starfish Early Alert, a Hobson product that identifies students who need attention and that helps advisors proactively schedule and manage student meetings. Technology tools such as these enable advisors to more effectively engage with students. (See Exhibit 1.) We observed that another area for technology investments was predictive analytics. For example, at Georgia State, frontline staff participated in the selection of about 800 risk indicators that enable advisors to be proactive with students in real time and intervene on the basis of students' individual performance.

NOTES

1. Various organizations have developed guides to help decision makers identify the right technology tools to support students on their campuses. For example, see *Crossing the Finish Line: Vetting Tools That Support Student Success,* EdSurge HigherEd, March 2017.
2. MCCC and Georgia State participated in the iPASS grant challenge to augment their systems and tools for more effective advising. FSU and UT Austin did not participate.

EXHIBIT 1 | MCCC Advisors Are Now Able to Help Students Early and Frequently



Source: BCG analysis.
Note: MCCC = Montgomery County Community College.

THE IMPACT OF ADVISING REFORMS

Advising can be a powerful mechanism to help students succeed. Although advising systems vary from institution to institution, there are a few characteristics common to all good advising programs. From a student's perspective, interventions are personalized to his or her unique needs and delivered at the right time and in a holistic manner, addressing a set of needs that is broader than course registration and scheduling. Additionally, advising programs are easy to navigate. From an institution's perspective, good advising programs help students thrive on campus and earn a degree or credential and are simultaneously cost effective.

Advising reforms contributed to a rise in on-time graduation rates.

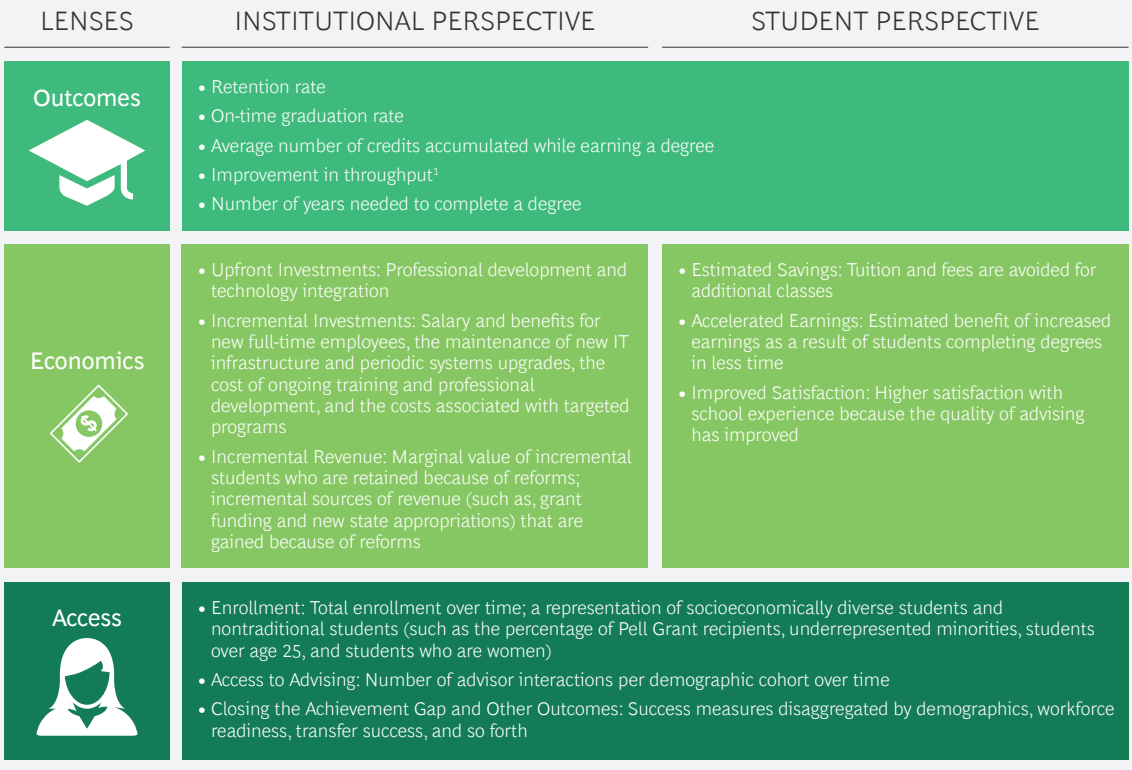
Our study found that broad-based advising reforms not only help to improve academic outcomes but also do so for a relatively low annual incremental investment. We assessed the impact in a comprehensive manner, informed by a framework that considers both academic and economic outcomes. (See Exhibit 2.)

It is important to note that advising reforms are often implemented as part of broader institutional transformation programs that are intended to improve the postsecondary student experience. It is difficult, therefore, to isolate the impact of advising reforms specifically. Our study focused on measuring the change in academic and economic outcomes by comparing prereform results with postreform outcomes. But we cannot attribute outcomes solely to advising reforms. We believe this is an area for further research.

The Impact on Academic Outcomes

Across the institutions we studied, advising reforms contributed to improved academic outcomes, such as better graduation rates and retention rates. Perhaps most saliently, the reforms contributed to a rise in on-time graduation rates.[1] This improvement was highest at FSU, which saw an increase of 21 pp since its reforms were introduced in 2000. Georgia State and UT Austin also saw marked improvements since the start of their reforms in 2008 and 2012, respectively, with on-time graduation rates climbing 10 pp and 15 pp. At MCCC, the first-time freshman cohort for the 2016 academic year was the first group to experience the full suite of advising reforms, so the change in the school's two-year graduation rate before and after the reforms could not be assessed. However, preliminary findings showed an average increase of 2.7 pp in the four-year retention rate of first-time freshmen.

EXHIBIT 2 | An ROI Framework for Measuring the Success of Reforms



Source: BCG analysis.
Note: ROI = return on investment.
[1]Throughput is the difference between the number of degrees that a school conferred and the number that it expected to confer, normalized for changes in student enrollment.

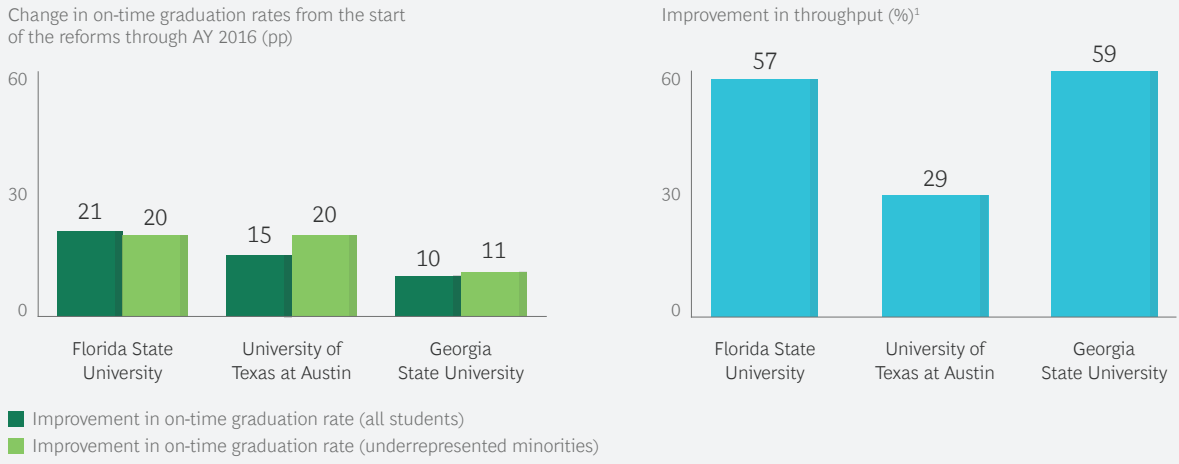
For the three four-year institutions (FSU, Georgia State, and UT Austin) we studied, we also assessed the improvement in throughput (that is, the difference between the number of degrees that a school conferred and the number that it expected to confer, normalized for changes in student enrollment).[2] For each institution, we compared prereform throughput with postreform throughput and found a significant increase—as much as 59%. For example, the rise in on-time graduation rates at UT Austin represented an increase of about 10,000 degrees conferred from 2011 through 2017. At Georgia State, the rise in on-time graduation rates represented an increase of approximately 2,400 degrees conferred from the 2007 academic year through the 2017 academic year. (See Exhibit 3.)

Importantly, our findings indicate that broad-based advising reforms may have had an outsize impact on high-need student populations. Graduation rates for students of color increased at almost the same rate or faster than the rate for the general student population. For example, at FSU, the increase in the on-time graduation rate was 20 pp for students of color, compared with 21 pp for the overall student population. Georgia State's rate increased by 11 pp for students of color, compared with 10 pp for the overall population. And at UT Austin, the on-time graduation rate improved by 20 pp for students of color, compared with 15 pp for the overall student population.

The Impact on Economics

Although implementing high-quality advising requires strategic investments, we found that the broad-based reforms at the institutions we studied came at a relatively low annual net cost. One reason for this was that the institutions were able to generate new revenue from improved retention or tap previously inaccessible funding streams (such as those al-

Exhibit 3 | A Summary of Outcomes Across Institutions



Source: BCG analysis.
Note: AY = academic year; pp = percentage points. MCCC was excluded because the cohort for the 2016 academic year was the first to experience the full suite of reforms.
[1]Throughput is the difference between the number of degrees that a school conferred and the number that it expected to confer, normalized for changes in student enrollment. We calculated throughput by comparing the most recent four-year graduation rates with the percentage of students who would have graduated in the absence of the reforms (which we calculated using prereform four-year graduation rates).

located on the basis of performance). The institutions then used the new revenue or funding to offset implementation expenditures for personnel, technology, and operations and maintenance. For example, at FSU, new tuition revenue from improved retention (as much as $1.9 million per year), as well as increased annual preeminence funding thanks to improved retention (as much as $3.2 million per year), helped to offset the cost of reforms.[3] As more and more states move to performance-based funding regimes, reforms that advance student success and thereby help institutions achieve state targets will prove increasingly beneficial to institutions' bottom lines.

Another reason that reforms came at a relatively low annual cost is because, in certain cases, institutions were able to minimize annual incremental expenses by repurposing existing staff and resources and by finding other low-cost, creative solutions. For example, MCCC reallocated the budget for its previous alert system to Starfish Early Alert, used automated reporting to free up IT and institutional research staff for advising initiatives, and prolonged hardware life. It also reduced the need for incremental personnel costs by shifting the activity mix of its preexisting, centralized cadre of about 22 professional advisors. Meanwhile, Georgia State engaged in a co-development partnership with EAB in order to reduce the school's licensing fee for EAB's technology.

For three of the four institutions we studied, we measured the cost of broad-based advising reforms from admission through graduation by capturing both direct advising costs (for example, advisor salaries and technology licensing fees) and indirect enabling costs (such as supplemental academic supports and maintenance costs for a student success center).

Specifically, MCCC made total annual broad-based advising investments of $3.0 million; FSU, $4.2 million; and Georgia State, $5.9 million. These amounts equated to about $165, $120, and $200 per student, respectively. The total annual direct cost of advising reforms for MCCC was $2.4 million (of $3.0 million); for FSU, it was $3.4 million (of $4.2 million); and for Georgia State, it was $3.2 million (of $5.9 million). Of this, we distinguished the cost that was *incremental* owing to advising reforms; this equated to a per student value of about $50 for MCCC, roughly $70 for FSU, and about $90 for GSU. Notably, we studied relatively large institutions; the cost of implementing these reforms maybe slightly higher for institutions with less scale, although the majority of costs we observed directly varied

with the size of the student body. (See the sidebar "The Cost of Advising Reforms.")

UT Austin's total annual cost of $11.7 million reflected a significant focus on targeted reforms, not only broad-based ones. Its targeted reforms were designed to help the portion of each freshman cohort that was most in need of support. UT Austin did introduce broad-based reforms focused on analytics, degree audit, and weekly small-group sessions. For those, we calculated that the total incremental cost was about $25 per student.

As previous studies have shown, personnel to support a highly personalized student en-

THE COST OF ADVISING REFORMS

To understand the cost of broad-based advising reforms—those that affect all students in a particular class—we conducted in-depth interviews and discussions with institutional leadership at the colleges and universities in our study. Our aim was threefold. First, we sought to capture the direct annual costs to advise students—a process that begins when students are admitted to a college or university and continues until they graduate. These costs included advisor salaries, licensing fees for technologies integral to the advising process, and the salaries of other personnel (such as data analytics staff, enrollment coaches, and administrators) directly involved in the advising process.

Second, we looked to evaluate the annual indirect costs that enable successful advising at each institution. Indirect costs included supplemental academic support and operations and maintenance costs for each institution's student success center.

Third, we sought to identify which costs were incremental as a result of reforms (for example, the salaries of additional advisors who were hired to lower student-to-advisor ratios), which costs were preexisting (for example, the salaries of advisors present prior to reforms), and whether the new and existing costs were covered by new or reallocated funding.

In total, we found that the *direct* annual cost of broad-based advising reforms totaled $2.4 million (of $3 million) for MCCC, $3.4 million (of $4.2 million) for FSU, and $3.2 million (of $5.9 million) for Georgia State.

As an example, at Georgia State, the direct annual costs to advise students total about $3.2 million, or about $100 per student. Of that total, about $2 million is incremental to the roughly $1 million that the school spent directly on advising before it undertook the reforms in 2008. The incremental $2 million covers more than 40 additional advisors, licensing fees for AdmitHub's chatbots, and EAB's Guide and Campus solutions.

Additionally, we identified two significant enablers of successful advising at Georgia State. The first is robust data and analytics capabilities. The second enabler is the Center for Student Success, which oversees the University Advisement Center, manages first-year programs, and provides supplemental peer tutoring. The cost of the allocated portion of these enablers plus the cost of operations and maintenance for the buildings that house the enablers total about $2.7 million annually, or about $90 per student. Of this, less than $1 million is incremental.

Adding together the $3.2 million for direct advising costs and the $2.7 million for enablers' annual costs totals $5.9 million in annual costs, of which less than $3 million is incremental.

Finally, we identified the costs that were covered by alternative funding sources at Georgia State, including grants and funding from the Board of Regents of the University System of Georgia. In total, $2.2 million in annual incremental funding sources were identified, fully covering the annual incremental direct advising cost.

gagement model are the largest driver of the cost of broad-based advising reforms. For the colleges we studied, personnel costs represented at least 80% of the total annual cost of reforms. Personnel costs included salaries for professional advisors, functionally embedded analysts, and other support staff, such as enrollment coaches and tutors, as well as stipends for professional development and conference fees. Costs—typically licensing and vendor fees—to support the development and integration of technology solutions represented a smaller cost category (at most 10%). We also captured operating costs for facilities and ongoing systems maintenance (at most 14%).

Targeted programs, such as those implemented by UT Austin to address the needs of specific student subgroups, tend to be relatively expensive. For example, UT Austin provides at-risk, first-time-in-college students with academic support, such as supplemental instruction and tutoring, at a cost of $1,200 per student. Meanwhile, the cost of FSU's Center for Academic Retention and Enhancement equates to more than $2,000 per participating student. Preliminary evidence shows that these targeted programs are effective. For example, for the 2013 cohort at UT Austin, 54% of the students who participated in the University Leadership Network (ULN) completed at least 30 credits in their first year, compared with 13% of the students who did not participate. Grade point averages and retention outcomes were higher for ULN students, as well.

Ultimately, we found that new revenue generated from improved retention, as well as new funding from grants and state government, offset all or part of the cost of reforms. The annual net incremental economic impact of advising reforms varied across a relatively narrow range, from negative $97 per student at UT Austin to positive $99 per student at FSU. FSU's more economically positive result stemmed from a combination of new revenue and annual preeminence funding that was attributable to improved retention. UT Austin's slightly negative result reflects the fact that its revenue lift from improved retention was relatively low. This was because UT Austin was at or near enrollment capacity and had a long waitlist of students to backfill student attrition. As a result, any revenue lost because of attrition could easily be replaced—rendering the incremental financial uplift from improved retention less impactful.

Second-Order Impacts

Conversations with leaders at the institutions we studied revealed several potential second-order impacts of advising reforms, many of which have been corroborated by existing research.[4] These impacts include the following:

- **Increasing Student Satisfaction.** Regular, sustained advising support may increase student satisfaction generally and potentially generate additional revenues in the form of alumni donations.

New revenue as well as new funding offset all or part of the cost of reforms.

- **Empowering Students.** Students with regular and holistic planning and advising support may benefit from an increased sense of empowerment and take ownership of their academic experience with the guidance and encouragement of their advisors.

- **Creating a Larger Labor Market for Employers.** Reforms such as degree planning and auditing may help students earn their degree sooner, creating a larger labor market for employers. In addition, to the extent that colleges and universities help to fulfill the demands of their local labor markets, the value of a credential from the institution may also increase.

- **Promoting the Use of Data and Analytics.** Implementing and integrating technology tools with existing data systems may increase the use of data in decision making around student success; in addition, this can shift the role of IT from service broker to strategic partner (with

regard to the selection of and engagement with third-party vendors, for example).

- **Reducing Students' Costs and Accelerating Employment.** We did not conduct an in-depth study of the financial benefits of completing a degree in less time, but we calculated that the value of tuition savings plus being able to enter the workforce sooner could be worth $4,000 to $5,000 per student at these four-year institutions.

- **Shaping Positive Changes to Academic Pathways, Requirements, and Curriculum.** By gaining systematic feedback and data-based feedback on academic pain points from a school's advising staff, faculty members can rework prerequisites and pathways to majors to reduce the time it takes students to earn a degree.

Notes

1. The on-time graduation rate is the percentage of all students who graduate in four years from four-year institutions or in two years from two-year institutions.
2. We calculated throughput by comparing the most recent four-year graduation rates with the percentage of students who would have graduated in the absence of the reforms (which we calculated using prereform four-year graduation rates).
3. The Board of Governors for the State University System of Florida and the Florida Legislature have collaborated to "elevate the academic and research preeminence of Florida's highest-performing state research universities." Owing to its designation as a preeminent university, FSU receives about $17 million in additional state appropriations to support efforts to improve its standing in national rankings. In order to maintain this designation, FSU must continue to meet 11 of 12 metrics; success along 3 of these metrics (retention rate, graduation rate, and national rank) can be attributed in part to student advising reforms (accounting for about 25% of total funds).
4. See, for example, Adena D. Young-Jones, Tracie D. Burt, Stephanie Dixon, and Melissa J. Hawthorne, "Academic Advising: Does It Really Impact Student Success?," *Quality Assurance in Education* 21, no. 1 (January 2013): 7–19.

THE DRIVERS OF ACADEMIC AND ECONOMIC RETURNS

The academic and economic impacts of advising reforms are clear and significant. Although research has shown that resources are constrained at many colleges and universities, advising reforms are within reach if they strategically maximize their resources. We recommend initially focusing on four reforms: simplifying students' paths, increasing right-time access to advising, strategically managing advising, and selectively investing in targeted programs. Carefully planning the implementation sequence of these reforms is equally critical.

Major maps provided students with clear and consistent guidance.

Simplifying Students' Paths

Simplifying a student's path to a credential requires ensuring that the student is taking only necessary courses and that he or she understands the course sequence required for on-time graduation. This reform can be implemented for a relatively low cost. For example, FSU streamlined students' paths using major maps, which it designed in-house for about $300,000 over a two-year period—an amount that was mostly allocated to salaries for full-time employees. FSU's major maps demonstrate the specific sequence of courses for each major and the timing for completing each course. They also describe thresholds for course performance to ensure that students and advisors can actively monitor a student's progress.

FSU's major maps were introduced in 2005 and designed by a two-person team comprising an associate dean and a representative of one of FSU's academic colleges. Over the course of two years, the team asked the faculty in each academic department to develop straw man maps for eight terms. The team analyzed enrollment and outcome trends to validate and refine the faculty's proposals. An iterative review process helped to generate buy-in across campus. The team also coordinated with FSU's Demand Analysis Numbers Group to ensure that a sufficient number of class sections were available to accommodate the demand that would be generated by major map milestones. FSU found that major maps provided students with clear and consistent guidance and reduced the volume of transactional student-advisor interactions.[1]

Less complexity and more clarity drives academic and economic returns for two additional reasons. First, compared with other tactics, this approach addresses the root cause of students' slow progression by eliminating structural barriers that would otherwise cap the

effectiveness of parallel reforms, such as increasing advising touchpoints or targeting at-risk students. FSU attributes more than half of the increase in four-year graduation rates to its efforts to help students get on a clear degree path.

Second, simplifying degree paths lets institutions avoid or reduce costs. For example, some schools have complex degree paths that require more than four years' worth of full-time credit accumulation for most students. If these schools cap tuition, and if students take extra credits each semester to graduate on time, the college implicitly has some unfunded credits. Institutions can avoid incurring such costs by simplifying students' paths. As an example, Georgia State reduced credit accumulation for a bachelor's degree by about 5% (eight credits). Simplifying degree paths also enables schools to scale back costs. FSU's use of major maps, for example, reduced the number of student-advisor interactions, which helped to contain costs.

Increasing Right-Time Access to Advising

Given unlimited resources, many institutions might choose to offer on-demand, in-person advising sessions to every student at every point in their academic career. The reality, however, is that resources are tightly constrained. To maximize academic returns while minimizing costs, colleges must try to ensure that students access the right advising at the right time. Practically, this means introducing multiple avenues of support and investing in processes and technology tools that enable advisors to identify at-risk students.

For example, during a student's first semester at Georgia State, the university's advising system combines mandatory engagement with periodic advisor outreach; the outreach frequency is determined by a student's progress and mediated by technology tools, including risk alerts and predictive analytics. When freshmen and transfer students enroll at Georgia State, they must declare a desired field of study and schedule a meeting with their assigned advisor in their first semester to remove a registration hold. Georgia State subsequently tracks both students' GPAs in prerequisites and their enrollment in mandatory classes, and advisors are alerted when students are off track (for example, when students are missing a mandatory course, receive a bad grade in a nonfoundation course, or are not meeting the grade requirement for a foundation course). Advisors also use predictive analytics to intervene with students on an ad hoc basis. For example, EAB helps advisors develop a watch list—a list of students who the advisors should contact midsemester. Over the course of the rest of the semester, advisors reach out to these students periodically and in advance of class registration for the following semester.

Colleges must try to ensure that students access the right advising at the right time.

It is important to note that while predictive analytics tools can help institutions implement advising reforms and improve the quality of student-advisor interactions, in some cases, limited transparency into the criteria for risk levels has been a barrier to broad adoption by advisors and administrators. Institutions that have overcome this barrier have found ways to limit the number of variables included in risk-alert systems in order to manage to a more intuitive set. These institutions have also invested heavily to train advisors how to use the tools and have communicated clearly to advisors about the algorithms behind the tools to increase transparency. At Georgia State, for example, each risk marker is explicitly shared with advisors and students. Further, advisors have visibility into what drives a risk for a student. (For example, accounting students are deemed at risk if they receive a C in college algebra, because 75% of students who receive this grade struggle in upper-level accounting.) This practice, coupled with clear guidelines for how advisors should use predictive tools throughout the semester—both in terms of cadence and types of discussions to have with students—have been critical to Georgia State's implementation success.

Strategically Managing Advising

As we have noted, personnel investments represent the largest proportion (typically 80%) of the total cost of broad-based advising reforms. A key driver of economic returns, therefore, is strategically assigning full-time advisors. For example, a school could lower advising ratios for higher-need students, such as first-year students who have not declared a major, while increasing ratios for other populations. An institution could also supplement professional advisors with lower-cost peer mentors. Each of the institutions we studied employed the latter method.

Software tools can help manage advising costs by optimizing advisor workloads.

A growing number of software tools can help institutions better manage advising costs by optimizing advisor workloads. These tools—such as chatbots and automated scheduling features—enable institutions to shift more transactional work off advisors' plates. MCCC, for example, created a walk-in Registration Lab staffed by peer mentors who guide students through course registration on the Ellucian platform. This model frees up advisors to answer complex questions and discuss more nuanced topics, such as students' personal, academic, and career goals. As another example, Georgia State uses the AdmitHub chatbot to address basic, procedural questions (such as those related to financial aid and enrollment) from recently admitted students.

Selectively Investing in Targeted Programs

A key investment tradeoff that institutions face is deciding whether to invest in targeted programs that address the needs of a specific student subgroup or in the other reforms that we have discussed that touch the broader student population. As we have noted, targeted programs are typically expensive (costing upward of $1,000 per student). To maximize economic return, institutions should use these interventions only if they have a differentiated student population, the capabilities to identify the students who are part of that population, and the resources to support the identified group.

Planning the Sequence of Reforms

The sequencing of reforms is an important consideration to maximize academic and economic returns. We recommend that institutions start by simplifying students' degree paths. This is because many simplification tactics require institutions to develop capabilities that are relevant to other reform tactics—an undertaking that may save institutions time and resources down the line. For example, in developing major maps, FSU ramped up its data analytics expertise so that the institution could optimize course sequences and identify processes for collaboration between central administration and academic departments. FSU, therefore, used major maps as an opportunity to build and test its internal analytics capabilities, which later became important both in implementing reforms that used predictive analytics and in scaling up professional advising.

Taking full advantage of technology tools may require reassigning or hiring full-time employees, which implies that institutions can benefit most when investments in people and processes precede technology investments. For example, risk-alert software, such as the solutions sold by EAB and Starfish, generate additional demand for student-advisor touchpoints and typically necessitate lower student-to-advisor ratios (approximately 300 to 1). For this reason, before making investments in technology, resource-constrained institutions should actively plan for changes in personnel capacity.

Note

1. For an example of an FSU major map, see its Academic Program Guide (https://academic-guide.fsu.edu/z-list) and select the Academic Map option.

ORGANIZING PEOPLE, PROCESSES, AND TECHNOLOGY

When designing and implementing advising reforms, institutional leaders face many important questions about people, processes, and technology. The institutions in our study revealed promising practices that helped them accelerate progress and overcome common challenges in these areas. In some cases, these findings add to others previously surfaced in the field.

Who Should Be Part of an Advising Program?

Many different models of advising exist today; faculty-only advising, professional advising, and hybrid advising teams are just a few.[1] According to the four institutions we studied, professional advising can help schools consistently and effectively serve at-risk populations while reducing the strain on faculty. One estimate for a student-to-advisor ratio sufficient to ensure individualized attention is 300 to 1, especially when predictive analytics tools are used. However, we recognize that the resources required to achieve this low ratio will be difficult for most institutions to acquire. The institutions in our study supplemented professional advisors with peer mentors to reduce advisors' transactional workload and to increase the frequency and number of touchpoints for students. In addition, these schools regularly engaged with the faculty to ensure that they were able to direct students to advising resources.

Some of the institutions in our study embedded at least one analytics-oriented role with dual reporting to institutional research and advising. Taking that step helped to improve the accuracy, transparency, and user-friendliness of the data and helped to encourage a shift toward data-driven problem solving and decision making. Institutions unable to make that investment could consider emphasizing data literacy for some advisors and for directors of the advising centers.

How Can Institutions Reduce Advisor Turnover?

Advisor turnover is a critical challenge that can stem from factors such as a lack of upward mobility, low wages, and insufficient training. To combat these factors, some of the institutions in our study implemented a career ladder that ties promotions to the development of specific skills, rewarding additional certification with advancement, responsibility, and (as financially feasible) incremental salary increases. These schools also enabled senior professional advisors to become peer leaders. In this role, senior advisors would train new advisors upfront in the specific skills required for success and create ongoing experiential learning opportunities. It is important to note that some advisor turnover may be valuable to a university's community, because advisors can move into other roles that an institution needs to fill.

Should Institutions Centralize Advising?

The institutions in our study showed that centralizing advising resources helps to reduce the amount of resouce duplication, ensure a consistent advising approach school-wide, and scale reforms faster. However, a fully centralized approach may not be feasible for all institutions. Indeed, we observed that the degree of centralization varied. MCCC, for example, has a single team that is responsible for advisors across all colleges and departments. By contrast, FSU has a satellite model of advisors who are centrally trained and embedded in individual academic departments.

A critical enabler for every institution was the creation of an empowered, cross-functional student success team or working group. Such groups allowed advisors to participate in surfacing and solving institution-wide issues and ensured that other stakeholders understood the value of the professional advising team. These teams were also charged with tasks such as generating buy-in for initiatives, encouraging collaboration (among faculty, admissions, financial aid, and the registrar, for example), and embedding cultural norms (such as using data as an input for decision making) school-wide. The most effective groups had a designated leader who was equipped with the authority and autonomy to execute key initiatives and who incorporated data and analytics into the decision-making processes.

What Change Management Efforts Are Needed?

Implementing advising reforms—and getting them to stick—requires significant transformation and coordination across disparate parts of an institution. The institutions we studied were successful in part because they anticipated this and were proactive in three ways. They aligned their reforms with their broader institutional missions and set clear goals with rewards for success. They ensured that senior leaders were visibly involved in all aspects of their reforms; for example, leaders attended working meetings and participated in ongoing communications. And the institutions made sure to include representatives from all functional areas in reform design and implementation. The latter, along with the use of experiential trainings to transfer knowledge across functions, helped to bridge organization silos and identify ways to improve reforms.

Change management for professional advisors is an especially important area. To manage change successfully, institutions should be prepared to implement a system for the professional development of advisors. Schools should also establish trainings and mechanisms to ensure that advisors consistently use tools (such as degree maps), create regular forums and accountability among advisors and other relevant departmental leads, and routinely gather end-user feedback on reforms to encourage a feeling of ownership.

What Technology Capabilities Are Needed?

To ensure careful stewardship of resources, the institutions we studied outlined the technological capabilities required to achieve their vision early in the strategic planning process. Because personnel investments tended to be significant, these schools prioritized technology tools that helped control personnel costs or make advisors more effective. The tools automated advisors' workflow (through automated scheduling and centralized note taking, for example); reduced the transactional aspects of advisors' responsibilities (by using chatbots to address basic questions, for instance); better enabled advisors and their students to monitor their progress toward a degree (by using degree audit tools, for example); and improved the quality of advising interactions (by using early alerts and predictive analytics to identify which students needed support on specific topics and to design specialized interventions).

Should Institutions Buy or Build Technologies?

As we have mentioned, previous work in this field provides a taxonomy of advising technologies and implementation tools that should help institutions navigate vendors and offerings. Still, a common question is whether an institution should buy or build technology. Because most institutions lack the technical

sophistication as well as the personnel and monetary resources necessary to successfully scale and manage custom solutions, we recommend buying over building unless an institution has the following:

- Internal capabilities such as data analytics expertise, dedicated software developers, and a robust data warehouse
- Time to develop software tools; our study indicates that third-party offerings are usually faster to implement
- Faculty or administrators to oversee the process, choose the software's features, select the variables to include in the algorithms, and so forth
- A relatively complex IT infrastructure or a substantial portfolio of legacy tools and applications that would pose integration challenges with third-party software

How Can Institutions Drive the Adoption of Technology?

After institutions have invested in technology, they understandably want to ensure its adoption. At the same time, technology adoption—particularly of risk-alert tools—is often a challenge. To address this, the institutions in our study communicated their vision for technology's role, aligning it with the institutional mission and supporting it with sufficient resources. The institutions engaged frontline staff in tool design and, when selecting variables to include in risk-alert algorithms, biased the selection toward the minimum number of variables needed. The institutions also influenced how advisors, faculty, and others used and interpreted tool features through end-user training.

To encourage the adoption of workflow-focused tools, the schools also publicized relative utilization among end-user groups to identify inconsistencies and incentivize improvement. We hypothesize that institutions can enlist the support of various campus functions to champion technological change, speeding adoption. We also expect that institutions can include the willingness to use these technology tools as an explicit hiring criteria for candidates applying for advisor positions and establish regular forums (such as discussion groups) to gather feedback from end users.

NOTE

1. For further discussion of advising models and structures, see, for example, Celeste F. Pardee, "Organizational Models for Advising," Nacada, Clearinghouse of Academic Advising Resources, 2004. See also, Marsha A. Miller, "Structuring Our Conversations: Shifting to Four Dimensional Advising Models," Nacada, Clearinghouse for Academic Advising Resources, 2012.

CONCLUSION

Today's colleges and universities guard our nation's future. They are uniquely positioned to deliver the skills needed for a 21st-century US workforce while closing pernicious achievement gaps. Providing a rewarding postsecondary experience—and ensuring that students earn a degree or credential in a timely, affordable manner—has never been so urgent. Interventions to support student success on campus will increasingly take center stage, and advising will be an area of continued interest for students, faculty, staff, and administrative leaders. The four most important takeaways for institutions are the following:

- Broad-based advising reforms significantly improve student access and outcomes at a relatively low annual incremental investment.
- The two primary drivers of academic returns are simplifying students' paths and increasing right-time access to advising.
- Selectively and strategically using software tools and data analytics enables more personalized and impactful advising interactions. Tools and analytics can be particularly effective when used by an empowered, cross-functional student success team.
- Personnel investments typically represent the largest proportion of the total cost of broad-based advising reforms. To maximize economic returns, institutions should strategically assign advisors and lower advising ratios for higher-need students.

To realize the full benefits of advising reforms and maximize academic and economic outcomes, institutions should consider the following strategic steps as a guide for implementation:

- Fully commit to advising reforms as a strategic priority.
- Engage a cross-functional team of faculty, administrators, and other relevant stakeholders early—at the reform design stage—and create mechanisms for regular feedback.
- Centralize advising resources, including professional advisors, to support at-risk student populations to the extent possible.
- Focus initial investments on tactics and tools that simplify students' paths, enable closer monitoring of students' progress toward a degree, and automate advisors' workflows.
- Tap outside technology vendors strategically, particularly for basic tools, such as

those that aid in calendaring and note taking.

- Engage frontline staff in designing software tools, particularly when selecting variables for risk-alert systems.

- Strengthen and invest in data analytics and reporting.

Institutions that champion advising reforms help open the door to higher education for more students at a relatively low annual investment. Additionally, advising reforms that reinforce cross-functional teaming and strengthen data-informed decision making can have positive spillover effects to other areas of student success. Each institution's journey will be unique, but we believe that the lessons described in this report can serve as an entry point for all.

APPENDIX

A COMPARISON OF REFORMS ACROSS INSTITUTIONS

Each institution we studied took a unique approach to advising reform. This appendix summarizes the key elements of each institution's reforms, as well as the academic and economic impacts that we observed.

	Florida State University FSU began reforming student advising in 2000.	Georgia State University[1] Georgia State began reforming student advising in about 2008.
Key elements of reform	• **A Satellite Advising Structure.** FSU transitioned from a faculty-driven advising model toward a centralized, professionalized, and developmentally focused model. The specific model of implementation differs slightly among FSU's colleges (for example, student-to-advisor ratios range from 100 to 1 to 550 to 1, and the use of peer advisors or faculty to supplement the professional cadre varies). Overall, FSU gradually increased the number of professional advisors during the transition to the satellite structure. FSU also created the Exploratory Advising Center (to provide intensive support to students having difficulty selecting a major) and the Academic Center for Excellence (a central hub on campus for learning supports, such as peer tutoring and supplemental instruction). • **A Data-Driven Approach.** The university invested in the in-house development of major maps and a cohort calendar that encouraged adoption of a campus-wide, data-driven approach to student success initiatives. • **Targeted Programs.** FSU developed programs—including the Center for Academic Retention and Enhancement and College Life Coaching—that layer on top of the standard model to support students most likely to withdraw or transfer. • **Third-Party Technology Investments.** The university partnered with EAB to implement its foundation (or campus) platform. FSU also invested in Guide, EAB's student-facing mobile app.	• **A Mindset Shift to Data-Driven Decision Making.** Georgia State created a public database (called Iport) as a single source of data. New positions within functional teams (such as admissions) embedded analytics capabilities and promoted development of fit-for-purpose dashboards. • **A Centralized Student Success Structure.** The university created the Office of Enrollment Management and Student Success (which employs more than 500 full-time staff) to centralize frequently siloed functions and to promote coordination among student-facing units. • **Scaling Up Professional Advising.** Georgia State scaled up and extended the reach of its system of professional advising by hiring more than 40 advisors. This enabled the school to lower its student-to-advisor ratio to 300 to 1 and to offer centralized advising support until a student had 90 credit hours. • **Predictive Analytics.** Through a co-development partnership with EAB, frontline staff participated in the selection of about 800 risk indicators that enabled real-time proactive intervention. • **Other Measures.** The university scaled up a supplemental instruction program and introduced adaptive courseware to support students with high rates of dropping, failing, or withdrawing from courses; it also introduced metamajors to simplify first-year students' decision making and limit the accumulation of unnecessary credits.

	Florida State University FSU began reforming student advising in 2000.	Georgia State University[1] Georgia State began reforming student advising in about 2008.
Outcomes	• The on-time graduation rate of the overall population has risen by 21 pp since 2000. • Throughput has increased by 57%.	• The on-time graduation rate of the overall population has risen by 10 pp since 2008; however, the impact of improvements in retention in years one through four over this period of reforms is outweighed by improved acceleration (for example, lower retention in years five through eight). • Throughput has increased by 59%.
Economics	• The total annual cost of broad-based advising reforms is $4.2 million, of which $2.6 million is incremental. Per student, the total annual cost is about $120, of which about $70 is incremental. • The total annual direct cost of broad-based advising is $3.4 million. • The net impact of reforms is $1.2 million to $3.2 million (or about $40 to $100 per student), due to annual preeminence funding and increased retention.	• The total annual cost of broad-based advising reforms is about $5.9 million, of which $2.9 million is incremental. Per student, the total annual cost is about $200, of which approximately $90 is incremental. • The total annual direct cost of broad-based advising is $3.2 million. • The net impact of reforms ranges from a cost of $60 to $80 per student.

NOTE:
1. All reform elements and reported outcomes exclude Perimeter College.

	The University of Texas at Austin UT Austin began reforming student advising in 2012.	Montgomery County Community College MCCC began reforming student advising in 2012.
Key elements of reform	• **Targeted Programs.** UT Austin introduced programs to provide additional support (such as financial aid and tutoring) to at-risk students. Approximately 20% of at-risk students were freshmen. • **Predictive Analytics.** The university developed a predictive model in-house to identify students for targeted programs. It also created or refined additional tools to enable a student success team to intervene with students whose degree plan was off-track after freshman year. • **Decentralized Support.** The advising model varies by college—student-to-advisor ratios range from 180 to 1 to 500 to 1—but predominantly, the colleges use a decentralized, professionally staffed model. Weekly small-group sessions provide quasi-group advising for all freshmen and are decentralized across colleges and departments.	• **An Expanded, Holistic Advising Program.** MCCC shifted the activity mix for its existing cadre of professional advisors (about 22 people) in order to address the diverse needs of students. Prior to the reform, advisors focused 100% of their time on registration support. After the reform, advisors spent 30% of their time on registration and administrative support, 30% on educational needs, 20% on career planning, 10% on financial planning, and 10% on case management. • **Early and Frequent Touchpoints.** The college extended student-staff touchpoints to admission (using coaches to walk students through enrollment, for example) and increased the number of advising touchpoints (adding two more required meetings, for example, and having advisors reach out to students when alerted). • **Technology Tools.** MCCC implemented new technology tools—from companies such as Academy One, Blackboard, Civitas Learning, Ellucian, jobZology, and Starfish Retention Solutions—that helped advisors plan their workflow and enabled them to better assist students.

	The University of Texas at Austin UT Austin began reforming student advising in 2012.	Montgomery County Community College MCCC began reforming student advising in 2012.
Outcomes	• Four-year graduation rates have risen by 15 pp, from 51% to 66%, over the past five years (from the 2008 academic year through the 2013 academic year).	• One-year retention has risen from 58% to 60%, despite a 4 pp increase in low-income students. • First-time freshmen in the 2016 academic year were the first to experience the full comprehensive suite of reforms.
Economics	• The total annual cost of broad-based and targeted advising reforms is about $11.7 million, of which $3.9 million is incremental. Per student, the total annual cost is about $280. • The incremental cost of broad-based reforms, specifically, is about $25 per student. • We did not split direct and indirect costs for UT Austin owing to its focus on targeted programs. • The net impact of reforms is about $100 per student.	• The total annual cost of broad-based advising reforms is $3 million, of which $0.5 million is incremental. Per student, the total annual cost is about $165, of which $50 is incremental. • The total annual direct cost of broad-based advising is $2.4 million. • The net impact of reforms ranges from a cost of about $0 to $18 per student.

NOTE TO THE READER

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