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CAREERS IN FOCUS

MANUFACTURING SHIFT: SOFTWARE JOBS NOW OUTPACE PRODUCTION OPENINGS

American manufacturers now post more jobs for software developers than production workers, a sign that the products we make—and the industries that make them—are increasingly driven by computer programming.

As the "Internet of Things" and other computer-driven technologies raise the level in sophistication and connectivity in products, software skills have become highly prized by employers. In fact, in the manufacturing sector software developers are now second only to sales positions in terms of the total number of jobs posted.

Occupation	Total Postings in 2016	Average Time to Fill (days)
Sales Representative	84,114	43
Software Developer/Engineer	55,897	48
Production Worker	54,464	32
Mechanical Engineer	44,583	45
Laborer/Warehouse Worker	44,145	31
Manufacturing Machine Operator	36,427	33
Business Development/Sales Manager	33,065	44
Production Supervisor	28,701	38
Maintenance Technician	28,125	38
Manufacturing Engineer	25,124	42

A dramatic shift in job postings in the auto industry provides a useful illustration of this trend. Most of the vital functions in cars are now computer-controlled, and as a result automobiles have become more reliable and fuel-efficient—and more dependent on software. In 2016, Motor Vehicle Manufacturers and Motor Vehicle Parts Manufacturers posted twice as many positions for Software Developers as Mechanical Engineers. What is even more telling is that, as recently as 2012, postings were evenly distributed between the two jobs. To look at it another way, auto manufacturers' demand for Software Developers has grown more than six-fold over demand for Mechanical Engineers over the past five years.

While more people are still employed as mechanical engineers in auto manufacturing, this explosion in demand for software developers could represent a leading indicator of the future shape of an industry.
It is also worth noting that manufacturers struggle to fill these positions – even more than other employers. It takes auto industry employers 48 days to fill a software developer job, compared to 45 days across all industries.

This disparity may partly be a function of geography. Burning Glass analysis shows that, while software development postings are significantly concentrated on the West Coast and in the Northeast, production jobs remain concentrated in the Midwest and South. As such, the majority of software workers are located in regions far from most manufacturing hotspots. This forces manufacturers to recruit software talent from outside their traditional recruitment bases.

As manufacturers shift more and more of their hiring to harder-to-fill software jobs, it is also changing the overall issues they confront in sourcing talent. The 48 days it takes auto manufacturers to source Software Engineers is 50% longer than the 32 days it takes them to fill jobs for Production Workers, or 33 days to fill Manufacturing Machine Operators.

	Software Developers/ Engineers	Mechanical Engineers
2016	3,980 postings	1,831 postings
2012	1,297 postings	1,281 postings

Those numbers bear out a broader trend bedeviling manufacturing: the demand is for skilled workers, not traditional assembly line workers, and those skilled workers are in shorter supply. Based on analysis of data from both the Bureau of Labor Statistics and Burning Glass, there are 16 general production workers for each vacancy, but the ratio for skilled production workers is only 7-to-1. In certain specialties, such as avionics technicians and CNC programmers, the ratio drops to 5-to-1. Those are not skills that can be picked up overnight, so employers will likely need to consider how they develop talent and partner with training institutions to come up with a long-term fix.

Concentration of Production Postings →

Concentration of Software Postings

		Low		Medium		High	
High		District of Columbia Virginia Maryland		Delaware Massachusetts California	Colorado Washington New Jersey	Connecticut Oregon	
Medium		New York		Arizona Georgia Illinois North Carolina		Minnesota Michigan Utah	
Low		Texas Florida Louisiana New Mexico West Virginia Wyoming	Hawaii Missouri Mississippi Nevada Oklahoma Alaska	Ohio Rhode Island Pennsylvania Maine Kentucky North Dakota Tennessee	Alabama Kansas Idaho South Carolina Vermont Montana	South Dakota Iowa New Hampshire Indiana Nebraska Arkansas Wisconsin	

ABOUT BURNING GLASS TECHNOLOGIES

Burning Glass Technologies delivers job market analytics that empower employers, workers, and educators to make data-driven decisions. Burning Glass is reshaping how the job market works, with data that identify the skill gaps that keep job seekers and employers apart and tools that enable both sides to bridge that gap and connect more easily. The company's artificial intelligence technology analyzes hundreds of millions of job postings and real-life career transitions to provide insight into labor market patterns. This real-time strategic intelligence offers crucial insights, such as which jobs are most in demand, the specific skills employers need, and the career directions that offer the highest potential for workers.

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