



**FLUKE®**

Reliability

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# Industry Trends and Emerging Technology for 2020

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**Thomas Wilk**

Editor in Chief, Plant Services

**Accelix™**  
Webinar Series



## Thomas Wilk

*Editor in Chief, Plant Services  
Putman Media*

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- Plant Services Editor in Chief 2014 – now
- Chair, SMRP Editorial Committee, 2018 – now
- Judge, Fluke Connect Student Contest, 2015 – 2017
- Completed four marathons
- Hiked the Grand Canyon rim-to-rim in one day

# Plant Services mission

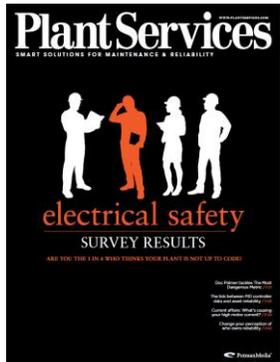
## Smart Solutions for Maintenance and Reliability

To deliver leading-edge content that showcases smart manufacturing processes and reliable asset management while generating action that promotes safe, sustainable plant operations.



# Previous surveys

Develop a fuller picture of the ways industry engages with predictive technologies, workforce issues, and electrical safety



Feb. 2018: <https://plnt.sv/1802-ES1> (background / technology)  
<https://plnt.sv/1802-ES2> (incidents / training)

June 2018: <https://plnt.sv/1806-WK>

Sept. 2019: <https://plnt.sv/1909-WK>



May 2017: <http://plnt.sv/2017-PdM1> (who makes the decisions?)  
<http://plnt.sv/2017-PdM2> (what are they deciding?)  
<http://plnt.sv/2017-PdM3> (who sees the data?)

Oct. 2018: <https://plnt.sv/1810-WB>

## 2019 takeaways

- Your data are gradually becoming as valuable as your assets.
- Thanks to resource constraints and a breadth of technology options, there is no silver bullet to overcoming the skills gap.
- To benefit from proactive maintenance, first audit and optimize preventive processes.
- Preventive processes are expanding to include big data analytics and network security basics.



## POLL QUESTION No. 1



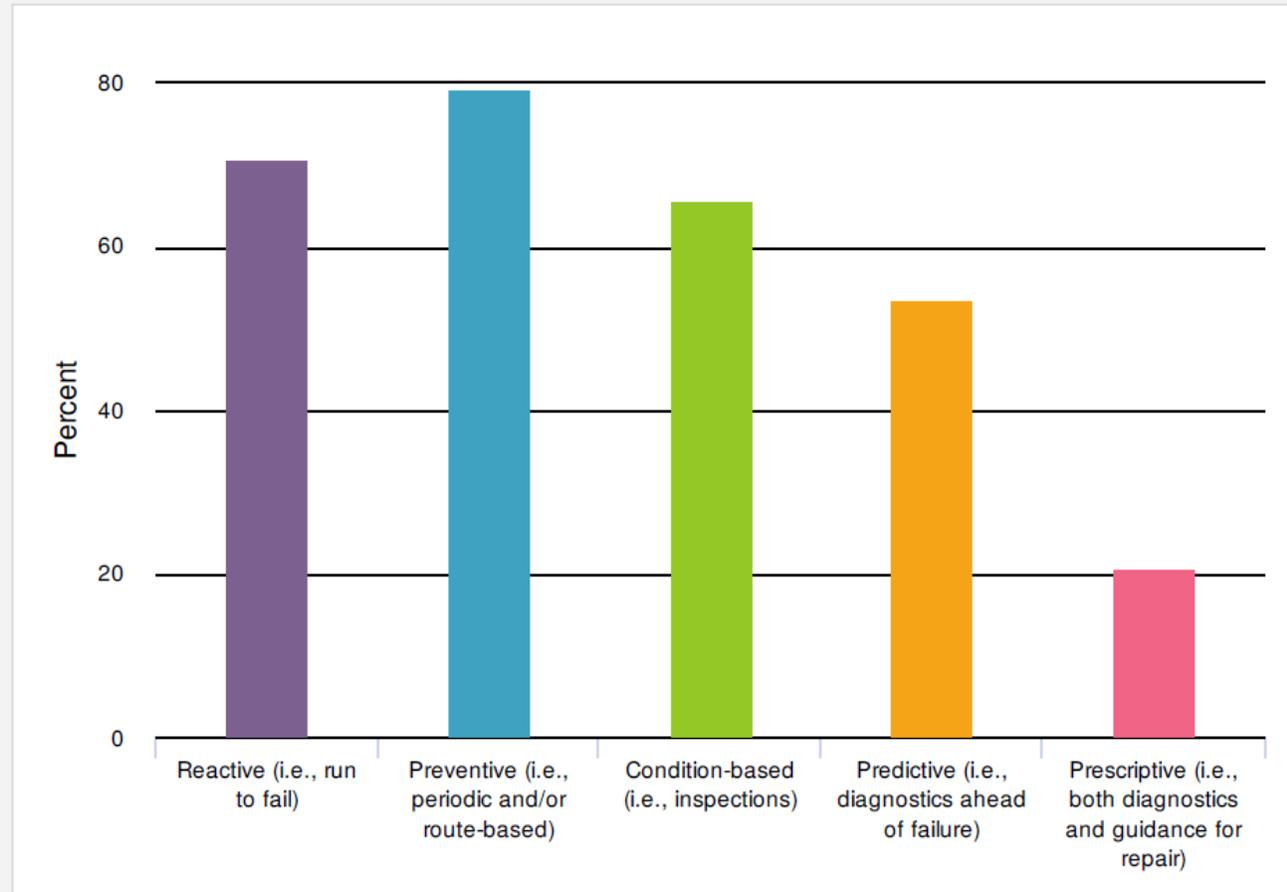
**Which types of maintenance approach is predominant at your plant?**

**(Click only one answer)**

- Reactive (run to fail)
- Preventive
- Condition-Based
- Predictive / Prescriptive

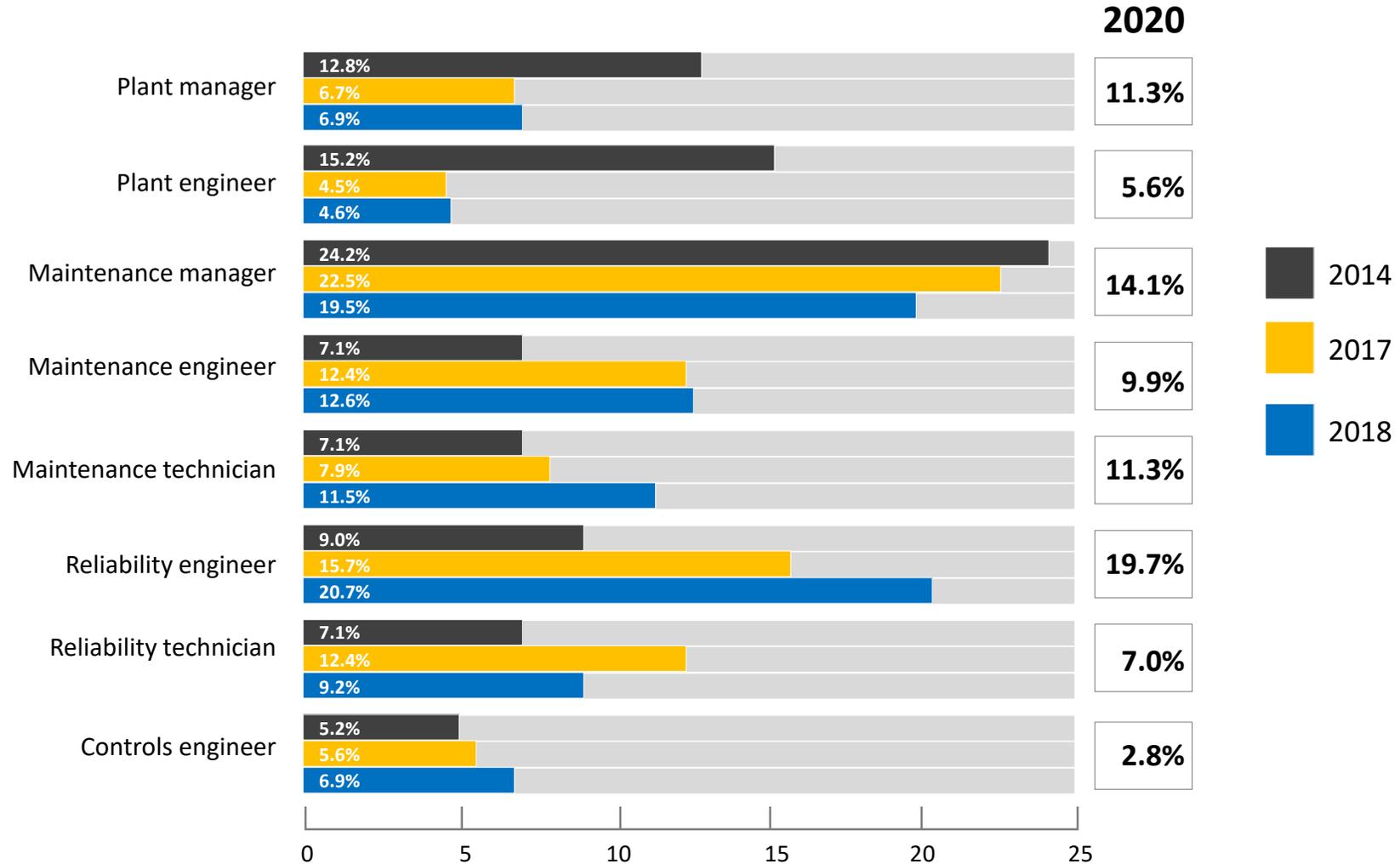
## Trend 1: Job title stability

Which types of maintenance approaches are currently deployed by your plant? (Please check all that apply.)



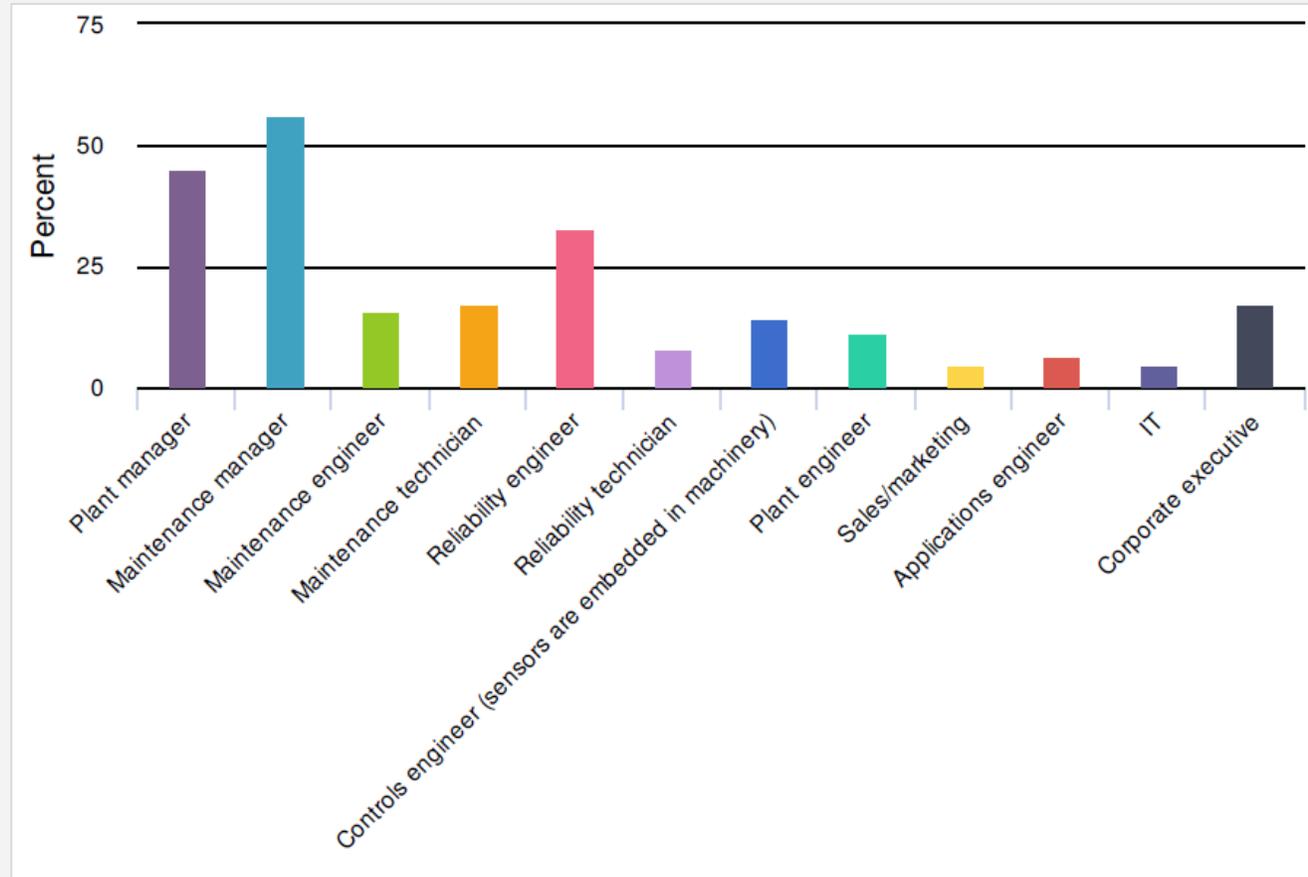
# Trend 1: Job title stability

## What is your primary job function?



# Trend 1: Job title stability

Who in your plant makes decisions on asset monitoring tools and configurations? (Please check all that apply.)



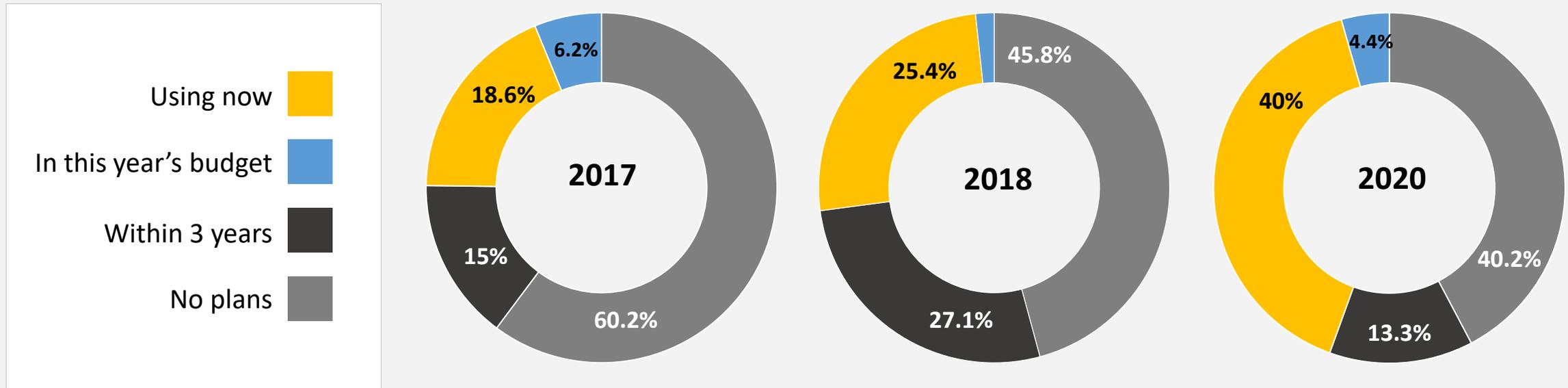
## Trend 1: Job title stability

Who in your plant makes decisions on asset monitoring tools and configurations? (Please check all that apply.)

	<b>2018</b>	<b>2020</b>
Plant manager	28.6%	45.3%
Maintenance manager	55.4%	56.3%
Maintenance engineer	25.9%	15.6%
Maintenance technician	12.5%	17.2%
Reliability engineer	36.6%	32.8%
Reliability technician	11.6%	7.8%
Controls engineer (sensors and embedded in machinery)	17.0%	14.1%
Plant engineer	17.9%	10.9%

# Trend 1: Job title stability

## Are you using OEM-enabled remote monitoring technologies or services?



## 2020 - Takeaway 1



As full-time teams shrink in size, make sure you are comfortable managing services partner(s).



## Trend 2: Technology stability

### Which PdM technologies have you deployed?

	Using now			2020
	2014	2017	2018	
Vibration	60.0%	70.5%	64.1%	72.4%
Ultrasound	45.5%	59.1%	60.9%	45.6%
Acoustic	24.7%	34.4%	21.9%	17.5%
Corrosion	33.8%	45.0%	28.6%	42.1%
Infrared	65.8%	74.8%	71.4%	57.9%
Oil analysis	62.3%	73.5%	74.6%	67.2%
Predictive modeling software	17.5%	20.6%	11.1%	19.0%
Electric motor testing	50.0%	47.0%	42.9%	48.3%

	No plans			2020
	2014	2017	2018	
Vibration	21.3%	12.1%	15.6%	15.5%
Ultrasound	32.5%	21.2%	25.0%	26.3%
Acoustic	54.5%	44.3%	57.8%	54.4%
Corrosion	43.5%	41.2%	46.0%	36.8%
Infrared	14.8%	14.5%	19.0%	15.8%
Oil analysis	17.5%	15.2%	14.3%	15.5%
Predictive modeling software	50.6%	48.9%	49.2%	48.3%
Electric motor testing	29.2%	22.0%	30.2%	27.6%

## Trend 2: Technology stability

### What data collection methods to you currently use with your PdM program?

	2014	2017	2018	2020
Paper-based system	71.7%	62.8%	66.1%	66.0%
Handheld data collector	60.1%	59.3%	62.7%	66.0%
Embedded sensors	48.6%	46.9%	57.6%	61.7%
Wireless sensors	–	29.2%	28.8%	46.8%
Internet-enabled sensors	–	12.4%	18.6%	27.7%
Industrial-grade smartphone	7.2%	7.1%	10.2%	12.8%
Consumer-grade smartphone	11.6%	18.6%	15.3%	21.3%
Industrial-grade tablet	7.2%	15.0%	25.4%	36.2%
Consumer-grade tablet	7.2%	13.3%	13.6%	19.1%
Industrial-grade PC	41.3%	39.8%	33.9%	42.6%
Consumer-grade PC	38.4%	35.4%	42.4%	42.6%

## Trend 2: Technology stability

Is your PdM system integrated with any of the following higher-level systems?

	Using now	In 2020 budget	Within 3 years	No plans
Reliability solutions Row %	36.2%	4.3%	17.0%	42.6%
Historian Row %	38.3%	8.5%	6.4%	46.8%
EAM/CMMS system Row %	46.8%	12.8%	10.6%	29.8%
EH+S solution Row %	10.6%	12.8%	12.8%	63.8%
ERP system Row %	25.5%	10.6%	17.0%	46.8%
Cloud-based analytics Row %	17.0%	10.6%	21.3%	51.1%

## 2020 - Takeaway 2



As full-time teams shrink in size, make sure you are comfortable managing services partner(s).

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The next frontier in PdM and proactive maintenance is data and systems integration, perhaps over a single platform.



## POLL QUESTION No. 2



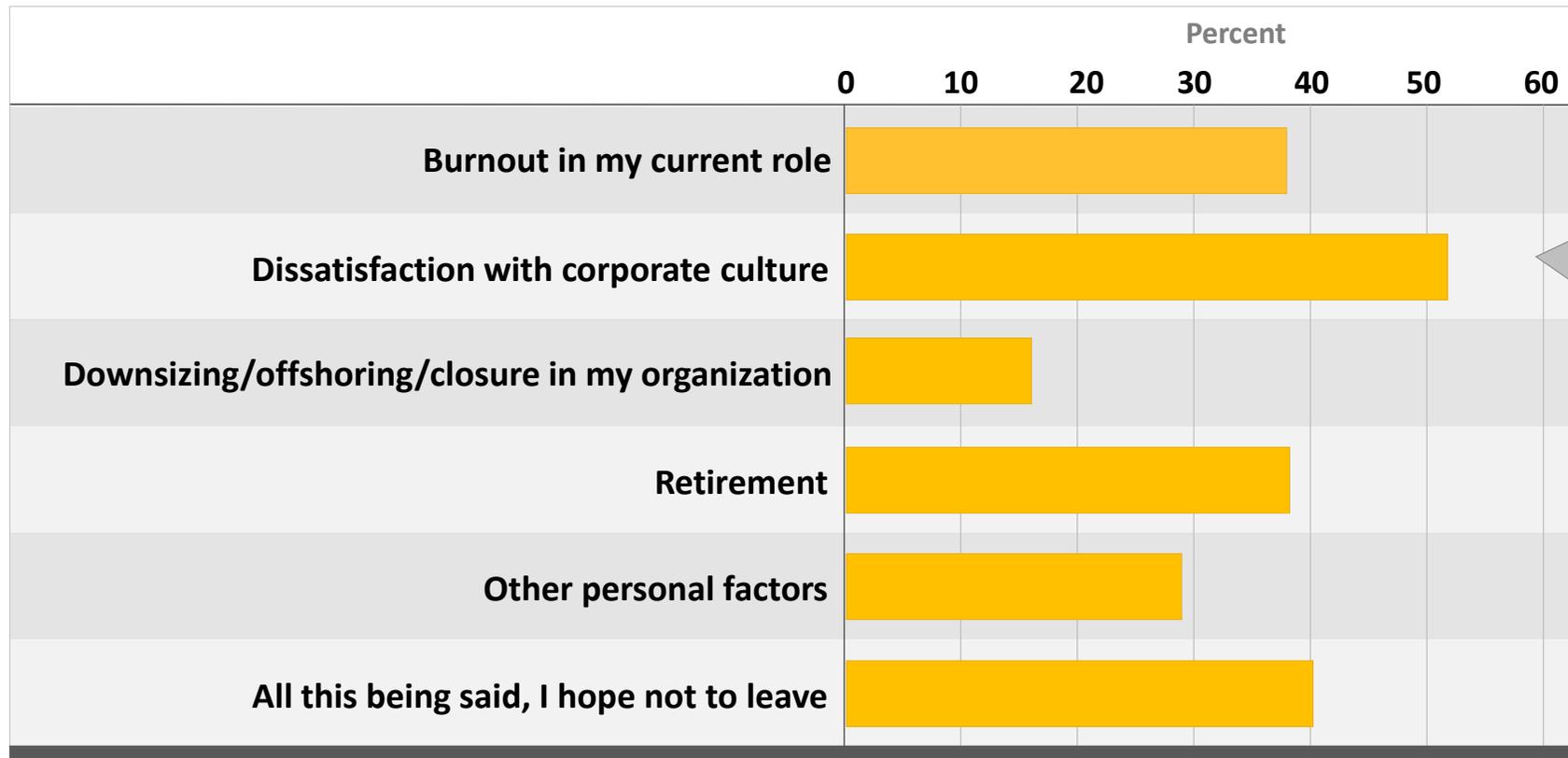
**Which of these factors would most impact your decision to stay or leave?**

**(Click only one answer)**

- Burnout in my current role
- Dissatisfaction with corporate culture
- Downsizing / offshoring / closures in my organization
- Retirement or other personal factors
- All this being said, I hope not to leave

## Trend 3: Corporate culture is key

Which of these factors would most impact your decision to stay or leave at your current organization?

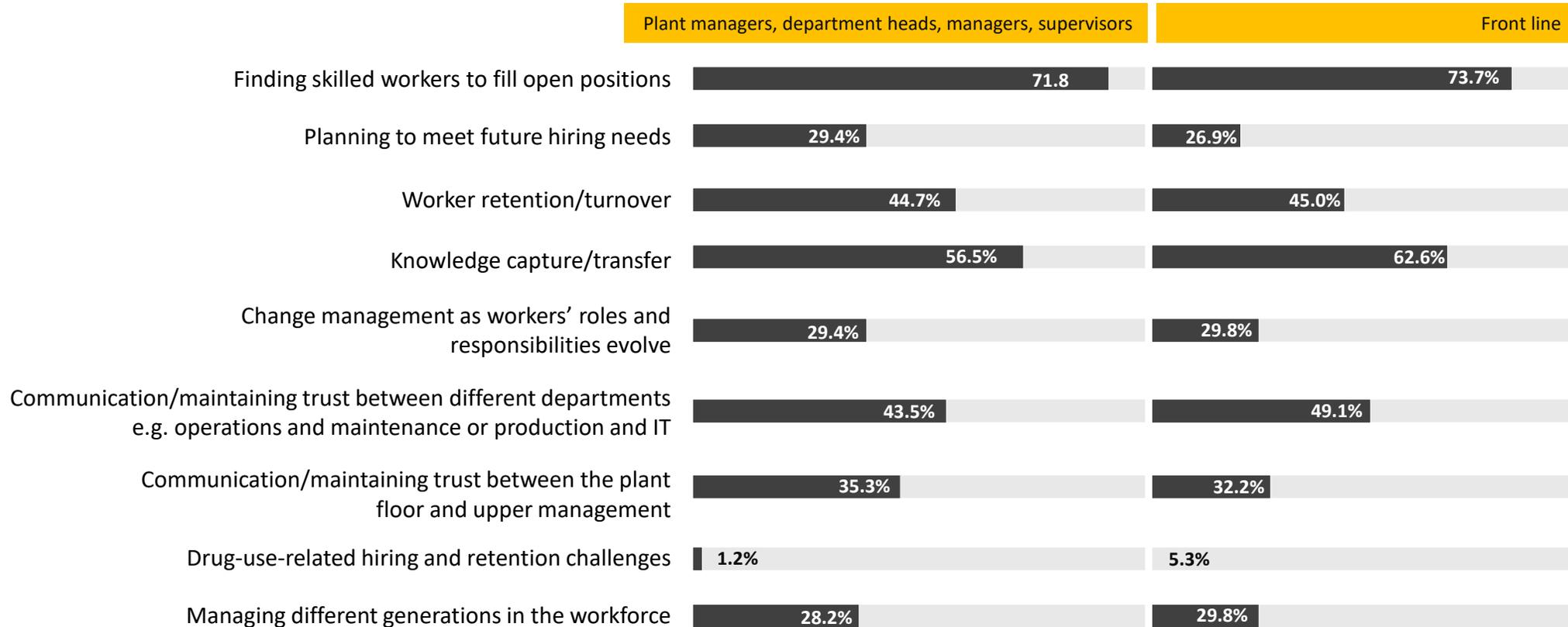


80%

of Millennial respondents said dis-satisfaction with the **corporate culture** would be their top stay-or-go factor

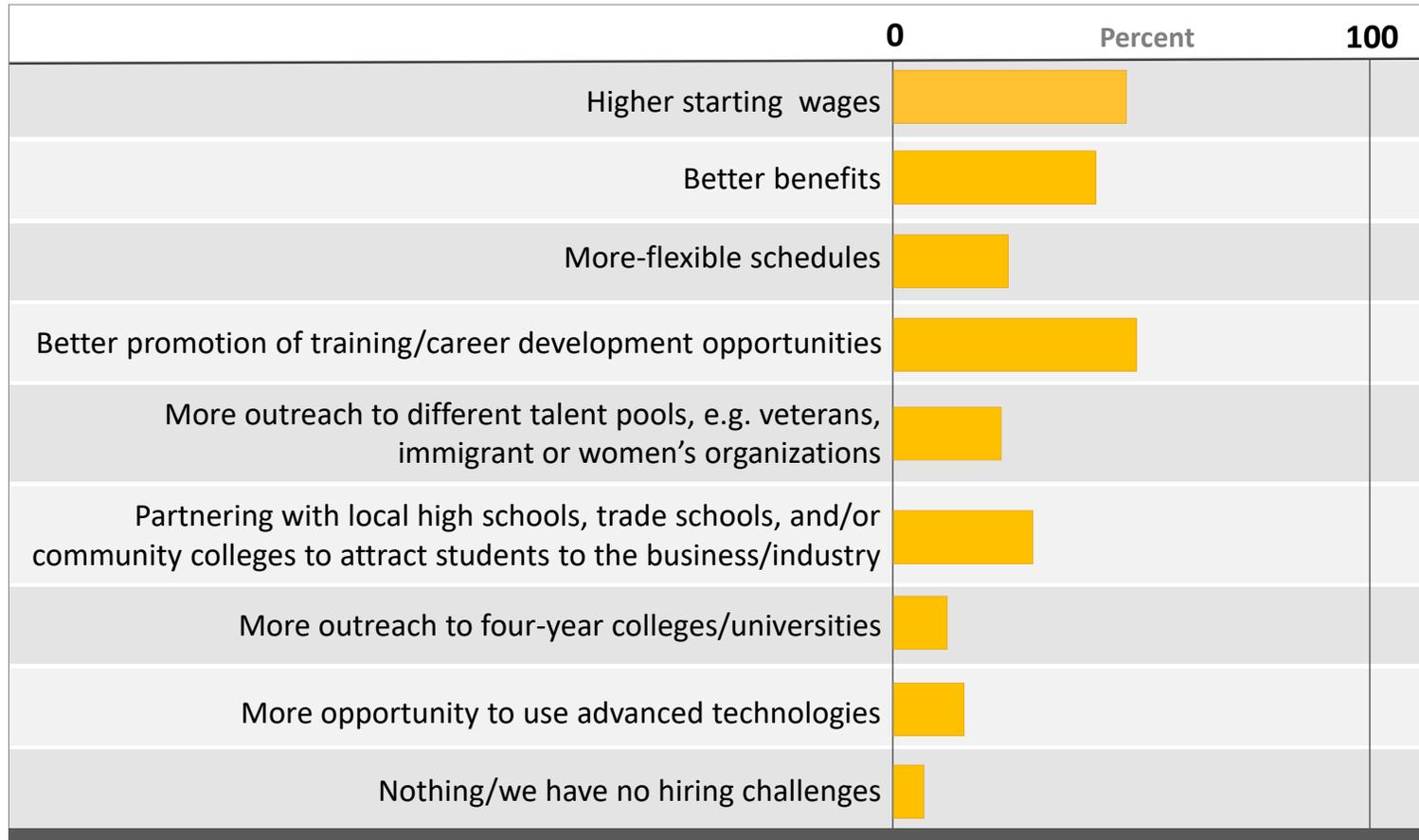
# Trend 3: Corporate culture is key

## What are your organization's biggest workforce challenges?



# Trend 3: Corporate culture is key

## What could your organization be doing differently to recruit new talent?

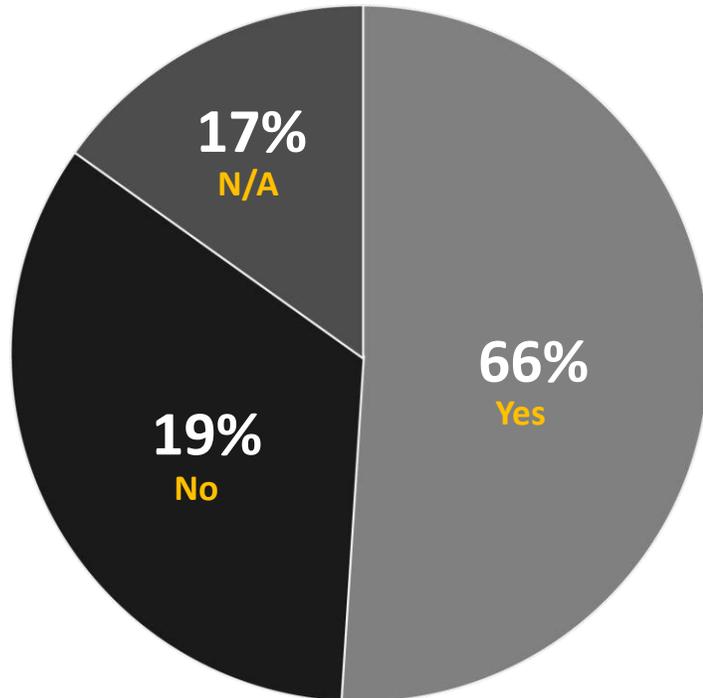


### When asked how to improve retention,

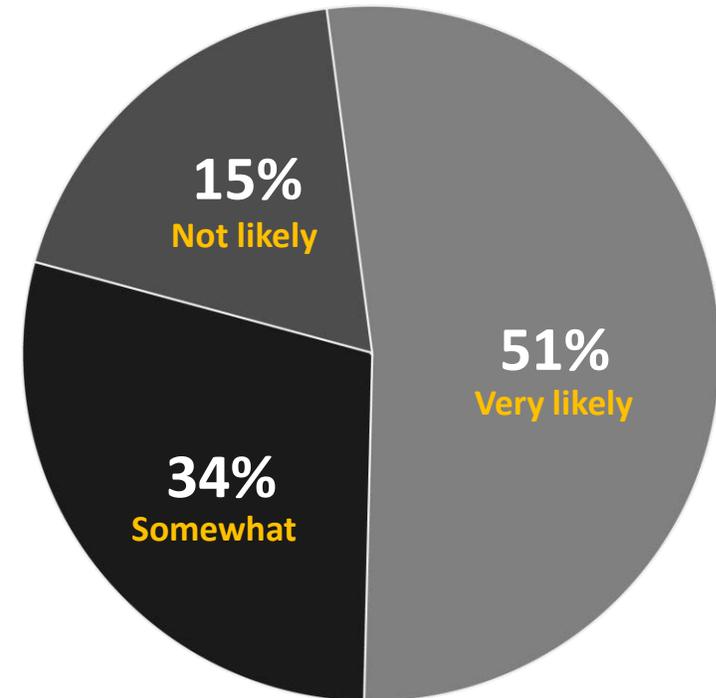
- 55% said higher starting wages
- 44% said better benefits
- 55% said training / career opps.

## Trend 3: Corporate culture is key

Have you participated in or taken advantage of any career-development programs/assistance your employer offers?



How likely are you to engage with a mentor/coach, if your company provides the opportunity?



## 2020 - Takeaway 3



As full-time teams shrink in size, make sure you are comfortable managing services partner(s).

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The next frontier in PdM and proactive maintenance is data and systems integration, perhaps over a single platform.

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Now more than ever, your corporate culture is key to future talent recruitment and retention

## Next steps

**Take the 2020 PdM Survey! Deadline: March 20** <https://plnt.sv/2020-PDM>

**Check out the Plant Services Market Research reports library!**  
<https://plnt.sv/2020-MR>

**Consult Palmer's Planning Corner, by Doc Palmer**

<https://www.plantservices.com/voices/palmers-planning-corner>

- Monthly in print and online
- Principles of planning, scheduling, and storeroom / inventory



# QUESTIONS?



Thank you!

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Editor in Chief, Plant Services

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### **DEMO**

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