
Oregon Talent Assessment

Prepared by ECONorthwest for
the Oregon Workforce and Talent Development Board

Summer 2018

ECONorthwest
ECONOMICS • FINANCE • PLANNING

Prepared for the Oregon Business Plan by ECONorthwest

Executive Summary

U.S. business leaders have identified access to skilled labor as a competitive strength in the United States, but a deteriorating one. They and civic leaders point to an anomaly: persistent underemployment while employers struggle to match the right talent to open positions. Concerns have ranged from widespread skill gaps (e.g., too few workers with STEM or technical skills) to skill shortages in specific, in-demand occupations (e.g., welders) to too few applicants with requisite soft skills: work ethic, motivation, the ability to work in teams.

Some economists challenge the notion of gaps and shortages. They counter that if they existed, wages would have risen faster than they have in recent years. Absent strong wage growth, some economists contend the skills problem has more to do with a timing mismatch than chronic gaps or shortages. In short, employers, civic leaders, and economists acknowledge a U.S. skills problem, but frequently disagree on its nature.

The Oregon Higher Education Coordinating Commission (HECC) hired ECONorthwest and Program and Policy Insight to assess the market for skills from business and industry's perspective. Specifically, the *Oregon Talent Assessment* serves as business and industry's determination of in-demand occupations, skills, talent, gaps, and trends. Its goal is to elevate the understanding of Oregon's skills problem by creating common data and language that can be shared across employers, educators, and workforce intermediaries. The *Assessment* is one part of a fully integrated series of strategic plans aimed at strengthening workforce planning and execution.

The *Talent Assessment* draws on quantitative and qualitative research. It summarizes key occupational and wage trends found in a variety of federal and state data sources and reviews projections. The perspectives of employers are collected through surveys and focus group interviews. Employers' perspectives generally align with market data, and the report highlights the instances where they do not.

The timing of the *Talent Assessment* is notable in two regards. First, it comes in the latter stages of a long U.S. economic expansion. Oregon's job growth has outpaced the nation's, incomes are up, and employers are operating in an increasingly tight labor market. Second, technological progress, which is always evolving, appears to be accelerating. Advances in machine learning and artificial intelligence are disrupting work and putting a higher premium on skills that are uniquely human. An assessment performed two years from now, in a different economic and technological context, could yield significantly different findings.

The 2018 *Assessment's* key findings:

1. **Most employers do not report, and data do not suggest, widespread gaps in basic skills.** This report defines a skills gap as a widespread shortfall of basic skills that would be consistent with a broad failure of the education system. A majority (77 percent) of employers agreed that their applicants possessed the basic skills required for their vacant positions: the abilities to read for and locate information, to write for communication, and to apply mathematics. Those who identified deficiencies specified inadequate writing skills.

The employers' responses are supported by a flattening of the college wage premium since 2000. An emerging theory is that automation is disrupting previously high-wage jobs and forcing some well-trained graduates into lower paid occupations. Others argue that slow-growing business investment is limiting innovation and opportunity for high-end work. Whatever the cause,

policymakers should keep close track of the college wage premium—especially in light of the increasing cost of attending college.

2. **About half of employers report a shortage of occupational skills required for specific occupations—with problem solving and critical thinking at the top of the list.** Our report characterizes a shortfall of hard skills—project management, problem solving, machine operation, software competencies, and the like—as a notable challenge in particular occupations. The skills could be learned through on-the-job training, internships, apprenticeships, or well-designed project-based activities in traditional education settings. While interviewees acknowledge the need to train individuals for tasks specific to the job, there was broad agreement that for nearly all levels of occupations, the labor pool was generally not equipped with baseline occupational skills, such as the ability to work with tools and machines, or knowledge of relevant computer software. Respondents in the outdoor gear/apparel, construction, bioscience, food and beverage, and wood products sectors reported the biggest challenges, with the absence of critical thinking and problem solving as the lead deficiencies.
3. **Employers signal a high demand for engineers, skilled tradespeople, and project managers.** While industries have specific employment needs, there are occupational needs that exist across sectors. The most frequently cited occupations across industries include engineers, skilled trades, and project managers. Nearly all sectors are in need of engineers, with the type of engineer dependent on the sector, such as marine engineer in the maritime sector, biomedical engineer in the biomedical sector, or software engineer in the technology sector. Electrical and mechanical engineers are in demand across sectors.

Several interviewees across multiple sectors cited the need for managers to oversee complex business and technical operations or products. Applicants need a broad range of skills, including data analysis, critical thinking, interpersonal and leadership skills, and knowledge of business operations.

4. **Employers recruit out-of-state to meet talent needs.** Several key stakeholders indicated that they needed to recruit and hire out-of-state to meet their employment needs for specific occupations: utility line workers, electricians, millwrights, engineers (particularly bachelor's or master's level mechanical, industrial, electrical, computer, and chemical engineers), UX/UI (user experience/user interface) managers, and middle-level project managers. With respect to recruiting electricians and millwrights, employers cited barriers to hiring out-of-state due to Oregon's strict licensing standards.
5. **Interpersonal skills are lacking while also growing in importance.** The skills are called by many different names: interpersonal, soft, essential, social. They are the skills associated with an individual's habits, personality, and character, including dependability, leadership, honesty, and the ability to work in teams. Only a narrow majority of employers (55 percent) agreed that applicants possessed the interpersonal skills required for their vacant positions. When employers were asked what skills applicants lacked, communication skills, motivation, dependability, and time management all elicited high responses.

The employers' responses are echoed in recent research that tracked skills associated with growing and shrinking occupations over the past three decades. Occupations that required a mix of high social and high math skills grew at the fastest rate followed by occupations that required high social skills. Occupations that required high math skills and low social skills shrank as a size of the labor market, while occupations that required low social and low math skills fared the

worst of all. The conclusion: the labor market has been rewarding humans for performing tasks that computers cannot do.

6. **Modest wage growth tempers declarations of widespread skill shortfalls.** The traditional relationship between unemployment rates and wage inflation is broken in this economic expansion. Nationally, low unemployment rates would suggest an economy near full employment, which typically triggers higher wages and inflation concerns. In this business cycle, wages have yet to accelerate. The relatively modest wage growth makes economists question employers' calls of skill gaps and shortages.

Oregon's experience is somewhat different than the nation's. Recovery and wage growth at the state level has outpaced the U.S. average. However, Oregon's average wages are still below national levels. Pay in Oregon's rapidly expanding professional and business services sector, which increased at an annual rate of 4.2 percent between 2007 and 2017, could support a story of shortages. It's hard to find similar evidence in other sectors. Even in construction, where anecdotes of cost overruns are common, wage growth corresponds to broad economy averages. Employer survey responses align with this wage story. When asked how they overcome hiring difficulties, only 35 percent identified wage increases as a remedy.

7. **Populations that remain outside the labor force, late in this economic expansion, warrant priority consideration under the forthcoming adult workforce goal.** This economic expansion, at the time of publication, is the second longest in the post-World War II era. Yet labor force participation rates (i.e., the share of the population working or seeking work) are still below those recorded in the early 2000s and 1990s. For the expansion to continue, more people will have to be pulled off the sidelines. Sizable, traditional working age populations are still without work. Almost half have a high school degree or less. And among that population, half receive federal food assistance and 40 percent have children. These late-expansion, non-workers—especially those with limited education—are obvious candidates for a full suite of basic skills training, supportive work environments, and job search assistance programs.

8. **Demography and automation play the leading roles in job projections.** The Oregon Employment Department's recently released 10-year projections boil down to several broad themes: an aging population will demand more healthcare and caregiving; automation will continue to erode employment in all sectors related to paper, from papermaking to publishing; today's low residential and commercial vacancy rates (and high prices) suggest strong growth in the construction sector; and the government—at all levels—is positioned for slow growth. Five of the top ten fastest growing occupations are health-related: physician assistants, home health aides, nurse practitioners, health specialties teachers, and health diagnosing practitioners. With the leading edge of the Baby-boom generation entering their mid-70s, these projections seem like a reasonable scenario.

The scope and pace of technological progress is the big question mark. In the near term, most observers anticipate continued destruction of routine work tasks, with disproportionate impacts in food service, office and administrative, sales, and production occupations. Most affected occupations won't disappear entirely, but the nature of the job will change, and workers will have to adapt accordingly. Artificial intelligence experts anticipate even more disruption and see technology outperforming human labor at higher points on the skill ladder (e.g., disease diagnosis, creative writing, clothing design). The trends warrant close monitoring.

9. **Employer forecasts of talent needs are common, short-term, and largely unshared.** Almost all (97 percent) survey respondents and the majority of interviewed stakeholders note that they primarily use internal company data and analysis to guide forecasting and planning. Most industry stakeholders suggest forecasting timeframes ranging between 3 and 12 months, with ongoing weekly discussions. Respondents described rapidly changing information and the need to be responsive and nimble to changing conditions.

The majority of stakeholders indicate that they limit their forecasting analysis to internal use only and do not share with other firms, training providers, or educational or workforce institutions.

10. **Employers report progress on strengthening the talent supply chain through externships, internships, apprenticeships, and reinvigorated career technical education programs.**

Respondents described a number of recruiting mechanisms designed to attract prospective employees at a younger age. Educator externships expose K-12 teachers, administrators, and counselors to the work they do, and the skillsets required to be successful in these careers. This in turn influences how young people learn about workplace skills and engage with career path options. CTE programs are expanding in high schools, allowing students to get hands-on experience in a wider variety of career options and skill areas. Industries are working closely with postsecondary institutions to develop and support curricular options to train their future workforce. Businesses and education institutions are supporting work-based learning opportunities for future potential employees, such as apprenticeships and internships. Industries are collaborating with associations and workforce development to invest in augmenting displaced workers' skillsets to support them in transitioning to careers in new sectors. Some industries are working to diversify their workforce by targeting women, minorities, and veterans in their training and recruitment efforts.