

Trends in Manufacturing Operations



Summary Results | August 2021

EXECUTIVE OVERVIEW

Between July and August 2021, Gatepoint Research invited selected IT, Manufacturing, Engineering, Operations and Quality Assurance executives in the discrete manufacturing industry to participate in a survey themed *Trends in Manufacturing Operations*. 105 executives have participated to date.

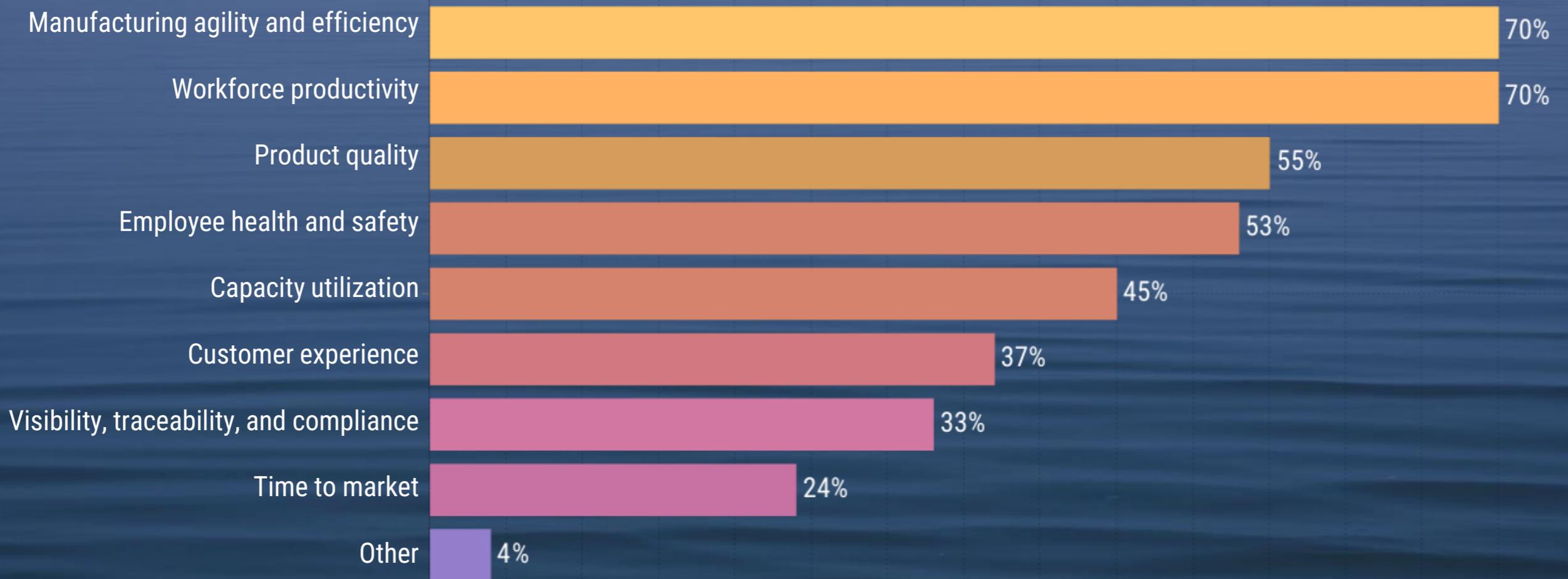
- Management levels represented are all senior decision makers and influencers: 11% hold CxO or VP titles, 19% are directors, 56% are managers, and 14% are Quality/Operations engineers.
- Respondents work for companies ranging in size from \$100 Million in annual revenues to more than \$5 Billion.

Manufacturing operations rely on skilled workers and efficient processes to be successful. Workers learn to efficiently and safely do their jobs from other expert workers, or from detailed instructions and training – but what if that's not enough to sustain continuous process improvement? What are companies doing to maintain a safe work environment, upgrade workers' skills, and continuously improve their operations?

This survey asked respondents to report:

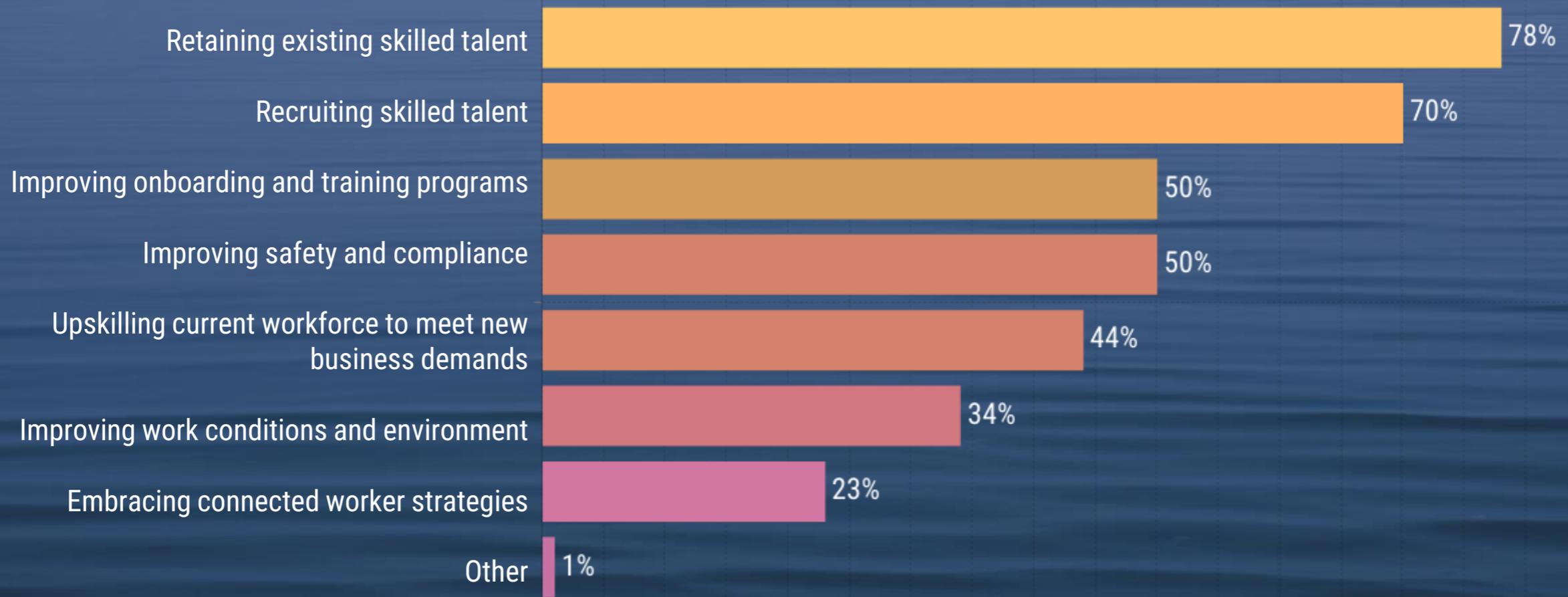
- What key business objectives and workforce priorities are driving their organization over the next 12 months?
- How are they helping workers improve manufacturing and service processes?
- Are their current workforce instructions, training, and knowledge transfer methods effective? Have they considered using Augmented Reality (AR) in this area?
- What use cases would benefit from AR and connected worker strategies?

What key business objectives are driving your organization over the next 12 months?



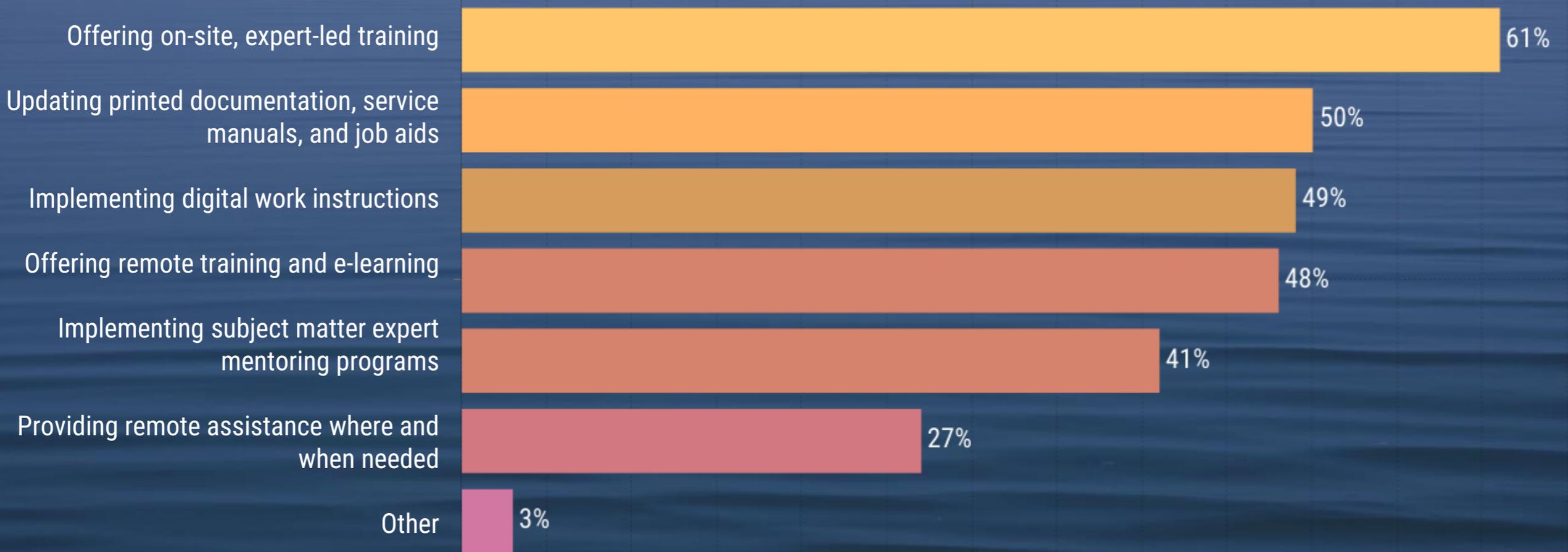
In the discrete manufacturing industry, agility, efficiency, and workforce productivity are equally cited by 70% of respondents as key business objectives driving their organizations. More than half agree that product quality (55%) and/or employee health and safety (53%) round out the top four drivers over the next twelve months.

What key workforce priorities are driving your organization over the next 12 months?



By a wide margin, the top two workforce priorities indicated by respondents are retaining and recruiting skilled talent (78% and 70%, respectively). Half say improving both onboarding/training programs and safety and compliance are a key priority. Hand in hand with these top four objectives are the next two: upskilling the workforce (44%), and improving work conditions (34%).

How are you providing information to help employees improve manufacturing and service processes?

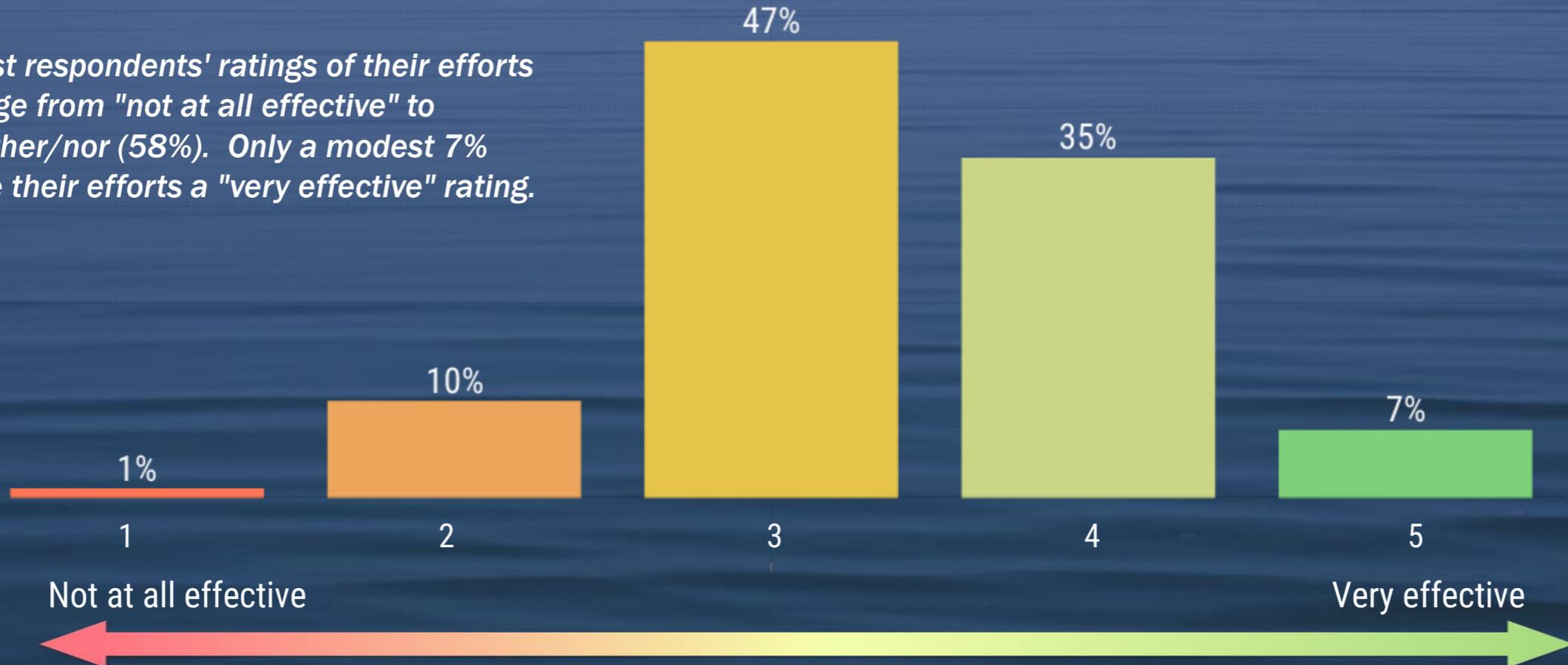


Cited by 61% of respondents, "on-site, expert-led" training is how they provide employees with information they need to improve processes. Printed documentation (50%), digital work instructions (49%), and remote or e-training (48%) are some other common methods.

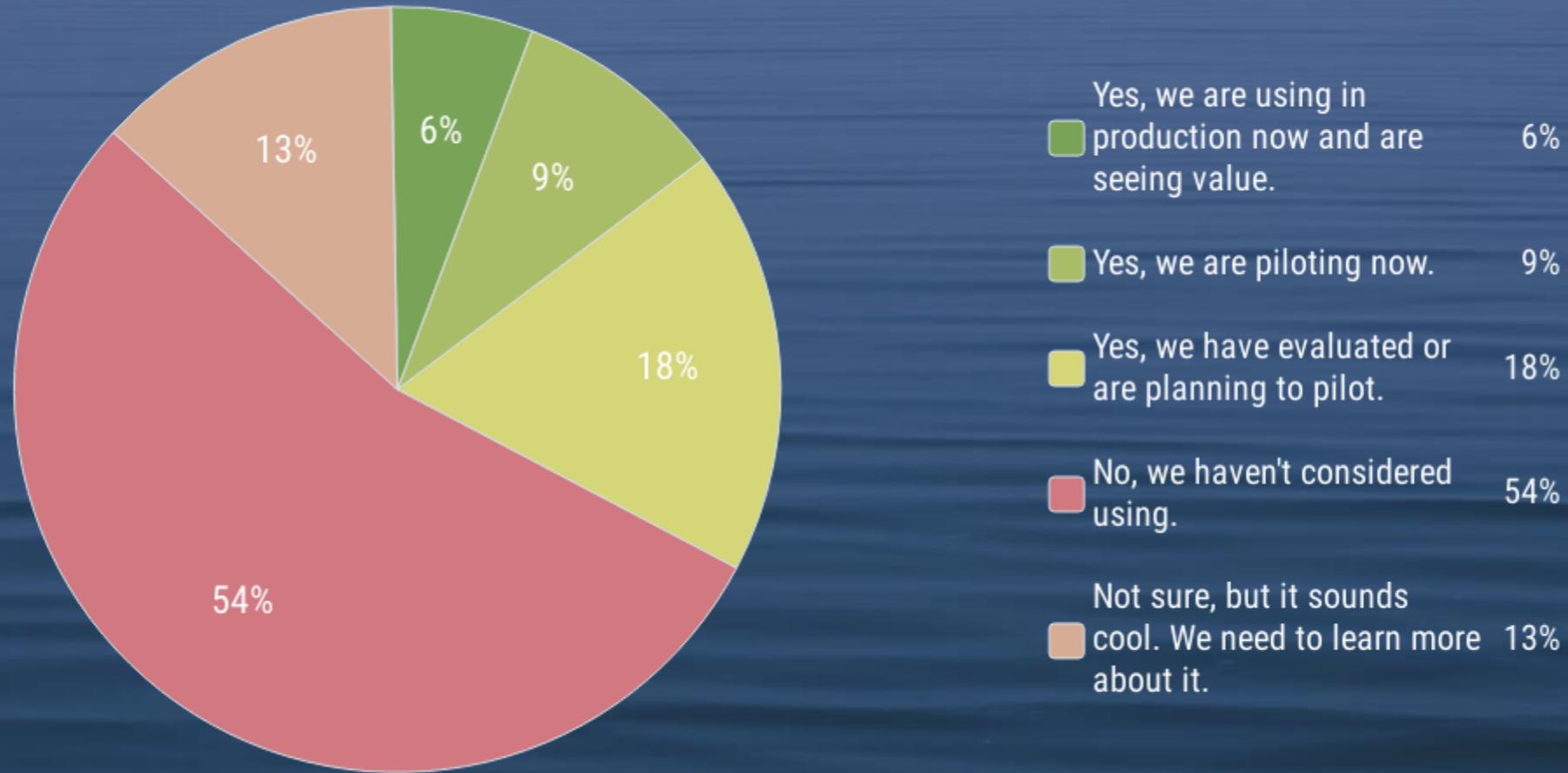
How effective have your efforts to improve work and service instructions, training, and knowledge transfer been to date?

(Rate 1 to 5: 1 = not at all effective; 5 = very effective)

Most respondents' ratings of their efforts range from "not at all effective" to neither/nor (58%). Only a modest 7% give their efforts a "very effective" rating.

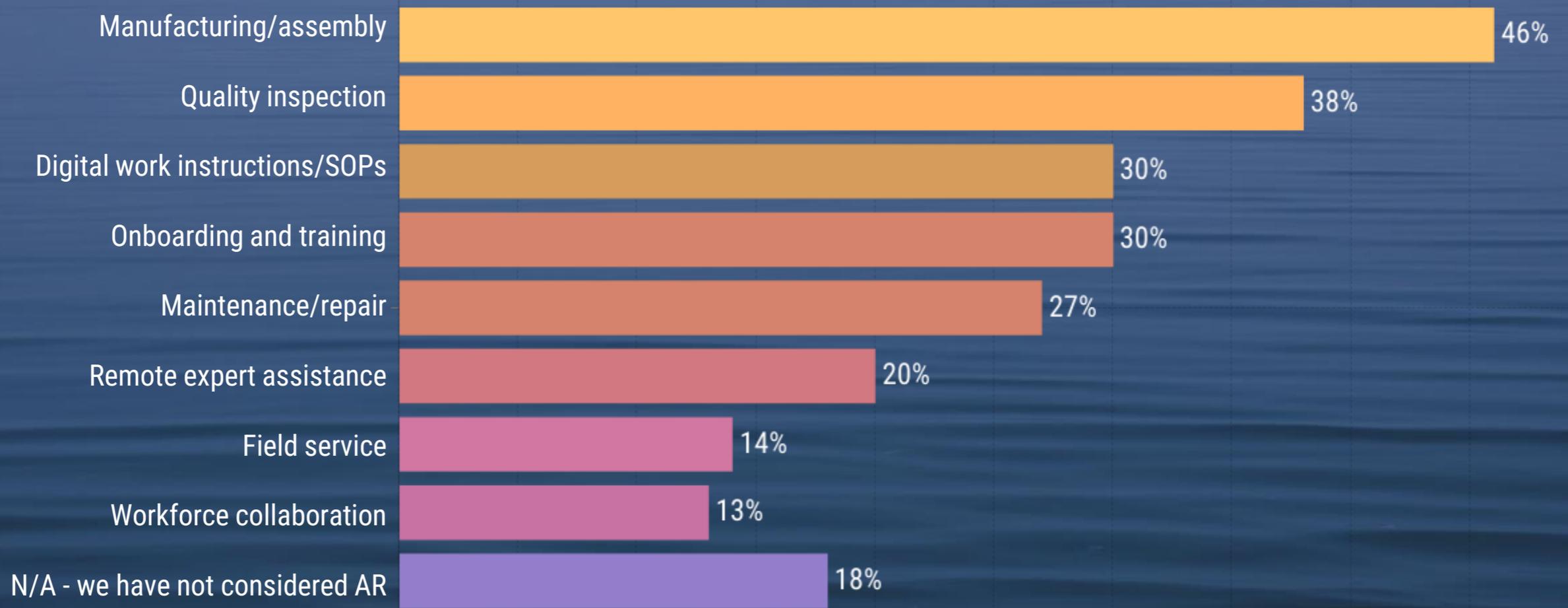


Have you considered using Augmented Reality (AR) technology to improve manufacturing and service processes?



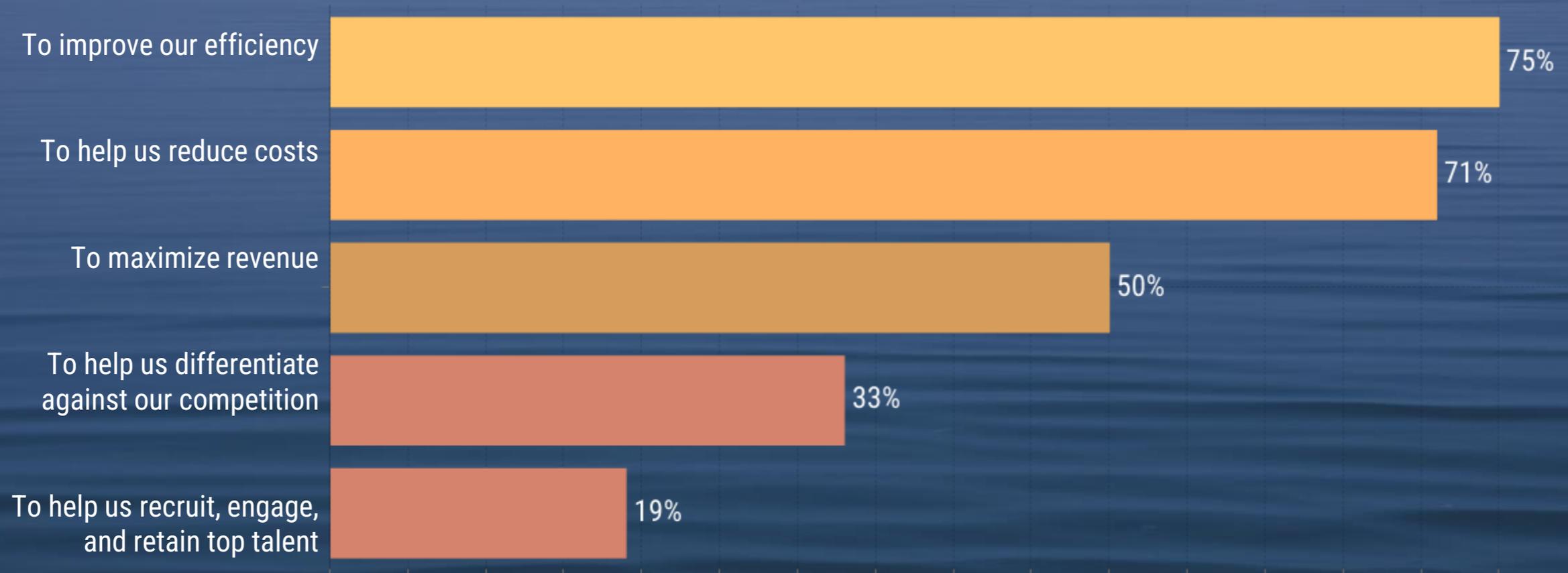
While 15% are either using or piloting AR, and another 18% are planning its use, more than half of respondents hadn't considered it. 13% are interested in learning more.

Which use cases have you considered for AR and connected worker strategies?



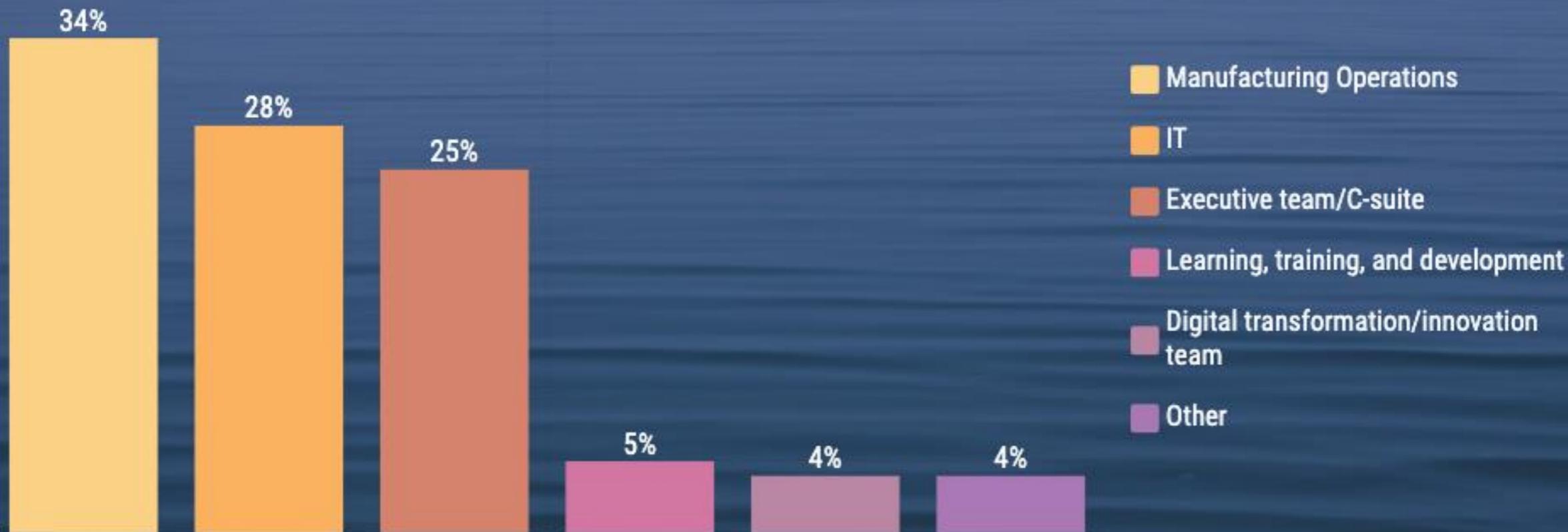
AR and connected worker strategies apply to a long list of use cases, with manufacturing and assembly getting the highest consideration among respondents (46%). Notably, while 54% said they hadn't thought about AR (on the previous question), many appear to have ideas about its use, as just 18% have opted out of identifying AR use cases.

How does your organization prioritize technology investments?



Three fourths of respondents say their technology investments are most likely to be prioritized if doing so means they can gain efficiency improvements. Nearly as many (71%) prioritize by cost reduction. Half are interested in maximizing revenue, a third say competitive differentiation is important, and 19% will consider technology that helps them build/retain a skilled workforce.

Which team leads the selection decision for manufacturing enterprise software solutions?



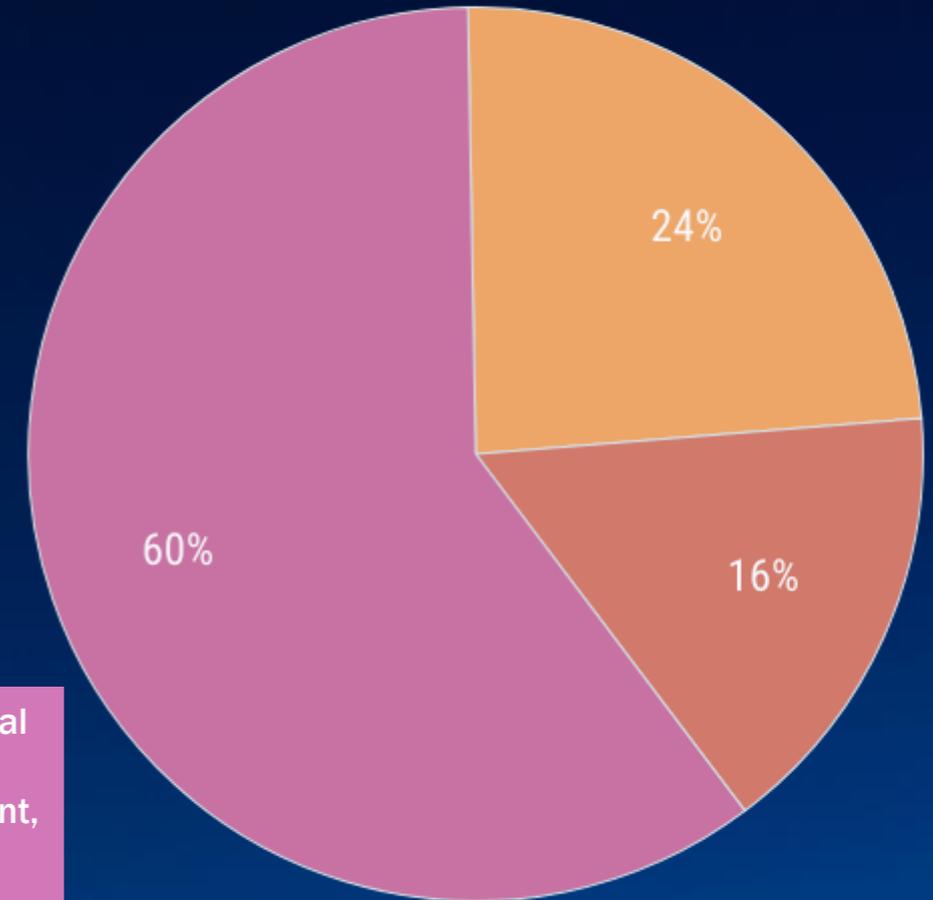
Although there is not a wide margin between three teams, 34% of survey participants rely on the Manufacturing Operations team to lead the decision when it comes to selecting manufacturing enterprise software solutions. 28% rely on IT and 25% say the executive team holds the keys.

INDUSTRY SECTORS

Responders represent a variety of discrete manufacturers.



OTHER: industrial machinery, industrial trucks, industrial valves, motors & generators, pumps, railroad equipment, farm machinery, aircraft engines, laboratory analytical instruments, etc.

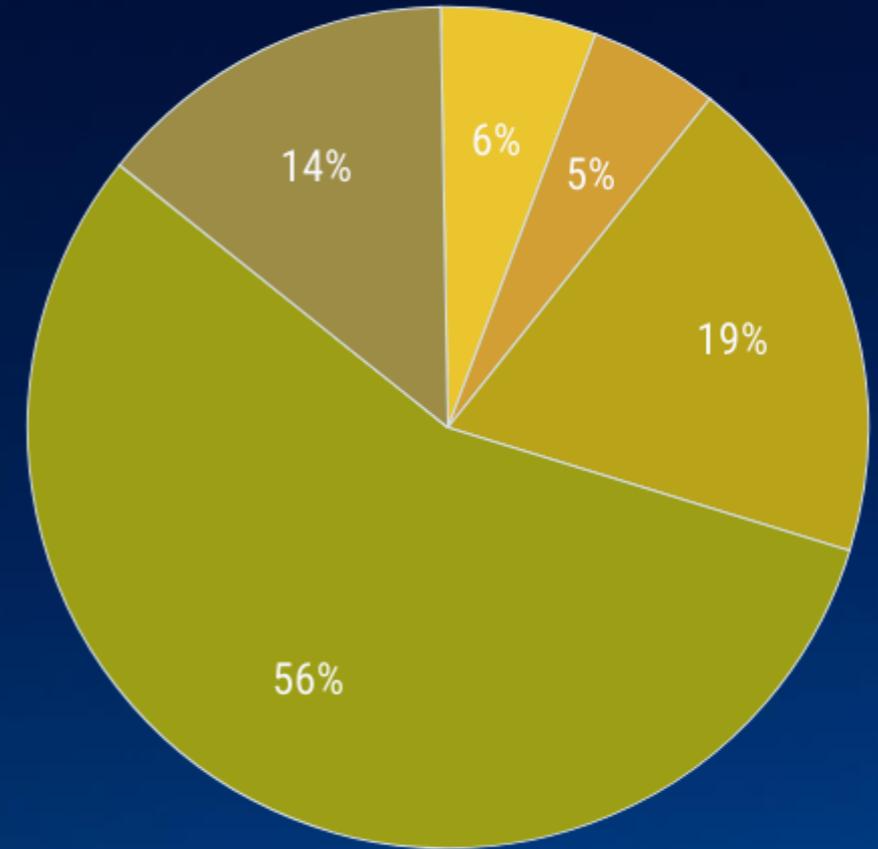


JOB LEVEL



30% of survey respondents hold director or executive level positions in their organization. The remaining majority are front-line managers and engineers.

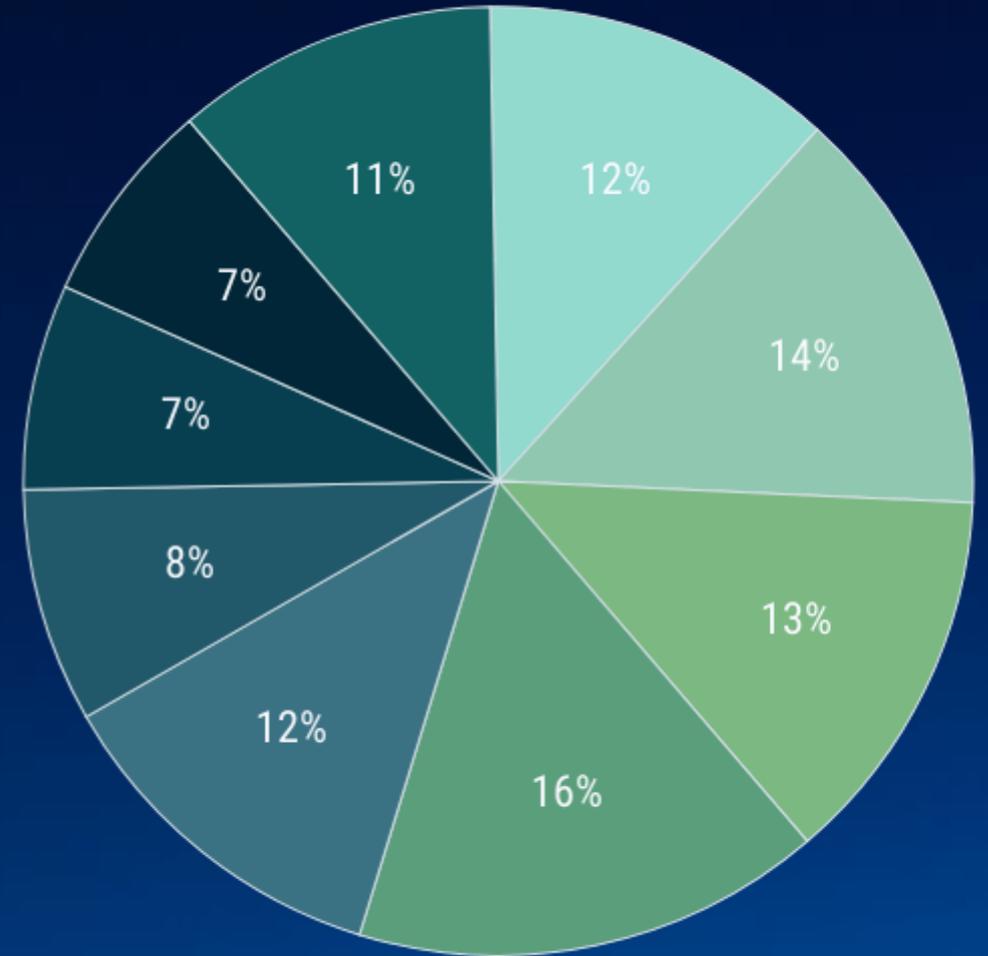
 CXO	6%
 VP	5%
 Director	19%
 Manager	56%
 Quality/ Operations Engineer	14%



REVENUE

55% of those surveyed work in large companies with revenues over \$1 Billion.

\$5B+	12%
\$3B - \$3.9B	14%
\$2B - \$2.9B	13%
\$1B - \$1.9B	16%
\$800M - \$999M	12%
\$700M - \$799M	8%
\$400M - \$699M	7%
\$200M - \$399M	7%
\$100M - \$199M	11%





PTC offers a suite of industrial augmented reality solutions that enable frontline manufacturing employees to get their jobs done quickly and accurately through step-by-step work instructions, enhanced training and knowledge transfer, and remote expert assistance.

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