



The Emerging Degree Reset

How the Shift to Skills-Based Hiring Holds
the Keys to Growing the U.S. Workforce
at a Time of Talent Shortage

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Executive Summary

Employers are resetting degree requirements in a wide range of roles, dropping the requirement for a bachelor's degree in many middle-skill and even some higher-skill roles. This reverses a trend toward degree inflation in job postings going back to the Great Recession. And while the Covid-19 pandemic accelerated this process, this reset began before the crisis and is likely to continue after it.

- Some 46% of middle-skill and 31% of high-skill occupations experienced material degree resets between 2017 and 2019.
- Only 27% of the changing occupations could be considered “cyclical resets,” or short-term responses to the pandemic. The majority (63%) appear to be “structural resets” that began before the pandemic, representing a measured and potentially permanent shift in hiring practices.
- When employers drop degrees, they become more specific about skills in job postings, spelling out the soft skills that may have been assumed to come with a college education, such as writing, communication, and being detail-oriented.

This reset could have major implications for how employers find talent and open up opportunities for the two-thirds of Americans without a college education. Based on these trends, we project that an additional 1.4 million jobs could open to workers without college degrees over the next five years.

Introduction

Jobs do not require four-year college degrees. Employers do. The last decade was characterized by a widespread phenomenon of “degree inflation.” Employers who had not asked for a four-year college degree historically started adding college degrees as minimum education requirements even for jobs that had not materially changed.¹

The widespread increase in demand for degrees concentrated itself among the 15.7 million jobs that represent a middle ground between the roughly 25% of jobs, like physicians, civil engineers, and marketing managers, that have universal degree requirements and the 39% of jobs like short-order cooks, retail workers, and truck drivers that operate out of the scope of higher education.

By definition, adding requirements serves as a filter for reducing the pool of applicants eligible to be considered. At a time when employers struggle to find talent, including a degree requirement immediately eliminates from consideration the 64% of working-aged adults who do not hold a bachelor’s degree.² At the same time, traditional middle-skilled jobs, defined as positions requiring some education or training beyond high-school, but short of a college degree, have long served as an important stepping stone to the middle class. As more and more of these jobs closed to workers without a bachelor’s degree, key avenues for upward mobility were closed to roughly 80 million prime working age Americans³ at a time when income inequality was already widening.

Harvard Business School’s Project on Managing the Future of Work, Emsi Burning Glass, and now the Burning Glass Institute have been tracking the arc of degree requirements and their impact on middle-skill jobs in a series of reports dating back to 2014. That research found that, among middle-skilled occupations, the skill requirements of those openings that require degrees are, for the most part, not significantly different from those openings for which no degree is required. Degree requirements seemed to function instead as a proxy used to simplify the hiring process, a shorthand for certain skills and a screen to reduce the number of candidates whom recruiters needed to evaluate.⁴

Today, across a wide array of fields, demand for talent far outstrips supply. Amidst the undeniable reality of talent shortage, a growing number of companies and even the U.S. government have reconsidered degree requirements. In June 2020 and January 2021, the White House announced limits on the use of educational requirements in favor of adopting a skills-based approach when hiring IT professionals.⁵ Many employers have joined the federal government in prioritizing skills over degrees. For example, IBM announced in 2021 that it had stripped bachelor’s degree requirements from more than half of their U.S. job postings and will continue to rethink the utility of degree requirements in the future. We call this phenomenon “downcredentialing,” or a “degree reset.”

The U.S. labor market is facing a number of challenges that are motivating employers to adopt skills-based hiring. The accelerating rate of technological change is reshaping skills requirements faster than providers can respond.



That further worsens the shortage of skilled talent with or without a degree – especially in jobs based on digital technologies. Evaluating applicants on their demonstrated skills and aptitudes, rather than on their level of academic attainment, can simultaneously help companies address skills shortages while creating more opportunities for Americans aspiring to improve their employment circumstances. It opens more pathways to well-paying careers to workers often hidden from employers’ considerations by degree requirements.⁶ This can help to reduce inequity by creating a more diverse workforce, since Blacks, LatinX, and other minority communities are materially less likely to have bachelor’s degrees than non-Hispanic whites and Asian Americans.⁷ Degree reset, while widely discussed, has only been studied occasionally.⁸

By analyzing over 51 million job postings, this report reveals the prevalence of this degree reset and explores the potential for skills-based hiring in the U.S. Our goal is to address some fundamental questions of relevance to various stakeholders, including employers, workers, and recruiters. Are there discernible changes in the corporate recruiting standards that suggest companies are beginning to move away from degree requirements in favor of skills-based hiring? Is the shift to skills-based hiring gaining momentum? In which occupations is the decline most pronounced? Do employers adjust their skill demands when removing degree requirements and what do such changes imply about the value they have historically placed on degrees? And what role, if any, has the Covid-19 pandemic played to catalyze such changes?

Based on our analysis, we find that after a sustained period of degree inflation, employers’ demand for bachelor’s and post-graduate degrees is starting to decrease perceptibly. Our major findings include:

- Some 46% of middle-skill and 31% of high-skill⁹ occupations experienced material degree resets between 2017 and 2019.¹⁰
- Degree resets occurred in multiple sectors before the onset of Covid-19 and accelerated as a function of the pandemic, spreading to new occupations. If these trends continue, we project that an additional 1.4 million jobs could open to workers without college degrees over the next five years.
- However, overall, 37% of middle-skilled jobs do not show a reduction in requiring a college degree, effectively stripping 15.7 million people¹¹ out of their candidate pool, even as employers struggle to find enough workers.
- Multiple technology companies have publicly announced their commitment to prioritize skills over degrees in IT occupations. Several, most notably Accenture and IBM, have made material changes in job requirements across their organizations. Others have made only modest changes in their requirements for specific positions, suggesting that corporate commitments have yet to translate to practical implementation of skills-based hiring strategies.
- Removing degree requirements spurs employers to be more specific about the skills

they seek. Employers that remove degree requirements often add to the hard, technical, and soft, social skills they require or prefer for the job. As such, the degree reset does not seem to reflect any diminution in the complexity of work; quite the contrary, jobs that undergo a degree reset are more likely to specify high-level skills.

- Those changes suggest that employers have historically inferred that college graduates possessed superior social skills such as communication, teamwork, attention to detail, and negotiating skills, motivating them to institute degree requirements.

Of the full set of occupations we analyzed, just over 60% of them were considered middle- and high-skill occupations in 2017.¹² We eliminated from the analysis set occupations where more than 90% of postings required a bachelor's degree or more — jobs that are highly unlikely to ever drop the degree requirement. This left us with just over half of occupations classified as open to a degree reset.

Occupations affected by a degree reset can be divided into two groups. One is “cyclical reset” (27% of occupations), those for which employers appear to have reduced degree requirements in direct response to the Covid-19 pandemic and job market crisis between 2019 and 2020.

The other is “structural reset” (63% of occupations), those that decreased their degree

requirements between 2017 and 2019, well before the pandemic. This is much more significant. A cyclical reset may reverse when conditions change. But in the structural resets, employers were clearly rethinking job requirements over time and deciding the degree was no longer appropriate. These measured judgements by employers on what is and isn't needed are far more likely to stick for the long term. Degree resets are much more pronounced in middle-skill than high-skill occupations, as expected. Previous research indicated a distinct trend toward degree inflation or “upcredentialing” for middle-skill jobs through 2015. The apparent reversal of that trend suggests that employers are beginning to revisit their reliance on bachelor's degrees in assessing job applicants.

Our analysis demonstrates a growing reset in segments of the U.S. labor market and shows the acceleration of this phenomenon due to a shortage of workers during the pandemic. The Covid-19 crisis continues to pose a huge disruption: It may cause employers making cyclical changes to rethink their hiring preferences permanently. While some employers have been nudged toward a degree reset by the pandemic, others like Accenture and IBM are responding to sustained shortages of skilled workers by rethinking both the attributes they are seeking in new employees and their approach to qualifying candidates.



Ups and Downs: How This Crisis is Different From the Great Recession

Researchers found that degree inflation accelerated after the Great Recession from 2008 to 2010. In the aftermath of the recession, the percent of vacancies requiring a bachelor’s degree or higher rose by more than 10 percentage points¹³ and then receded gradually during the subsequent slow recovery (see Figure 1). However, it remained considerably higher than historical levels between the end of that recession and the onset of Covid-19.

By contrast, the Covid-19 economic slowdown led to a sudden, sharp drop in the share of jobs requiring a college degree. In order to understand the extent to which that phenomenon merely reflected a surge in demand for workers who were deemed “essential” — frontline workers in positions in public safety, food

service, transportation and logistics, health care, etc., that are predominantly low skills — we searched for changes in degree requirements across and within all occupational skill levels.

The Covid-19 Pandemic Led to a Surge in Demand for Sub-BA jobs

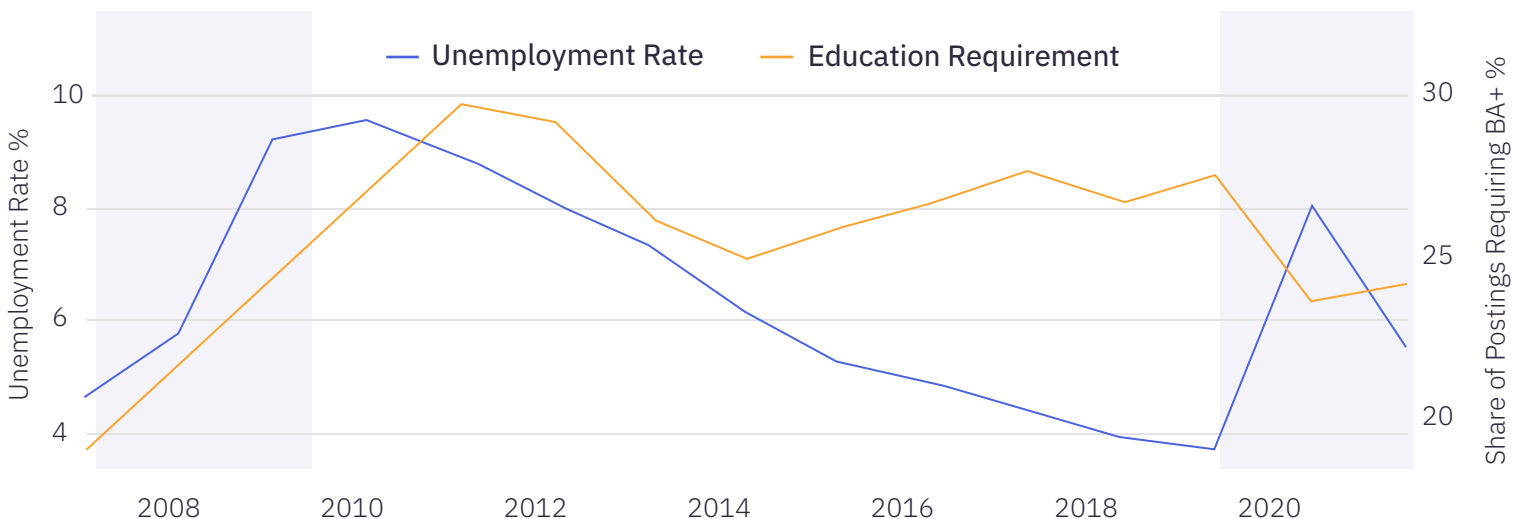
We analyzed over 51 million job postings from Emsi Burning Glass in 2017, and from 2019 to March 2021. Our aim was to understand how much of the shift over the period was a function of changes in the pattern of demand, whether such changes reflected a shift toward skills-based hiring, and what the implications are for job seekers, companies, and skills providers.

The pandemic did indeed materially alter the mix of job postings (Figure 2). The demand for sub-BA jobs,¹⁴ like Warehouse and Delivery Workers, surged during the pandemic and it is likely to remain strong due to the rise of the remote economy. Historically, such workers could be hired temporarily and at lower wages relative to high-skill workers. And while the growth rate in compensation offered by employers ranging from Amazon to Costco is likely to slow as the

FIGURE 1: Relationship between minimum education requirements in job postings and unemployment rate

Notes: The shaded areas indicate the Great Recession and the Covid-19 Recession.

Source: Analysis of data from Emsi Burning Glass and Bureau of Labor Statistics, 2007-2021.



dislocation by Covid-19 abates, talent shortages and shifts appear likely to be long-term.

Moreover, Covid-19 inflicted great uncertainty on companies, inhibiting hiring for high-skill roles. The share of postings in high-skill jobs decreased by 5 percentage points in the year between March 2020 and March 2021. The share of postings in middle-skill roles, like Bookkeepers or Legal Secretaries, appears to have remained relatively stable.

Did Covid-19 Drive the Degree Reset?

Part of the decrease in bachelor's degree requirements (Figure 1) during the crisis reflects a predictable shift in the mix of occupational hiring given the disruption depicted in Figure 2. What is not evident from Figure 2 is any decrease in bachelor's requirements within middle- and high-skill occupations that was emerging before March 2020.

In this report, we set out to understand the extent of that reset in specific occupations and across sectors. Such changes are not universal; an occupation does not go from generally requiring a bachelor's degree to having no such requirement overnight. Instead, some employers may retain such a requirement while others dispense with it. This evolution can become marked over time. For example, 81% of E-Commerce Analyst postings required a bachelor's degree in 2017. In 2020, only 62% required a degree.

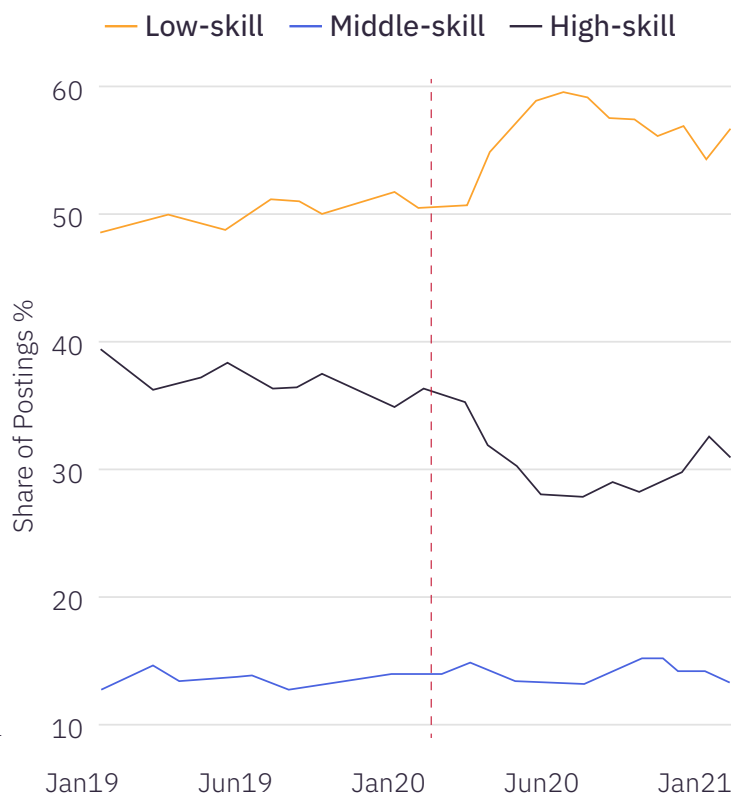
In order to understand this phenomenon, we dissected degree requirements in postings for middle- and high-skill jobs, occupation by occupation, between 2017 and 2020. We found degree requirements for middle-skill jobs were gradually receding even before the pandemic. The trend is far less pronounced for occupational groups traditionally reserved for those with a four-year college background, such as analytical

and scientific occupations. Nonetheless, our analysis indicates that between 2017 and 2019, 46% of the middle-skill and 31% of the high-skill occupations we studied experienced material declines in degree requirements. This shift occurred to some degree in 63% of occupations, with the most pronounced declines in finance, business management, engineering, and health care occupations. In some instances, the declines were relatively modest; in others surprisingly substantial.

FIGURE 2: The Covid-19 crisis increased demand for sub-BA jobs

Notes: The figure shows the demand for low-, middle- and high-skill workers from January 2019 until March 2021. The red dotted line marks the start of the pandemic. Low-skill occupations are those with a share of bachelor and above (BA+) below 25%, middle-skill below 50%, and high-skill above 50%.

Source: Analysis of data from Emsi Burning Glass.



Two Types of Reset: Structural and Cyclical

Our analysis of degree requirements for the 2017–2020 period revealed a clear distinction between the recovery following the Great Recession and the Covid-19 pandemic. Two distinctly different types of reset occurred (Figure 3). Over the course of the decade beginning in 2017, some sustained structural reset occurred. A second, Covid-19-induced wave followed, as employers lowered barriers for applicants in the face of an unprecedented surge in demand for certain occupations. Thus, we distinguish two types of change that have reduced degree requirements in almost one million jobs over the past two years:

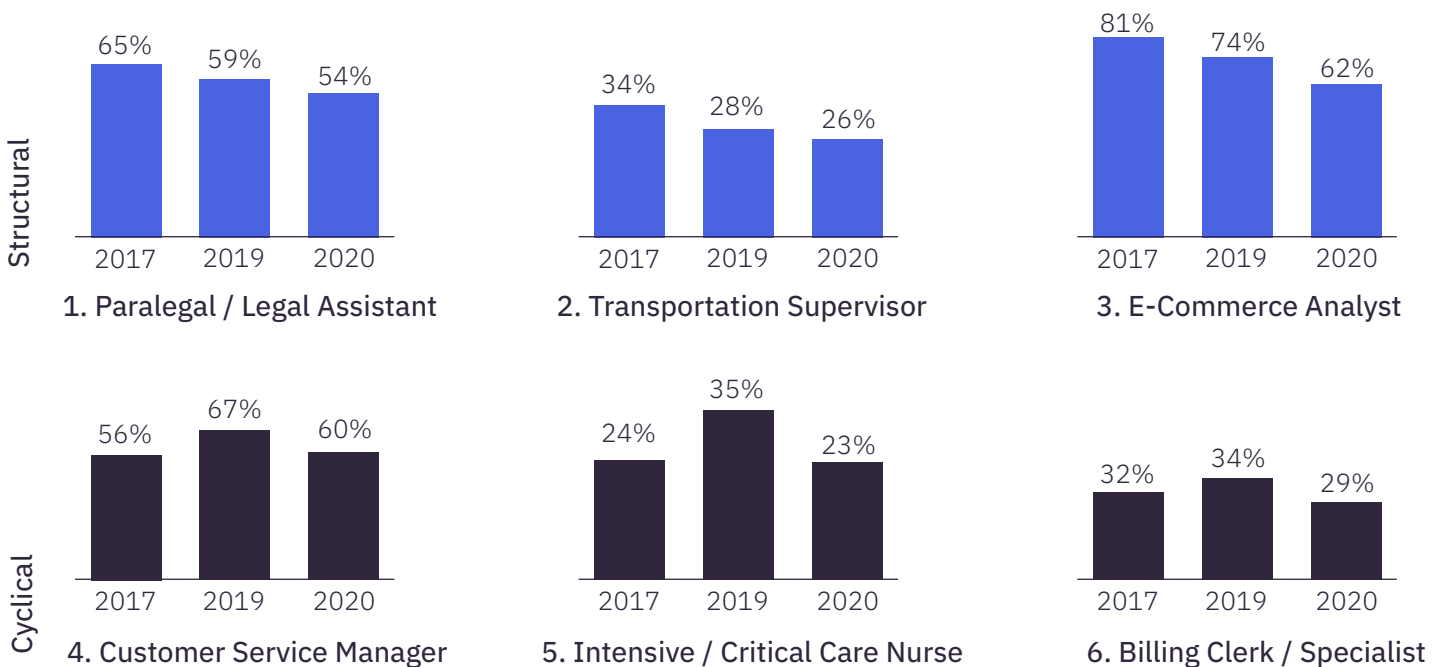
Structural Reset

In these occupations, the share of postings requiring a bachelor’s degree decreased between 2017 to 2019. In some occupations, that trend has been consistent over an extended period, suggesting that, in these jobs, the removal of job requirements is likely to be permanent. This type of reset is most evident in IT and managerial occupations (see Table 1 and Appendix Table 1). A pattern emerged in the high-skill occupations experiencing the greatest degree of change: Employers limited their use of credential requirements in occupations featuring significant technical or analytical requirements. For example, the share of postings stipulating a bachelor’s degree for Telecommunications Engineering Specialist declined from 66% to 58% between 2017 and 2019.

FIGURE 3: Distinction between structural and cyclical degree resets¹⁵

Notes: Shown are examples for occupations that experience resets removing degree requirements between 2017 and 2019 and 2019 and 2020.

Source: Analysis of Emsi Burning Glass data.



Across a wide array of occupations, demand for skilled workers nowadays far exceeds supply.¹⁶ This supply-demand imbalance appears to have encouraged employers to suspend the use of proxies, such as degree completion, in order to expand their pool of prospective candidates. That appears to have been most true for occupations requiring specific skills or competencies that can be evaluated accurately through mechanisms like pre-employment aptitude testing. However, degree resets are most evident in the middle-skill domain. In total, over 363,000 job postings were affected by structural resets in the past two years.¹⁷

Cyclical Reset

Since the start of the pandemic, resets removing degree requirements occurred in 27% of occupations (Table 2 and Appendix Table 2). This affected middle- and high-skill occupations, such as Critical/Intensive Care Nurses or Registered Nurses in the health care sector, which experienced a surge in demand as a direct result of the pandemic.

Those occupations usually require specific credentials other than a traditional higher education degree, including health-specific certifications, state-licensing requirements, or certain measurable skills. The dramatic rise in demand for skilled health care workers during the pandemic led to resets in those occupations. For example, in 2020, the share of postings

for Registered Nurses specifically asking for a bachelor's degree declined by 5 percentage points compared to 2019, from 38% to 33%. Other health occupations usually filled by middle-skill workers like Intensive/Critical Care Nurses also experienced resets in the face of the biggest health crisis of modern times. More than a third (35%) of those positions required a bachelor's degree in 2019; only 23% did in 2020. In these occupations, the reset is more recent and therefore it is not yet clear whether it is anything more than an immediate response to cyclical labor shortage. In total, over 548,000 job postings were affected by cyclical degree reset in the past two years.

Why Degree Resets are Focused on Middle-Skill Occupations

There are significant differences in the extent of this reset between middle- and high-skill occupations. Historically, degree inflation rose steadily in middle skills jobs through 2015.¹⁸ In many such positions, a substantial “degree gap” — the difference between the percentage of job postings requiring a degree and the percentage of the current occupants of that position possessing one — emerged. In jobs ranging from front-line supervisors in everything from landscaping to construction, from Surveying and Mapping Technicians to Executive Secretaries, degree gaps of 40% or more existed.¹⁹ As Figure 3 indicates, that pattern appears to have begun to reverse itself.

While few high-skill occupations experienced resets, the phenomenon is much more pronounced in middle-skill jobs. For instance, in a high-skill position like IT Project Manager, degree requirements have barely changed, decreasing by a single percentage point from 92% to 91% between 2017 and 2019. Significant reductions in degree requirements of above 5% remain rare in high-skill jobs broadly. That said, there are a handful of examples of high-skill occupations that exhibit greater rates of change: For example, the share of postings requiring a BA or above for Computer Programmers declined from 83% to 79% between 2017 and 2019.

Is this trend here to stay?

The gradual reversal of degree inflation in many middle skill jobs, and particularly those we categorize as experiencing structural resets, suggests that employers are revisiting their use of academic attainment as a job requirement. That undoubtedly reflects their response to a broadly tightening labor market between 2017 and 2019 and the growing scarcity of workers with digital and technical skills. It may also suggest that some employers have found that degree requirements are superfluous. Employers that have relaxed their academic requirements during the pandemic will have the opportunity to reassess the necessity of reinstating them in the future.²⁰ But the pattern that followed the Great Recession — a quick raising of the bar and then a gradual reconsideration and reset — suggests that the recent changes may endure for a time, if not become permanent. In both the case of structural and cyclical reset, the competitors of firms that have chosen to eliminate degree requirements may want to consider whether they, too, should broaden the pool of candidates available to them in the future.

TABLE 1: The biggest occupations experiencing significant structural reset, divided into middle- and high-skill categories based on their BA+ shares

Occupation	Career Family	Change 2017 – 2019 (%)	Change 2019 – 2020 (%)	BA+ share 2017 (%)	Number of postings 2017	BA+ share 2019 (%)	Number of postings 2019	BA+ share 2020 (%)	Number of postings 2020
High-Skill Structural Reset Occupations									
Insurance Sales Agent	Finance	-32.98%	-11.95%	61.52%	121,516	41.23%	164,742	36.30%	219,140
Personal Financial Advisor	Finance	-8.56%	-8.06%	84.06%	75,984	76.87%	68,804	70.67%	55,586
Loan Officer	Finance	-11.21%	-16.90%	58.90%	64,942	52.29%	72,828	43.46%	117,071
Paralegal/Legal Assistant	Law, Compliance, and Public Safety	-9.30%	-8.52%	65.07%	47,313	59.02%	84,429	53.99%	74,928
Claims Specialist/Adjuster/Examiner	Finance	-8.51%	-4.88%	61.47%	37,406	56.24%	49,802	53.50%	43,521
Middle-Skill Structural Reset Occupations									
Retail Store Manager/Supervisor	Sales	-9.81%	-15.47%	26.31%	542,530	23.73%	682,705	20.06%	682,283
Real Estate Agent/Broker	Sales	-23.64%	-22.53%	43.35%	84,076	33.10%	121,294	25.64%	145,403
Maintenance/Service Supervisor	Maintenance, Repair, and Installation	-14.39%	-11.98%	33.14%	77,292	28.37%	119,388	24.97%	126,702
Property/Real Estate/Community Manager	Business Management and Operations	-16.41%	-10.24%	49.58%	41,118	41.44%	87,846	37.20%	102,156
Human Resources Assistant	Human Resources	-5.16%	-5.19%	32.98%	25,524	31.28%	34,447	29.66%	29,473

Source: Emsi Burning Glass data. Occupations are sorted by the number of postings in 2017.

TABLE 2: The biggest occupations experiencing significant cyclical reset, divided into middle- and high-skill categories based on their BA+ shares

Occupation	Career Family	Change 2017 – 2019 (%)	Change 2019 – 2020 (%)	BA+ share 2017 (%)	Number of postings 2017	BA+ share 2019 (%)	Number of postings 2019	BA+ share 2020 (%)	Number of postings 2020
High-Skill Cyclical Reset Occupations									
Sales Representative	Sales	+14.17%	-10.57%	45.05%	590,557	51.43%	854,871	46.00%	766,935
Recruiter	Human Resources	+4.45%	-8.11%	65.63%	120,745	68.54%	164,674	62.98%	119,639
Clinical Case Manager	Health Care including Nursing	+23.85%	-6.19%	44.47%	86,787	55.08%	117,521	51.67%	116,039
Customer Service Manager	Customer and Client Support	+19.47%	-10.87%	56.16%	28,583	67.1%	46,185	59.80%	41,450
Banking Branch Manager	Finance	+5.81%	-8.72%	51.56%	41,488	54.56%	42,244	49.80%	34,710
Middle-Skill Cyclical Reset Occupations									
Registered Nurse	Health Care including Nursing	+16.74%	-15.11%	32.85%	1,314,799	38.34%	1,070,791	32.55%	1,330,373
Bookkeeper/Accounting Clerk	Finance	+1.30%	-6.85%	42.58%	245,618	43.13%	301,812	40.18%	270,446
Intensive/Critical Care Nurse	Health Care including Nursing	+45.46%	-33.51%	24.18%	244,007	35.18%	168,707	23.39%	263,206
Sales Assistant	Sales	+16.23%	-5.69%	29.32%	36,853	34.08%	42,381	32.14%	33,312
Billing Clerk/Specialist	Clerical and Administrative	+4.91%	-13.78%	32.29%	32,414	33.87%	42,270	29.20%	36,847

Source: Emsi Burning Glass data. Occupations are sorted by the number of postings in 2019.

Room to Grow in Hiring Practice

How the Degree Reset is Playing Out Across the Tech Sector

Companies intent on broadening their applicant pools can reverse degree inflation by making changes in their hiring policies. Many Information Technology (IT) sector leaders have made strong public commitments to stripping jobs of their degree requirements, while a host of tech mavericks, from Mark Zuckerberg to Elon Musk, hold themselves up as examples of what can be achieved without a degree. “We don’t care if you have a degree, we just care if you can code,” is a common mantra in Silicon Valley. As such, studying the uneven progress of major tech firms provides a window both into what can be achieved and what remains to be done.

Our analysis finds that, even for the same role, there is considerable variance across tech firms as to the prevalence of degree requirements. Figure 4 shows for a selection of IT roles the percentage of postings requiring a bachelor’s degree, across

a range of tech companies. Overall, we find that, for most of the IT occupations we studied, these tech leaders continue to have a higher demand for college degrees than the national average. Oracle, for example, requires degrees in well over 90% of postings across the sampled roles.

That said, there are marked differences in the prevalence of requiring a degree across firms. For example, only 26% of Accenture’s Software QA Engineer postings specify a degree requirement, and 29% of IBM’s, vs. 100% of these postings at Oracle, 94% at Intel, 92% at HP, and 90% at Apple.

This indicates that, with few exceptions, there is still significant work that remains. That said, notwithstanding the continued strong demand for degrees at many tech firms, we wanted to understand their progress to date.

Figure 5 shows the percentage of IT occupation postings at major tech companies that require a bachelor’s degree or above, and how that has changed over the past five years.

A few employers are noteworthy in their efforts to reevaluate degree requirements.

FIGURE 4: Degree requirements across tech firms for select IT occupations

Notes: Orange shading reflects a higher prevalence of degree requirement than the national average for that occupation. Green shading reflects a lower prevalence.

Source: Analysis of Emsi Burning Glass data, 2021.

	National	Amazon	Apple	Google	Microsoft	Accenture	IBM	Facebook	Intel	HP	Oracle
Computer Support Specialist	24%	11%	55%	55%	54%	9%	42%	50%	50%	6%	93%
Software Developer / Engineer	60%	76%	65%	80%	62%	40%	31%	84%	98%	84%	99%
Software QA Engineer	54%	80%	90%	84%	87%	26%	29%	66%	94%	92%	100%
Network Administrator	52%	59%	73%	76%	21%	50%	34%	91%	84%	71%	100%

IBM, the largest American technology company by employment, is well ahead of its peers in stripping degree requirements from job postings. Overall, only 29% of its postings for IT roles require a degree. While this is up somewhat from 2017 when only 21% of its IT postings required a degree, IBM still stands alone in the extent to which it has fulfilled on its public commitment to reducing demand for degrees. In fact, the company issued the following statement in January 2021:

“IBM has now stripped bachelor’s degree requirements for more than half of our US job openings, and we’re continuously reevaluating our roles to prioritize skills over specific degrees.”²¹

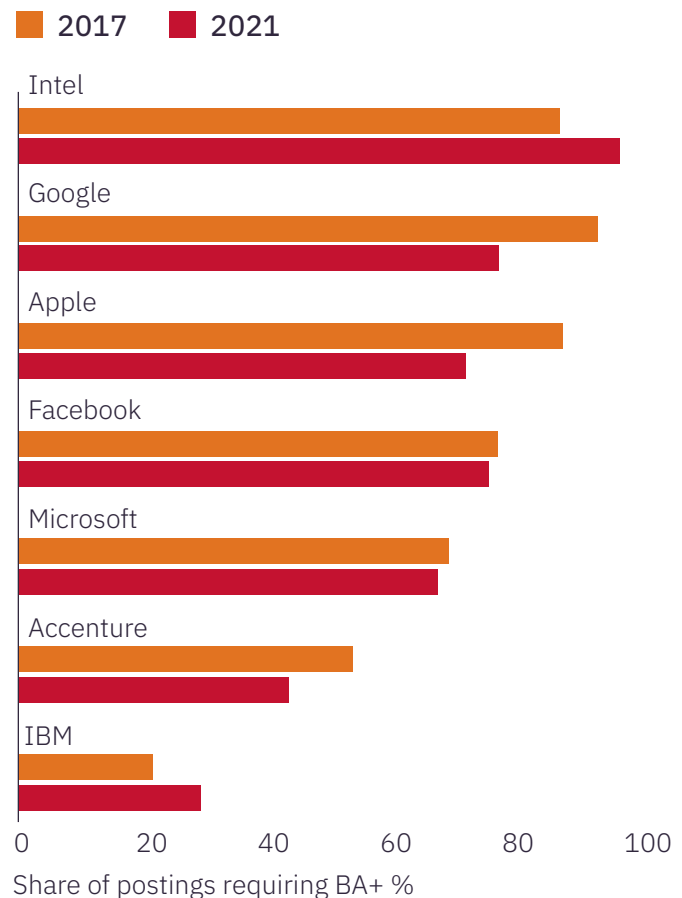
The eight-point rise in the share of the company’s IT postings that specify a degree is itself instructive. It suggests that real-world success demands more than just removing language from job ads. Rather, companies will need to reevaluate these changes continually to understand where degrees are superfluous and where they are effective indicators of required skill.

Accenture, one of the world’s largest technology services companies, and a competitor of IBM’s in some lines of business, has made a similar pledge to emphasize skills in the hiring process. A comparison of Accenture’s IT hiring profile in 2021 vs. 2017 reflects how even a company that was already ahead of its peers can continue to make substantial progress, with the share of postings specifying a BA or higher down to 43% in 2021 from 54% in 2017. These reductions have borne out across 71% of the firm’s IT roles. Figure 6 shows the extent of Accenture’s degree reset in various IT roles. For example, just 20% of Accenture’s Data Warehousing Specialist postings now specify a bachelor’s degree or above, down from 69% in 2017. Similarly, by 2021, only 23% of its Business Intelligence Architect / Developer postings specify a BA or

FIGURE 5: Share of BA+ postings in IT occupations at big tech employers

Notes: Bars show the vacancy-weighted share of BA+ postings in the occupations group Information Technologies for big tech employers and Accenture.

Source: Emsi Burning Glass 2017 and 2021.



above vs. 56% in 2017. Only 9% of its Computer Support Specialist postings specify a BA or above vs. 46% in 2017.

While Apple and Google still both demonstrate a heavy reliance on degrees in their postings, the two firms are noteworthy for the progress they have made thus far. Figure 5 shows that the share of postings at Apple that specify a bachelor’s degree or above are down 18%, from 88% to 72%, while the share of postings at Google that specify a bachelor’s degree or above are down 17%, from 93% to 77%.²²

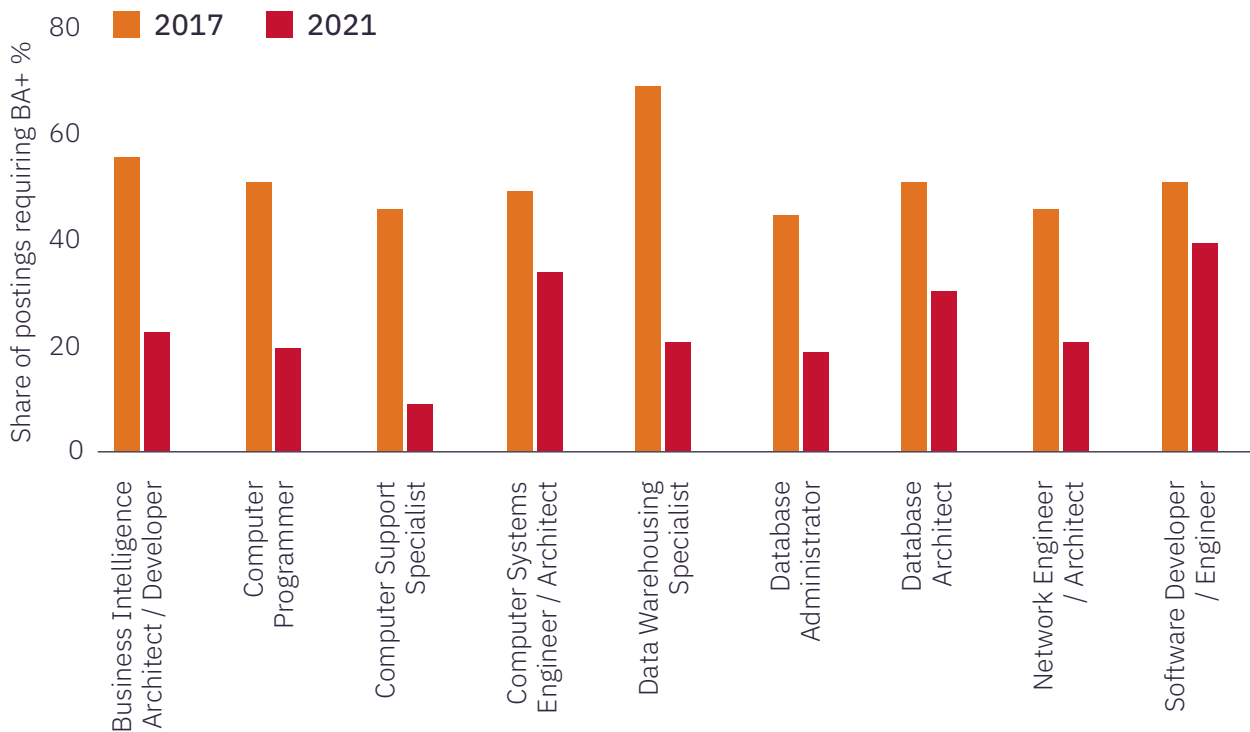


FIGURE 6: Accenture: Degree reset in IT occupations

Notes: Bars show the vacancy-weighted share of BA+ postings in specific IT occupations at Accenture. Source: Analysis of Emsi Burning Glass data, 2017 and 2021.

We do not see an equivalent change in job postings for other big tech employers like Facebook, Intel, or Microsoft -- all of which have announced some reduction in their degree requirements. As reflected in Figure 5, these firms have not materially reduced the number of actual positions requiring degree. In fact, Intel has seen a material increase in its reliance on degree-based hiring, with the percentage of IT postings specifying a bachelor's degree or above

now up to 96% vs. 87% in 2017. This suggests a lag between corporate rhetoric and practical implementation of skills-based hiring strategies. There appears to be a significant opportunity for more companies in the technology sector to follow through on implementing broad policy changes that revise the requirements for specific positions, following in the footsteps of IBM and Accenture.

Analyzing How Skill Requirements Change

as Employers Drop Degree Requirements

Prior research indicates that employers often rely on bachelor’s degrees as proxies for other skills that graduates are assumed to possess. As employers strip out degree requirements, do they find other ways of signaling their demand for such skills? Analyzing how skill requirements change as employers drop degree requirements provides an opportunity for identifying more concretely the perceived proxy value of degrees.

Our analysis of 33 million job postings between 2017 and 2019 shows that employers that cut credential requirements also sought job

candidates with a wider and deeper set of skills than were required previously: For occupations traditionally reserved for degree holders, a reset requires employers to be more articulate about the skills they require for the job. When the academic hurdle is lowered, other, more specific hurdles are raised. Figure 5 shows examples for skill demand changes in occupations that saw degree resets between 2017 and 2019.

A pattern emerges from the change in emphasis placed on specific skills: The biggest increases in requirements are related to soft or social skills. Conversely, in the past, employers appeared to imply that those who have not earned a degree possess inferior soft skills and a lesser ability to develop them on the job than their counterparts with degrees. Having eliminated a degree requirement, many employers explicitly stipulate that candidates should possess a range of specific soft skills. That suggests that companies previously associated having a degree with

FIGURE 7: Skill Percentage Point Changes in Degree Reset Occupations Between 2017 and 2019

Notes: The graphs show examples of skill changes in occupations that saw degree resets between 2017 and 2019. Percentage point changes are shown.

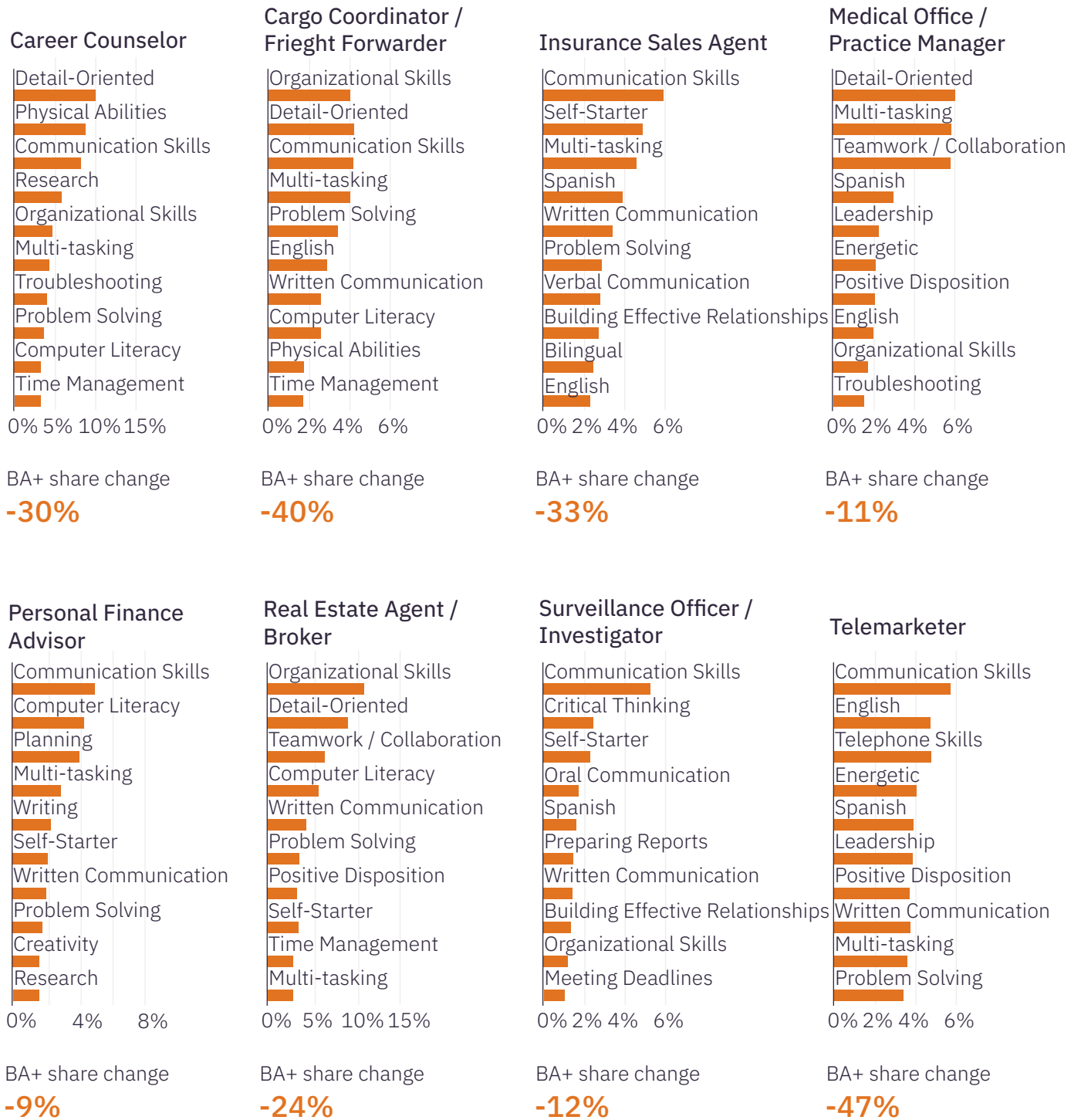
Source: Analysis of data from Emsi Burning Glass.



FIGURE 8: Human Skill Percentage Point Changes in Occupations Undergoing Degree Resets Between 2017 and 2019

Notes: The graphs show examples of soft skill changes in occupations undergoing degree resets between 2017 and 2019.

Source: Analysis of data from Emsi Burning Glass.



superior social and soft skills, ranging from those that are more easily evaluated, such as written and oral communications, to those less easily defined, such as commitment, self-discipline, and the ability to participate effectively in unfamiliar groups. This validates that degrees served in large part as a reassuring proxy for employers in terms of the breadth, depth, and durability of social skills they could expect from a graduate.²³

This becomes more apparent when one isolates changes in soft skills sought by employers for occupations that historically required a bachelor's degree. For example, the degree requirements for Insurance Sales Agents dropped by 33% between 2017 and 2019. However, in the same period the demand for communication skills in this occupation increased by over 5 percentage points (Figure 6). This phenomenon is not restricted to certain occupational groups or industries. Job postings for Career Counselors in the educational sector increased explicit references to being detail-oriented by 10 percentage points between 2017 and 2019, while the bachelor's degree requirement fell by 30%. The same pattern is also visible in careers ranging from managerial positions (Medical Office / Practice Manager), to finance (Personal Finance Advisor), to sales (Real Estate Agent / Broker).

Replacing bachelor's degree requirements with more explicit skill mandates is an important step in offering clear signals to workers and training partners alike. By highlighting specific soft-skill requirements, employers make applicants more aware of the importance of developing such skills and of highlighting them in their job applications. Skills providers will also be made more aware of the necessity of incorporating soft skills development in coursework in both general education and CTE programs.

Potential Impact

The discernible, albeit hesitant, shift toward removing degree requirements for middle-skill jobs has potentially important implications for major constituents in the labor market:

EMPLOYERS: Skills-based hiring can provide a mechanism for companies to close important skill gaps and compete in a tight labor market by expanding the pool of candidates they consider. In 2015, 63% of employers said it was difficult to find suitable candidates for their middle-skill job openings.²⁴ Yet job posting data shows employers were simultaneously ratcheting up degree requirements for those very same middle-skill positions. That artificially constrained the talent pool on which they were drawing, making it harder to fill vacant positions, fast. Research has demonstrated that degree holders in middle-skilled positions have higher rates of voluntary turnover and lower levels of engagement, while commanding a material wage premium even though their performance more often is not equal to or worse than the performance of their experienced, non-degree holding colleagues in the same job.²⁵ When viewed in its totality, that is a poor tradeoff. Widening the aperture of the recruiting process to include more non-degree holders can generate real economic returns for employers by reducing the mean time to fill positions and turnover with no major associated reduction in productivity.

Accessing that talent pool will require employers to change their hiring practices.²⁶ Specifically, they should consider:

- Say what you mean: The use of a bachelor's degree as a proxy for soft skills in middle-skill work raises multiple issues, but one of the less-appreciated problems is that it means employers are essentially speaking in

code. If employers value skills like written and oral communication, collaboration, and creativity, they should come out and say so. The example of Insurance Sales Agents cited above is a case in point: Clearly, employers favor candidates with superior communications skills for this position. To call that out specifically sends a more accurate signal to jobseekers and skills providers alike about how they should prepare for a career.

- Mean what you say: Job descriptions are too often an afterthought for employers, especially for middle-skill positions. Yet the specific job requirements have a powerful influence on who applies for jobs, how they are screened, and whether the company's own policy goals get implemented. Descriptions should be updated more often with an eye toward eliminating dated or secondary skills requirements. Skills that are known to be paramount in contributing to a worker's success should be made explicit; secondary and tertiary skills should be labeled as such or simply eliminated. Recruiters should compose job descriptions and, indeed, review the entire application process through a user-experience (UX) lens: How will this be understood by a job-seeker?
- Recalibrate filters used in initial applicant screening: The vast majority of large- and medium-sized companies rely on Applicant Tracking Systems (ATS) to process submissions and rank applicants in the initial phase of the hiring process. Those systems rely on instructions provided by the employer to filter out undesirable candidates and rank the pool of applicants that remain. Level of educational attainment is frequently employed to filter and rank applicants, as are attributes ranging from continuity of

employment (are there gaps of more than six months in the work history?) to the possession of specific hard skills or relevant experiences. Expanding the talent pool will require revisiting the relevance of such filters and recalibrating them so as to eliminate those that act to exclude qualified, non-degree candidates for reasons other than educational attainment level.

- Consider incumbent workers: It has never been more difficult to fill a company's open positions by relying on the "spot market" for labor. Employers too often fail to survey their current workforce for experienced workers with proven track records, but who lack degrees. Opening pathways for incumbent workers to advance, regardless of their degree status, allows employers to fill an important position with the confidence instilled by the contents of a personnel file, rather than the representations made in an applicant's resume and job application.

WORKERS: Skills-based hiring will create opportunities for non-degree holders with non-traditional backgrounds. Most employers value soft skills like communication, teamwork, and organizational skills, as well as "hard" technical skills like proficiency in Microsoft Office or the ability to program in Python. Workers need to be cognizant of the growing importance to employers of soft skills and need to emphasize their relevant experience and aptitude in demonstrating these skills in presenting their credentials. They will also want to take advantage of the growing array of online skills building opportunities to burnish their credentials.²⁷ The value of such badges or alternative credentials will only grow as initiatives like the Open Skills Network gain momentum.

SKILLS PROVIDERS: Educators face two daunting challenges. The pace of change in job requirements is such that it is nearly impossible for many institutions to keep pace. That is made apparent by the recent actions of major technology providers, which have turned to creating and offering their own curricula to educators, rather than waiting for skills providers to close the gap. For example, Google has launched career certificates in areas such as Project Management and Data Analytics, and treated them as the equivalent of a degree in the recruiting process. Skills providers will need to innovate by partnering with leading employers, introducing more hybrid and work-based learning programs and developing platforms to share curriculum with other institutions if they hope to avoid falling further behind the state of the art in jobs that are founded on digital technology.

They face a still greater challenge. Social skills are increasingly required for good paying jobs at all levels of the skills hierarchy, but skills providers and the education system are not configured to teach them. Lesson plans in K through 12 are designed to teach the fundamental concepts of specific topics, not social skills. Chemistry instructors teach about chemical reactions, not the reactions of lab partners. English instructors teach the rules of grammar, not the rules of etiquette in the workplace. Social skills are learned in K through 12 by induction, not by design. Educators need to consider how to introduce the acquisition of soft skills to their curriculum by design and not rely solely on socialization. Providers of teaching materials should develop innovative offerings that respond to this need to blend learning subject matter with developing the capacity to put that knowledge to use.

Conclusion

Removing barriers that allow more aspiring workers to qualify for good-paying jobs without investing four years in a degree is an essential step in reducing inequity in the American labor market. Decreasing degree requirements will open opportunities for a more diverse and inclusive workforce, especially in the middle skills positions, which many non-degree holders are well-qualified to occupy through experience. Rethinking the use of blunt filters like degree attainment will also be essential to companies demonstrating meaningful improvement in their levels of diversity and inclusion. Only 26% of African Americans and 19% of Hispanics aged 25 and older hold bachelor's or post-graduate degrees, compared with 40% of non-Hispanic Caucasians and 58% of Asian Americans according to the U.S. Census Bureau. Diversity in the workforce should be a matter of skill, aptitude, and commitment, not educational pedigree.

Our analysis shows that employers are slowly beginning to reevaluate their hiring preferences. More employers need to set aside dated assumptions and revisit their use of such blunt instruments to assess the worthiness of willing applicants from a shrinking labor force. That would mark an important next step in helping the previously overlooked to pursue attractive career pathways – even without a four-year degree.

Appendix

APPENDIX TABLE 1: The ten biggest occupations experiencing significant structural reset, divided into middle- and high-skill categories based on their BA+ shares

Occupation	Career Family	Change 2017 – 2019 (%)	Change 2019 – 2020 (%)	BA+ share 2017	Number of postings 2017	BA+ share 2019	Number of postings 2019	BA+ share 2020	Number of postings 2020
10 Biggest High-Skill Structural Degree Reset Occupations									
Healthcare Administrator	Health Care including Nursing	-1.72%	-1.02%	86.17%	132,872	84.69%	162,947	83.83%	161,841
Insurance Sales Agent	Finance	-32.98%	-11.95%	61.52%	121,516	41.23%	164,742	36.30%	219,140
Network/Systems Administrator	Information Technology	-2.83%	-2.13%	82.20%	121,082	79.87%	128,070	78.17%	102,900
General Manager	Business Management and Operations	-4.29%	-2.17%	79.45%	102,858	76.04%	140,068	74.39%	131,365
Personal Financial Advisor	Finance	-8.56%	-8.06%	84.06%	75,984	76.87%	68,804	70.67%	55,586
Construction Manager	Construction, Extraction, and Architecture	-3.80%	-3.43%	75.75%	71,515	72.87%	128,510	70.37%	129,720
Loan Officer	Finance	-11.21%	-16.90%	58.90%	64,942	52.29%	72,828	43.46%	117,071
Office Manager	Clerical and Administrative	-1.72%	-7.90%	56.14%	63,458	55.17%	91,736	50.81%	75,470
Computer Programmer	Information Technology	-4.88%	-0.14%	82.9%	63,124	78.86%	83,904	78.75%	75,832
Compensation/Benefits Analyst	Human Resources	-2.39%	-0.42%	88.73%	56,151	86.60%	58,772	86.24%	43,371

Occupation	Career Family	Change 2017 – 2019 (%)	Change 2019 – 2020 (%)	BA+ share 2017	Number of postings 2017	BA+ share 2019	Number of postings 2019	BA+ share 2020	Number of postings 2020
10 Biggest Middle-Skill Structural Degree Reset Occupations									
Retail Store Manager/ Supervisor	Sales	-9.81%	-15.47%	26.31%	542,530	23.73%	682,705	20.06%	682,283
Real Estate Agent /Broker	Sales	-23.64%	-22.53%	43.35%	84,076	33.1%	121,294	25.64%	145,403
Maintenance/ Service Supervisor	Maintenance, Repair, and Installation	-14.39%	-11.98%	33.14%	77,292	28.37%	119,388	24.97%	126,702
Preschool/ Childcare Teacher	Education and Training	-12.01%	-18.56%	25.36%	72,412	22.31%	149,438	18.17%	154,476
Production Supervisor	Manufacturing and Production	-2.84%	-9.75%	37.62%	59,692	36.55%	74,728	32.99%	77,690
Coach	Education and Training	-20.77%	-2.63%	41.19%	51,247	32.64%	97,358	31.78%	88,597
Sales Supervisor	Sales	-3.19%	-6.76%	39.86%	49,867	38.59%	64,865	35.98%	55,191
Property/ Real Estate/ Community Manager	Business Management and Operations	-16.41%	-10.24%	49.58%	41,118	41.44%	87,846	37.20%	102,156
Bill and Account Collector	Clerical and Administrative	-3.79%	-16.64%	25.89%	34,219	24.91%	46,498	20.76%	47,051
Human Resources Assistant	Human Resources	-5.16%	-5.19%	32.98%	25,524	31.28%	34,447	29.66%	29,473

Source: Emsi Burning Glass Data. Occupations are sorted by the number of postings in 2017.

APPENDIX TABLE 2: The biggest occupations experiencing significant cyclical reset, divided into middle- and high-skill categories based on their BA+ shares

Occupation	Career Family	Change 2017 – 2019 (%)	Change 2019 – 2020 (%)	BA+ share 2017	Number of postings 2017	BA+ share 2019	Number of postings 2019	BA+ share 2020	Number of postings 2020
10 Biggest High-Skill Cyclical Degree Reset Occupations									
Sales Representative	Sales	+14.17%	-10.57%	45.05%	590,557	51.43%	854,871	46.00%	766,935
Recruiter	Human Resources	+4.45%	-8.11%	65.63%	120,745	68.54%	164,674	62.98%	119,639
Software QA Engineer/Tester	Information Technology	+0.46%	-2.40%	88.65%	99,330	89.06%	137,943	86.92%	110,389
Human Resources/ Labor Relations Specialist	Human Resources	+3.87%	-1.82%	68.88%	89,144	71.55%	120,766	70.24%	103,733
Database Administrator	Information Technology	+7.48%	-1.50%	76.82%	104,179	82.57%	117,932	81.33%	94,834
Clinical Case Manager	Health Care including Nursing	+23.85%	-6.19%	44.47%	86,787	55.08%	117,521	51.67%	116,039
Nursing Manager/Supervisor	Health Care including Nursing	+12.15%	-2.31%	48.41%	105,119	54.29%	100,564	53.04%	102,637
Executive Assistant	Clerical and Administrative	+3.22%	-4.01%	53.12%	57,557	54.83%	83,663	52.63%	59,570
Customer Service Manager	Customer and Client Support	+19.47%	-10.87%	56.16%	28,583	67.10%	46,185	59.80%	41,450
Banking Branch Manager	Finance	+5.81%	-8.72%	51.56%	41,488	54.56%	42,244	49.80%	34,710

Occupation	Career Family	Change 2017 – 2019 (%)	Change 2019 – 2020 (%)	BA+ share 2017	Number of postings 2017	BA+ share 2019	Number of postings 2019	BA+ share 2020	Number of postings 2020
10 Biggest Middle-Skill Cyclical Degree Reset Occupations									
Registered Nurse	Health Care including Nursing	+16.74%	-15.11%	32.85%	1,314,799	38.34%	1,070,791	32.55%	1,330,373
Bookkeeper/Accounting Clerk	Finance	+1.30%	-6.85%	42.58%	245,618	43.13%	301,812	40.18%	270,446
Computer Support Specialist	Information Technology	+0.65%	-3.64%	44.42%	182,801	44.71%	231,303	43.08%	198,189
Intensive/Critical Care Nurse	Health Care including Nursing	+45.46%	-33.51%	24.18%	244,007	35.18%	168,707	23.39%	263,206
Sales Assistant	Sales	+16.23%	-5.69%	29.32%	36,853	34.08%	42,381	32.14%	33,312
Billing Clerk/Specialist	Clerical and Administrative	+4.91%	-13.78%	32.29%	32,414	33.87%	42,270	29.20%	36,847
Construction Foreman	Construction, Extraction, and Architecture	+0.76%	-17.07%	39.31%	21,485	39.61%	36,093	32.85%	41,682
Interpreter/Translator	Design, Media, and Writing	+31.28%	-12.86%	29.07%	29,526	38.17%	26,006	33.26%	26,184
Insurance Claims/Policy Clerk	Finance	+27.89%	-15.92%	28.48%	16,930	36.42%	21,027	30.63%	17,961
Residential Assistant/Advisor	Community and Social Services	+2.96%	-14.16%	25.84%	16,033	26.60%	20,932	22.84%	25,564

Source: Emsi Burning Glass Data. Occupations are sorted by the number of postings in 2017.

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Endnotes

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2 New data from <https://www.census.gov/newsroom/press-releases/2020/educational-attainment.html>.

3 <https://www.bls.gov/news.release/empsit.t04.htm> (total working age population, Nov 2021, seasonally adjusted, without a college degree)

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Work Experience as a Job Market Signal for Workers without Bachelor's Degrees, National Bureau of Economic Research Working Paper, <http://www.nber.org/papers/w26844>.

9 We define low-skill jobs as those with a BA+ share below 25%, middle-skill as those between

25% and 50%, and high-skill as those above 50%. The focus of our analysis lies on occupations with an average BA+ share between 25% and 90% in 2017.

10 We define material downcredentialing as a reduction in the BA+ share of over 5% in middle- and high-skill occupations.

11 <https://www.bls.gov/news.release/empsit.t04.htm> (total working age population, Nov 2021, seasonally adjusted, without a college degree).

12 We used the Burning Glass Occupation taxonomy, which contains 679 distinct occupations. 411 of them were considered middle- or high-skill.

13 Modestino et al. (2020) – Upskilling: Do Employers Demand Greater Skills When Workers Are Plentiful?

14 Sub-BA jobs have a BA+-share below 50%, BA+ jobs have a BA+-share equal to or above 50%.

15 Structural occupations experience a decrease in degree requirements between 2017 and 2019. If this trend continues between 2019 and 2020, we also refer to those occupations as structural. By contrast, cyclical refers to a decrease only during the pandemic period between 2019 and 2020, not the earlier years.

16 <https://www.conference-board.org/pdfdownload.cfm?masterProductID=38217>.

17 In total, structural occupations account for 15.6% of postings in 2017 and 16.5% in 2019.

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19 Ibid, p. 8.

20 As of June 2021, we could detect no rebound in bachelor's degree requirements in occupations affected by cyclical reset.

21 <https://www.ibm.com/policy/education-skills/>.

22 It should be noted that some employers, most notably Google, have launched certificate programs in a number of technical areas. They treat completion of those programs, which they offer to skills providers free of charge, as the equivalent of a college degree for hiring purposes. See <https://grow.google/certificates-edu/>.

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