



The 2017 **IndustryWeek** Salary Survey: Smooth Sailing on Pay as Skilled Jobs Go Unfilled

Our annual survey of manufacturing leaders is long on longevity and stability.

By Laura Putre

It's that time of year again: we unmask the results of the annual IndustryWeek Manufacturing Salary Survey. This year, we analyzed data from 780 leaders in jobs from CEO to engineering management; vp of operations to EHS supervisor.

Manufacturing may no longer be dirty, dark and dangerous, but according to the survey demographics this year, its leadership still heavily skews white, male and over 50. Our prototypical respondent is a white, male corporate executive in his 50s working in the industrial machinery or automotive industry. He has a bachelor's degree, lives in the Midwest and has spent more than a quarter century working in manufacturing. Being in the C-Suite, he makes, on average, 180K per year.

According to our results, 2016 was a good year to be making heart monitors and joint replacements; motor oil and emulsifiers, not so much. Salaries in the medical device category topped our survey this

year, while salaries in last year's leader, chemicals, decreased 8% to \$124,500 as demand slowed with the strong dollar and lower oil prices cut into revenues.

Salaries in the automotive, consulting/education and food and beverage sectors showed healthy growth (13%, 11% and 13% respectively), while petroleum and coal salaries lost considerable ground (17%).

The most lucrative job titles were vice president of manufacturing/production, CEO/CFO/COO and vice president of operations. Directors of manufacturing/production, lean and engineering managers, human resource and R&D managers and consultants also cracked the 100K threshold.

Strengths of U.S. manufacturing, according to our respondents, are certainly substantial: career stability, a family atmosphere and solidly middle- and upper-middle-class salaries.

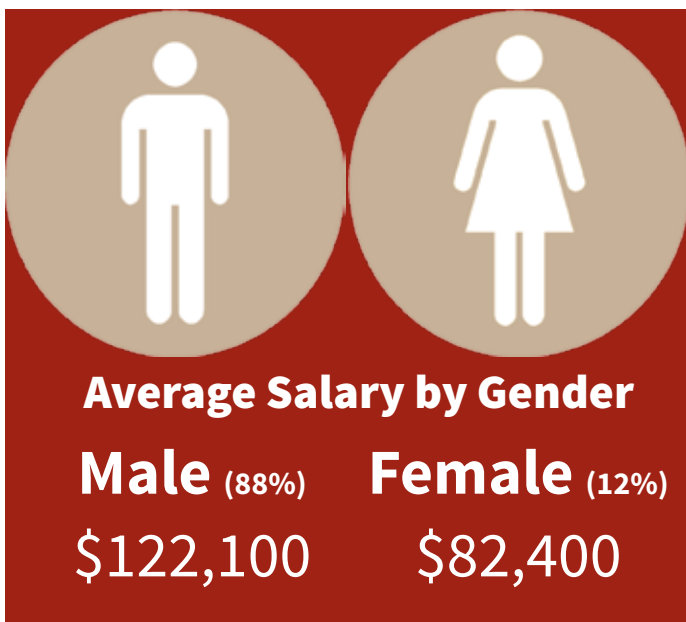
Weaknesses include a reluctance to adopt new thinking and a slowness to address the skills gap with well-thought-out (and -funded) plans to recruit and train new workers.

Average Salary by Job Responsibility

Position (% of response)	Salary
Corporate/Executive Management (CEO, COO, CFO, CTO, President, GM, etc.) (16.3%)	\$179,900
VP, Manufacturing/Production (1.5%)	\$180,400
VP, Operations (2.7%)	\$167,700
VP, Director, Purchasing/Procurement /Sourcing (1.3%)	\$112,260
VP, Supply Chain (0.1%)	\$97,400
Director, Manufacturing/Production (4.6%)	\$137,100
Manufacturing/Production Management (5.9%)	\$90,000
Engineering Management (11.2%)	\$106,400
Purchasing/Procurement/Sourcing Management (5%)	\$94,200
Plant/Facilities Management (5%)	\$98,800
Supply Chain/Logistics Management (4.6%)	\$97,400
Operations Management (3.6%)	\$95,500
Sales/Marketing Management (8.2%)	\$96,700
Quality Management (6.4%)	\$97,300
Human Resources Management (2.6%)	\$113,900
R&D/Product Development Management (3.9%)	\$110,700
Financial Management/Controller (1.2%)	\$50,100
Administration (0.9%)	\$52,500
Environmental, Health or Safety Management (2.8%)	\$86,230
Consulting/Education (3.1%)	\$107,400
Lean/Continuous Improvement Management (7.6%)	\$103,200
IT/IS Management (1.5%)	\$122,700

Average Salary by Industry

Industry sector (% of response)	Salary
Aerospace & Defense (7.55%)	\$110,000
Apparel/Textiles (1.7%)	\$124,100
Automotive/Transportation Vehicles & Equipment (10.2%)	\$122,700
Chemicals (4.6%)	\$124,500
Construction/Building Equipment (5.6%)	\$99,700
Consulting/Education (5.9%)	\$138,900
Consumer Goods/Durables (5%)	\$125,000
Electronics/High-Tech/Telecom Equipment (6.8%)	\$124,000
Food & Beverage (4.2%)	\$128,000
Industrial Machinery (14.8%)	\$110,100
Medical Devices/Lab Equipment (4.2%)	\$139,700
Metals (12.2%)	\$101,600
Paper/Printing/Publishing (2.5%)	\$111,200
Petroleum & Coal (1.7%)	\$93,700
Pharmaceuticals/Healthcare (2.3%)	\$122,500
Plastics & Rubber Products (6.1%)	\$119,900
Stone, Clay & Glass (1%)	\$103,600
Wood Products/Furniture (3.4%)	\$104,400



Career satisfaction improved from last year, with 47% respondents saying they were “very satisfied with manufacturing as a career path,” compared to 41% last year. Thirty percent were “very satisfied” with their current job, up from 29% last year.

In addition to dollar signs and charts, we asked a series of open-ended questions about workplace culture, workforce issues and the state of manufacturing. Here’s a closer look at how our readers responded.

Q: What Are Your Biggest HR Concerns and Why?

Against the rising tide of low unemployment, manufacturing’s skilled worker shortage isn’t showing any measurable signs of slowing over last year. Sixty-five percent of respondents said their company had trouble filling a position last year, compared to 67% last year.

The No. 1 concern in the HR portion of our survey was the lack of skilled

Average Salary by Education Level

Highest level attained (% of response)	Salary
High School (3%)	\$89,800
Some College (10.8%)	\$99,600
Two-Year Degree (7.7%)	\$87,400
Four-Year Bachelor’s Degree (34.7%)	\$113,800
Some Graduate Study (11.8%)	\$124,200
Master’s Degree (30.3%)	\$130,400
Doctorate (1.5%)	\$349,100

Average Salary by Staff Size

Number of employees you manage (% of response)	Salary
0-10 (70%)	\$107,000
11-25 (13.1%)	\$125,700
26-50 (4.3%)	\$130,200
51-100 (4.2%)	\$141,000
More than 100 (8.3%)	\$165,400

Average Salary by Ethnic Background

Ethnic background (% of response)	Salary
Asian or Pacific Islander (3.8%)	\$122,000
Black/African-American (2%)	\$78,400
Hispanic/Latino (4.4%)	\$103,400
Native American or Alaska Native (.08%)	\$95,300
White/Caucasian (84%)	\$118,200
Prefer not to say (%.1%)	\$114,600

Average Salary by Age

Age (% of response)	Salary
21-29 (2.8%)	\$83,400
30-39 (8.5%)	\$91,900
40-49 (16.3%)	\$104,900
50-59 (42.5%)	\$119,900
60+ (29.8%)	\$130,200

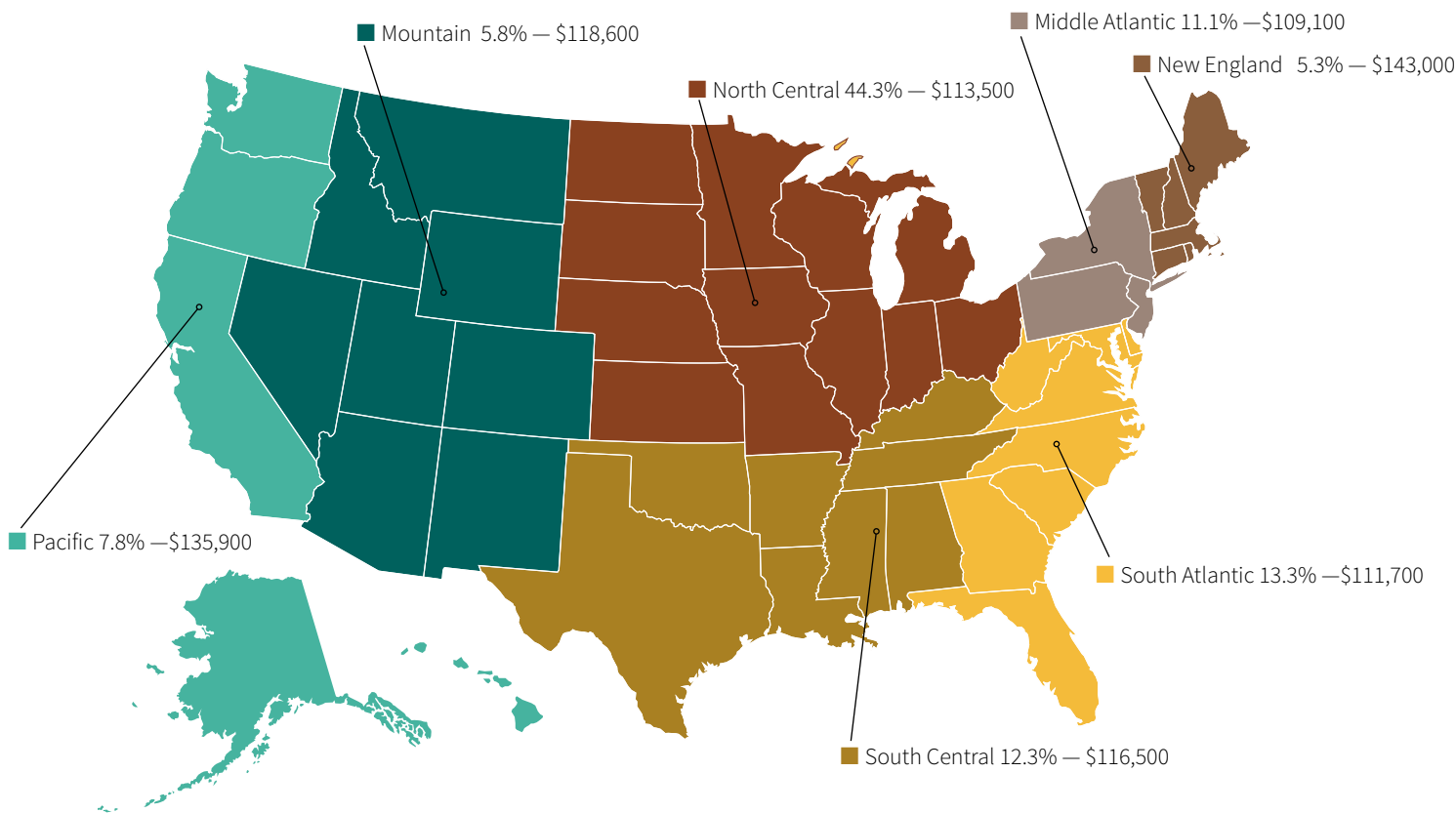
Average Salary by Seniority

Years with current company (% of response)	Salary
1-2 (20.1%)	\$102,900
3-5 (15.6%)	\$116,400
6-10 (16.6%)	\$108,300
11-15 (11.8%)	\$113,500
16-20 (10.4%)	\$123,400
21-25 (7.2%)	\$115,600
26+ (18.4%)	\$137,300

Average Salary by Company Size

Annual corporate revenues (% of response)	Salary
Less than \$25 million (26.9%)	\$105,400
\$25 million-\$50 million (11.2%)	\$111,100
\$51 million-\$100 million (11%)	\$131,500
\$100 million-\$500 million (16.5%)	\$123,200
\$500 million-\$1 billion (7.8%)	\$115,500
\$1 billion-\$20 billion (20.1%)	\$117,400
More than \$20 billion (6.5%)	\$142,100

**Average Salary by Geographic Region
(% of response)**



workers to fill open positions. A less-than-adequate technical training pipeline and the industry’s inability to connect with young people as they decide on a career are leaving a worrisome void.

“In West Michigan, we have a tight labor pool,” said a C-suite executive at a mid-size medical device manufacturer. “Skilled workers come at a premium. . . . It’s an expensive and difficult challenge for a company our size when revenues have been flat for the past couple of years.”

An engineering manager at a small wood products/furniture firm lamented that “our county has an average unemployment rate below 3%. There are virtually no workers available who actually want to work.”

Soft skills are hard to come by, said a good number of respondents. A lean/continuous improvement manager at a small building equipment company said his biggest HR challenge is “hiring people with life skills,

who come to work every day, on time, and participate in discussions to improve the process.”

A human resources manager at a paper/printing company described her biggest hurdle as “finding people with a good attitude and a willingness to learn.” Right now, she’s struggling to fill operator, inspector and maintenance technician jobs.

On the flip side, employers could do a better job of making soft skills more of a priority in the hiring process. “We tend to hire on qualifications, while our internal data tells us cultural fit is the mostly likely determinant of long-term success and retention,” said a lean/continuous improvement manager who works at a medium-sized building equipment company.

An aging workforce was also on the minds of many; nearly three quar-

What matters most to you about your job? (% of response)

Base Salary	17.8%
Benefits	4.8%
Career Advancement Opportunities	8.7%
Company's Recognition of the Importance of Manufacturing Operations	5.9%
Continuing Education/Training	2.4%
Flexible Schedule	5.7%
Job Stability	18.8%
Recognition of Your Importance to Company	10.8%
Relationships with Co-Workers	4.1%
Vacation Time	0.5%–
Challenging Work	20.4%

How satisfied are you with your current job? (% of response)

	2015	2016	2017
Very Satisfied	31	29	30
Satisfied	43	44	42
Neither satisfied nor unsatisfied	16	16	17
Unsatisfied	8	8	8
Very unsatisfied	2	3	2

How satisfied are you with manufacturing as a career path? (% of response)

	2015	2016	2017
Very satisfied	43	41	47
Satisfied	42	44	37
Neither satisfied nor unsatisfied	10	12	12
Unsatisfied	3	4	3
Very unsatisfied	1	<1	<1

ters of respondents said the issue was either a mild or big concern.

“There seems to be no effort to train people to adequately fill positions that will be left empty by individuals retiring in the next few years,” wrote a quality manager whose workplace has machine maintenance and operator jobs to fill.

Although the oldest members of the Millennial generation are now entering their late 30s, integrating this group into the workforce continues to be a struggle at many workplaces. An engineering manager at a large plastics company said engaging younger employees was his company’s biggest quandry.

What Jobs Are You Having the Most Difficulty Filling? (% of response)

Engineer (4-Yr Degree)	25%
Machinist	13.7%
Production Laborer	12%
Management	11.5%
Technician	11.8%
Maintenance Technician	10.3%
Misc Skilled Trades	8.2%
Welder	7.9%
CNC	6.5%
Sales	5.5%
Quality	5.3%
Logistics	4.3%
Tooling	4.1%
Finance/Accounting	2.9%
IT	1.9%
Customer Service	1.7%
Press Operator	1.7%
Purchasing	1.7%
EHS	1%
Lean Expert	1%
R&D	1%
Plant Manager	0.7%
Product Manager	0.7%

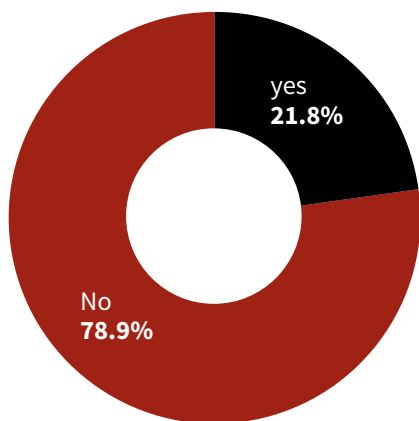
A few respondents mentioned the government overreaching on its regulations, with policies like the overtime rule changing the description of salaried workers, OSHA public reporting of workplace accidents and the requirement of healthcare plans to cover contraceptives. Drug use of new employees and the inability of new recruits to pass a drug screening popped up more than a few times.

Performance review practices also met with some criticism for being too limited in scope. One respondent, an R&D manager for a plastics company, said her company’s yearly review system “pretty much guarantees people will be rated as ‘successful’ rather than ‘exceptional’ and then we’re quite locked into a raise that is about cost-of-living adjustment. People don’t feel rewarded—they feel trapped.”

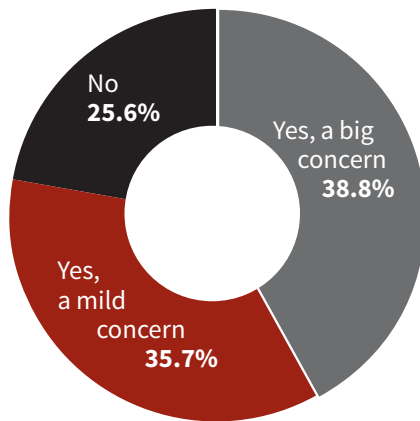
Another frequent HR concern (17 respondents mentioned it specifically) was rising healthcare costs.

“We have seen nearly a 50% increase in cost over the past two years,” said a 20-something financial manager/controller in the

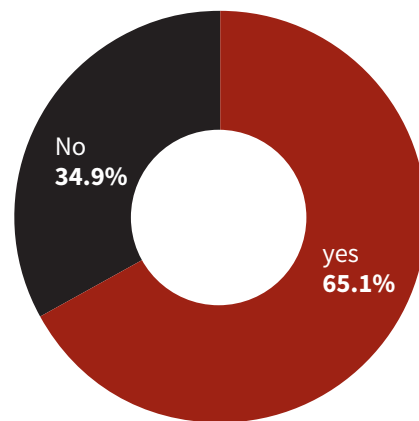
Has your company location added an apprenticeship program in the past two years?



Is an aging workforce a concern for you in the next five years?



Has your company location struggled to fill a position in the past year due to a lack of skilled candidates?



consumer goods/durables industry.

“Healthcare costs are outpacing inflation,” said a vice president of purchasing/procurement at a manufacturing company with revenues of \$100 to \$500 million. “This hits lower-paid employees the hardest.”

Q: What is the Biggest Challenge Facing the Manufacturing Industry?

Manufacturing is less impermanent, requires more capital to start and takes up more physical space than other areas of the economy, so it makes sense that nimble response time and flexibility would not be among its strongest suits. But some respondents worried that leaders are actively resisting change, that inflexibility is pathology rather than an obstacle to creatively strive to overcome.

A sales/marketing manager in his 20s, in the metals sector, was struck by the unwillingness of management to consider fresh approaches. “Because I have only been in this role for a couple of years, my ideas are not relevant [to my bosses],” he said. “We need to change and adapt to new innovations so we can stay open and competitive, or else other countries will take all our business.”

“Manufacturers don’t seem interested in changing their product, approach, etc., to keep up with changes in the world,” said a female EHS leader in the apparel industry. “I understand that people do not like change, but if we don’t change approaches and even products, we

will never adapt to the world as it is now. In my industry, more time is spent blaming government, laws and people than figuring out a way for the company to remain innovative and relevant in the current economy.”

Changing the perception of manufacturing among Millennials was a notable concern, as were trade imbalances, keeping pace with changing technologies, insufficient incentives to reshore and manufacturing’s comparatively low return on capital that makes it less attractive to Wall Street than other investments.

Q: What Jobs Are You Having the Most Difficulty Filling? (Hint: Engineers, and more engineers)

Last year, the most unfilled jobs were, in ranking order, engineer with a bachelor’s degree or above, industrial maintenance, quality specialists and sales. This year, engineer still held the top spot, with 25% of respondents having difficulty filling those jobs, but it was followed by machinist (13.7%), production laborer (12%) and management (11.5%)

Q: With the Shift in U.S. Presidential Administrations, What, If Any, Adjustments Do You Anticipate Having to Make in Your Workforce Policies and Approaches to Hiring?

The survey took place in November and December, after the U.S. presidential election but a good month before the inauguration. At

Curious About Bonus Pay? Here's What the Top Manufacturing Jobs Offer

Bonuses can make or break a manufacturing leader's salary—or at least provide a cushion in the good years to pay off debt, save for retirement or invest in a small Maldivian island. With that in mind, in our 2017 Salary Survey, we asked respondents about their bonus pay separately from their salary. More than half responded that they received it. Overall, the average lagniappe was \$29,200.

Here are the job categories in our survey that had the highest percentage of respondents sharing information on bonus pay, and what these particularly performance-driven people took home.

Average Bonus Pay in 2017

Job Title	Average Bonus Pay in 2017 (of those indicating they receive it)
Corporate/Executive Management	\$72,700
Vice President, Operations	\$56,550
Director, Manufacturing/Production	\$32,400
Lean/Continuous Improvement Manager	\$11,300
Engineering Manager	\$12,600
Plant/Facilities Manager	\$15,800
Sales/Marketing Manager	\$23,600

the time, most respondents felt the change in administration would have a negligible effect on their businesses. Of those who did anticipate adjustments, a number expected an easing of governmental regulations.

“I hope for improvements in the regulatory process and in pro-growth policies,” said a vice president of manufacturing/production at a small automotive company. “Improvements in our education system will take longer to have a positive impact.”

“If excessive regulations are reduced and taxes adjusted to give a level playing field versus imports, we can probably increase production and add jobs,” said a consultant with more than 25 years in manufacturing.

A few respondents mentioned they had no idea what to expect. “Be prepared for totally unforeseen policy changes from the new ‘loose-cannon-in-chief,’” predicted a 60+ sales/marketing manager at a large electronics company. An executive at a West Coast plastics company that has difficulty filling machine operator and packing positions said that potential deportations of undocumented workers “may cause a worsening labor shortage.”

A manufacturing vp of a small metals company was hopeful that “more work will be brought to the United States and the corresponding demand for our services will allow more margin in our industry.”


In our 2017 Salary Survey, we asked, among other open-ended questions, “What Is the Biggest Challenge Facing the Manufacturing Industry Today?” Respondents were concerned about finding and training skilled workers, the lack of soft skills in new recruits, implementing new technology effectively on the shop floor and pressure from foreign competition, to name a few.

Here are some of the most astute responses, arranged by age group, from a cross-section of people.

21-29 year-olds

“In the food and beverage processing industry, I believe the biggest challenge is the shift in focus towards food safety and conformance with FSMA regulations. The shift in paradigm in spending towards sanitary design is something that every plant will have to embrace.”—*male, engineering management, \$100-\$500 million company.*

“Balancing the roles of machine and human interaction in intelligent manufacturing environments.”—*engineering management, chemicals industry.*



“Having management think that because I have only been in this role for a couple years, my ideas are not relevant. They need to change and adapt to new innovations so we can stay open and competitive, or else other countries will take all our business.”
—*male, sales/marketing management, metals industry.*

30-39

“Application of technology that reduces labor cost and time to manufacture from the shop floor to the back office.”—*male, purchasing/procurement/sourcing management, industrial machinery.*

40-49

“Growth opportunities within various industries in manufacturing. Which leads to slow development periods in my career path.”— *female, manufacturing/production management, chemicals.*

“I think it is lack of flexibility, meaning that manufacturers don’t seem interested in changing their product, approach, etc. in order to keep up with changes in the world. I understand that people do not like change but if we don’t change approaches and even products, we will never adapt to the world as it is now. In my industry, more time is spent blaming government, laws, and people than figuring out with a way for the company to remain innovative and relevant in the current economy.”—*female, Environmental Health and Safety management, 11-15 years in manufacturing.*

“Rapid need for engineers to be talented in both electrical as well as mechanical technologies.”—*male, engineering manager, automotive/transportation.*

50-59

“The biggest challenge is the raising pressure to manufacture with less and less cost in order to be able to compete with the low salary countries. As long as this is not being recognized by government and companies and companies only follow the idea “How

can I get rich fast?” more and more manufacturing jobs will disappear.”—*male, IT/IS management, 11-15 years in manufacturing.*

“The constant need to reduce cost yet maintain quality, on-time delivery and revenue with drastically reduced resources.”
—*female, sales/marketing management, \$1 billion-\$20 billion company, construction/building equipment manufacturing.*

“Many US manufacturers seem to be stuck in old ways of treating employees and have a difficult time creating cultures of continuous improvement where employees’ minds are engaged.”—*male, corporate/executive management, \$100-\$500 million industrial machinery company.*

“Maintaining profitability as we bridge the gap between the old school processes of management and operation, and the automation and technology that is now necessary for both front and back office processes in our current global marketplace.”
— *female, financial management/controller, metals.*

60+

“Labor. High school doesn’t prepare them for even the most basic positions.”—*male, vice president of manufacturing/production, 26+ years in manufacturing.*

“I have seen a move away from in-house engineering. I believe that relying too much on integrators to design and install systems carries with it too many potential pitfalls in getting systems that meet users’ needs.”— *male, engineering management, pharmaceuticals/healthcare.*

“Although it has varied in degrees of the years, I still think the biggest challenge is the low return on the capital invested for most manufacturing entities. Not very attractive to Wall Street nor the current individual expectation to get rich quick.”—*R&D/product development, aerospace & defense.*