THE SKILLS GAP DILEMMA
HOW IS IT EVOLVING AND HOW HAVE THE NAYSAYERS GOT IT WRONG?
**THE SKILLS GAP DILEMMA**

The “skills gap” is a popular topic today. At its core, the skills gap is the articulation of a tension between employers, educators, and job seekers in expectations and desires.

This skills gap is not ubiquitous across all sectors and skill types; instead, it is centered within large knowledge economy industries (such as IT, business, and healthcare) and specific skill types: technical skills, job-specific skills, or soft skills. The most evident example is in IT, where employers are demanding more technical skills.

A key element of this skills gap is an information gap between the main participants: employers don’t know how to articulate their capability needs nor how to assess whether candidates have those capabilities; educators don’t know which skills to focus on; and job candidates don’t know how to demonstrate they have the right skills.

Doubters of the skills gap point to stagnant wages, suggesting that employers would be increasing wages if there were really a dearth of talent. However, employers are increasing their searching and screening costs instead. Employers are competing with each other on their ability to search and screen for talent, rather than on wages, ultimately demanding better information flow.

All stakeholders - employers, educators, and job seekers - are attempting to “solve” the skills gap, but given the challenges in doing so (See Exhibit 2), vendors improving information flow appear best positioned to help close the gap, in the short term.

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**Exhibit 1: Skill types**

<table>
<thead>
<tr>
<th>Technical Skills</th>
<th>Requiring specific knowledge of a program or task, such as computer skills and quantitative numeracy skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job-Specific Skills</td>
<td>Trained and learned over time with experience, such as communication skills, leadership skills, and problem solving</td>
</tr>
<tr>
<td>Soft Skills</td>
<td>Behavioral traits or attributes that are difficult to train, and usually intrinsic to individuals, such as motivation/drive and cultural fit</td>
</tr>
</tbody>
</table>
WHAT SKILLS ARE IN DEMAND?

The skills gap represents the disconnect between employer expectations regarding job seekers’ readiness for a specific role and the experience and training applicants possess for that role. This divide is more pronounced within the knowledge economy sectors where unfilled job openings exceed the number of unemployed workers, as opposed to sectors like construction and manufacturing, where the number of people unemployed vastly exceeds job openings. (See Exhibit 3)

Exhibit 2: Institution/employer/job candidate disconnect

Traditional educational institutions
- College programs are not evolving their curricula to match employers’ needs
- Programs view themselves as opportunities for self-exploration and personal growth, and for individuals to pursue their intellectual curiosities

Employers
- Firms are unwilling to pay higher wages for candidates that are not “job ready”
- Firms are unwilling to invest resources into training because training needs vary greatly and individuals are switching jobs more frequently

Job candidates
- Individuals expect education programs (e.g., college) to provide them with the skills necessary to get a job
- Individuals (often with student debt) are wary of investing in developing skills independently as a result of relatively stagnant median wages

Source: Oliver Wyman analysis

Exhibit 3: Quantifying the skills gap

NUMBER OF JOB OPENINGS PER UNEMPLOYED WORKER IN THE PROFESSION

<table>
<thead>
<tr>
<th>Profession</th>
<th>Skills gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing</td>
<td>4.6</td>
</tr>
<tr>
<td>Business &amp; financial</td>
<td>1.9</td>
</tr>
<tr>
<td>IT / tech</td>
<td>1.5</td>
</tr>
<tr>
<td>Management</td>
<td>1.3</td>
</tr>
<tr>
<td>Sales</td>
<td>1.1</td>
</tr>
<tr>
<td>Architecture &amp; engineering</td>
<td>0.7</td>
</tr>
<tr>
<td>Office &amp; administrative</td>
<td>0.6</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>0.3</td>
</tr>
<tr>
<td>Construction</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Source: Oliver Wyman analysis, BLS, Moving the Goalposts (Burning Glass)
Oliver Wyman research reveals that between 64 percent and 83 percent of IT, business, and healthcare employers surveyed find it a challenge to acquire qualified candidates, and that between 51 percent and 70 percent agree that the challenge has grown in the past decade. (See Exhibit 4) Employers in the nursing profession are particularly challenged.

Exhibit 4: Degree of hiring challenge

PERCENT OF RESPONSES

“It is challenging to find appropriately qualified candidates for job openings”

<table>
<thead>
<tr>
<th>PERCENT OF RESPONSES</th>
<th>Business</th>
<th>IT</th>
<th>Nursing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disagree</td>
<td>11%</td>
<td>13%</td>
<td>17%</td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>18%</td>
<td>23%</td>
<td>20%</td>
</tr>
<tr>
<td>Agree</td>
<td>71%</td>
<td>64%</td>
<td>66%</td>
</tr>
</tbody>
</table>

“Over the past 10 years... it has become more difficult to find qualified candidates”

<table>
<thead>
<tr>
<th>PERCENT OF RESPONSES</th>
<th>Business</th>
<th>IT</th>
<th>Nursing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>7%</td>
<td>20%</td>
<td>8%</td>
</tr>
<tr>
<td>Neither Agree nor Disagree</td>
<td>58%</td>
<td>51%</td>
<td>70%</td>
</tr>
<tr>
<td>Disagree</td>
<td>25%</td>
<td>29%</td>
<td>11%</td>
</tr>
</tbody>
</table>

Source: Oliver Wyman skills gap survey

Our research shows that the specific gap varies by the type of role employers are seeking to fill. Across the market, there are challenges in technical skills, job-specific skills, and soft skills. In IT roles, a lack of technical skills can give employers headaches – and as a result, the primary emphasis in recruiting is finding candidates with the right technical skills. (See Exhibit 5) In nursing, hospitals are concerned that new nurses lack adequate experience – so the recruiting emphasis is on job skills. Finally, for business roles, employers are primarily concerned with soft skills, followed closely by job-specific skills.

Exhibit 5: Which recruiting criteria matter most?

INDEXED TO AVERAGE IMPORTANCE ACROSS CRITERIA

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Business Roles</th>
<th>IT Roles</th>
<th>Nursing Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical skills</td>
<td>-9%</td>
<td>26%</td>
<td>-18%</td>
</tr>
<tr>
<td>Job skills</td>
<td>1%</td>
<td>-9%</td>
<td>16%</td>
</tr>
<tr>
<td>Soft skills</td>
<td>5%</td>
<td>-9%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Source: Oliver Wyman skills gap survey
HOW ARE EMPLOYERS RESPONDING?

Employers are quick to place the blame for the skills gap on the other participants in the job market – educators and job seekers. (See Exhibit 6) They claim educators are not teaching the right subjects and are not evolving curricula to meet the needs of business. At the same time, employers believe job seekers are not studying the right subjects and lack the corporate loyalty to justify an employer’s investment in training them. While there is some truth to these claims, in reality much of the responsibility rests with employers themselves.

Exhibit 6: How important are the following reasons in explaining why it has become more difficult to find qualified candidates?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Education institutions are not evolving their curriculum</th>
<th>We expect candidates to be more job-ready</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education institutions are not evolving their curriculum</td>
<td>66%</td>
<td>64%</td>
</tr>
<tr>
<td>IT</td>
<td>63%</td>
<td>66%</td>
</tr>
<tr>
<td>Nursing</td>
<td>57%</td>
<td>71%</td>
</tr>
<tr>
<td>We expect candidates to be more job-ready</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

% OF RESPONDENTS THAT SAID “SOMewhat IMPORTANT” AND “VERY IMPORTANT”

Source: Oliver Wyman skills gap survey

Historically, employers would retain and invest in talent even through economic downturns. However, new research shows employers are no longer holding on to employees through recessionary periods. In the past two downturns, companies have been far more likely to lay off workers than to suffer short term declines in productivity. This in turn leads to less experienced talent available within their organizations once the recovery begins, requiring employers to post for individuals with higher expectations on experience and aptitude than which they would have otherwise historically needed. Employers are finding that hiring for this talent is more difficult than developing it within their own organizations, exacerbating the perceived skills gap in recent years as the economy recovered.

Employers have four means to address the skills gap: (1) work directly with education institutions on building required skills into new curricula; (2) outcompete other employers for limited talent by raising wages; (3) outcompete other employers for limited talent by improving the recruiting workflow of articulating needs, evaluating candidates, and training employees; or (4) work with other intermediaries who are circumventing the traditional education institutions to provide the right skills and information either before or after hiring. Although all of these methods are in use, our research and discussions suggest employers are focused primarily on outcompeting other employers for talent by improving their recruiting workflow.

Working directly with universities and colleges is time consuming and costly for an employer. These institutions of higher learning move slowly and often are misaligned with employers on the mission of education: whether the goal is personal growth vs. career readiness. Intermediaries are showing signs of progress, primarily in the area of technical skills, where they are working with employers to identify verifiable and relevant skills to better train prospective candidates.

1 http://hbswk.hbs.edu/item/leadership-lessons-of-the-great-recession-options-for-economic-downturns
(for example, Udacity’s nanodegree programs and their Blitz platform matching nanodegree graduates with employers). However, the principal way employers are seeking to close the skills gap is by competing for the limited talent that is available.

The quickest way to compete for limited talent is to raise wages. However, wages have remained relatively flat in recent years, as economists are quick to point out, questioning the existence of a skills gap at all. If there was indeed a labor shortage (that is, lack of supply), economic principles would suggest the cost to acquire that labor (that is, price to hire labor) would increase. What our research suggests is that the price to hire is indeed increasing, but not in the form of wages. The price to hire is a function of wages, as well as the costs associated with the full hiring process, such as searching and screening. Employers are spending more on their own recruiting workflow instead of on wages, seeking to build company-specific capabilities that can yield a competitive advantage over paying a higher wage which can easily be matched.

The employers’ recruiting workflow itself consists of three main parts: defining needs, hiring, and training. (See Exhibit 7)

### Exhibit 7: Employer recruiting workflow

<table>
<thead>
<tr>
<th>Defining needs</th>
<th>Hiring</th>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defining business needs</td>
<td>Translating needs into job specifications</td>
<td>Building Candidate Pool</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Measuring skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Building and improving employee competencies</td>
</tr>
</tbody>
</table>

**Overview**
- Identify gaps in current team that can be addressed by new hires
- Write job postings, with specific criteria based on business input
- Source candidates that meet the criteria for a job posting
- Evaluate the candidates to narrow-down and select the best one
- Train new and current employees to overcome identified weaknesses

**Source** Oliver Wyman analysis

### Exhibit 8: What approaches are your company using to improve your hiring processes and ensure employees have the required competencies?

**SELECT ALL THAT APPLY**

**Business**
1. We are seeking to improve our ability to articulate needs and translate them into requirements for job postings **33%**
2. We are focused on improving our ability to screen and hire the ‘right’ candidates **64%**
3. We are focused on improving our training and professional development for employees **30%**
4. We are not taking any specific actions **17%**

**IT**
1. We are seeking to improve our ability to articulate needs and translate them into requirements for job postings **26%**
2. We are focused on improving our ability to screen and hire the ‘right’ candidates **67%**
3. We are focused on improving our training and professional development for employees **26%**
4. We are not taking any specific actions **17%**

**Nursing**
1. We are seeking to improve our ability to articulate needs and translate them into requirements for job postings **40%**
2. We are focused on improving our ability to screen and hire the ‘right’ candidates **75%**
3. We are focused on improving our training and professional development for employees **41%**
4. We are not taking any specific actions **8%**

**Source** Oliver Wyman skills gap survey
Within the recruiting workflow, most employers indicate they are focused primarily on improving hiring practices, rather than working to better articulate the skills they need, or else seeking to invest in internal training their employees to develop talent within their own organizations. (See Exhibit 8) The screening processes used by employers rely less on things like college degrees and instead are shifting toward more finely tuned information sources, such as online portfolios. (See Exhibit 9)

Exhibit 9: How frequently are the following used as skill measurement tools in the recruiting process, today vs 10 years ago?

<table>
<thead>
<tr>
<th>Tools Decreasing or Constant in Relative Importance</th>
<th>Tools Increasing in Relative Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Years Ago</td>
<td>Today</td>
</tr>
<tr>
<td>College degree</td>
<td>Work experience</td>
</tr>
<tr>
<td>32%</td>
<td>28%</td>
</tr>
<tr>
<td>35%</td>
<td>34%</td>
</tr>
<tr>
<td>35%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Source: Oliver Wyman skills gap survey

The emphasis on screening vs. internal training and on optimizing the current recruiting workflow vs. working with education institutions suggests an important takeaway: employers believe it’s uneconomical for them to work directly to solve the skills gap; instead, they’re willing to invest more in search and screening abilities, such as hiring algorithms, and letting intermediaries solve the gap more directly.

HOW ARE EDUCATION INSTITUTIONS AND JOB SEEKERS RESPONDING?

Traditional educational institutions have been slow to adapt their programs to match employer needs. These institutions are in touch with employers, but many within these institutions lack the mindset required for this type of outreach. An earlier survey demonstrated that 72 percent of the leaders at four-year colleges think the main role colleges play in students’ lives is to “promote intellectual and personal growth,” while only 28 percent believe the main role is to “provide knowledge and training for the working world,” according to Pew Research Center. So, despite an active outreach to talk to employers, education institutions remain slow to adapt their programs, leaving employers to lose hope of influencing any sort of curricula changes.

Intermediary educational providers, such as software coding boot camps, are teaching technical skills, and the leading providers are closing the information gap between employers and job seekers. These providers generally take a hands-on approach toward career guidance and help their students find employment. Furthermore, the content taught is current and up-to-date, relative to traditional curricula, some of which have not been changed in decades.
But for positions requiring job-specific and/or soft skills, this nontraditional education route hasn’t had as much success. The skills are less discrete and highly subjective, making it difficult for education providers to validate job candidates’ skills for employers. Just think, how would you create a portfolio of tangible work output to showcase your improvement in cultural fit? Or leadership? It is still early in the evolution of these intermediary providers and schools, so it remains to be seen whether these education intermediaries can solve the gap for job-specific and soft skills.

With employers focusing on their own recruiting workflow, and educational institutions not yet adapting their programs to match the needs of the market, job seekers are feeling the weight of the skills gap. Job seekers are arguably in a weaker position. In 2015, a study conducted by AfterCollege (a connector of job-seeking college students to employers) found that only 14 percent of new college graduates had jobs at the time of graduation. Separately, the re-employment rate for those who have lost their jobs within the last three years is well below historical averages and has yet to recover to pre-recessionary levels. These factors are leading job seekers to take the initiative to develop and build new skills on top of the ones they have and communicate the added capabilities to employers.

**WHAT DOES THIS MEAN FOR VENDORS LOOKING TO HELP SOLVE THE SKILLS GAP?**

Many players are focused on trying to solve the problem, across the broad range of skills, including technical, job-specific, and soft skills. (See Exhibit 10)

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**Exhibit 10: Sample players by segment**

Most services today are focused within the recruiting workflow

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Source: Oliver Wyman analysis, Company website, and Company reports
COLLABORATING WITH EDUCATION INSTITUTIONS

Most employers have decided it’s uneconomical to try and work with education institutions to reshape curricula for the right skills. Educational institutions themselves can be proactive on solving the issue, and we’ve seen a few of them taking the initial step in reaching out to employers and crafting programs to target the needs of business. Northeastern University started a data analytics boot camp called Level that is designed to equip students with specific technical skills sought by employers. The two-month program blends career-oriented instruction and experiential learning to focus on preparing students directly for the workforce. In 2012, Southern New Hampshire University (SNHU) founded College for America, which partners with employers to deliver a competency-based model around job-specific skills in healthcare and business, so that students are prepared for work when they graduate. Some online for-profit universities are also trying to bridge the information gap between job seekers and employers as a way to counter steep declines in enrollment. Strayer University launched Strayer@Work to help employers understand what skills their employees are missing and target degrees to equip them. Despite these few examples, this space remains sparse and slow to change.

IMPROVING THE RECRUITING WORKFLOW

Employers are focused on their own recruiting workflow, and screening in particular. They are increasingly willing to spend on emerging technologies and algorithms to identify candidates with the right skills and profile, particularly job-specific and soft skills. Employers are less focused on vendors working to better define needs or provide training.

Kiran Analytics is an example of a predictive analytics company that provides screening data on potential candidates. Their algorithms work to ensure candidates have the appropriate job-specific and soft skills necessary, particularly for financial services positions.

On the flip side, job seekers are in a precarious position, and are looking for short-term solutions that will help better communicate their skills so as to get onto the radar screens of employers. This has led to a rise in the popularity of tools that directly help job seekers find employment. Both established companies and startups are operating in this space.

For example, Skillful is an online marketplace founded by LinkedIn and the Markle Foundation that aims to forge connections between employers, educators, and job seekers. Describing themselves as “GPS for a job seeker’s career,” Skillful aims to provide job seekers with tools to identify the industries that are hiring, the skills they will need to get hired, and the list of places where they can get trained in those skills.

Virgil Inc. is a company seeking to create transparency in the hiring market by helping job seekers understand what competencies they need to have to get hired, which companies and roles are a good fit, and what the next steps need to be to move forward on a given opportunity. Virgil has an app-based interface where job seekers choose a career they are interested in, take a short assessment of their capabilities, and receive a score which determines whether a specific role is a good fit with their existing experience and competencies.

Burning Glass uses technology to provide information to the key stakeholders in the employment market. It uses advanced artificial intelligence to analyze job postings and resumes to understand the competencies employers are looking for and which candidates have those skills. Burning Glass is working to repackage this information to create tools specific to each stakeholder across all skill types. For educators, the tools can help pinpoint the skills employers in the local market are looking for to help design programs for students that ensure their capabilities are suited to the job. For employers, Burning Glass is helping find the right matches for new jobs and develop current employees.
WORKING WITH INTERMEDIARIES TO SOLVE THE GAP

Employers are allowing intermediaries to try to solve the skills gap. There are a variety of models that are being used by these companies for validating and credentialing their students. But a clear solution has yet to emerge.

A new market of technology-focused boot camps has sprung up over the past five years. These providers target job seekers and job switchers who are looking for career transformation through building vital skills, with coding being the most popular, but also a host of other technical skills (such as UX, design, and data analytics). The number of providers in this space has rapidly grown to over 70 at last count. Campuses are located in major technology hubs all over the country. The business model is focused on job placement rates. Some have gone so far as to monetize based on success; App Academy, a coding boot camp focused on Ruby on Rails, charges tuition based on the starting salary of its students’ new positions (claiming 23 percent of their students’ first year salary, unless students pay an upfront fee or do not find a job within the first year). General Assembly has a full-time team working hand-in-hand with candidates on resume screening, interview prep, and other activities to ensure they are taking the right steps to build their career. Pluralsight, another learning platform, provides modularized content for its users who come back and depend on the content for day-to-day work. For non-IT providers, progress has not been as linear. Overall, the most successful will be those that provide verifiable, granular, and relevant information about job candidate skills to employers, and work closely with job seekers to secure employment.

Badges, nanodegrees, micro-credentials – these buzzwords have been a mainstay of education discussions for the past few years, and many feel they signal a coming revolution in postsecondary adult education. Although there is still a significant need for a unified taxonomy and broad knowledge of respected and widespread micro-credentials, there are a myriad of players staking their claim in the space and trying to make these skill identifiers gain acceptance with employers. Some examples include Coursera and Udacity, which provide specialized video-based learning culminating with a badge, degree, or certification to confirm the acquisition of a marketable skill. Udacity’s new Blitz platform also matches its graduates with companies seeking talent. LinkedIn, with its acquisition of Lynda.com, is combining the online resume with digital badging, and is seeking to move more aggressively into prescriptive badging. LinkedIn has publically stated its vision is to suggest courses and badges to its members to advance their careers.

Portfolios as a concept have a long history, especially in creative fields. Online portfolio management companies are starting to enable job seekers and employees to keep a streamlined, living digital portfolio as an extension of their traditional resume. These solutions provide individuals with a platform to aggregate and curate a broad set of learning, training, and skills-related learning artifacts. Such online platforms can showcase those skills, experiences, interests, and capabilities much better than a traditional resume. Content on the platform may include everything from digital evidence of course or degree completions, to badges and nanodegrees, from sample code for developers, to presentations or project deliverables. Key players in this space include Portfolium and Degreed. Both provide a mechanism to track past accomplishments, and enable job seekers to demonstrate skills across the spectrum – technical skills through code samples, job skills through conference presentations, and soft skills through showing the output of self-driven initiatives. Credly is another provider with a streamlined platform to keep track of and manage online badges and credentials and to enable parties to authorize and distribute digital credentials themselves. These can be used to verify skills, endorse involvement in events, highlight professional certifications, and more.

Although these models are gaining awareness, our research shows the use of boot camps, micro-credentials, and online portfolios is not yet widespread. IT roles are leading in the use of these tools, due to the verifiable nature of the work, but even here their penetration is not deep.
Before there can be a strong uptake for these intermediary models, a number of key questions need to be answered:

- **Boot camps**: How do employers ensure the information regarding job candidate skills is relevant, current, and of quality, particularly for job-specific and soft skills?
- **Micro-credentials**: Badges make sense, but who decides which badges really matter?
- **Skill tracking**: How do you ensure the portfolios contain relevant information for employers to quickly sift through and identify quality?

With such a fragmented market, there is an opportunity for a company to establish a position as the go-to source for the skills gap by increasing communication and information flow between the leading stakeholders and intermediaries in the employment market. While we are still in the early innings of the game, those companies that can best make those connections will be the winner in the long term.

**CONCLUSION**

The current skills gap is concentrated in the new knowledge economy, where the required skills (whether technical, job-specific, or soft skills) depend heavily on the role. As a result, a one-size-fits-all approach is not likely to work. Instead, the path to closing the skills gap is one that calls for better information flow among the key stakeholders. Employers are looking to improve how they confirm job candidates have the right skills, educators are looking to improve what skills they teach, and job seekers are looking to improve how they showcase their skills. For those seeking to invest in this space, the key to success lies in ensuring that you can support this ultimate vision—by forging the necessary connections for creating knowledge and information flow between all the key participants: employers, educators, and job seekers.
ABOUT OLIVER WYMAN

Oliver Wyman is a global leader in management consulting that combines deep industry knowledge with specialized expertise in strategy, operations, risk management, and organization transformation.

Our Global Education Practice has extensive knowledge of the strategic and operating realities of the education sector. We understand its unique dynamics: the sales cycles, the funding environment, the workflows, the transition from print to digital, and the tensions between business and mission goals. And we combine our deep sector expertise with world-class horizontal capabilities – in areas such as enhancing the customer journey, customer segmentation, cost improvement, sales force and pricing optimization, strategy, due diligence, M&A, and post-transaction support – to deliver differentiated results.

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