



Career Ed  
Tech Stack

# The Career Ed Tech Stack

WRITTEN BY DR. SHEETAL PATEL & DAVID KOZHUK

# Table of Contents

<b>Letter from the Authors</b>	<b>3</b>
<b>Introduction</b>	<b>4</b>
<b>Background</b>	<b>5</b>
<b>The Career Ed Tech Stack</b>	<b>7</b>
Website Management	9
Marketing and Communication	10
Career Planning Tools	11
Career Services Management (CSM Systems)	12
Data and Analytics	13
<b>Deep Dive: Career Planning Tools</b>	<b>14</b>
Assessment	14
Career & Industry Research	15
Skill Building	15
Resume Building	16
Personal Storytelling & Branding	17
Mentoring & Networking Tools	18
Interview Prep	19
Recruiting & Career Fairs	20
Labor Market Data	21
Workplace Success	22
<b>Creating a Career Services Ed Tech Stack: 8 Steps to Help You Choose</b>	<b>23</b>
Identify Your Career Planning Process	23
Map Current Tools	24
Define Your Goals	25
Understand Success	26
Determine Your Strategy	26
Choosing a Tool or Stack	27
Map Out Tactics	28
Evaluate	29
<b>Driving Engagement: How to Get Your Ed Tech Stack in Front of Your Students</b>	<b>30</b>
<b>Partners in the Ecosystem</b>	<b>34</b>
<b>What's Next?</b>	<b>35</b>

## Letter from the Authors

Dear Readers,

Believe it or not, we first started talking about the Career Ed Tech Stack in 2015. During the Annual NACE Conference in Chicago, David had printed out his version of a career services technology stack to share with attendees. In three days, Sheetal was the only person who reacted to it. Perhaps, the “stack” hadn’t been socialized enough, or the evolving technology landscape wasn’t top of mind in career services. In 2015, it wasn’t anything more than a thought-provoking conversation but, in 2017, we reconnected at the Amplify Conference and the conversation sparked again. While we both had demanding jobs (and new infant children at home!), we agreed that technology was an emerging priority for many in our field, and it would be worthwhile to research the history, analyze trends, and explore the growing implications of the technology stack, to share with the career services community.

We were motivated, in part, by seeing so many of our colleagues struggling to keep up with the rapidly evolving technology ecosystem, how to assess potential vendors, and how to implement strategies for engagement. While it appeared many schools were struggling to engage students with the resources and services they already had, they were being bombarded by promotions and sales pitches for new solutions without many resources to effectively evaluate them for their office and students. Months of research culminated into this e-book, which summarizes our findings to help career leaders identify their “career ed tech stack,” more effectively assess their current offering, identify gaps to inform new procurements, and ultimately grow awareness and utilization of the full range of career resources and services.

As those of us in career services move from a service model to a more scalable community model, where the career center becomes a facilitator, mobilizing campus stakeholders to better support students’ career pathways, the need to provide transparency and access to career resources is paramount to engaging students and guiding them to meaningful outcomes. We hope you find this e-book immediately valuable in your strategic planning, and welcome any and all feedback!

Sincerely,  
Sheetal & David



Sheetal Patel  
**Stanford**  
University



David Kozhuk  
**uconnect**

## Introduction

Technologies  
used across the  
career services  
industry

400

Career offices  
having a dedicated  
technology person

10%



The landscape in higher education career services has changed dramatically over the last decade. Influential factors range from the health of our economy to a changing generation of students and related shifts in expectations. With the role of the career center evolving, so too has the technology that supports it. There are now more than 400 career-specific technologies used across the higher education career services industry, serving a wide variety of operational and student needs.

In fact, there is now a career education technology stack (“Career Ed Tech Stack”). No longer is a job board and events calendar enough to provide the high-touch and specialized support students need. It takes a variety of technological components to help today’s students achieve meaningful career outcomes.

**For the purposes of this discussion, a “tech stack” is defined as the set of layers of software and technology applications that provide an organization functionality for a particular purpose.** The term “tech stack” has grown in popularity as technology across industries has grown, e.g., martech, fintech, food tech, and ed tech. Within education technology, there are many tools and applications, that when used together, help higher education professionals educate students and achieve learning outcomes, such as learning management systems (e.g., Canvas) populated by student registration systems (e.g., Peoplesoft).

For career services, there are different technologies that together help students in the career education, planning, and job search processes. The challenge many in the field face is that with an abundance of technologies just in career services alone, and fewer than 10% of career offices having a dedicated technology role, it has become daunting for many to figure out what tools to leverage to help their students achieve their desired career outcomes.

The goal of this e-book is to illustrate how career services professionals can leverage technology available on the market to better support their students. First, we provide a breakdown of the evolving technology landscape in higher education career services. Then we discuss a framework to help career services professionals and administrators analyze what they have, identify areas of need, and fill the gaps to provide more holistic career education and support services for students. Lastly, we address engaging students and key stakeholders in the career ed tech stack and recommend trends to be aware of for future development of the ed tech stack.

## Background Making a Case for the Career Ed Tech Stack

In terms of incoming freshmen between 2010 and 2017, 86%<sup>1</sup> said getting a better job represented a critical factor in their decision to enroll in college. However, only 34% of current college students express confidence that they will graduate with the skills and knowledge they need to be successful in the job market, and only 11%<sup>2</sup> of employers say that students are ready for the workforce. As career advancement becomes a more important factor in students' decisions to enroll in college, there is greater pressure for higher ed institutions to deliver on the promise of career outcomes. With this shift, the role of the career center, and the technology that powers it, has changed dramatically.

**“As career advancement becomes a more important factor in students' decisions to enroll in college, there is greater pressure for higher ed institutions to deliver on the promise of career outcomes.”**

At many institutions, the perception has been that the career center is simply a job placement office, a service students can use to find internships and entry-level jobs before graduation. As recently as the turn of the century, the technology career centers relied on was limited to receiving faxes of job descriptions from employers and organizing hard copy resumes in three-ring binders as a matching mechanism. Not only were career resources limited to in-person engagement, they were only available during the hours the on-campus career office was open. As a result, a majority of students were overlooking the valuable resources their career center offered, causing many to delay or neglect career planning until too late in their journey, when the stakes are high and time to prepare is limited.

Given the focus on employment, students are increasingly demanding more robust career services, and with an exposed track record of limited support from administrators in this area, the pressure to evolve career services is at an all-time high. No longer is it enough for the career center to offer job postings and review resumes. Institutions now need to view the career center as a more strategic resource that should be integrated into the daily student experience. As a result, career offices have started to brand themselves as a more holistic service designed to reach students earlier in their journey and encourage them to be more thoughtful about potential career pathways and more purposeful in their engagement.

While the pressure might be on, this is actually good news for the career services field as a whole. Schools are beginning to invest in career services to better recruit, retain, and support students, aligning the work of career centers with key strategic

1. The 2017 College Student Survey: <http://www.stradaeducation.org/consumer-insights/strada-gallup-college-student-survey/>  
2. Gallup-Purdue Index: <https://news.gallup.com/businessjournal/185804/college-graduates-not-equipped-workplace-success.aspx>



initiatives for today's institutions. Accordingly this improves the case for the attention career services deserves from upper administration, students and, to the focus of this discussion, from innovative companies who are developing technology solutions in the education market. If you are a career center professional, you will likely agree that improved technology to engage students and the campus community is a welcome addition for many career center staff who are faced with increasing expectations, a student population that is dominated by a new crop of digital natives (Generation Z), and an emerging conversation about the Future of Work that has left many with far more questions than answers.

With more attention—hopefully—comes more budget for resources and a technology ecosystem that continues to grow and evolve to help the higher ed industry meet the needs of today's students. The education technology industry has grown. A lot. But how do institutions leverage this emerging ecosystem? With the challenges of so many technologies, little bandwidth and expertise, and mounting pressure to better serve students and key stakeholders, it has become daunting to figure out what tools and technologies are needed to meet their goals.

### **Where did all this new tech come from?**

With increased urgency from education institutions to evolve, operating budgets allocated to procure technology are increasing, causing the market for education technology, and private investment into the space to grow.

Even more important than a capital inflow from investors are strong returns for those investors in order to encourage sustained investment over time. The chart below shows returns for investors (in purple) and new invested capital (in red). This attractive ratio of returns to invested capital has created more investor confidence, resulting in more capital flowing into education technology companies.

In addition, the discussion among experts about macro-level trends impacting the future of education is influencing the recent and continued growth of education technology. The emergence of life-long learners (who will live past 100 and likely need to work into their 70's) suggests that people will need to learn throughout their careers as the skills required to stay competitive evolve at a faster pace than ever before. In response, experts believe that an evolved version of post-secondary education, that is more digestible, accessible, and

aligned to the future of work, will emerge at the center of this societal shift, resulting in a continued need for growth and advancement of career technology.

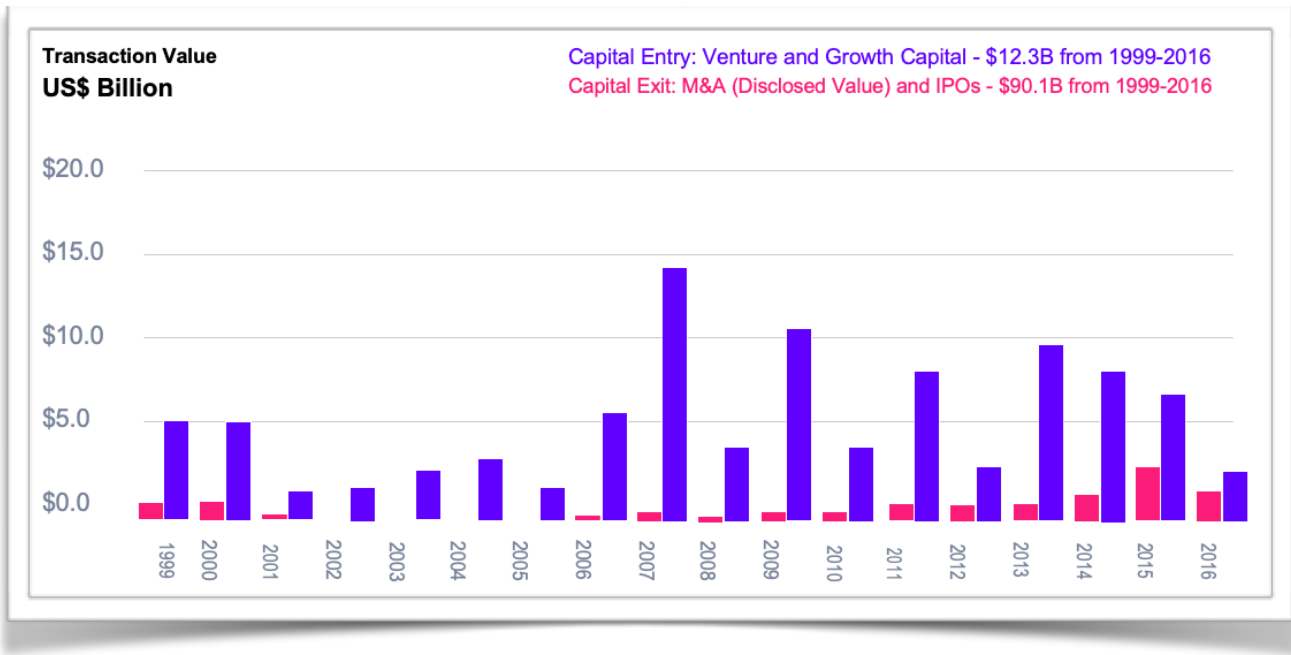


Figure 1: Exit Analysis, GSV Acceleration, 2017

As more money is invested in the education technology industry, more companies are building solutions that focus on supporting meaningful student outcomes. As a result of this, the career education tech stack has emerged.

## The Career Ed Tech Stack

Having discussed the expansion of technology in career services and some key reasons behind its emergence, let's discuss what the career ed tech stack looks like. For this e-book, we will do so with the career services professional in mind. If you work in career services and are looking at a broad variety of career services technologies and resources available, or even just in the market to add specific technology to do one task, it can be overwhelming to identify and assess potential solutions, understand if and how they reach your objectives, how students will respond, and if the available choices effectively complement what you already offer. With new technologies constantly coming to market, the choices and possibilities can seem endless. In this section, we break down the career services ed tech ecosystem so you can make more informed choices about your technology stack.

For our discussion, we break down the career services technology environment into five layers called the “career ed tech stack.” The layers include:

- Website Management
- Marketing & Communications
- Career Planning Tools
- Career Services Management Systems
- Data & Analytics

We refer to Website Management, Marketing & Communications, Career Services Management, and Data & Analytics as operational layers—those that offer functionality that helps career services professionals with daily operations. Some tools fit in more than one category depending on the features they include. While we chose to break down the tools into these categories, certainly each career center and campus may have different frameworks and career journey phases.

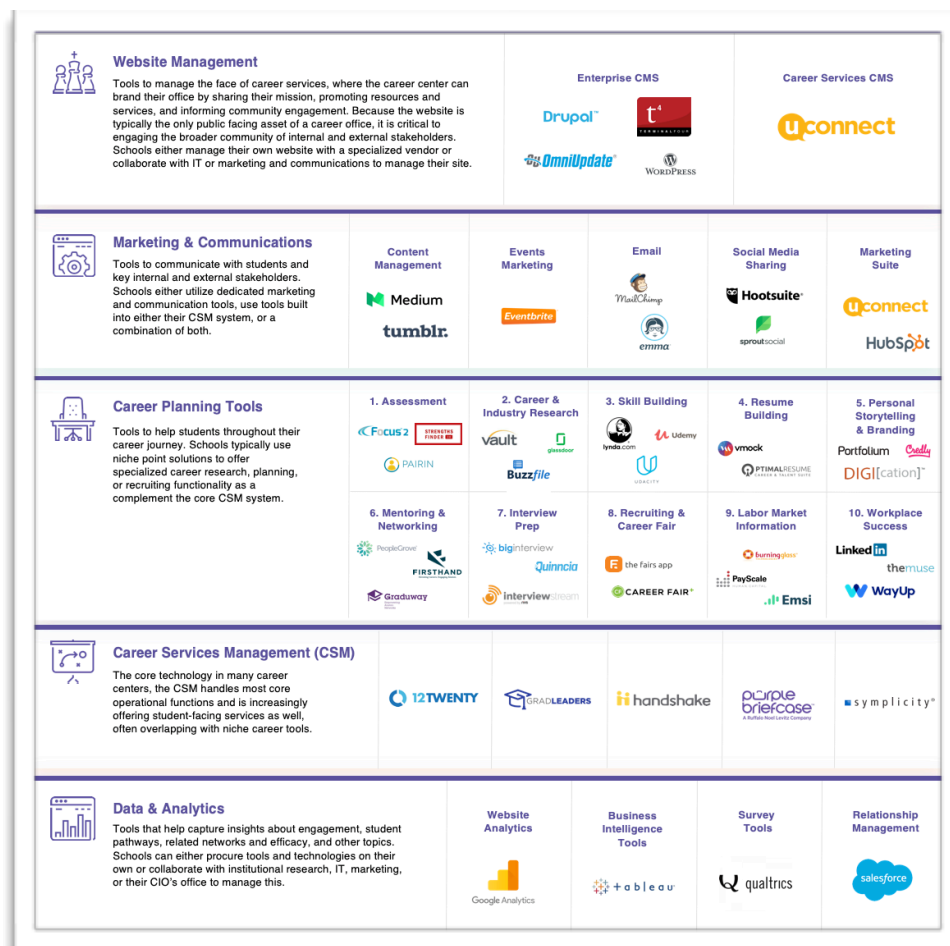


Figure 2: The Career Ed Tech Stack, Kozhuk & Patel, 2018



# Website Management



## Overview

Many career centers have websites that serve as a front facing portal for students and stakeholders or a 'front door' for career services engagement. These website are typically the first touch point and the only digital real estate a career center has that is visible and accessible to all stakeholders. A critical tool for branding career services, websites are powered by a content management system (CMS), either home-grown or provided by a third-party technology vendor.

### Use Cases / Outcomes:

When thinking about how students find information online, especially for career centers, it almost always starts using a search engine, like Google.

As the sole, public-facing engagement point for most career centers, the website serves as the starting point for students and a wide range of stakeholders to learn about the resources, programs, and services available in career services. With no authentication required, the career center website often serves as the representation of career support that a school offers for current students, prospective students, parents, and the community.

### Examples:

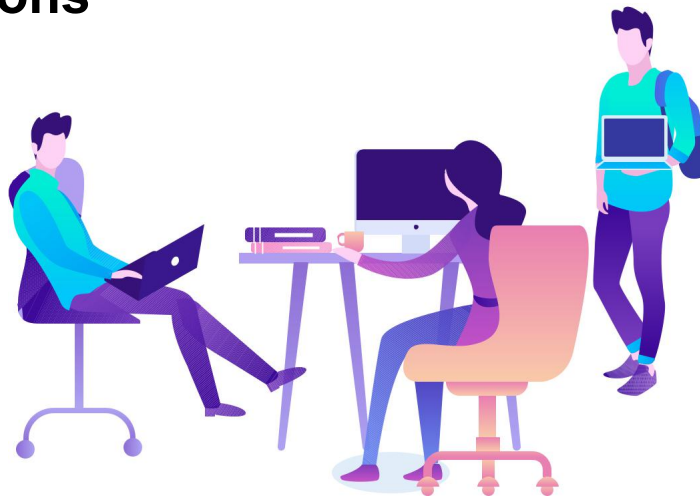
Enterprise Content Management Systems (CMS) are typically used by a central IT or web services team to manage a school's overall website. A career services CMS is built for career centers, often integrated with career center resources, and specifically designed to help schools brand their career center plus showcase the important work being done in career services.






Figure 3: Example Content Management Solutions

# Marketing & Communications



## Overview

Communicating with students so they are engaged is a long-standing challenge for career educators, and a task that is likely to become only more difficult as Generation Z takes over campuses. The emergence of the digital landscape has made it more difficult to reach the right stakeholders with the right message at the right time. As such, there are many tools available that can help career services professionals reach their audiences, including marketing tools built into existing campus systems, standalone social media and email marketing tools, on-campus listservs, and many more.

### Use Cases / Outcomes:

Tools in this layer can help career service professionals capture the attention of their audiences, engage them through multiple channels, and help measure engagement. This could be as simple as letting students know there is an event or as complex as content marketing and building the reputation of a career center on campus. As career services and outcomes grow in importance, it is critical to think about marketing and communications tools to engage all stakeholders. The average career center can have as many as six or seven stakeholder groups, many of which are not likely to use individual services, so proactive marketing and a robust website are widely seen as the most effective ways to engage the campus community.

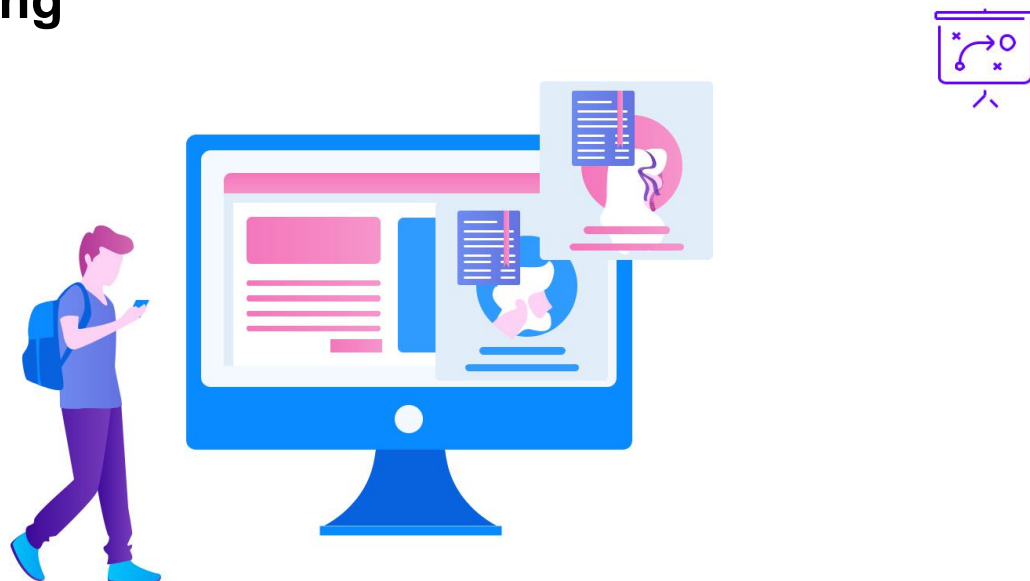
### Examples:

Below are examples of commonly used tools and technologies to publish blogs, promote events, and manage strategic campaigns across email and social media. We recommend you consider marketing tools that are not connected to an existing resource, but instead are agnostic, so as to objectively and effectively promote the full-range of resources available to students and stakeholders.



Figure 4: Example Marketing and Communications Tools

# Career Planning Tools



## Overview

Career offices typically use a variety of solutions to offer specialized career research, planning, or recruiting services as a complement to the core career services management systems (described later). In order to organize this vast and constantly changing category in a way that is broadly accessible and contextual, we provide a segmentation of the ecosystem, identifying ten career planning phases to help schools focus on the phases (and associated tools) that are of greatest importance to their specific student populations (see section “Deep Dive: Student Facing Career Planning Tools”).

### Use Cases / Outcomes:

Career centers typically provide support on everything from assessments and resume review to job boards and more. Career planning tools can aid in the delivery of this support. Read our “Deep Dive into Student Facing Career Planning Tools” beginning on page 14 for more in-depth discussion.

### Examples:

Organized into ten distinct career planning phases common among students today, we provide a sampling of tools representing a fraction of the tools available for higher education career services.

<b>1. Assessment</b> 	<b>2. Career &amp; Industry Research</b> 	<b>3. Skill Building</b> 	<b>4. Resume Building</b> 	<b>5. Personal Storytelling &amp; Branding</b> 
<b>6. Mentoring &amp; Networking</b> 	<b>7. Interview Prep</b> 	<b>8. Recruiting &amp; Career Fair</b> 	<b>9. Labor Market Information</b> 	<b>10. Workplace Success</b> 

Figure 5: Segmentation of Career Planning Tools

## Career Services Management (CSM Systems)



### Overview

While schools historically were forced to rely on homegrown career services management systems, more vendors have entered the space over the past ten years, and the choices have proliferated. These systems typically take on the core operational functions for the career center staff and increasingly offer student-facing portions as well, e.g., advising appointments, on-campus interviewing, job boards, application systems, and data management. For schools with limited resources who rely on their CSM system for most of their office's operational needs, the CSM system may also serve as event management and marketing and communications as well.

#### Use Cases / Outcomes:

Depending on the needs of the career center, CSM systems can provide efficiency in operations by automating tasks like appointment scheduling, curating internships and jobs, facilitating on-campus interviewing, serving as a CRM (customer relationship management) to manage notes about students and employers, developing and maintaining metrics, and much more.

#### Examples:

Many vendors focus on a specialty area, which can often be found on their corporate website. For example, Handshake boasts a user-friendly interface and a large network of employers and jobs. 12Twenty touts itself as a data-driven solution to support career center staff. Symplicity has the longest tenure in the space. GradLeaders has a particular focus on supporting graduate schools, specifically graduate business programs.



Figure 6: Example Career Services Management Systems

# Data and Analytics



## Overview

When career services thinks data, it is typically first-destination data on everything from job offers to first-year salary. In more sophisticated systems there are spaces to integrate other meaningful data points with first destination data to paint a broader picture of career pathways. This space has also proliferated, as schools seek to quantify their impact on student outcomes and as ROI becomes a more important factor for current and prospective students, as well as campus stakeholders, including marketing, admissions, academic advising, and institutional research.

### Use Cases / Outcomes:

Data for career services is about career outcomes of students, but also about what got them there, including internship tracking, networking, career services event participation, and digital communication. All of these together should help ultimately determine if career centers are helping students through their journeys and what services are having the biggest impact. Ultimately, data-reporting technology should help determine if a set of outcomes and goals are being reached.

### Examples:

Data and analytics tools represented in Figure 6 focus on tracking and sharing website engagement data, first destination data, and constituent relationships. Note the career services management system can also be used as a tool to manage data in a variety of ways for career centers, including the collection of first-destination data.



Figure 7: Example Data & Analytics Tools

## Deep Dive: Career Planning Tools

With hundreds of career tools in the market, the following section details our approach to segmenting the ecosystem of “Career Planning Tools” mentioned above. The ten identified career planning phases detailed below span the broad range of student needs, from traditional students to adult and continuing ed learners, so an institution can easily hone in on the segments that are most important to its specific student population.



### 1. ASSESSMENT

#### Overview

Assessments are used to analyze certain qualities of an individual, such as student’s strengths and preferences, to help inform both academic and career pathways.

#### Use Cases / Outcomes:

Depending on the type of assessment and when they are taken, assessments can highlight a student’s strengths and weaknesses, and offer students tailored information about what courses or majors to enroll in, skills to focus on developing, industries to explore, and even types of jobs to pursue. If assessments are taken pre-enrollment, assessments can be used to inform what programs or degree paths might be most relevant for students given their academic and career goals.

#### Examples:

There are standalone assessment tools as well as those that are integrated as part of a broader service. Focus 2, Pairin and Strengthsfinder are standalone assessments used in career services, while Portfolium and BurningGlass are examples of broader technologies with assessments included.



Figure 8: Example Assessment Tools



## 2. CAREER & INDUSTRY RESEARCH

### Overview

These tools help students research jobs and industries as they explore career options by providing information through different media about potential career pathways.

### Use Cases / Outcomes:

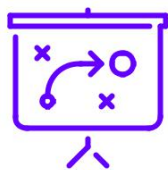
Information can include field-specific information for joining a particular industry or getting entry level positions in a particular function. These tools benefit students unsure of their destination as well as those sharpening their knowledge to impress a potential employer. For those who are sure, these tools can be helpful in allowing students to learn more in-depth industry/function knowledge to make the best decision for an internship or full-time job post graduation.

### Examples:

Commonly used tools include Vault Guides, Buzzfile, and Glassdoor. There are also tools available for free across the web that schools can curate, but they must carefully vet these resources.



Figure 9: Example Career & Industry Research Tools



## 3. SKILL BUILDING

### Overview

Tools in this phase help students build particular skills, often times outside of a traditional curriculum or classroom setting.

### Use Cases / Outcomes:

Students build skills and competencies in field-specific areas or areas that may not be offered through the traditional curriculum. For example, a career in graphic design today requires more in-depth knowledge of Adobe Creative Suite, which can be obtained in Lynda.com tutorials.

### Examples:

Similar to Career and Industry Research tools, skill building tools, like Udacity or Udemy, can also be found across the internet, although, unlike research tools, skill building courses often cost money (at least the valuable ones). Many companies in this space will offer institutions bulk pricing to provide online skill building courses to their students for free or at a discount.



Figure 10: Example Skill Building Tools



## 4. RESUME BUILDING

### Overview

We typically think of resume review, occurring in person. However, with AI and machine learning coming out of their infancy in career services, innovative tools are emerging to help provide feedback on resumes at scale. Tools in this category can provide resume feedback by industry or can provide templates and industry-specific recommendations for resume development and creation.

### Use Cases / Outcomes:

Students can leverage historical data and pre-built assets to optimize formatting, create effective messaging, and tailor to specific industries. Automating or



streamlining this service saves time for career center staff and allows more time with in-person coaches to be spent on more strategic, in-depth conversations.

### Examples:

VMock and Optimal Resume are two systems commonly used in career centers today to serve these purposes.

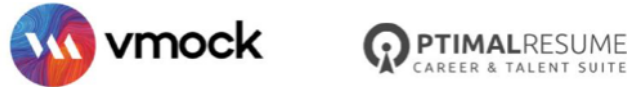


Figure 11: Example Resume Building Tools



## 5. PERSONAL STORYTELLING & BRANDING

### Overview

An important part of the job search process is marketing oneself, which often means being able to tell a powerful personal story and translate educational and work experience to potential employers. These tools help students develop a story that can be told and shared with employers and other stakeholders to aid in finding opportunities.

### Use Cases / Outcomes:

Tools in this space help with different elements from credentialing and badging services that help translate education requirements to website and portfolio tools that help students showcase a student's full body of curricular and co-curricular work to a broad audience

### Examples:

Badging and ePortfolio tools have experienced increased attention from the higher education market as they prove to be a valuable solution to connect a student's learning experience to their career goals. Tools like Portfolium, Digication, and

Credly are examples of solutions that have gained momentum in recent years. Tools like LinkedIn are free for students and schools and can also be powerful in helping students promote their backgrounds, achievements, and ambitions for offices operating on tighter budgets.





Figure 12: Example Personal Storytelling & Branding Tools



## 6. MENTORING & NETWORKING TOOLS

### Overview

Mentoring and networking are key pieces of the career journey for students and have proven to be valuable when it comes to career planning and recruiting. Tools in this sector help students make connections to vetted groups of alumni, faculty, and student mentors, as well as professional connections. These systems can be procured in career services, alumni relations, or even advising.

### Use Cases / Outcomes:

Emerging systems can provide important workflows, such as supporting video mentoring, flash mentoring, optimizing scheduling, and tracking student-mentor connections.

### Examples:

PeopleGrove, First Hand, and Graduway represent specialized systems to facilitate networking and mentor connections. The benefit of using LinkedIn for career center staff and their institutions can be limited, especially for institutions seeking data and insights on connections made and impact.





Figure 13: Example Mentoring and Networking Tools



## 7. INTERVIEW PREP

### Overview

Interview prep does not just have to be in an office doing a mock interview anymore. In fact, as recruiters increasingly use video (live streaming or recorded video sessions), interview prep takes different forms. Tools in this sector help students do mock interviews and get feedback, typically online through video. There are field specific interviewing modules to prep students, for example, case study interviews in consulting.

### Use Cases / Outcomes:

These tools help prep students by making recommendations and helping to develop competencies in general and behavioral interviewing. Students can use technology to practice, record, and review commonly asked interview questions as practice ahead of an upcoming interview. They can also use recordings as a marketing tool to share with potential employers.

### Examples:

Commonly used interview prep technologies in career services include Big Interview and Interview Stream. Newer tools like Quinnia are increasingly leveraging AI to optimize the interview prep process.



Figure 14: Example Mock Interview Tools



## 8. RECRUITING & CAREER FAIRS

### Overview

Recruiting and career fair tools tend to get a lot of visibility. They include apps that allow employers to post jobs and students to apply directly to those postings, enabling employers and students to connect directly, and largely independent of the college staff or administration. Some of these systems tend to overlap with career service management systems described previously, like Handshake or Symplicity. However, many schools promote third-party job boards with a specialty or niche focus to supplement opportunities offered in their CSM.

### Use Cases / Outcomes:

These tools help students connect with employers and apply for opportunities including full-time jobs, internships, co-ops, project opportunities, freelance gigs, and others. They can help facilitate important connections between students and employers during live events, including career fairs, networking events, and campus visits. Special workflow and functionality, potentially not offered by CSM providers, can be important to making sure your students make the most out of these opportunities to connect with employers and gain confidence. As CSM providers expand their offerings and/or create integrations with third-party job boards, the need to promote multiple job boards may lessen.

### Examples:

Outside of the career services management system, the most popular job search systems are focused on specialized events, such as career fairs or niche opportunities for students. For example, the Fairs App offers turnkey career fair management, Angel.co specializes in offering internships and jobs at start-ups, and Parker Dewey offers students innovative, micro-internships.

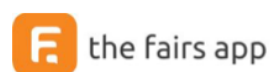


Figure 15: Example Recruiting & Career Fairs



## 9. LABOR MARKET DATA

### Overview

Resources in this space help higher education professionals and students alike track the constantly evolving workforce landscape to identify trends and patterns in workforce development, hiring, and compensation. This data can help students make more informed decisions about career pathways to pursue and help career service professionals and higher ed administrators evolve programs and offerings to better align to the “Future of Work.”

### Use Cases / Outcomes:

Access to quality labor market data can help ensure students are identifying and pursuing attractive, in-demand career pathways, pursuing the right job titles, and negotiating fair, equitable compensation. When used early in the student journey, labor market insights can be used to inform more relevant academic pathways, experiential learning, and career preparation. A growing trend is to use labor market data as part of admissions to help schools align academic programs to growing industries and lucrative careers.

### Examples:

PayScale, Burning Glass, and EMSI are examples of technologies that are designed to inform students and administrators based on real-time labor market data.



Figure 16: Example Labor Market Data Tools



## 10. WORKPLACE SUCCESS

### Overview

According to the National Center for Education Statistics (NCES), nearly 40% of degree-seeking students are 25 or older, many pursuing degrees while working in a part-time or full-time role. Tools in this space help institutions provide support for students who are well into their careers but pursuing continuing education to stay competitive.

### Use Cases / Outcomes:

Navigating the workplace is challenging. Managing people, pleasing one's boss, and negotiating a raise are just a few of the workplace challenges everyone faces. Many students need workplace success advice to make the most out of an internship experience or first job. Others, who are pursuing a degree while working, need this information to stay competitive in addition to a degree or continuing education program. Schools are also increasingly leveraging workplace success content to share with alumni as a way of delivering value to students post-graduation and to keep them close to their alma maters.

### Examples:

Third party services like The Muse, LinkedIn, and Wayup have resources to help people navigate the workplace, understand and capitalize on workplace trends, and ultimately improve their career prospects. Many of the resources on sites like these are free, as companies are increasingly relying on advertising revenue to fund operations.



Figure 17: Workplace Success Tools

# Creating a Career Services Ed Tech Stack

## 8 STEPS TO HELP YOU CHOOSE

Given the vast amount of choices now available to support career pathways, and a growing frequency of outreach from technology vendors, many higher education administrators are overwhelmed by creating their own career ed tech stack. As with any new initiative, starting with a basic plan can help build a foundation and allow a team to move in one direction, which is why we developed these eight steps to strategizing a career services ed tech stack.

*One note before we begin: While we will provide details for this process, we know not all career services professionals have the bandwidth or resources to go through an entire process suggested here. We hope that you go through a thoughtful process, however you design it, when choosing tools to add to your stack. Deciding on new technologies should be about much more than cost or benchmarking with peer institutions. In fact, there are third party tools that can be completely free and help you achieve your objectives. At a minimum, think through the objectives and outcomes you want to achieve, how you will get stakeholders to engage, and identify a few measurable success metrics to evaluate impact.*

You can use this process to rethink an entire tech stack or simply to inform the addition of one new technology to your existing offering. To the extent possible, we encourage you to test new solutions. Take a design thinking approach: consider the needs of your students, the problem you are solving, and prototype or iterate quickly and as needed.

### STEP 1

## IDENTIFY YOUR CAREER PLANNING PROCESS

Start with an internal audit of your students' career journey to anticipate their needs. If your organization has not done so already, identify the full range of steps your students most commonly go through in their career exploration journey. This will help you also include unique characteristics of your students, such as age, career stage, and skill-building areas.

You can define the phases to align with literal actions taken, such as research, networking, or interviewing. As an alternative, you might consider aligning each step more broadly to convey a mindset at various stages in the journey. For example, many career centers include a framework similar to prepare, explore, and engage. Do not forget to refer to the phases we have outlined in Figure 5.

## STEP 2

### 8 Steps to Create your Career Ed Tech Stack

1. Identify your career planning process
2. Map current tools
3. Define your goals
4. Understand Success
5. Determine your strategy
6. Choose a tool or stack
7. Map out tactics
8. Evaluate

## MAP CURRENT TOOLS TO PHASES FROM STEP 1

Ask what tools you already have that help you accomplish your operational and student success initiatives across the phases you identified above. Think about how each of those tools are working for you and your students at each stage in the career services lifecycle, what problems they are solving, and what problems remain unsolved. What needs are they meeting, and what needs are left unmet?

This is an important step, because it will help you identify whether you already have a resource or a service in place. Sometimes, we already have the answer in our toolkit but a lack of awareness, education, or use is creating a gap. In that case, it may be more important to focus on making sure students are using the right resources, at the right time, rather than going out and getting another tool.

If a gap exists, it might also be a good time to explore resources available across your institution by understanding what is available through other student services, IT, or other partners on campus.

<p><b>Website Management</b> Tools to manage the face of career services, where the career center can brand their office by sharing their mission, promoting resources and services, and informing community engagement. Because the website is typically the only public facing asset of a career office, it is critical to engaging the broader community of internal and external stakeholders. Schools either manage their own website with a specialized vendor or collaborate with IT or marketing and communications to manage their site.</p>	Enterprise CMS		Career Services CMS			
<p><b>Marketing &amp; Communications</b> Tools to communicate with students and key internal and external stakeholders. Schools either utilize dedicated marketing and communication tools, use tools built into either their CSM system, or a combination of both.</p>						
<p><b>Career Planning Tools</b> Tools to help students throughout their career journey. Schools typically use niche point solutions to offer specialized career research, planning or recruiting functionality as a complement the core CSM system.  Choose based on the needs of your student population and sequential stages of career exploration and planning they should go through:  Examples stages include: assessment, skill building, resume prep, personal branding, mentoring, interview prep, job search/career fair prep, and workplace success</p>	1. _____	2. _____	3. _____	4. _____	5. _____	6. _____
<p><b>Career Services Management (CSM)</b> The core technology in many career centers, the CSM handles most core operational functions and is increasingly offering student-facing services as well, often overlapping with niche career tools.</p>						
<p><b>Data &amp; Analytics</b> Tools that help capture insights about engagement, student pathways, related networks and efficacy, and other topics. Schools can either procure tools and technologies on their own or collaborate with institutional research, IT, marketing, or their CIO's office to manage this.</p>	Website Analytics	Business Intelligence Tools	Survey Tools	Relationship Management		

Figure 18: Blank Career Ed Tech Stack Worksheet



When this step is over, you should have a map of your current career ed tech stack. You can use the blank ed tech stack template in Figure #17 to help you.

## STEP 3

### **DEFINE YOUR GOALS (WITH NEW PROCUREMENTS)**

Start by asking some basic questions of your team: What do you want to accomplish in the long-term, what technology can aid in supporting these goals, how would it be better than the current process, and how will you know you were successful? This could be operationally and/or within your student journey phases.

The conversation we hear often when it comes to choosing a piece of career services technology is less about choosing a technology to build and engage stakeholders in an organization, but instead is more of a reaction to solve a short-term issue or a fire that has just been identified. Or it is about joining the crowd when benchmarking what other peer institutions are doing. This is where identifying your long-term goals is critical. This way, any new procurement should map to at least one aspect of achieving those goals, e.g., an international job board would be a logical procurement if providing more tailored support for international students were a priority goal.

We need to think about a bigger picture when it comes to an entire stack of tools working together. The first step is to answer the question, “What are your overall goals for technology within your organization, and if applicable, for the specific issue you are looking at currently?” Example related questions include:

- What problem are you trying to solve?
- How do you know it is a problem?
- What is the biggest challenge in solving this problem? Where is the gap?
- What segments of students and stakeholders will this serve?
- Are you planning for now or for the future? For example, if we know Generation Z wants a transformational and customized experience, how do we build a stack that meets that need?

**STEP 4****UNDERSTAND SUCCESS****MEASURABLE OBJECTIVES AND KEY PERFORMANCE INDICATORS**

Technology has the power to do many different tasks, including things you did not even know you needed to do, which can lead you off the trail. Make sure you stay focused by asking how you will know you are successful once you have implemented your stack or particular tool. What outcomes do you hope to achieve for the different audiences and stakeholders involved? For example, a desired outcome might include things like less time spent by coaches on resume review or for students to better understand themselves by knowing their core values or facilitating more connections to mentors for your students. What are the learning outcomes for students? Are there operational outcomes you are hoping for? For example, maybe you hope for more collaboration on employer outreach and alumni outreach between teams.

Most importantly, how will you measure these outcomes, or in other words, what are your key performance indicators? Is there a measurement you want to increase or decrease, and how much time do you think this will take? This is critical when adopting a piece of technology so you have a benchmark to determine whether that tool actually helped accomplish your goals. For example, if mentor matches is an outcome, perhaps you want to double matches. However, what will it take to double matches? More awareness? More alumni and students logged into a system? Many offices will need to make their most educated guess based on whatever data they have currently, which could mean establishing a baseline. From there, an organization can iterate as it prototypes and tests a solution.

**STEP 5****DETERMINE YOUR STRATEGY**

Once you think through a goal and objective, then the question becomes determining the best way to reach your goals and objectives. Will it require building an entirely new technology stack, or adding a single piece of technology to the stack you already have? Or perhaps you already have the systems in place to address the issue at hand and need to focus on better utilizing the tools you already have.

There are several questions you should ask to determine if adding a tool or developing a stack is the right direction:

- Who are your stakeholders for the technology? It is common to think of the stakeholder being those on the receiving end, e.g., students, but that is not always the case. For example, internal staff may be key for use of tools.
- What are your current resources?
- Do you have the monetary resources and the human resources to add more technologies?
- Who will manage the stack or technology, including planning, transition, maintenance, and evaluation?
- Do you already have a stack with which a new app or apps will need to integrate? Today, it is difficult to have one system that can do everything. The growing trend now is for one tool to do one task well while being able to transfer and speak with other systems.

There are several stakeholders, including internal staff. So, you need to think through who are they, what their journey and needs look like, and accordingly what tasks you want them to do with this technology. This will help you think through user experience, and when looking at companies and vendors that provide technology services, the exact parameters needed and the tasks that need to be accomplished. You may figure out from here that you need one tool or a few different tools working together in your stack to accomplish these tasks.

Once you feel you have some ideas and preliminary answers to the questions above, it is time to start researching and speaking to different vendors to identify what is available in a particular technology space. Use the map we have provided as a starting point but know that this map changes quickly. You will need to begin researching to identify new players. You should be flexible, as what is out there may cause you to alter some of your goals, objectives, and strategies based on what is realistic and possible.

## CHOOSING A TOOL OR STACK

Once you have your goals, objectives, and strategy in place, it is time to choose: Should you go with the tech you already have or choose a new vendor to work with?

### STEP 6

As you consider different companies, here are some questions to consider:

- How long has the company been in operation? How long has it been serving your space?
- What are the resources (monetary and human) expected on your end?
- Will they provide references and make intros to clients that have implemented the promised solutions?
- Are they able to quantify potential outcomes? Do they have case studies they can share?
- Is their solution accessible for students with disabilities?
- Will they offer a pilot or a discount to try the product for a predefined length of time?

*A note on testing: Typically, we are used to just sticking it out even if a particular technology solution is not working for various reasons, e.g., we do not have enough bandwidth to change directions, we have invested too much, or we do not think anything else will work. Given the growing ecosystem of tools and how fast technology is changing, there is a paradigm shift needed in how we think about technology that supports career services: we have to constantly change our stack and be able to pivot quickly. In higher ed, though, this can be complicated for many reasons, not the least of which is that it was difficult to gain buy-in in the first place. This is where fast prototyping of a technology with a small group can be helpful before releasing to a large population when possible. Some consider this part of testing. Ask the vendor about possibilities.*

## STEP 7

### MAP OUT TACTICS

Once you have chosen a vendor or technology/ies, make sure to have a clear, but flexible, plan for implementation.

You need to be able to inform your stakeholders, especially internal staff responsible for the implementation, how it will happen, including roles and goals for staff, timelines, training, and anything else needed to launch successfully. Make sure to speak about evaluation as well.

Hopefully you have socialized this plan throughout to develop buy-in at every step from your teammates, but if you have not, before implementing, make sure your

team is onboard. The best thought-out technology can be great, but if your internal team is not using it and promoting it, it will not have the intended effects.

Tactics should also include engaging your end user in the identified tech solution. For student engagement, see the section on “driving engagement.”

## STEP 8

### EVALUATE

#### CONDUCT PROCESS/POST-LAUNCH EVALUATION AND MAINTENANCE

You have done your homework at this point and have launched, but anything can happen: stakeholders change, perhaps the tech did not work as expected, and other obstacles can get in the way. You can stay ahead by thinking through process, post-launch, and maintenance evaluations.

Process evaluation is keeping track of how the process of implementation of your tech or stack is going.

Post-launch evaluation occurs as your stack or tool launches and you keep track of things that need to be altered or changed or are going well. Are you beginning to see any of your success measures? You set out with measurable objectives or key performance indicators (KPIs). It is time to measure and see how you are doing. Common KPIs could measure awareness of the tool, engagement via logins, actions taken within the tool, or qualitative/quantitative data you gather.

In these phases, you may decide this is working out, or you may find some things are going well while others are not. Or you could decide things are not working. This data can help you pivot if needed.

Once you have decided to keep the technology and/or stack, maintenance is important to make sure it continues to meet your intended goals, as these goals and objectives change and grow. In other words, for maintenance, you may enter back into this process all over again or iterate as needed.

## **DRIVING ENGAGEMENT: HOW TO GET YOUR ED TECH STACK IN FRONT OF YOUR STUDENTS**

Designing your stack and procuring relevant resources and technologies is only half the battle. While recent data has shown that many students overlook their career center, the good news is that there are some low-hanging-fruit opportunities many career centers can implement that could have a significant impact on awareness and engagement in your technology stack.

### **KNOW YOUR GOALS:**

First, the key is not to think about engagement generally but within the context of specific strategic initiatives. If you have not already, read through your institution's strategic plan and see how your office can support those strategic initiatives.

For example, a school's strategic plan includes a goal that every student should have at least one alumni connection before graduation. In this case, one of the ways "engagement" can be examined is specifically within the context of student-alumni connections. If possible, try to quantify "success." In this case, a goal might be to facilitate 500 of these connections in the next year.

Now, think about what components of the stack can help facilitate those 500 connections. Hopefully, there is a system to help students and alumni make connections. If not, it is a great time to make that case.

### **CAMPAIGN OBJECTIVES, REACH AND FREQUENCY:**

Once you have identified your strategic goals and mapped the components of your tech stack to those goals, you can now start to think about planning campaigns to increase engagement and support those goals.

First, measuring engagement can vary depending on what components of your tech stack are involved. If it is a mentor matching tool for example, you could track connections or you could track deeper metrics that lead to connections like logins, daily active users, time on the tool, or actions within the software. For illustrative purposes, let us say 1,000 students signing up will result in 500 mentor connections.

Now, how many students would you need to communicate with (and how many times) to move 1,000 students from awareness to use. Say you estimate that you need to reach 3,000 students an average of 2.5 times to achieve 1,000 sign ups. You now have a campaign reach goal (how many unique students you need to communicate with), a frequency goal (how many times you need to reach each student), and an engagement goal (what you hope exposure to the campaign will accomplish).

As for execution, there is no silver bullet, but most Gen Z students are inundated with digital messaging. It takes multiple coordinated messages in different channels to get their attention. You might coordinate email or newsletters, have coaches give out print cards, and target student clubs that can be your word-of-mouth influencers. This is a great time to be creative and engage Gen Z in that creative process.

## **STRATEGIES & BEST PRACTICES**

Below, we have included some best practices that career centers can implement to improve engagement:

### **BRANDING**

Students often overlook career services, not because their services are not valuable but because of a misconception about what the career center does and how it helps students. Unfortunately, many students perceive career services to be a transactional office, a place to visit before graduation to find a job, and this can be intimidating for many students, especially underclassmen or underrepresented student populations.

If your website does not tell a compelling story, it might be turning away users before they engage with any specific resources. Once that perception is there, it becomes even harder to bring them back. Use the website as a place to tell students and key stakeholders that the career center is much more than a job board – it is a holistic resource that can help students with assessment, research, planning, and recruiting, i.e., a critical resource to leverage throughout the student journey.

### **FINDABILITY**

Simplifying engagement with your office in the online environment is critical. It must be easy to find all your most important resources, services, and programs in one place and with the fewest barriers to entry. In addition to telling your story, your career center website can be a place to consolidate access to career resources and provide a single access point for students and stakeholders to engage with your office and technologies.

A simple way to make sure students have a full picture of all your resources before engaging is to direct engagement from your marketing to your website and allow students to navigate to the tools they need from there. You might have the perfect solution for students, but if they are directly alerted about a tool that is not relevant and there is no connection to the rest of your suite, you may have lost them. If you have special IT resources or vendors who are prioritizing integrations, you can create a user experience that will take users from one tool to another seamlessly.

### **PERSONALIZATION**

The average career center has six to eight different types of stakeholders. Before thinking about what communication tools you want to use, you must clearly identify your stakeholders and segment them. Who are you targeting and for what purpose? Can you drill down to create sub-segments of a particular stakeholder group, like “international students” or “engineering faculty,” to get even more targeted with your messaging? To the extent that you can, the more targeted the better.



When it comes to communication channels, things can get trickier. Some channels allow you to customize more than others, e.g., email, social media, SMS, etc. Decide which ones you can and should use per your resources and goals.

Machine learning technology has emerged in higher education and career services specifically. This technology is designed to understand a user's interests over time. As users spend time engaging with a particular tool, data may be collected to identify that user's preferences and inform a more relevant and curated student experience. This level of personalization may seem unnecessary, but it is indicative of what most consumers today expect, especially Gen Z consumers.

### **STRATEGIC PARTNERSHIPS**

With a majority of students citing the prospect of a job as the motivating force behind their decision to enroll in college, it is now everyone's job to support positive outcomes for students. Partnering with important influencers who engage with your students on a daily basis can be a highly effective and efficient strategy. If campus stakeholders like faculty, academic advisors, and student leaders are evangelizing your resources, communication and engagement becomes more organic, credible, and potentially more relatable.

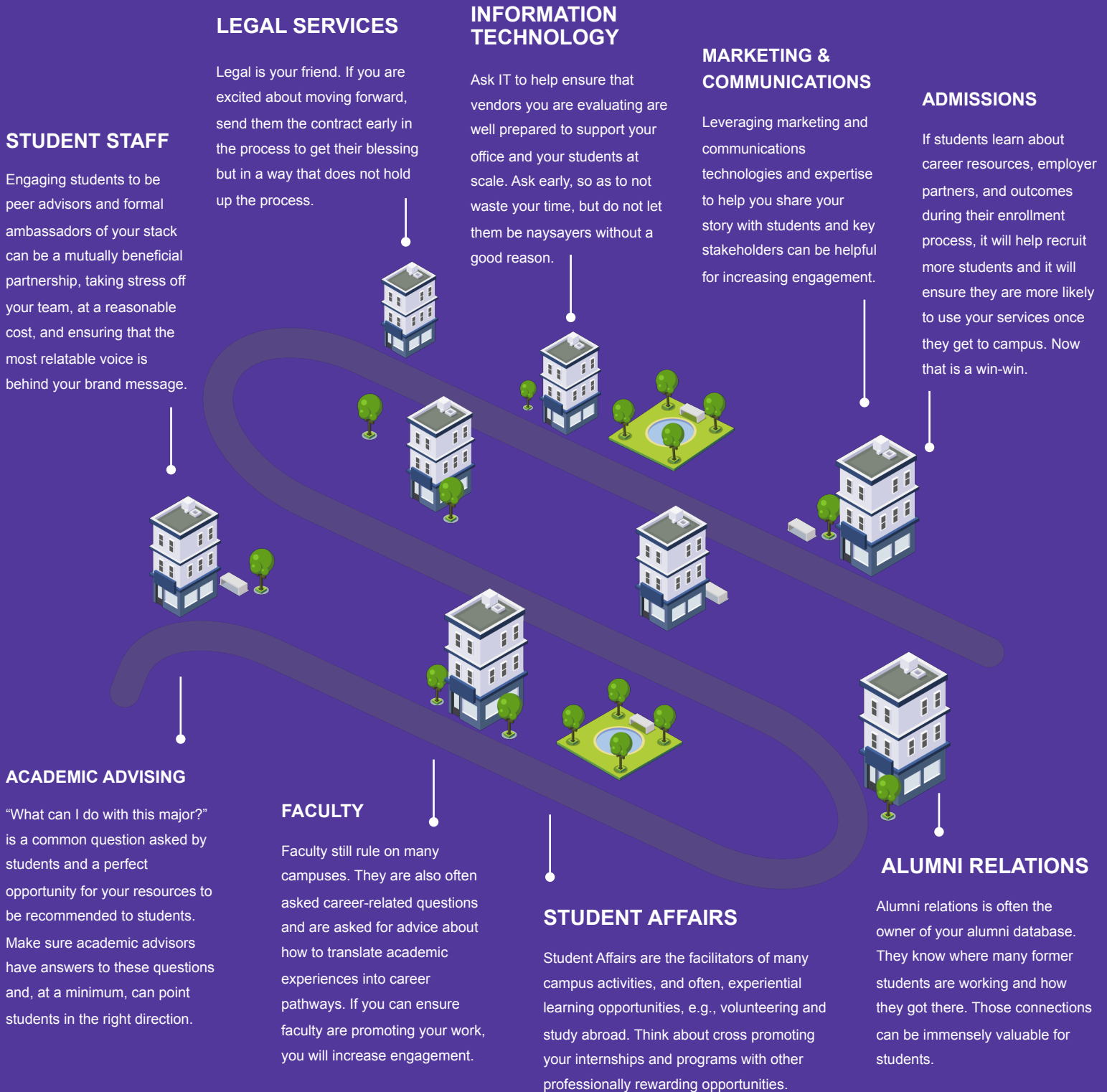
To ensure your stakeholders are aware of your services and how to refer them to students, we recommend you create a single page on your website, or a one page PDF, for each of your top five stakeholders to easily access. Include answers to frequently asked questions, links and explanations of key resources and services, introduce relevant career center staff members and share use cases for student and community engagement.

Use Figure 19 below to help identify and engage potential partners and/or map the partners you already have.

# Partners in the Ecosystem

Figure 19

A critical component of the career services story is resources and staffing. While historically career services offices have been left to support students' career planning, preparation and recruiting needs alone, this is changing. Many schools have consciously shifted to a model that relies on a collaborative campus ecosystem to support students' career pathways, from enrollment through graduation. We have included examples of campus partners and example collaborations to act as an extension to the career services staff and help scale the reach and impact of career center resources and technology.



# What's Next?

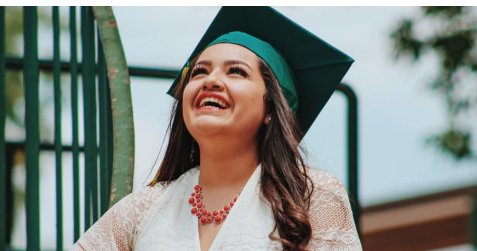
## The Future of Work

What is on the horizon? From the [Gig Economy](#)<sup>3</sup> to the [Fourth Industrial Revolution](#)<sup>4</sup> and the renewed need for soft skills, mapping what employers need to what students can offer coming out of higher education will be key. Knowing relevant outcomes and providing services and technology that help students achieve those outcomes will be critical. This only adds importance to the process of strategizing a career ed tech stack that can show measurable ROI.



## Generation Z

[Generation Z](#),<sup>5</sup> the population born between 1995 and 2010, is here. From smartphone natives to the mass shooting generation, Gen Z has a different world view. They have faced political upheaval through gender rights, the Great Recession, extreme differences in the White House, and much more. They are consistently showing a pendulum swing back to wanting face-to-face communication, although that might look different, e.g., video conferencing. How they view careers and consume information is different. Having a modern career ed tech stack will be critical for them to engage with. It will need to provide customization and a human touch.



## Adult Education

More than half of students currently pursuing a college degree are not “traditional aged” students, meaning they are not coming directly from high school. Many experts have found that the motivations of older, adult learner populations are even more motivated to pursue continuing education because of career advancement than traditional populations. Institutions are increasingly creating professional, online and continuing education divisions to support adult and online learners. And, to compete, schools must be able to show that they can provide specialized and sophisticated solutions to support career planning and advancement.



3. World Economic Forum: <https://www.weforum.org/agenda/2015/12/what-does-data-tell-us-about-the-gig-economy/>

4. World Economic Forum: <https://www.weforum.org/agenda/2016/01/the-10-skills-you-need-to-thrive-in-the-fourth-industrial-revolution/>

5. Gen Z is Trending: <https://www.linkedin.com/pulse/generation-z-trending-10-things-you-need-know-future-patel-ma-phd/>



## Conclusion

From a fast-changing career services industry landscape to huge educational technology shifts, it is more imperative now than ever that career services organizations carefully understand and think through their career ed tech stack. If built strategically and partnered with a great engagement plan, career ed tech stacks have the power to address generational changes and changes occurring in the future of work. Altogether, this has the potential to influence our future economy by allowing students to develop needed market valued skills, reach their career goals, and make a difference.