

PLANT ENGINEERING

Audience Research

Industrial Maintenance Report

April 2022

Sponsored by:

ATS

CFE Media and Technology™

Table of Contents

Section	Pages
Introduction	3
Summary of Findings	4
Respondent Background	5-9
Industrial Maintenance	10-29

Introduction

Objective
The Industrial Maintenance study was conducted by *Plant Engineering* to evaluate the maintenance practices and strategies currently in place in manufacturing facilities and the effects of maintenance on productivity and profitability.

Sample
The sample for this study was selected from qualified subscribers of *Plant Engineering* with valid email addresses. Only respondents responsible for maintenance for all or part of their facilities were asked topic-related questions.

Methodology
Subscribers were sent an email from *Plant Engineering* asking them to participate in this study. The email included a URL linked to the questionnaire.

- Data collected: March 17, 2022, through March 30, 2022
- Number of respondents: 158
- Margin of error: +/-7.8% at a 95% confidence level
- Initial incentive: Drawing for one $100 Amazon.com eGift Card
- Reminder incentive: First 50 respondents to qualify and complete the survey received one $10 Amazon.com eGift Card

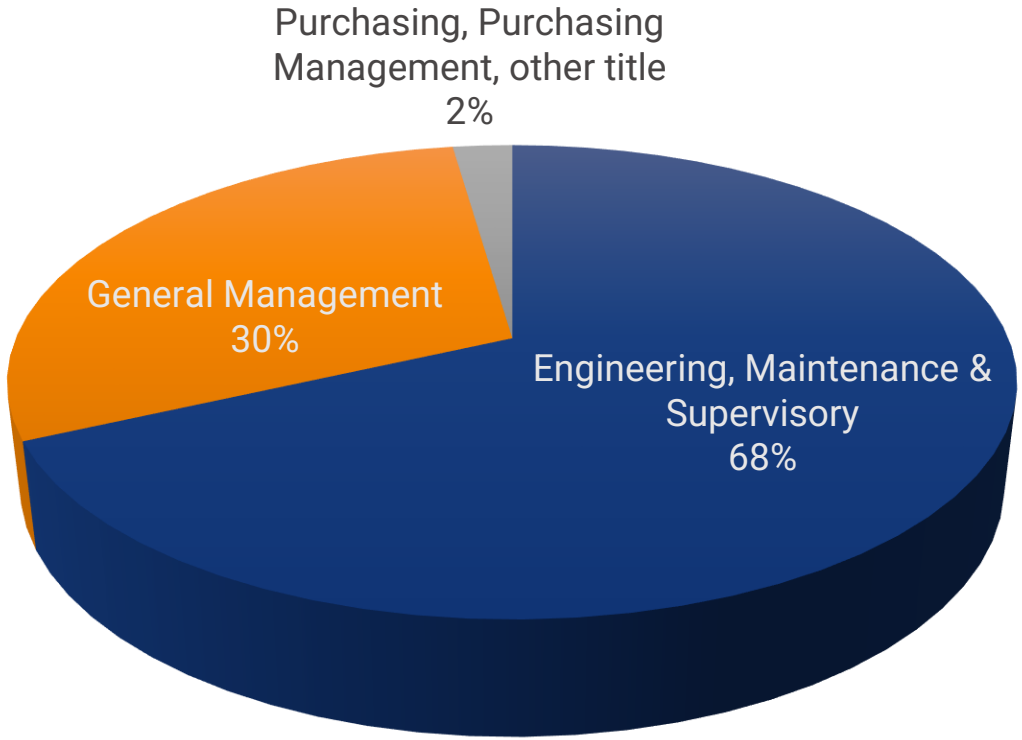
Summary of Findings

- Eight in 10 industrial facilities currently run three or more maintenance programs/strategies. The top two programs, according to respondents, are reactive maintenance (run-to-failure) and preventive maintenance.
- The average facility manages 35% of their assets with a reactive maintenance program, 38% with preventive maintenance, 14% with predictive maintenance and 10% reliability-centered maintenance.
- Eighty-nine percent of facilities use one or more computer applications to support maintenance efforts. The top two applications are a computerized maintenance management system (CMMS) and a home-grown system.
- Eight-five percent of facilities have or are planning to implement condition-based monitoring (CBM); 55% aim to improve cycle times for preventive maintenance and execute predictive maintenance with CBM.
- Thirty-nine percent of facilities allocate more than 10% of their annual operating budget to maintenance tasks, services and equipment; the average facility assigns 10.6%.
- Almost half of respondents report that their maintenance staff works more than 80 hours per week performing maintenance-related tasks; the average is 138 hours/week.
- An average of 23% of a facility's operations team is part of the maintenance department.
- Eighty-six percent of facilities outsource some or all of their maintenance operations. Since 2021, 29% of facilities have increased or greatly increased their use of outsourced maintenance services.
- The top factor leading facilities to outsource maintenance operations has changed from "agreement with manufacturer/supplier" in 2021 to "lack of skills among current staff." Lack of skills increased from 40% to 52%, surpassing the second factor, "too many specialized skills required," by 13 percentage points.
- Ninety-seven percent of facilities experience challenges when improving maintenance. The top challenge remains aging equipment (58%), but a lack of resources or staff has increased from 37% in 2021 to 49%.
- Following up to maintenance challenges, labor recruitment has become more difficult, or significantly more difficult, over the past 12 months, according to 72% of survey respondents.

Respondent Background

Primary Job Function

Which of the following best describes your job title?

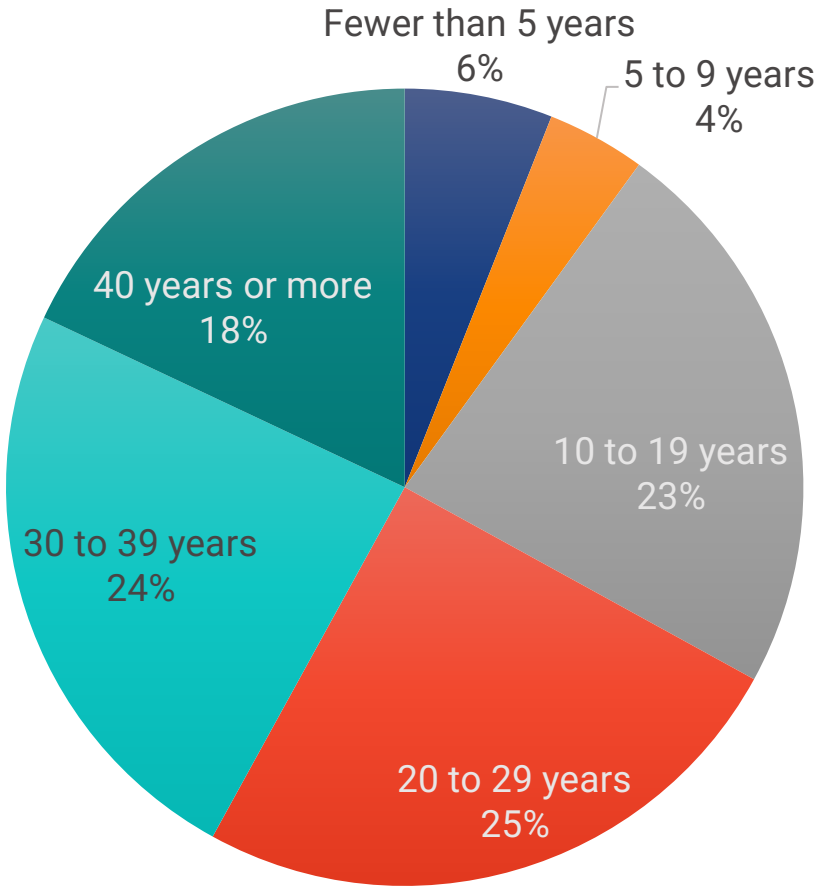


Engineering, Maintenance & Supervisory includes the following job titles: Engineer, Manager, Superintendent, Foreman, other plant engineering/maintenance title

General Management includes the following job titles: President, VP, Secretary, Treasurer, GM, Owner, Partner, other general management title

Industry Experience

For approximately how long have your worked in the manufacturing industry?

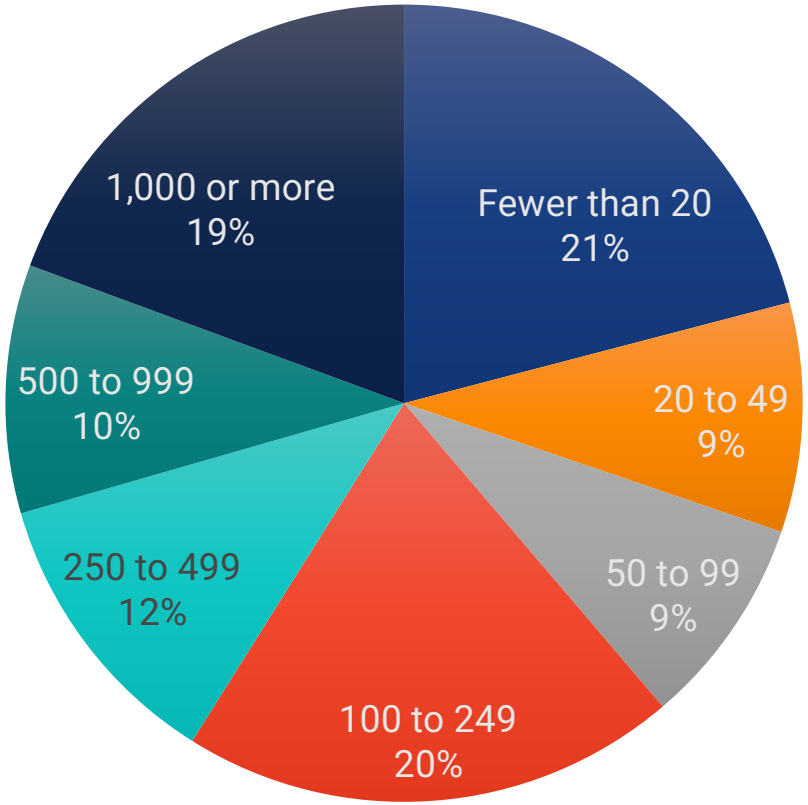


42% of survey respondents have worked in the manufacturing industry for **30 years or longer**.

The average respondent has worked in the industry for **26 years**.

Facility Size by Number of Employees

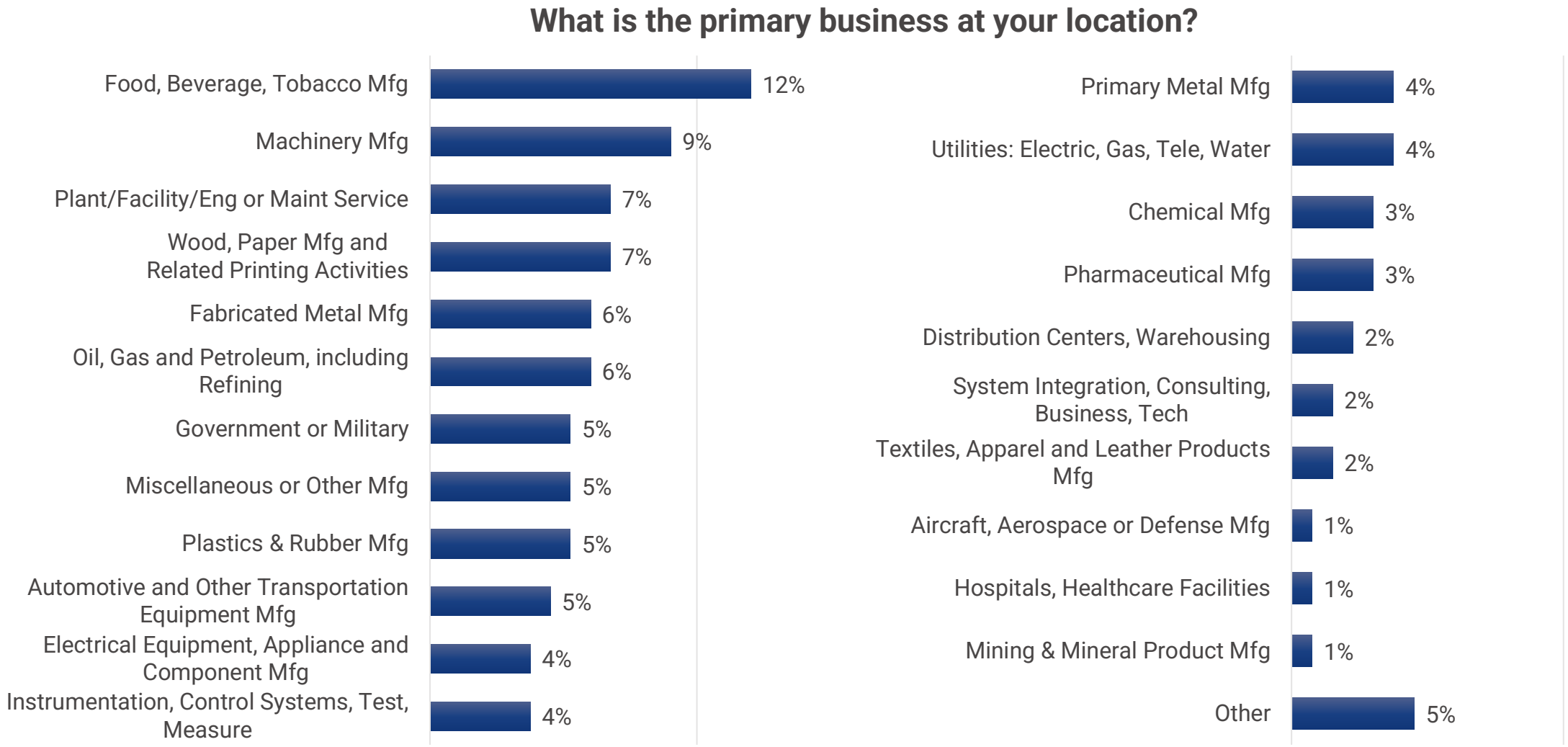
How many people work at your location?



41% of industrial facilities employ **250 people or more**; the average number of employees is **370**.

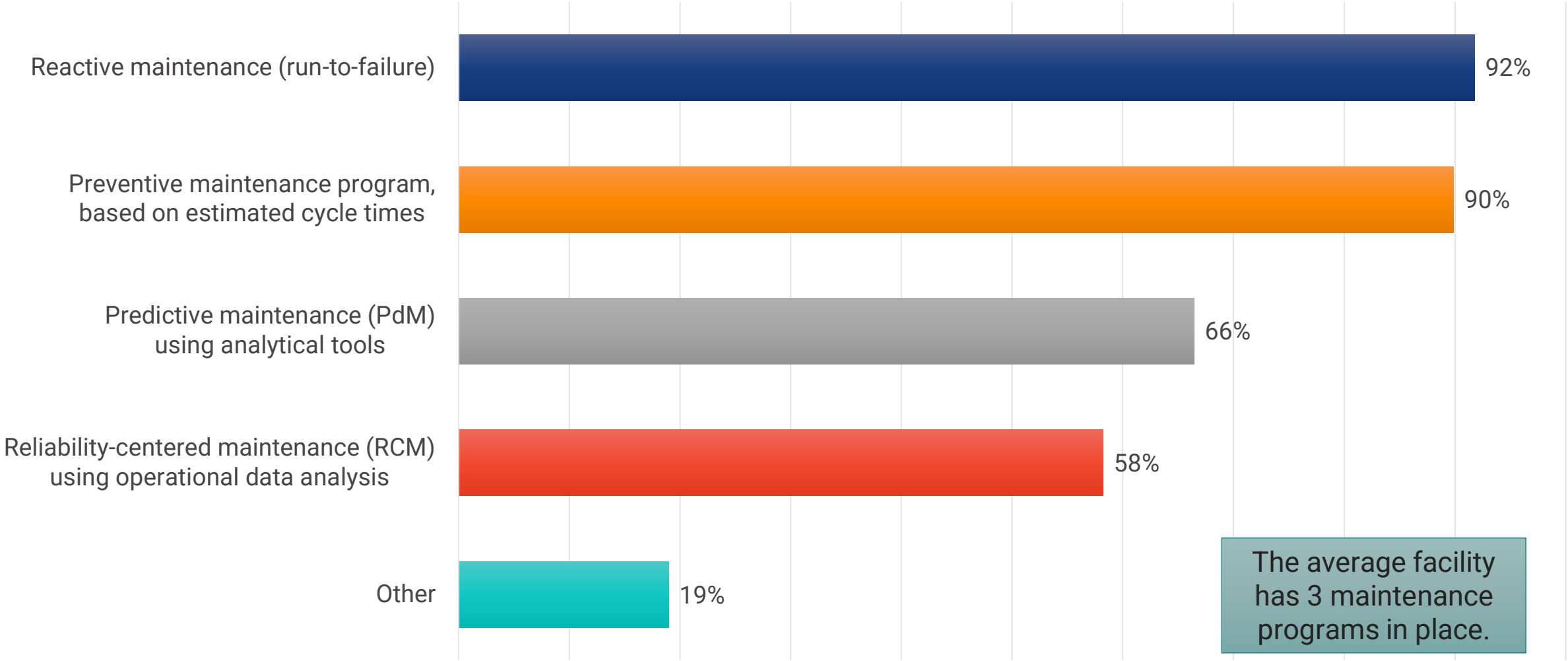
On average, **23%** of a plant's operations team is part of its maintenance department.

Primary Business Served



Industrial Maintenance

Maintenance Programs Currently in Place



Usage of Maintenance Programs

Looking across maintenance functions within your plant, please estimate what percentage of assets under maintenance is managed using the following programs*:

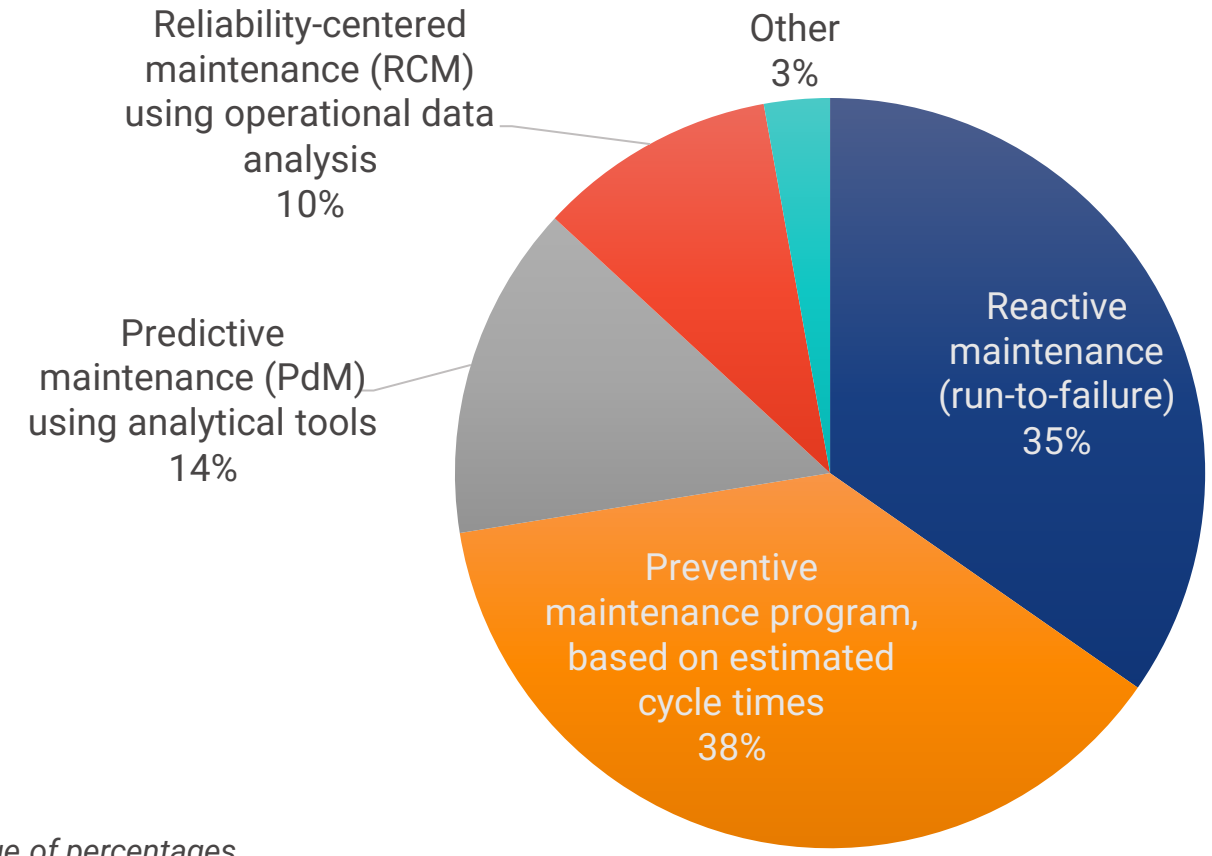
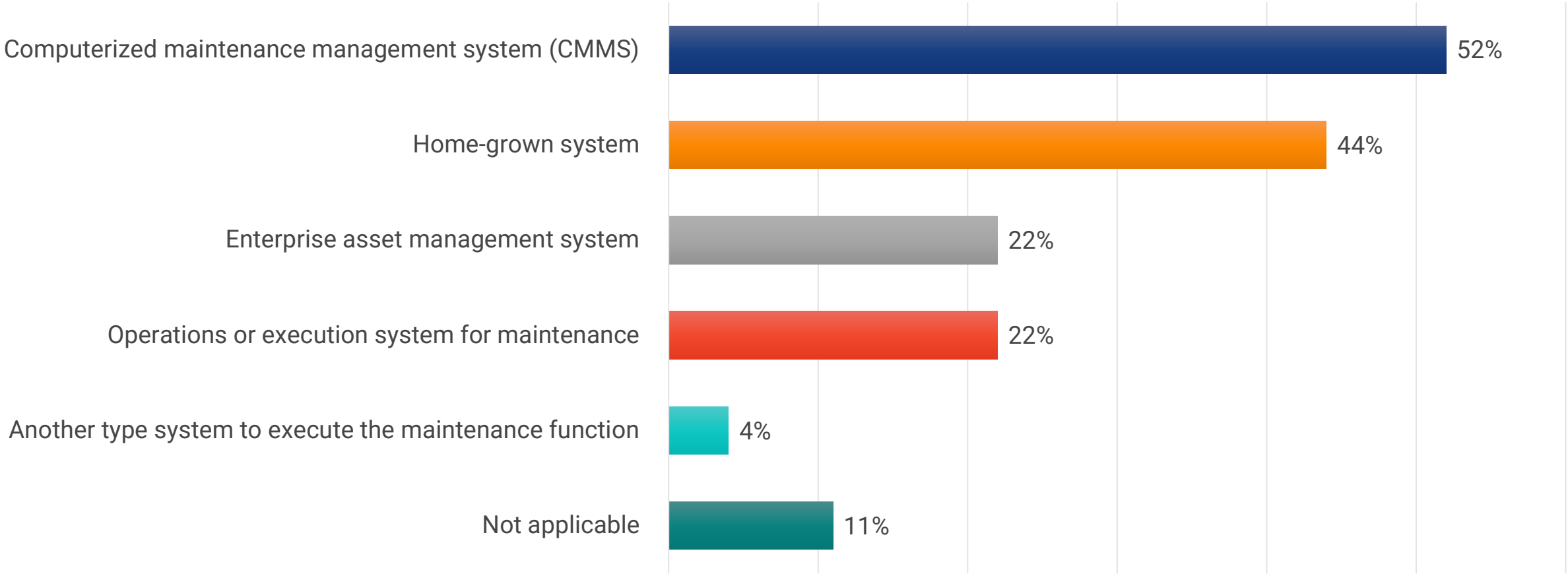


*Chart displays the average of percentages

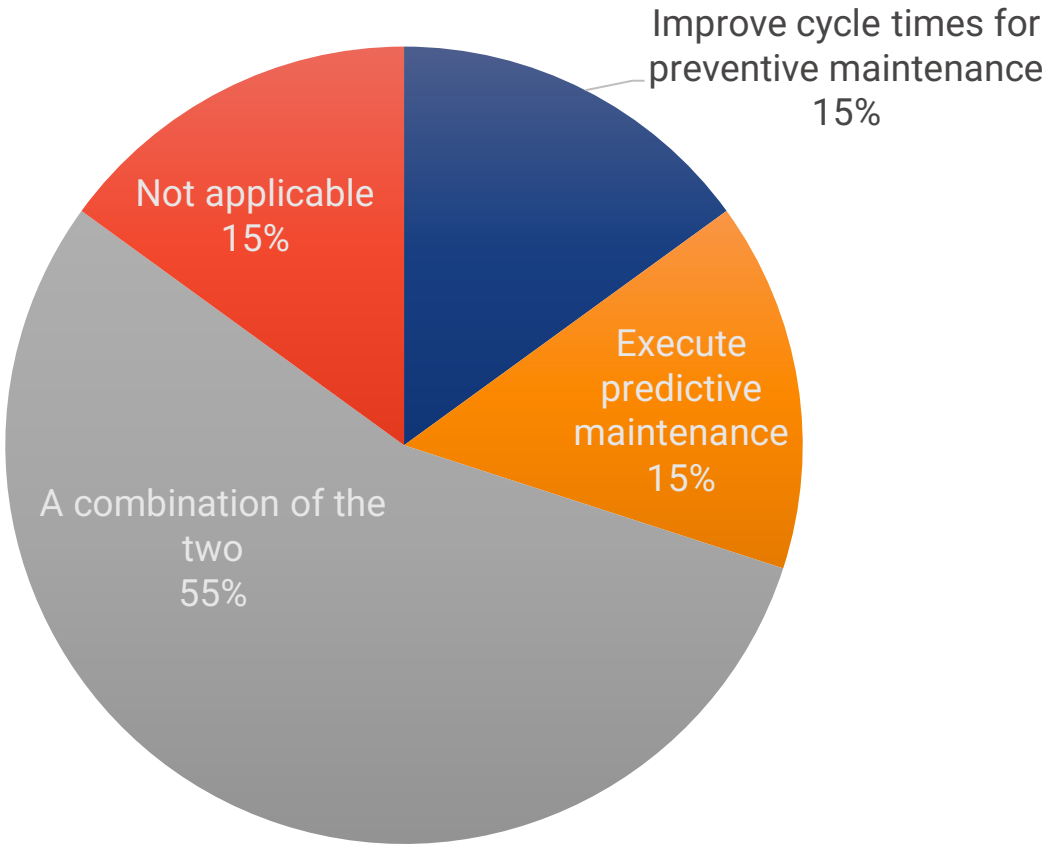
Computer Applications Supporting Maintenance

Which computer applications are in use to support the maintenance function? Check all that apply.



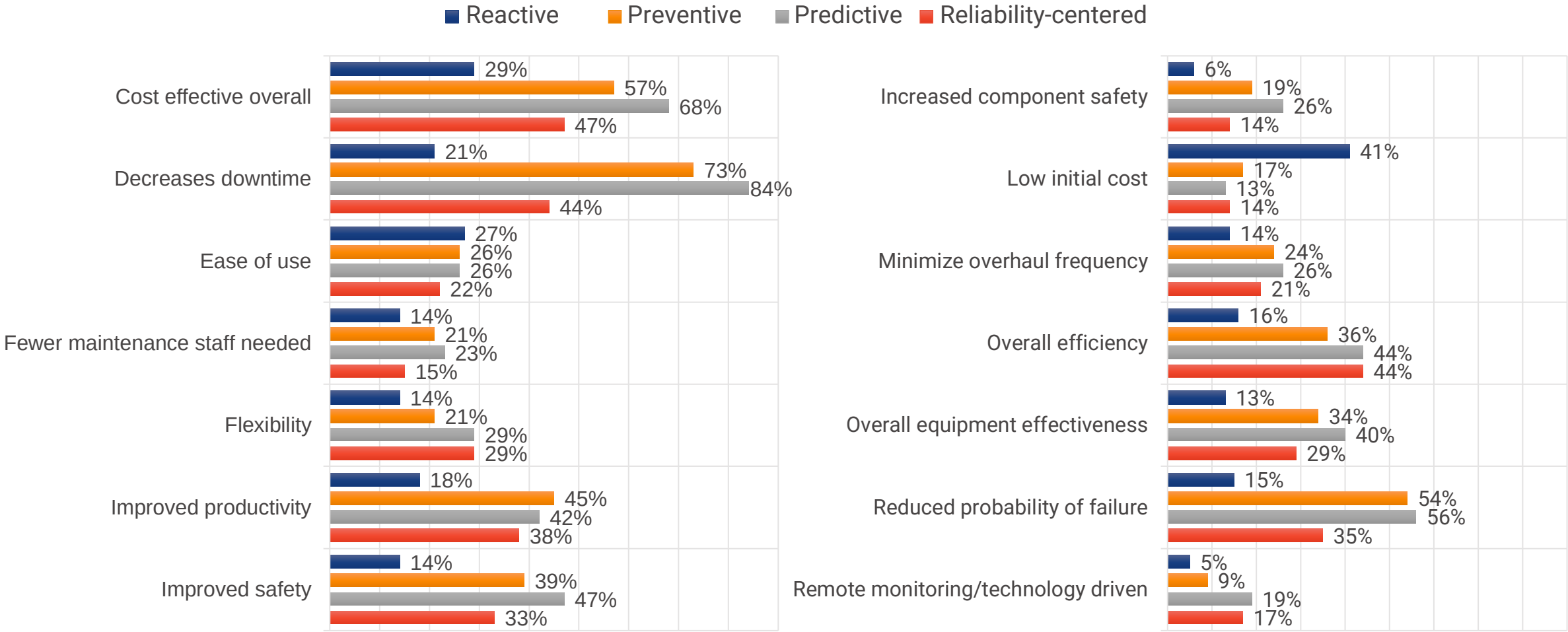
Goal of Condition-based Monitoring

If you have or are planning to implement condition-based monitoring, what will the goal be?



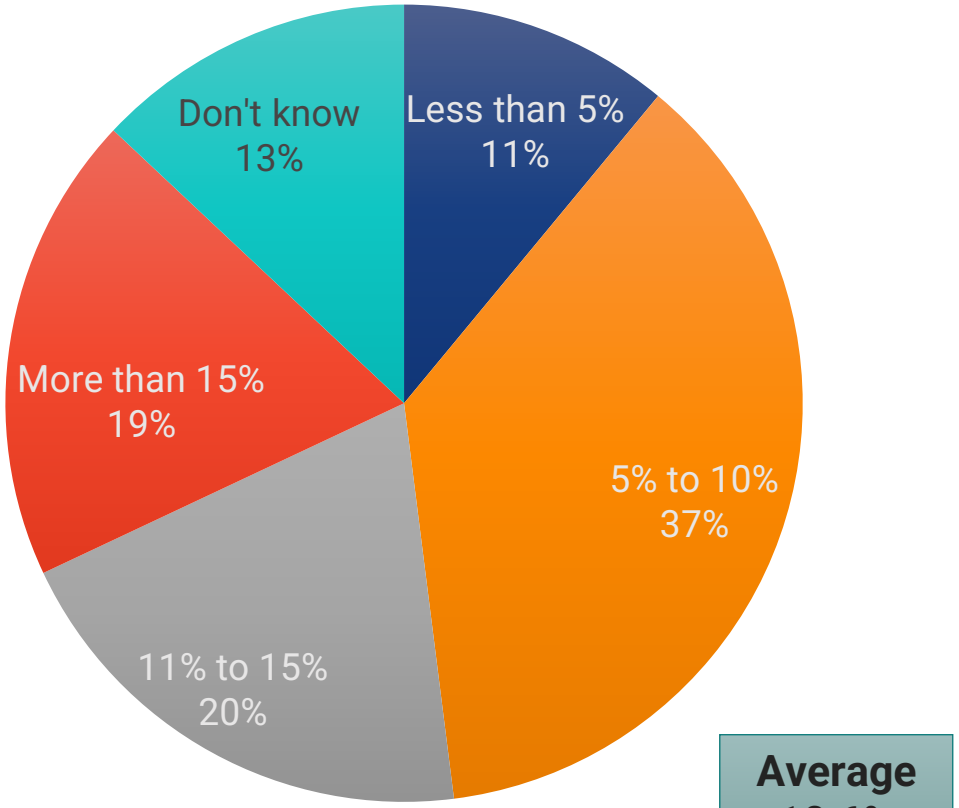
Advantages to Maintenance Strategies

What are the advantages to the maintenance strategies in place at your plant? Check all that apply.



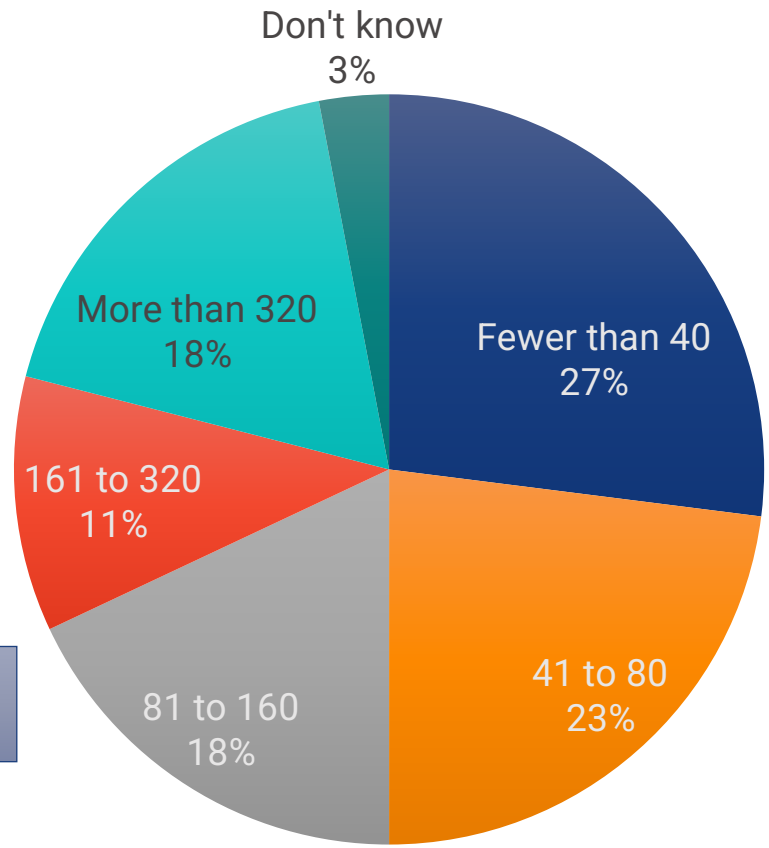
Annual Maintenance Budget

What percentage of your plant's annual operating budget is spent on maintenance?



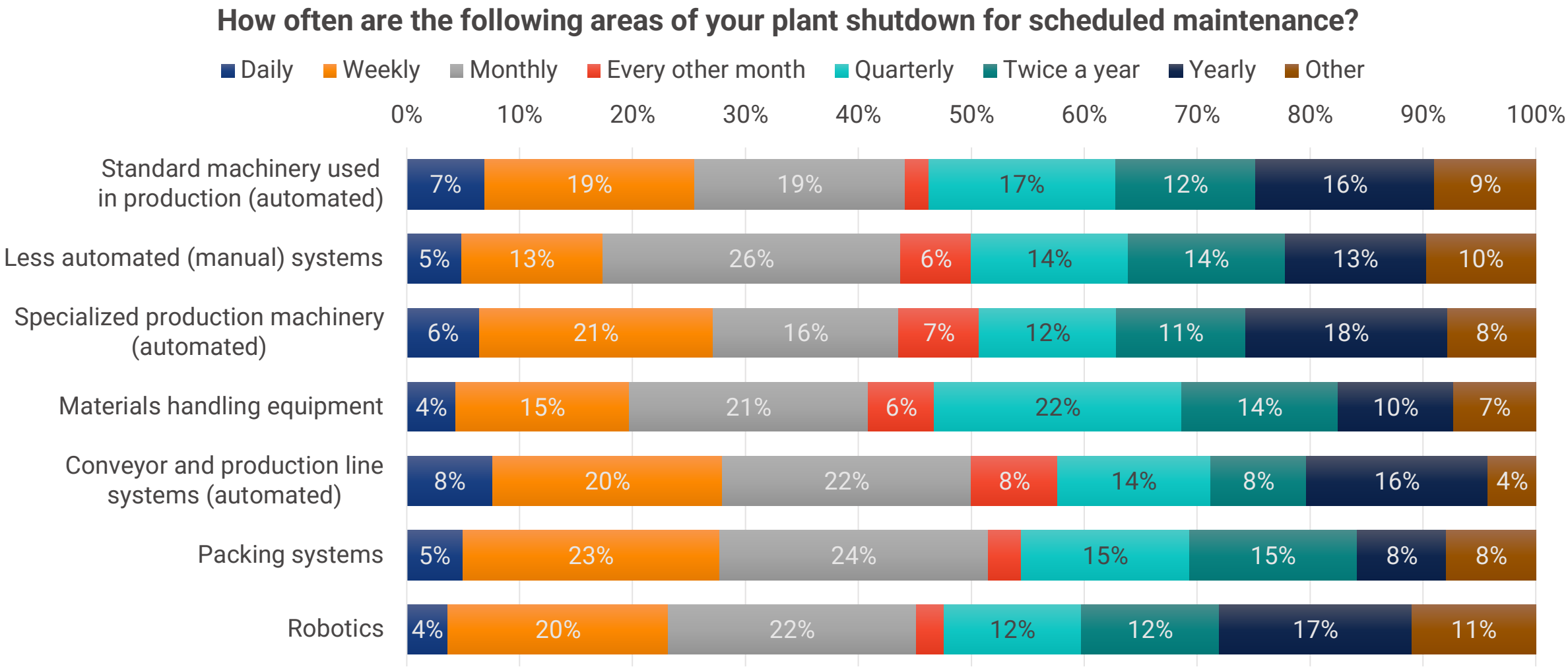
Hours Spent on Weekly Scheduled Maintenance

Approximately how many employee hours per week does maintenance staff spend performing maintenance-related tasks?

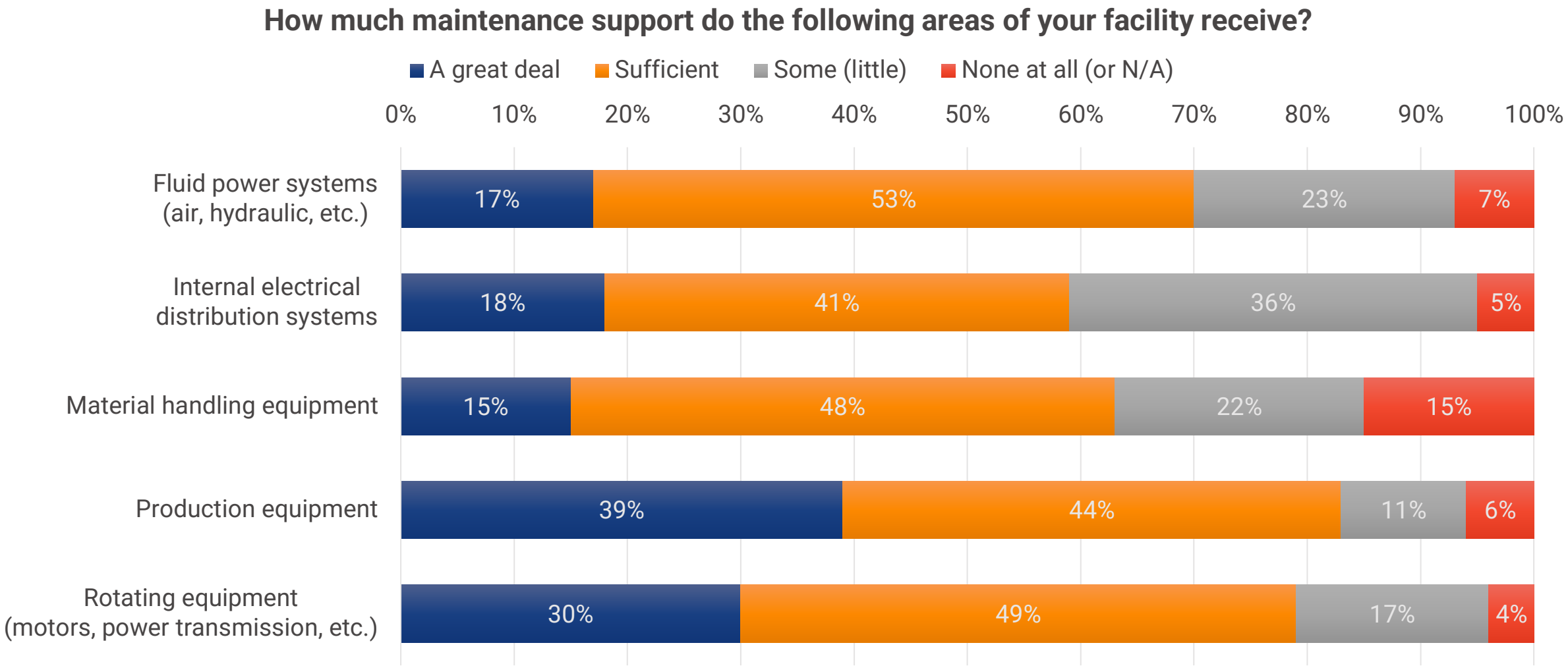


Average
138 hours/week

Systems Shutdown for Scheduled Maintenance

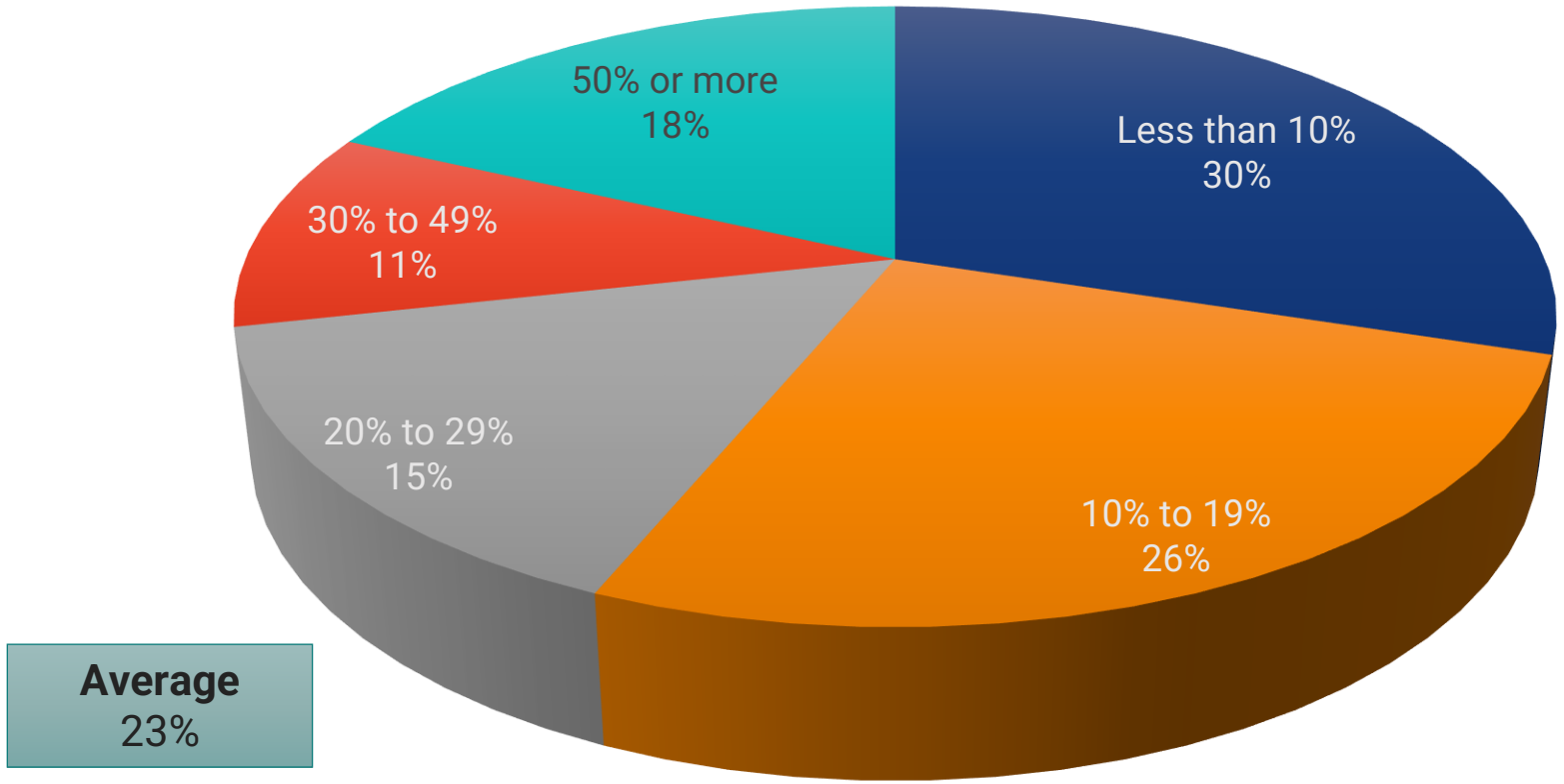


Maintenance Support

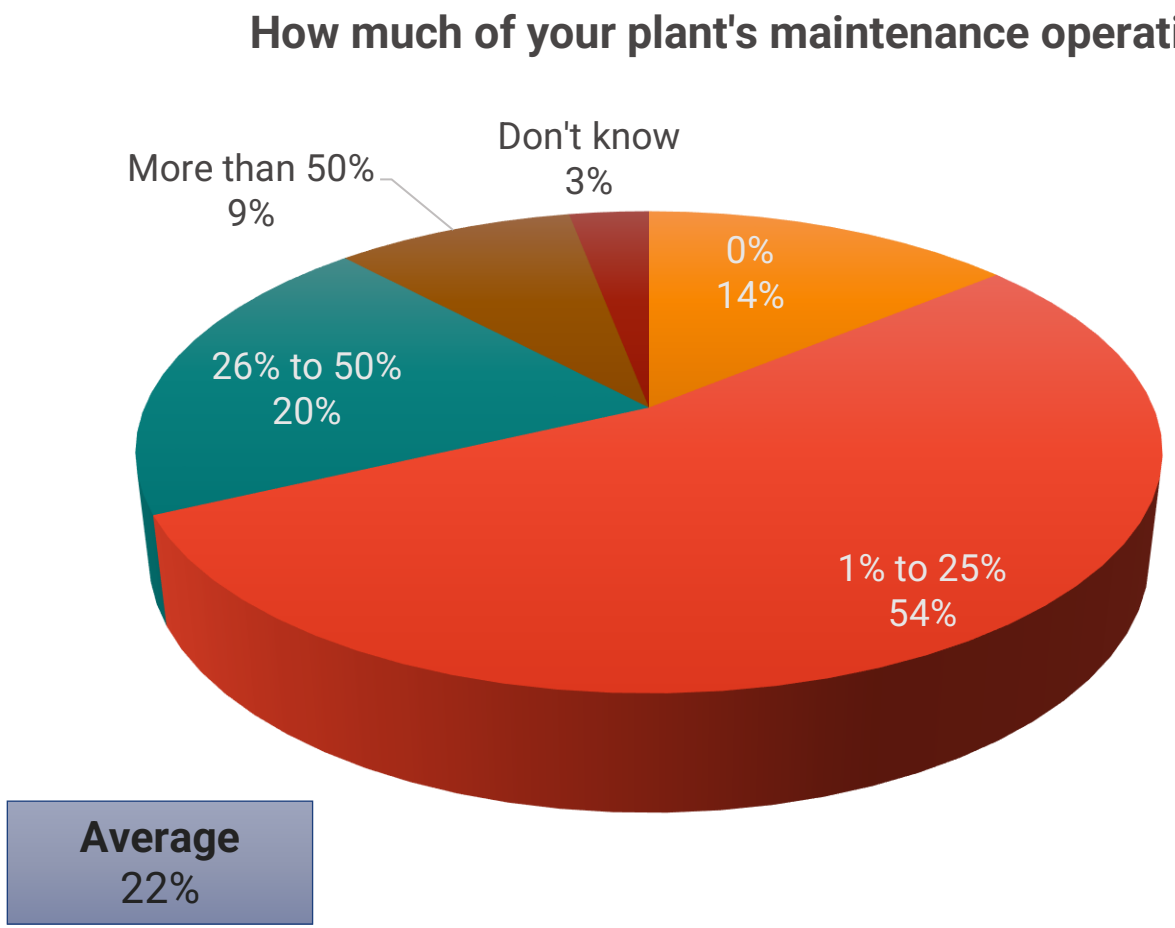


Internal Maintenance Team

What percentage of your plant's operations team is part of your maintenance department?



Outsourcing Maintenance Operations

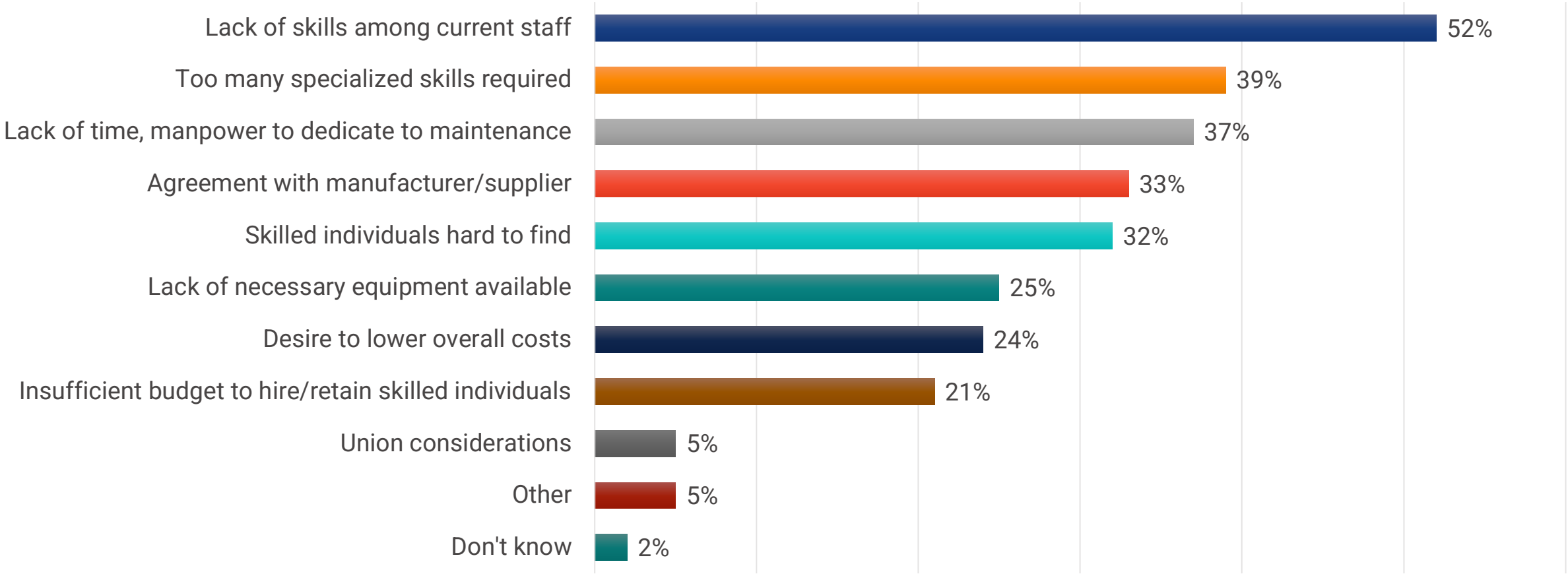


86% of plants outsource some or all of their maintenance operations.

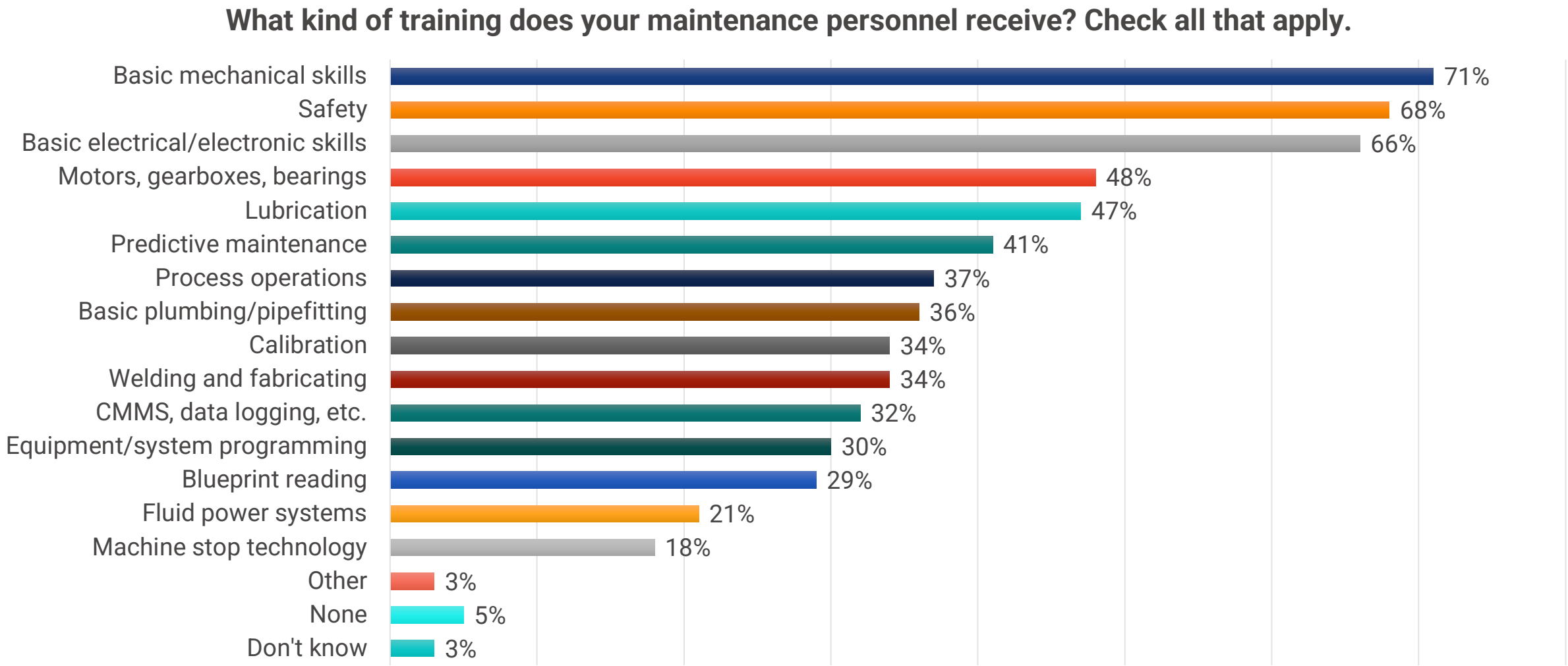
Compared to 2021, 21% of facilities have **increased** their use of outsourced services for maintenance operations; 8% increased significantly; 15% decreased; 56% remained the same.

Reasons for Outsourcing Maintenance

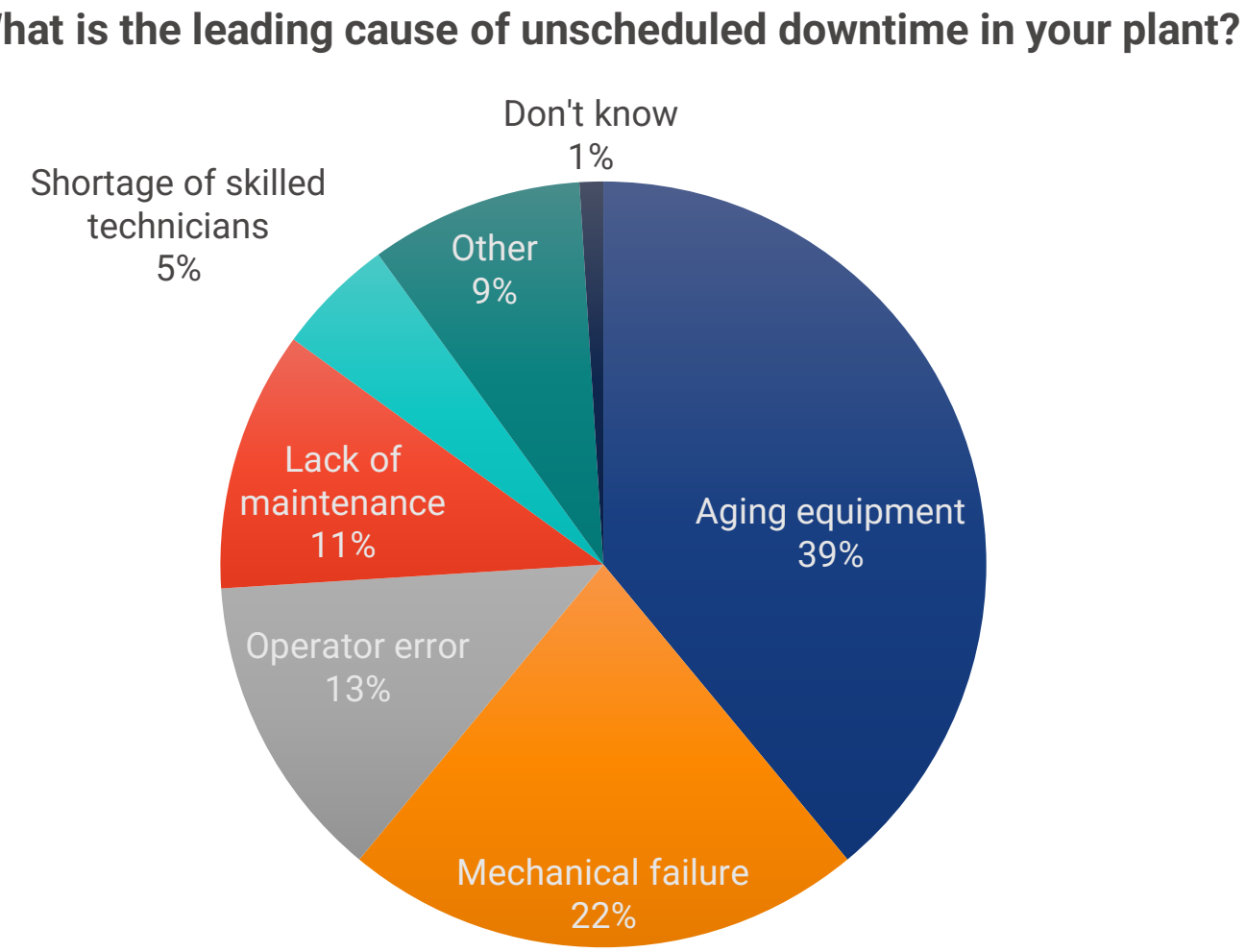
Which factors led to the outsourcing of maintenance operations at your plant? Check all that apply.



Maintenance Training

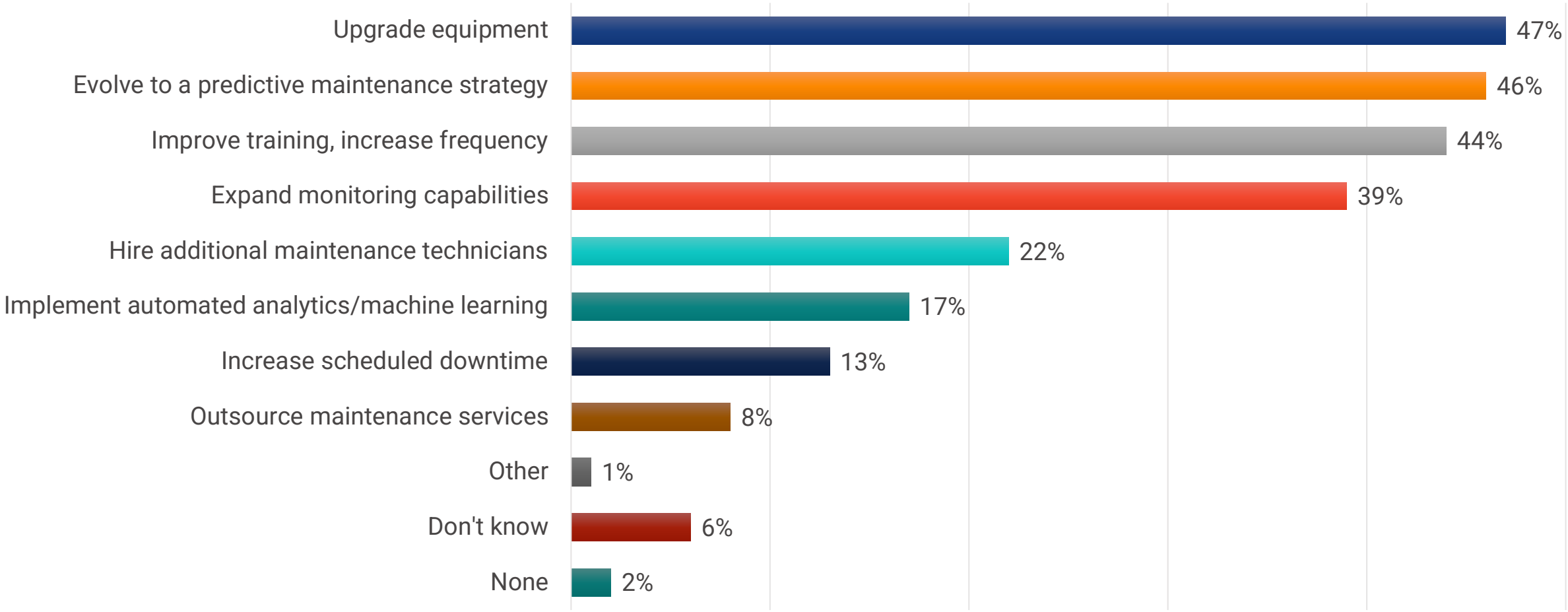


Leading Cause of Unscheduled Downtime



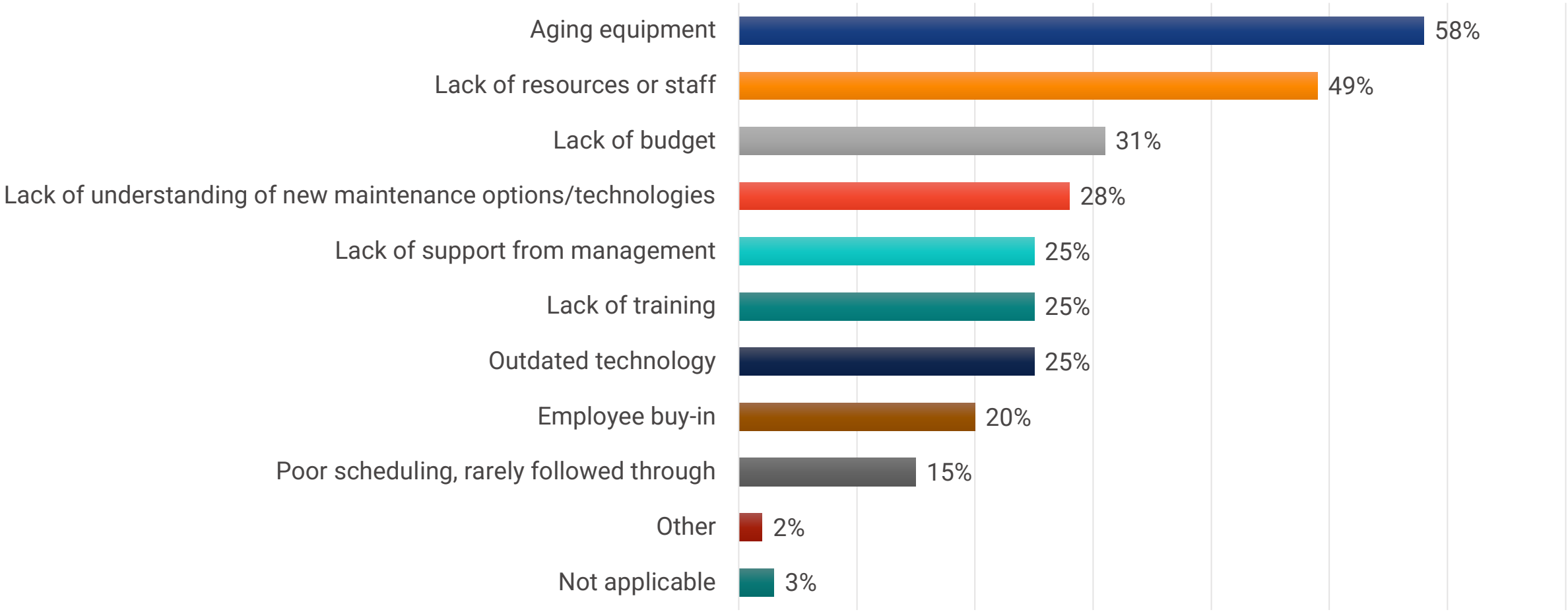
Plans to Decrease Downtime

How do you plan to decrease unscheduled downtime in your plant? Check all that apply.



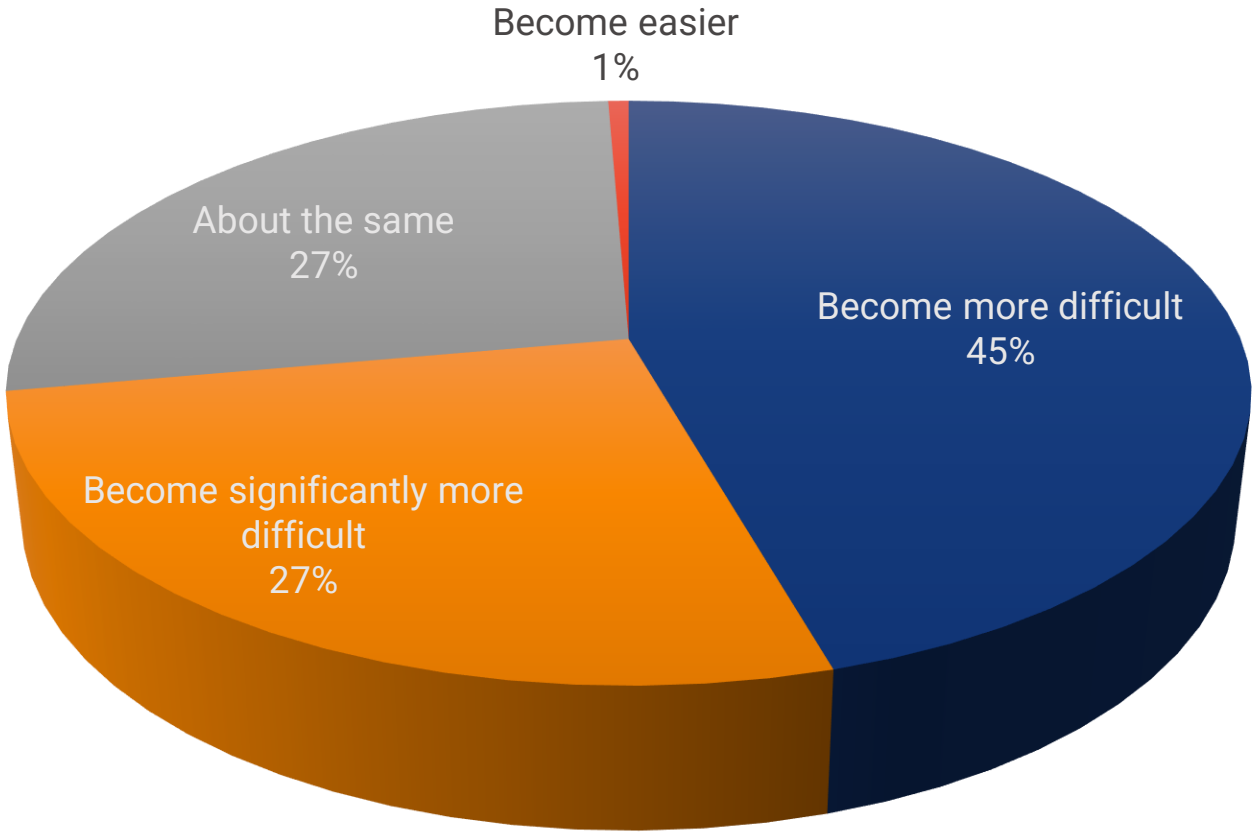
Key Challenges to Improving Maintenance

What are the key challenges for improving maintenance at your facility? Check all that apply.



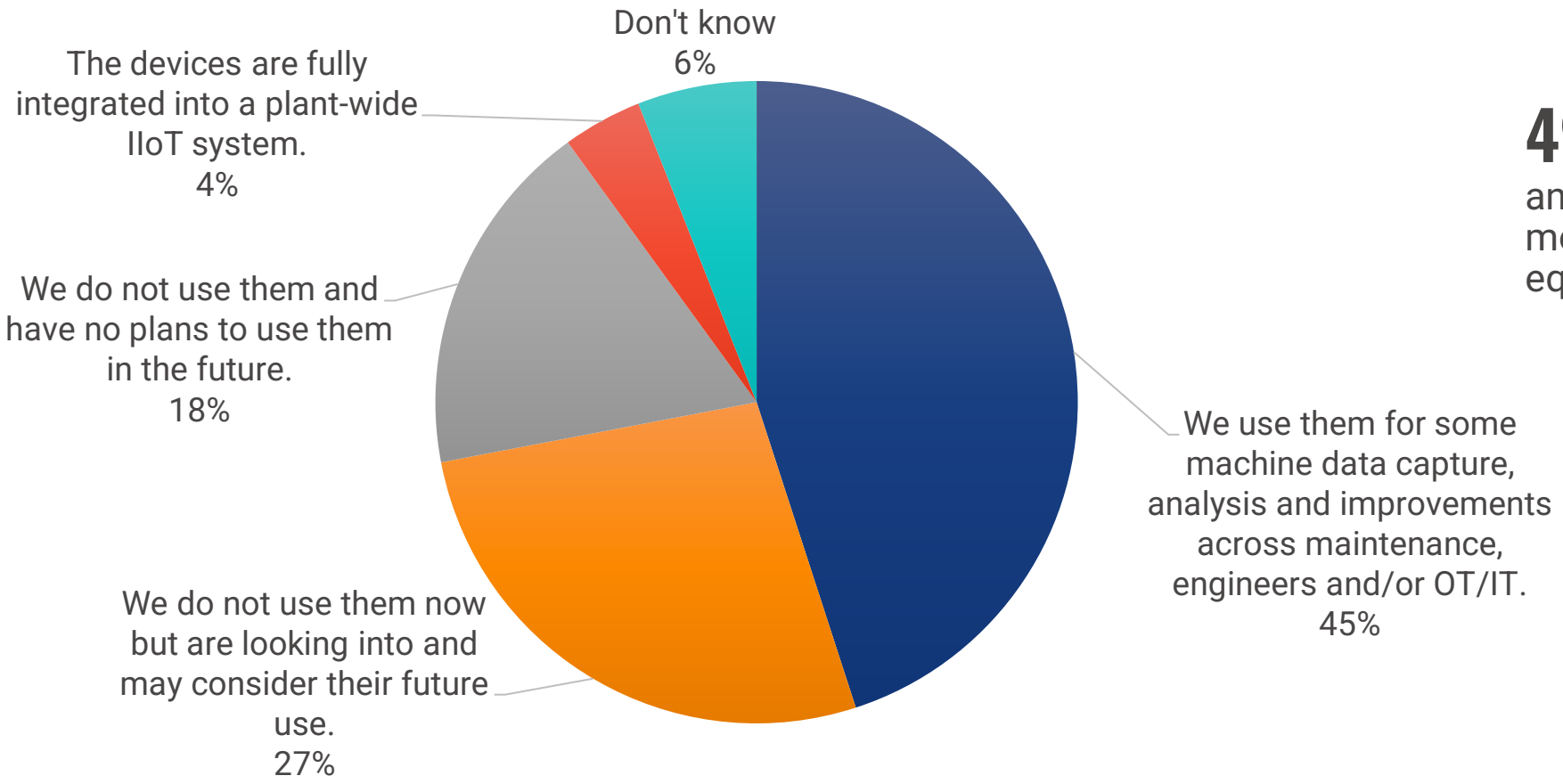
Difficulty of Recent Labor Recruitment

In relation to skilled labor markets in the manufacturing industries, has labor recruitment become more difficult over the past 12 months?



Use of Handheld or Mobile Devices for Maintenance

To what extent is your plant using connected devices for remote monitoring of production equipment?



49% of plants use handheld and/or mobile devices for remote monitoring of production equipment.

Impact of IIoT on Maintenance Operations

