Next-Generation Advising Solutions
Insights and case studies for higher education
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Introduction

The need to serve large numbers of diverse learners at scale has necessitated the rapid development of technology-enhanced advising systems that augment human capabilities. *Next-Generation Advising Solutions* refer to an emerging set of technological and organizational practices that 1) accommodate and leverage scale to serve large numbers of students, while 2) providing fully personalized advising experiences that meet individual students’ needs. Properly designed and implemented, Next-Generation Advising Solutions have the potential to shift advising from a series of transactional, administrative conversations between a student and advisor into a transformational, developmental process that improves outcomes related to retention and graduation and helps institutions to manage the challenges of scaling.

Although effective Next-Generation Advising Solutions are technology-dependent, leveraging data and automation to achieve an optimal balance between in-person advising and self-service, technology alone is not enough to ensure their success. Next-Generation Advising Solutions must also be purposefully built to accommodate normative considerations such as equity, and these commitments must be suffused throughout the institution’s culture and reflected in its advising practices. For these solutions to succeed, higher education institutions must mindfully and strategically appraise and develop opportunities that anticipate future challenges, rather than reactively adopting new technology to address immediate problems.

Critically, the challenges facing higher education right now — including low retention and graduation rates and persistent inequity — are the result of design choices over the last several decades as public U.S. colleges and universities rapidly built-up systems and capabilities to serve large numbers of learners. These design choices that facilitated the “massification” of higher education were based on the idea of providing the greatest good to the greatest number, often at the expense of providing the greatest good to students as individuals. Consequently, large swaths of learners were left out, especially those who did not conform to the 18-24-year-old, residential, middle-class, mentally and physically able, and often ethnically white archetype.

These legacy design choices have touched every aspect of the U.S. education system, including admissions standards and decisions, the quality and comprehensiveness of student support services, disability accommodation, expectations of professors to focus on research versus teaching, advising systems and practices, and more. One key premise of these decisions is that learner choice must be restricted for the sake of managerial and operational efficiency. Over the last several decades, only a scant few colleges and universities have been able to offer students the flexibility and guidance to realize their own self-defined potential, and these institutions are often private and exclusionary by design. To increase accessibility, public higher education institutions ceded “excellence” in teaching and learning and services delivery to elite institutions capable of offering a high-touch experience. A second premise of these design choices is the idea that the learner must conform to the priorities of the institution, lest the need to accommodate personal needs overwhelm the bureaucratic systems that enabled
mass education. Learners who are unable to fit into these systems are characterized as problematic and deficient.

To succeed at providing personalization at scale, Next-Generation Advising Solutions must challenge these premises, and further, must be supported by thoughtful design choices centered around equity, learner agency, personalization, and scaling. Educational leaders must take stock of the way that the impact of design choices made today will endure and affect the experience of learners for decades to come.

This report summarizes work carried out by Arizona State University (ASU) and the Boston Consulting Group (BCG) on behalf of the Bill & Melinda Gates Foundation BMGF. After providing a contextual overview of the potential of Next-Generation Advising Solutions and the market solutions that might enable them, the report introduces case studies of Arizona State University (ASU) and Western Governos University (WGU); an analysis of how these institutions’ experiences might shape the trajectory of Next-Generation Advising; and a case study of a Next-Generation Advising pilot at ASU. The report concludes with recommendations to the Bill & Melinda Gates Foundation for future investments in Next-Generation Advising.

**Next-Generation Advising in Context: Defining the Ideal State and Assessing Market Conditions**

In 2020, BCG carried out work to understand the ideal state of advising for institutions and a undertook a landscape assessment of technology providers that can help to provide Next-Generation Solutions. This effort drew upon interviews with leaders and personnel at 10+ colleges and universities; a survey of 950 students; and a landscape analysis of multiple technology investors and suppliers.

**Defining the Ideal Future State of Advising**

In the ideal future state of advising, learners will receive comprehensive, coordinated support from pre-enrollment to post-graduation career advancement through a unified, coordinated care model. Technology providers are critical to realizing this ideal state by enabling the ability of institutions to make changes to their service delivery models. To provide personalization at scale, institutions and technology providers must work together to create "bionic" advising organizations wherein students benefit from the use of self-service tools in support of cross-functional concierge teams that direct them to resources across and outside of institutions. The path toward technologically integrated, holistic, and streamlined solutions must account for the needs of all advising ecosystem stakeholders, including learners and their families as well as institutional offices (admissions, career services, financial aid) and personnel (advisors, counselors, and faculty).
Next gen advising solutions will enable coordinated care due to their technological features and service delivery model. The technological features will be optimized for usability and in order to promote greater equity in student outcomes, ideally will be co-designed with end users and updated based on continuous user feedback. The solutions must enable ease of integration across a variety of other services and tools. Moreover, solutions that can be updated efficiently (e.g., cloud-based) will further enable a high-quality student experience. In terms of service delivery, next-generation solutions will strike a balance between self-service and on-demand support for students. The solutions should free up advisors for high impact engagements (with less time spent on transactional aspects of the workload).

**Ideal state for advising technology journey, “v1.0”**

The current state of advising capabilities of higher education institutions run the gamut from less agile to more agile technology stacks and attendant organizational designs. The least agile institutions rely on *siloed, bespoke* approaches marked by poorly integrated, standalone systems that do not effectively leverage data or provide adequate transparency and rely on manual processes. The path to greater agility runs along a continuum toward *integrated* technology stacks with decreased data transfer time and more robust reporting and insights to drive continuous improvement; to *data and AI-centric* technology stacks that leverage cloud/SaaS platforms, along with some AI integrations to drive more robust, data-driven decision-making; to *bionic* solutions that detect and take actions to ameliorate points of failure, with technological and organizational processes overhauled and talent up-skilled and re-skilled to be more agile. No institution has achieved the ideal state yet, and only a handful have made a meaningful shift to data and AI-centric advising.
The COVID-19 pandemic is accelerating the shift already underway at many institutions toward more agile solutions. In the near term, BCG hypothesizes that the pandemic is creating resource trade-offs and temporary challenges that impede the development of Next-Generation Advising Solutions, but over the longer term will catalyze investment and development of underlying technological solutions and related organizational shifts. The potential impact of the shift to Next-Generation Advising Solutions include: 1) Institutional capacities to support students as lifelong learners and personalized, coordinated care tailored to individual needs, especially for disadvantaged groups; 2) More accurate, easily available data that improve the accuracy of AI/machine learning tools, reduce bias, and inform strategies to reduce opportunity gaps; and 3) Customization of select student-facing, non-automated advising activities, with scalable technologies that enable increased self-service.

The Supplier Market for Next-Generation Advising Solutions

Key observations from the landscape analysis of multiple technology investors and suppliers, indicate the state of the supplier market for next-gen advising solutions have shown a particular interest in addressing career and alumni engagement as well as financial planning tools, while fewer suppliers address credit mobility, personalized coaching, and caseload management. As suppliers focus the development of their solutions on high tech capabilities, utilizing flexible integration points and incorporating AI and machine learning, results are not always fully realized because of institutional technical limitations. To date suppliers continue to focus on single point and multi-point solutions, leaving no clear “one-stop shop” solution, which could be contributed to the substantial up-front investments from the supplier and consumer and the less than clear ROI. In the overall development of next-gen solutions suppliers often tout intentional efforts to build equity into their product designs, but there is limited evidence in the delivery.

BCG identified four foundational conditions necessary to drive the supply-side market toward evolution of the ideal future state: 1) A clear, unified view of how institutions and suppliers can leverage technology to deliver personalized support to students; 2) Interoperability across tech stacks and incentives to encourage collaboration; 3) Sufficient institutional IT team capacity and resources to realize solutions; and 4) Increased understanding of technology ROI and how solutions impact interoperability and equity. The barriers to achievement of these conditions include: 1) Poor interoperability between point solutions underlying enterprise systems; 2) Lack of proof points for the value of a coordinated care model; and 3) Limited institutional capacity and funds to allocate toward implementation of new advising technologies.

The persistence of these obstacles has impeded the emergence of single platform models that offer fully integrated, plug-and-play technology stacks. Given the constraints of the current market, a hub and spoke model, wherein an institution manages a modular ecosystem of point solutions integrated across all systems, is likely to be more feasible.
Ideal future technology stacks can enable institutions to provide “one-stop shop” student experiences

Single platform model

- CRM
- LMS
- Single vendor providing integrated advising functionality
- Additional systems (e.g., Wisetail, Zaps, G Suite)

Hub and spoke model*

- CRM
- LMS
- Multiple vendors providing distinct advising functionality
- Additional systems (e.g., Wisetail, Zoom, G Suite)

Institution manages single platform supporting functional areas across student lifecycle with flexible integration across systems.

Institution manages modular ecosystem of point solutions, enabled by advanced integration capabilities across systems.

Across scenarios...

- People-tech advantage
- Real-time integration through APIs, iPaaS & native
- Cloud-based/SaaS

* Most likely scenario given current market conditions. In both scenarios, institutions must commit resources to modernize legacy architecture.

However, successful uptake of a hub and spoke model requires improved alignment between institutions, investors, and suppliers that help to clarify market demand across higher education and to incentivize investment and technology development to meet this demand. These market dynamics are very similar to those facing the health tech market, where multiple consortia of providers, patients, and payers have intervened in the market to propose regulatory changes, set standards for interoperability, convened end-users and tech suppliers, and marshal funding and investment.

Managed Service Providers: A Unified Path to the Ideal Future State of Next-Generation Advising?

A Managed Service Provider (MSP) model could bring together institutions in need of advising services with external parties to provide quality offerings at lower costs. For some institutions (especially those that are smaller or more resource constrained), the MSP model could improve the economics of advising reform and enhance the quality of their advising offerings. Because there is no single, fully integrated market player, institutions with expertise and capacity to white label their approach — such as ASU and Georgia State university — can play the role of MSPs, translating their learnings from working directly with students and third-party providers. Institutions-as-suppliers could employ a partnership model that allows other institutions to access the resources either directly or via third parties. Alternatively, third parties can act as MSPs, provided that the private sector is able to develop a bundle of outsourced advising solutions. A private sector-led approach would require new suppliers to enter the market;
incentives to stimulate private investment in solutions aligned with institutional needs; and a coordinated execution effort that is able to integrate with core functions of client institutions. In both the MSP and private sector-led scenarios, client institutions must become comfortable with the inherent risks of outsourcing their current advising capabilities.

Arizona State University: Next-Generation Advising Capacity Building at a Large Public University

From 2003 to the present, ASU grew enrollment from 55,000 students to 135,000 (~100,000 on-campus/hybrid students, ~35,000 fully online). During this time, ASU increased the diversity of its student body, doubling the population of black and Hispanic students from 15% to 30%. Over the last 10 years, ASU has also increased retention rates by 10%. The primary enabling factors for these achievements include development of new credentialing pathways; an integrated suite of advising tools called eAdvisor; and scaling up professional advising across academic units. Together, these solutions have laid the foundation for ASU’s current activities to rapidly transition to the ideal state of Next-Generation Advising and increase retention beyond 90%.

The Path to Next-Generation Advising at ASU

Respective to Next-Generation Advising, ASU’s three strategic ambitions are to:

- Scale its student success concierge model
- Provide continuous support to students on their lifelong learner journey
- Define the optimal mix of self-service versus high-touch engagement

ASU’s current activities are centered around developing a concierge-based coordinated care model that optimizes a balance between technology-enabled self-service and human interactions that promote learners’ ownership of their own journey. To date, ASU has migrated about 70% of its core systems to the cloud, invested in multiple third-party Next Generation Advising technology solutions; integrated technology solutions to create a student-facing digital support suite (via My ASU and the ASU mobile app); created new ways to reach students in pre-enrollment (me3, MyPath2ASU); and convened discussions across units to prepare for a shift toward a concierge model.

In ASU’s emergent Next-Generation Advising model, students have touch points with multiple resources across their learner journey, including:

- **Peers**: provide orientation programming and 101-level intro classes across colleges; facilitate mentorship
- **Academic advisors**: responsible for student academic planning and checkpoints each semester
- **Success coaches**: provide holistic support to online students (e.g., financial aid, assistance with personal circumstances)
• **Retention specialists**: provide cross-functional student retention programming and outreach in select academic units
• **Career coaches**: guide students through career exploration and professional development in select academic units

These touch points are complemented by an evolving ecosystem of homegrown and third-party advising technology solutions, including:

• **eAdvisor**: an ASU-developed suite of tools that provides shared functionality for administration, advisors, and students (2008-present)
• **My ASU web portal**: houses eAdvisor tools and most institutional resources needed for progress in the learner journey (2006-present)
• **ASU Mobile app**: one-stop shop student app that houses eAdvisor tools, other institutional resources, and access to third-party solutions (2018-present)
• **Third-party platforms**: multiple tools to increase advisor and student functionality (2015-present)

ASU’s 70% migration of core systems to the cloud reflects a reorientation of IT from back-end functions to active partnership with academic units and university stakeholders in driving student success strategies. The transition of ASU’s tech stack to the cloud has increased the capacity of teams to focus on student success innovation; reallocated physical real estate to support research; improved responsiveness through real-time workflows; and reduced the total cost of the tech stack. ASU has also automated key functions in its IT environment, enabling greater predictability for engineers so that they can more reliably serve product owners, while reducing the need for engineers to manually run systems checks. Additionally, ASU has shifted key legacy systems and products to enable real-time data transfer, yielding more accurate, consistent data to inform outreach to students and advising approaches.

Academic units at ASU are actively evolving their service delivery models toward a single point of contact to facilitate student support. All academic units leverage several advisor or advisor-adjacent roles (e.g., faculty) and student peers to support learners, with differentiated roles across units for career coaches, success coaches, and retention specialists. For example, at the W. P. Carey School of Business, one assigned advisor and one career coach follows a student from enrollment through graduation. Behind the scenes, a student engagement team manages outreach to students; a retention partners team meets twice per month to discuss student case notes; and advisors escalate requests to other departments on behalf of students as needed. At ASU’s New College, a student success team coordinates to create a centralized point of contact for students, allowing students to meet with any member of the advising team as needed. The student success team is comprised of co-located Program Officers focused on retention and Academic Advisors focused on academic planning. Program Officers have weekly and biweekly retention meetings with other units to coordinate student engagement and discuss case notes.
ASU-Developed Technology Solutions

ASU’s initial 2008 investment to develop the eAdvisor ecosystem ($11M upfront with $1.5M ongoing spend) is the cornerstone of the university’s approach to Next-Generation Advising. ASU’s decision to build eAdvisor in-house was informed by the lack of comparably functional tools on the market. eAdvisor integrates numerous resources differentiated for administrative versus student-focused applications. On the administrator side, these include degree auditing requirement tools that sequence graduation audit requirements by term; advisor tracking tools that enable real-time student tracking and intervention; tools for building and managing major maps; catalog archives; dashboards for managing student Pathway Agreements; a semi-automated course scheduler; a Pathway Builder that allows rapid approval of transfer credit based on in-state community college course equivalencies; and a course enrollment management dashboard to forecast class demand. For students, eAdvisor offers a simplified view of degree auditing and tracking toward degree completion; major maps; degree search functions; class search functions; a transfer guide and credit mapper for transfer students; and Me3, an interactive tool that helps students to identify their interests and potential career paths.

The development of My ASU began in 2006, when ASU identified the need for a unified interface for students to navigate institutional tools. As with eAdvisor, there was no robust, viable solution offering in the market. From 2006-18, ASU built out the My ASU web portal with a team of 25 engineers, integrating the platform into 300 backend systems (including eAdvisor). In 2018, ASU launched a mobile app version of My ASU to increase convenience and facilitate deeper student engagement with web portal tools as well as third-party tools. Interviews with ASU personnel have confirmed that the mobile app has helped to improve student engagement.

Third-party Technology Solutions at ASU

Since 2015, ASU has integrated multiple third-party solutions into eAdvisor and My ASU. Prior to adoption of each of these solutions, ASU leaders asked the following questions:

1. What do users across academic units need? Does the solution work at enterprise or unit level?
2. Does the market offer a robust solution?
3. Can the solution be purchased from a preferred vendor?
4. Can the product be integrated into the existing tech stack?
5. Does the vendor/product satisfy tech and security requirements?

The solutions that ASU has adopted touch students at five phases of the learner journey:

- **Prospective students** (Tealium and AdmitHub): provide targeted messaging and proactive engagement with students, including through chatbot push campaigns
- **Pre-enrollment coaching** (ReUp): personalized, 1:1 support from an external coach to increase reenrollment of stop-out students
• **Financial aid navigation** (RaiseMe, iGrad): access to information about best fit financial aid to increase persistence
• **Personal and academic coaching** (GetSet, PeopleGrove): enables support from online community of peers and technology-enabled alumni mentoring
• **Career navigation** (Handshake, Vmock, Uconnect): self-service career exploration/applications, AI-powered resume evaluation, aggregated case notes for advisors

### Challenges and Lessons Learned

ASU has identified several challenges on its path to the ideal state of Next-Generation Advising, as measured against its three core strategic ambitions. Scaling the student success concierge model requires reconfiguring teams and re-scaling across units to accommodate the complexities of scale, and further requires culture change at units that already have customized approaches in place. Providing continuous support to students as lifelong learners requires shifting the historic focus on first-year engagement toward success across the whole learning lifecycle, from pre-enrollment to post-graduation, and there are few direct-to-student tools available on the market to help accommodate these needs. The shift to a more optimal mix of self-service versus high-touch engagement requires new approaches to identifying students of concern, and some self-service tools currently lack advanced student-facing functionalities.

The ASU case study surfaced five key lessons to inform future investment strategies in Next-Generation Advising Solutions:

1. **Cloud migration**: It can directly promote innovation in student success.
2. **Technological maturity**: This maturity does not guarantee accelerated next-generation adoption and requires investment in the building blocks of open infrastructure to promote adaptability.
3. **Increased understanding of the optimal self-service mix**: This has potential to reduce equity gaps.
4. **Increased cognitive load**: Next-generation advising solutions can increase cognitive load for advisors and students.
5. **Centralized decision-making**: It introduces a trade-off between consistency and responsiveness.

ASU still has unrealized upside for leveraging more self-service technology to improve the quality of interactions between students and advisors. As ASU works towards the optimal mix of
high-touch and self-service advising, a key focus is shifting transactional advising (e.g., ensuring mutual student/advisor understanding of degree audit requirements) toward greater automation to free up time for developmental advising that is more effective for students and improves retention.

**Western Governors University: 360° Community of Care**

Established in 1997 as a disruptive university with a self-paced, competency-based model and a fully online learning environment, WGU has grown to serve 130,000 students (7x growth in enrollment since 2010). The market segment served by WGU is non-traditional (85% working while enrolled, 73% working full time, median student age 35) and diverse (22% low-income, 25% underrepresented minority, and 39% first generation). The average WGU student completes a degree in 2.5 years, and WGU’s goal is to achieve 100% on-time completion within self-defined, personalized tracks.

WGU offers simplified degree plans to optimize individual students’ progress based upon their goals, prior experience, and life situation. The WGU curriculum and assessment program is oriented toward helping students develop labor market relevant skills based on a common data standard (“Rich Skills Descriptors”) that helps students to make learning pathway choices personalized to their industry, goals, and geographic locations; manage knowledge gaps and knowledge decay with responsive nudges and coaching; match learners and employers based on skills and demand; and connect with “last mile” curriculum that closes skills gaps necessary for employment. As a result of a coordinated, all-of-university approach to improving student outcomes, WGU has increased its six-year graduation rate by 13% since 2012 and increased its three-year graduation rate by 4% since 2015; WGU’s 13-month retention rate in 2020 was 90.6%, a 1% increase from the previous year.

**Next-Generation Advising at WGU: Homegrown Technological and Organizational Innovation**

WGU is working toward a Next-Generation Advising vision based on an open, flexible technology stack, peer engagement, and redesign of the student experience to address equity gaps. Between 2006 and 2013, WGU developed the foundation of its advising approach, a 360° Community of Care model comprising four key faculty members:

- **Program Mentor**: serves as student’s main point of contact to create personalized academic and term plans; assesses strengths and development needs; helps to connect coursework to program/career competencies; provides holistic support
- **Course Instructor**: provides course instruction and intervenes directly with individual students to personalize interventions
• **Evaluator:** evaluates performance-based assessments to assess demonstrated student competency and provides comprehensive feedback to students
• **Curriculum and Assessment Developer:** designs curriculum/assessments defining learning outcomes aligned to marketable skills; curates instructional materials

From 2014-19, WGU focused on improving just-in-time support through investments in IT infrastructure and supportive organizational change, including the rollout and scaling of a Learner Care Dashboard (LCD) that informs Program Mentor outreach. The LCD combines 80+ inputs from multiple systems into a cohesive view for the Program Mentor, tracking student progress relative to 15 identified student “essential actions” that trigger a touch point. WGU developed the LCD in-house because off-the-shelf market options did not meet the university’s use case. After piloting the platform in 2018 to understand which prompts and interventions have the greatest impact, WGU scaled the LCD across the institution along with an extensive change management approach to ensure consistent adoption across academic units. WGU invested ~$700,000 and technology development time and data integration and $600,000 in change management and training.

WGU also developed integrated self-service tools including the Personal Learning Guide, which assesses learning strategies, life factors, mindset, basic competencies, and readiness for learning; and a Course Planning Tool that assesses readiness for courses (experience, confidence, and knowledge). Both tools inform student conversations with Program Mentors regarding relevant support resources and term planning, as well as course planning interactions with Course Instructors.

**Third-Party Technology Solutions at WGU**

From 2019 through the present, WGU has integrated multiple third-party applications into its tech stack:

• **Inside Track** provides individualized 1:1 coaching to student subgroups (2020)
• **Handshake:** enables students and alumni to explore career opportunities and submit applications; ~330k users (2019)
• **Mongoose:** allows Program Mentors to send SMS texts to individual and groups of students (2020)
• **Civitas:** assesses impact of interventions specific to student subgroups (2019)
• **AdmitHub:** enables AI SMS nudges to students as well as on-demand support for transactional questions (2021)
• **Mentor Collective:** formalized peer mentoring opportunities (2021)

Program Mentors report the introduction of new tools has allowed them to spend more time with students on high-impact, developmental topics. New tools have helped to personalize the cadence and content of engagement with students toward being more proactive, data driven, and convenient (e.g., greater ease of communication through text messages).
WGU Success Factors and Lessons Learned

Western Governors University’s development of Next-Generation Advising Solutions aims to evolve Community of Care member workflows away from a reactive, just-in-time approach toward a proactive and predictive approach that leverages more self-service tools while maximizing personalization.

WGU is carrying out ongoing redevelopment of courses and assessments to support student success, along with incremental cloud migration of its tech stack. Additionally, WGU is leveraging advanced analytics to improve student success across four research vectors, including geographic clustering and spatial analysis; human touch point/intervention impact research; curriculum and assessment impact research; and systems and policy friction research.

Three facets of WGU’s approach to organizing human capital and business processes have enabled its emergent Next-Generation Advising approach:

1. **Strategic design of student-facing teams**: WGU coordinates the behind-the-scenes efforts of various teams to present a unified, seamless service experience to students. For example, the financial services team has multiple functional subgroups dedicated to different types of financial support (i.e., state grants, payments, title IV, military benefits, and third-party sponsorships), but the student sees only the relevant information to their needs in the student portal and has the option to reach out to receive more customized support.

2. **Strong shared services model**: WGU operates as a matrixed organization built around student needs, with six core units offering shared services to WGU’s four academic colleges (business, health, IT, and teaching). These six areas include: Academic Programs (design and development); Student Success Operations; Advanced Analytics; Academic Engagement (including accreditation); Business Transformation; and General Education. These six units matrix with cross-cutting WGU capabilities in educational technology (IT, product, engineering, security, tools, and platforms); operations (marketing, enrollment, regional operations, financial aid, and IT service); people and talent (HR functions, benefits, recruiting, business partners); public policy; and legal.

3. **Centralized, agile tech procurement and implementation**: This is supported by a standardized approach to piloting new initiatives and technologies. WGU employs a unified change management methodology with a single point of contact at each college (Change Manager); assessments of change managers’ ability to champion change within colleges and drive college-level ownership of implementation and outcomes; and “listening rooms” that bring together representatives from colleges every four weeks to debrief on progress and share experiences.
ASU and WGU Insights for Next-Generation Advising for Higher Education

Although ASU and WGU’s tech stacks and service models differ significantly, four cross-cutting insights emerged from case studies of each institution that may help to inform the development of Next-Generation Advising Solutions across the higher education industry:

1. **A facilitated effort to articulate demand across multiple institutions could catalyze meaningful alignment around a consistent vision for a Next-Generation student experience.** Despite differing institutional contexts, leaders at ASU and WGU articulated a very similar ideal future state. Analysis of ASU and WGU’s shared experiences suggests that a coordinated effort could incorporate three themes common to both universities’ ideal future state: 1) Coordinated student care; 2) Enabling student ownership; and 3) Shifting toward greater personalization.

2. **Next-Generation Advising must prioritize the needs of student subgroups, which requires building alignment around semantic data models to scale future tech solutions.** Most institutions have designed advising systems to support “typical” students, later supplementing them with targeted programs for groups performing differently. These design choices reflect a perceived trade-off between scalability and personalization; the complex nature of determining the right self-service mix for students; and the fiscal expenses required to address the needs of student subgroups. Leaders at ASU and WGU both recognize the importance of determining the right mix of self-service versus high-touch support, as strengthening the former frees up time and resources for the latter. However, the move toward greater self-service requires technology and service model optimization to meet the needs of specific student subgroups, and common data models will enable better fit between suppliers and institutions and more rapid and effective scaling of solutions that accommodate these needs.

3. **ASU and WGU represent unique starting points in the journey toward Next-Generation Advising, and most institutions will likely follow ASU’s path and require support to shift towards greater personalization.** As most institutions will begin with an advising model (advising roles, structure, advising ratios) similar to ASU, they will find that ASU’s model is more scalable for their needs, whereas WGU’s has a distinct design and is more personalized, and each approach offers unique benefits, trade-offs, and challenges. ASU’s higher student-to-advisor ratios (~400:1 versus ~85:1 at WGU) maintain distinct specializations in student support roles and offers greater potential to reach more students at lower cost, whereas the WGU’s model integrates the role of advisor, success coach, and career coach and allows for personalized support. ASU’s distinct advising structure and higher student to advising ratio offers a unique opportunity to scale and test advising interventions rapidly, whereas WGU’s model allows for ongoing attention to the individual needs of students and less student responsibility for navigating advising systems. ASU’s more scalable model introduces
unique challenges in addressing the specific needs of student subgroups, and there may be limitations to the gains that can be achieved without a more personalized and integrated approach. WGU’s more personalized model is expensive to scale while keeping student-to-advisor ratios low, and there are challenges to achieving an equal degree of personalization through technology without expanding automation and self-service to adjust mentor loads, activities that WGU has expanded in the recent years.

4. **Investments to improve IT maturity in higher education could help to enhance high-fidelity implementation of Next-Generation Solutions.** IT maturity and the strength of data and technology capabilities enable institutions to identify and deploy advising solutions at scale and with fidelity. Driving IT maturation across the industry may therefore address solutions such as middleware as a public good or IT as a shared service.

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**A Case Study of a Next-Generation Advising Pilot at ASU’s University College**

In 2020-21, BMGF provided funding to ASU to design and pilot a Next-Generation Advising Solution. ASU’s University College took on this work as part of its broader mission to develop scalable academic platforms that improve educational access and outcomes. University College designs personalized learning experiences to close achievement gaps between students of all backgrounds; solutions for future of integrated work and learning; and services to support learners at scale by using design thinking, analytics, automation, and intelligence systems. University College focuses its work on impacting first-year students, transfer students, returning adult students, workers in need of upskilling, occasional learners, and American Indian students.

**The Challenge: Addressing the Needs of High-Risk Students**

The work carried out under this grant accelerated the redesign of existing University College units and development of new capabilities and is now in a state of continuous improvement. The core opportunity that this pilot addressed is the lack of a comprehensive mechanism to address high-risk student issues. The current service model demands speedy, proactive, and holistic support for students navigating a university experience across multiple domains. A low-risk student has relatively simple life circumstances can easily identify their own problems and seek the relevant solution within ASU’s existing institutional structures. For example, when a low-risk student is struggling to learn new math skill, they seek tutoring sessions and learn the skill, unimpeded by atypical academic and personal challenges. For a high-risk student, problems are much more complex, limiting their ability to take immediate action to solve a given challenge. The student’s ability to learn the same math skill might be hampered by a personal emergency
that triggers failing grades, a financial crisis, social anxiety, or housing insecurity. For such a
student, there is no single place to seek help, and the student may face difficulty in seeking
support from multiple units that offer no unified mechanism to handle idiosyncratic,
multidimensional challenges.

The Solution: A Coordinated Care Model

University College’s pilot project established the parameters for a shift to a coordinated care
model and tested out aspects of this model. The traditional model, which suits most low-risk
students, prioritizes academic planning (course selection, major guidance); provides semi-
automated mechanisms for student success (early alert monitoring, case management); and
directs students toward specializations (through first-year seminars, career advising, financial
advising, and personal counseling). A coordinated care model for higher-risk students prioritizes
student success, while incorporating dimensions including well-being and engagement;
academic performance; academic planning; and career preparation.

The coordinated care model draws upon lessons learned in the healthcare sector for
segmenting care across patient populations with different risk profiles. University College has
developed a risk level/services matrix that aims to ensure care is allocated proportionately
to support high-risk students. For low-risk students, a variety of existing programs and self-service
tools (e.g., ASU’s “Sunny” chatbot) enable effective self-direction. For moderate-risk students,
these resources are augmented with 1:1 interaction with coaches and coordinators that engage
the student holistically, proactively monitoring and intervening with assistance from an analytic
safety net that identifies problems before they escalate. For high-risk students, University
College coordinators provide high-touch care by working closely with students and helping to
orchestrate their interactions with support offices within and outside the College.

The four defining characteristics of the coordinated care model are:

- **Predictive**: identify risks associated with student progress; recognize the signs of a
  student at risk before withdrawal or stop-out; understand and plan for these challenges
  in advance
- **Personalized**: service units provide holistic and compassionate care to individual
  students, optimizing student success by predicting challenges and personalizing
  interventions
- **Proactive**: care strategies leverage technology and data for expeditious,
  compassionate, and high-touch support; strategies will be shared across University
  College and academic partners
- **Participatory**: enhance students’ self-efficacy and sense of agency with accessible,
  context-sensitive self-service tools
Piloting the Coordinated Care Model at Two University College Units

Two units of the University College, American Indian Student Support Services (AISSS) and First Year Success (FYS), are piloting the coordinated care model. AISSS addresses the unique challenges facing indigenous students through multiple population-specific programs, dedicated physical spaces, and student success staff. FYS leverages peer mentorship to increase retention and persistence rates across ASU’s broader population. University College’s coordinated care pilot comprises: 1) Redesign of the core activities of both units; and 2) Proactive outreach campaigns that leverage data and analytics reach high-risk students served by both units.

The redesign of AISSS will:
1. Reconfigure physical spaces to honor the cultural heritage of indigenous students at all four ASU campuses, tailoring the spaces to activities that support a sense of belonging and provide a place to thrive.
2. Deploy coordinated, robust services leveraging support networks across the university, including expanding programming and services for community-based outreach and indigenous well-being.
3. Establish an enhanced case management data system, including analytics dashboards that will inform proactive outreach efforts.

The redesign of FYS will:
1. Create a digital coaching community that offers digital 1:1 coaching, virtual events, coaching videos, and other expanded services.
2. Enable student self-scheduling of appointments, increasing user-friendliness and offering synced calendars, customized appointment details, and automated reminders.
3. Enable just-in-time interventions in partnership with ASU’s Actionable Analytics Initiative, leveraging data monitoring and collaboration with student retention partners for rapid outreach/issue resolution.
4. Expand peer coaching to upper-division students.
5. Embed peer coaches into the Get Set platform, which uses features such as sentiment analysis to facilitate rapid resolution of issues of concern.
6. Develop a comprehensive communication plan utilizing analytics-driven communication.
7. Integrate content from ASU’s “Adulting 101” content into course for first-year students.
8. Serve exploratory students through engagement with success coaches.

Beginning in March 2020, AISSS and FYS prepared for launch of the proactive outreach campaigns, an effort that included onboarding and training coordinators in the Advisor Portal; mapping historical student data uses and future needs aligned with student journeys; identifying campus partners to support data architecture and document requirements for self-service campaign building; developing a case creation workflow; and developing recurring, predictive analytic datasets for case management.

In spring of 2021, both units launched the proactive outreach campaigns. The proactive outreach campaign of AISSS reached high-risk indigenous students, including those who were:
- On academic warning/probation
- Had outstanding balances prior to tuition and fees payment deadline
- Had shown a drop in persistence outlook
- Were within 18 hours of graduation but had not applied for graduation
- Were not yet enrolled in Fall ’21 courses

For FYS, the campaign reached four at-risk segments of students, including:

- First-year students who received an “academic status report” (structured feedback from a course instructor indicating potential challenges)
- College Attainment Grant Scholars (recipients of scholarship based on low income) who showed a drop in persistence outlook
- New transfer students who showed a drop in persistence outlook
- Exploratory students who showed a drop in persistence outlook

Students across these segments received calls and emails from support staff through ASU’s Salesforce Advisor Portal, with frequency ranging from weekly to once per term. The message for each segment was defined by the objective for the segment.

**Pilot of proactive outreach campaigns at Arizona State University’s University College (Spring 2021)**

**Predictive analytics**

- Leveraged data to identify indigenous students who needed to take various levels of action to resolve their financial barriers, prior to students receiving late tuition and fee charges, and enrollment holds.

  Identified 1,457 students.

**Outreach and action**

- Coordinators made multiple phone calls and sent emails with actionable steps.
- Coordinators made multiple attempts to connect with 100% of the students within 2 weeks of case creation.
- After completing financial aid requirements, some students still had financial barriers.

**Low-touch**

- Prompted students to self-serve and complete financial aid requirements and resolving issues early.

- 36 students were given a tuition reduction grant from AISSS equating to $27,666 to date.
- 38 students have also received a basic needs emergency grant from AISSS equating to $14,506 to date.

**Resolution**

- ~450 student financial aid holds resolved

**High-touch**

- Coordinators worked with students, 1-on-1, to create payment plans and complete grant applications.

AISSS identified 1,457 students who needed to take action to resolve financial barriers. Coordinators were able to reach 100% of the students within two weeks of case creation,
ultimately resolving 450 cases through a low-touch workflow. Among students that required a high-touch workflow (1:1 coordinator interaction), 36 students were given a tuition reduction grant, equating to $27,666 in total; and 38 students received a basic needs emergency grant equating to $14,506 in total.

For FYS, 99% of students surveyed through the program reported their coordinator helped them to achieve their goals, and 99% reported overall satisfaction with the intervention.

**Future Investments in Next-Generation Advising**

Initially, major maps and advising tools were designed to meet the needs of first-time, full time students. Over a decade later, the diversity of student populations and advances in technological capabilities outside higher education creates an opportunity to create adaptive, interactive, and personalized tools for diverse learner journeys.

**Investments in next-generation advising can be structured to help explore the following learning questions:**

1. **What are the design implications that higher education leaders must consider to inform the design of next generation of advising tools and practices?**
   a. To what extent are higher education leaders equipped to develop design practices specific to unique personas to inform how the design of next generation advising tools and practices (instead of designing for the “traditional” first-time, full-time student)?
   b. How might funders support the product and practices design thinking capacity for administrators and/or design teams by providing technical assistance?

2. **“The US Department of Education reported that, in 2017, 43 percent of all full-time undergraduate students and 81 percent of part-time students were employed while enrolled...Working for pay is more common among undergraduates from underserved groups.”**
   a. How might higher education institutions design their next generation tools to connect the critical skills learned from experiential learning to personalized degree pathways?
   b. How might institutions design their next generation of tools and practices to help students progress towards their academic and personal goals while enhancing student’s sense of identity, agency, and purpose?

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