

Executive Summary

# CONSTRUCTION EQUIPMENT<sup>®</sup>

## SURVEY OF STATE-OF-THE-ART TECHNOLOGY IN THE CONSTRUCTION INDUSTRY

**JANUARY 2017**

Conducted by  
*Scranton Gillette Communications/SGC Horizon Research Services*



# PURPOSE AND METHODOLOGY

## PURPOSE

To learn from those involved in the construction industry about state-of-the-art management tools introduced to the marketplace and used to streamline project management, help to compete for projects, and to stay within budget and improve margins.

## METHODOLOGY

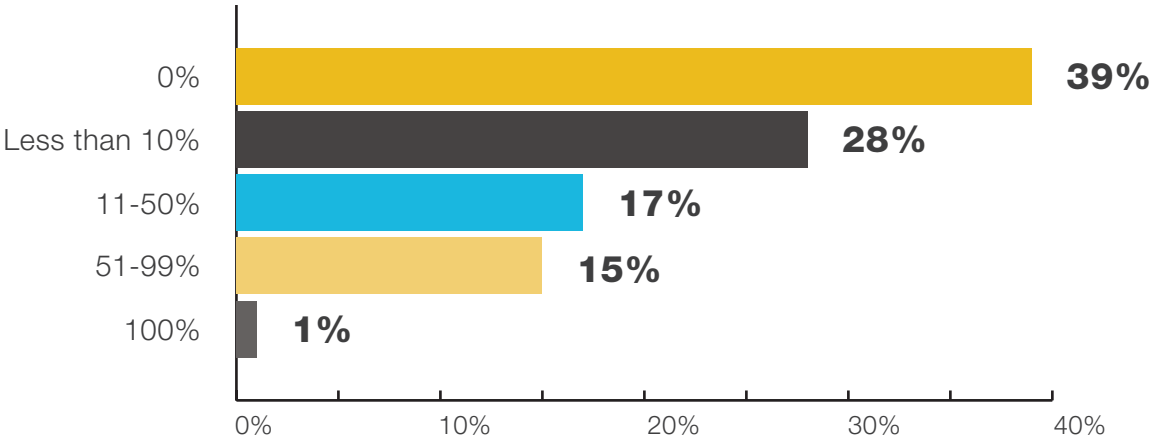
1. A core questionnaire was delivered digitally via the survey mechanism *Question Pro* in September 2016 with the survey sent four times to ensure a projectable response level. The survey was sent to those subscribers to *Construction Equipment* with fleet replacement values of \$5 million or more along with contractors from the subscriber list of *Roads & Bridges*, building contractors from *Building Design & Construction*, and those involved in water infrastructure construction from the list of *Water and Wastes Digest*, *Storm Water Solutions*, and *Water Quality Products*.
2. A second, supplemental questionnaire was sent in early December 2016. The purpose of this questionnaire was to obtain additional information about data that responders firms collect about their fleets.
3. A “cover email” was sent over the signature of Rod Sutton, Editorial Director, *Construction Equipment*.
4. An incentive was provided. Respondents were offered the opportunity to enter a drawing for one of three Virtual Reality goggles. In addition, responders will receive the results of the study to learn what how their industry colleagues are utilizing today’s construction technology.
5. A total of 257 respondents opened the emails with 146 (56.8% of opens) answering all or parts of the survey and 101 completing the questionnaires in-full (69.1% of those starting the survey).
6. Appreciation and thanks to Case Construction Equipment for its partnership with *Construction Equipment* in presenting this analysis of technology in the construction industry.

# SUMMARY OF THE FINDINGS

## EQUIPMENT FLEETS AND THE USE OF TELEMATICS

*Equipment users were asked about telematics capabilities with their fleets*

- Sixty-one percent of respondents to the survey say their equipment fleets have telematics capabilities.



# SUMMARY OF THE FINDINGS

## EQUIPMENT FLEETS AND THE USE OF TELEMATICS

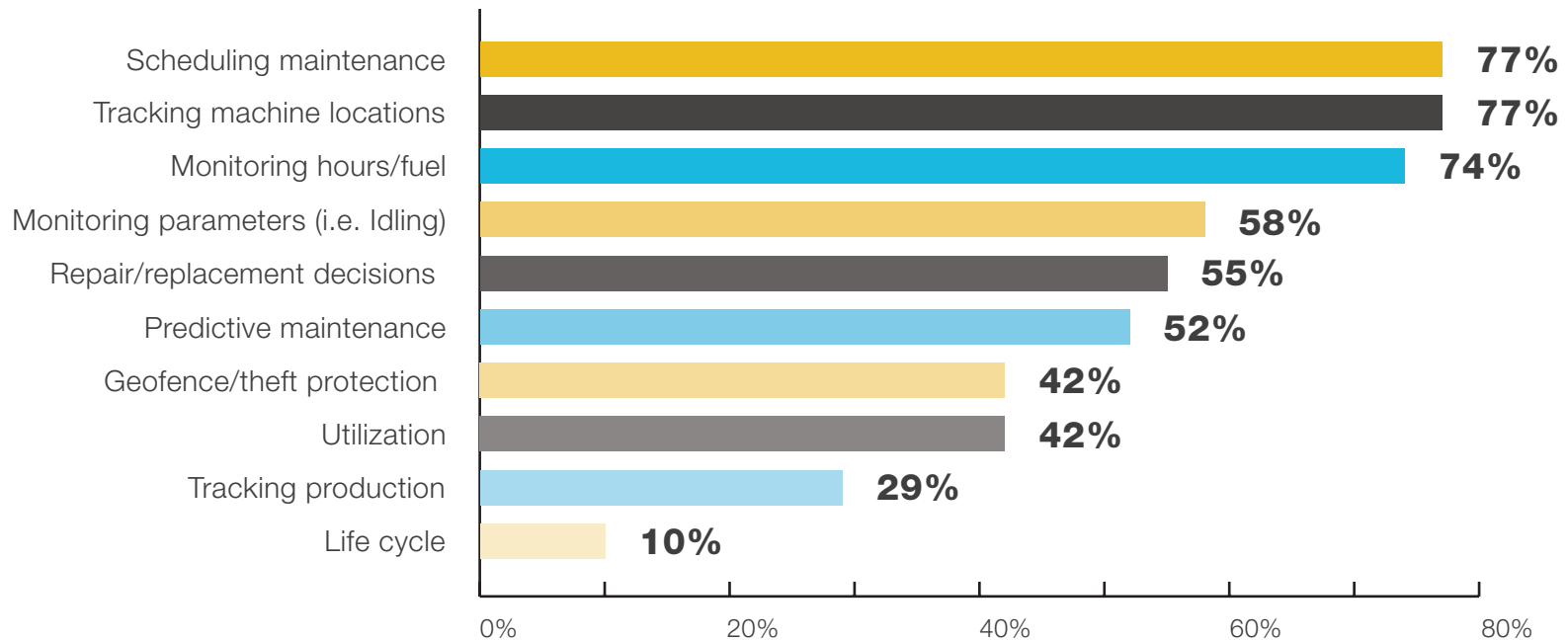
*Users were asked if their equipment divisions/departments collect telematics data*

- About one-third of respondents say they collect telematics data.
- In a supplemental questionnaire, users indicated that an additional 32 percent have their dealers monitor data for them.

# SUMMARY OF THE FINDINGS

## EQUIPMENT FLEETS AND THE USE OF TELEMATICS

Those who use telematics data were asked how they use the data.



Other

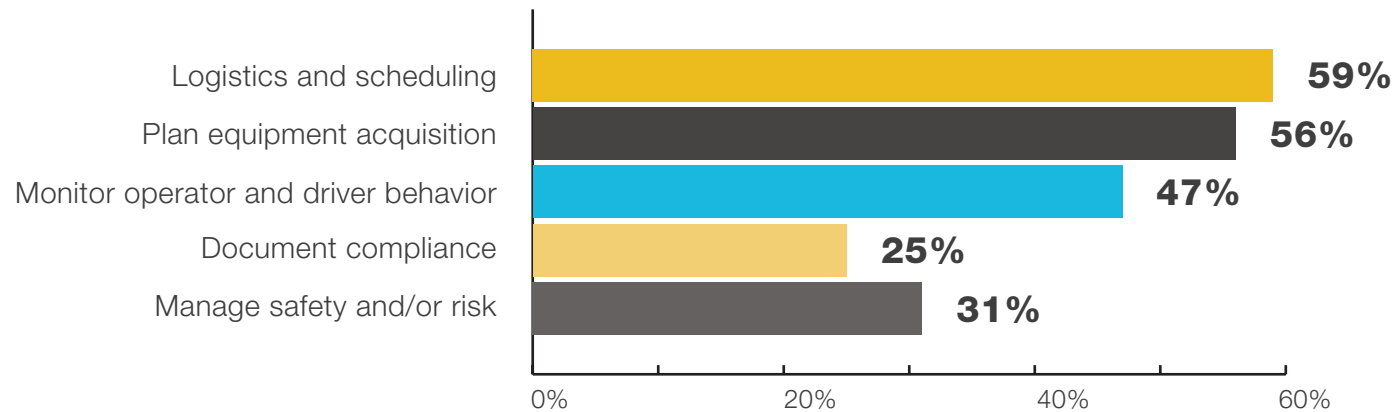
“We have our own preventive maintenance program from which we make equipment decisions.”  
“Remote diagnostics.”  
“Fuel.”

# SUMMARY OF THE FINDINGS

## EQUIPMENT FLEETS AND THE USE OF TELEMATICS

*Are fleet data used elsewhere in the respondents' organizations and how is it used*

- More than one-third of respondents (34%) say they use data elsewhere in their companies.

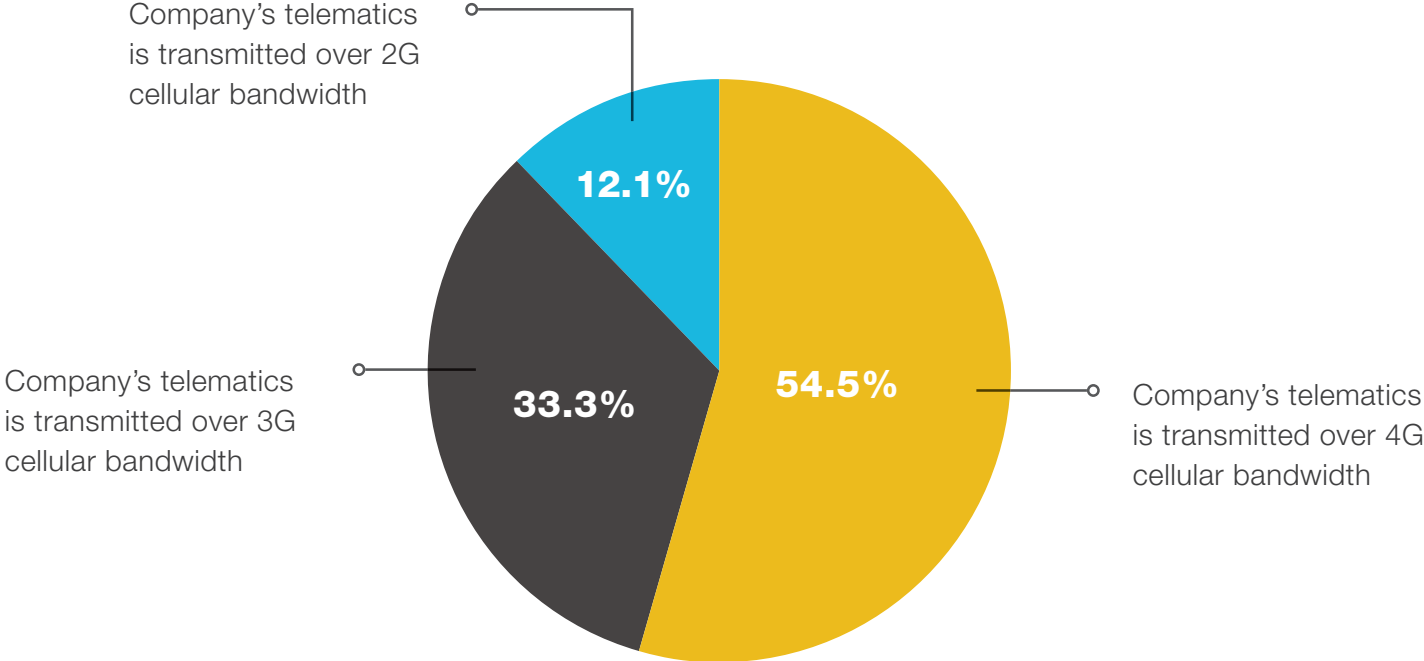


- Over one-third (34%) say equipment cost data is incorporated into estimating and job costing with 25 percent indicating that equipment dealers monitor their machines and advise respondents' companies.

# SUMMARY OF THE FINDINGS

## EQUIPMENT FLEETS AND THE USE OF TELEMATICS

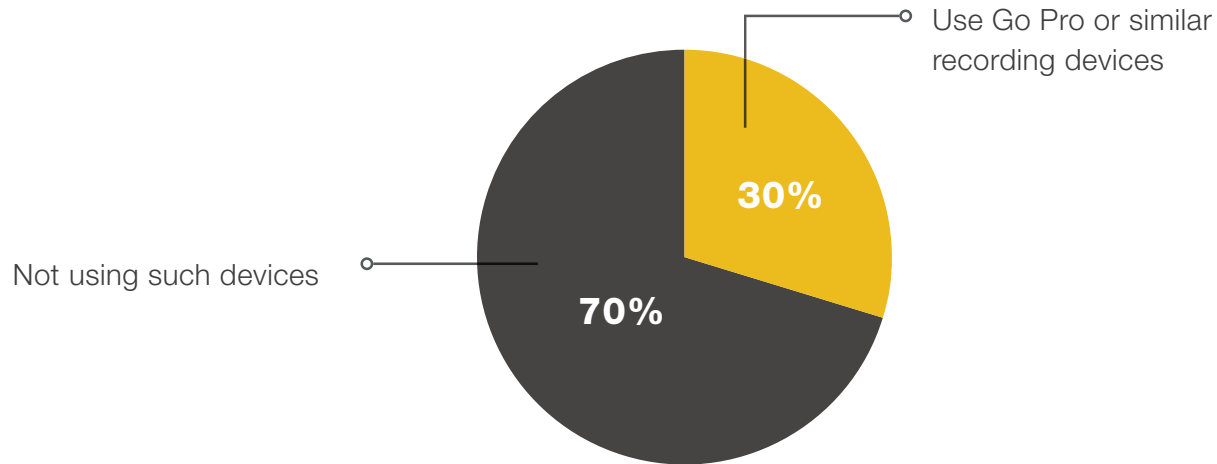
Those surveyed were asked over what cellular bandwidth their is telematics transmitted



# SUMMARY OF THE FINDINGS

## ORGANIZATIONAL USE OF EMERGING TECHNOLOGY

*Use of Go Pro or comparable video recording devices and how they are used*



- To aid in site preparation and mapping (46%) and to monitor job sites are applications in which Go Pro and similar devices are used most.
- Other applications include inspecting infrastructure (bridges, pipelines, underground) to determine conditions, indicated by 31% and to inspect job sites (27%).

- More than 15 percent of those surveyed indicated “other” applications, including:

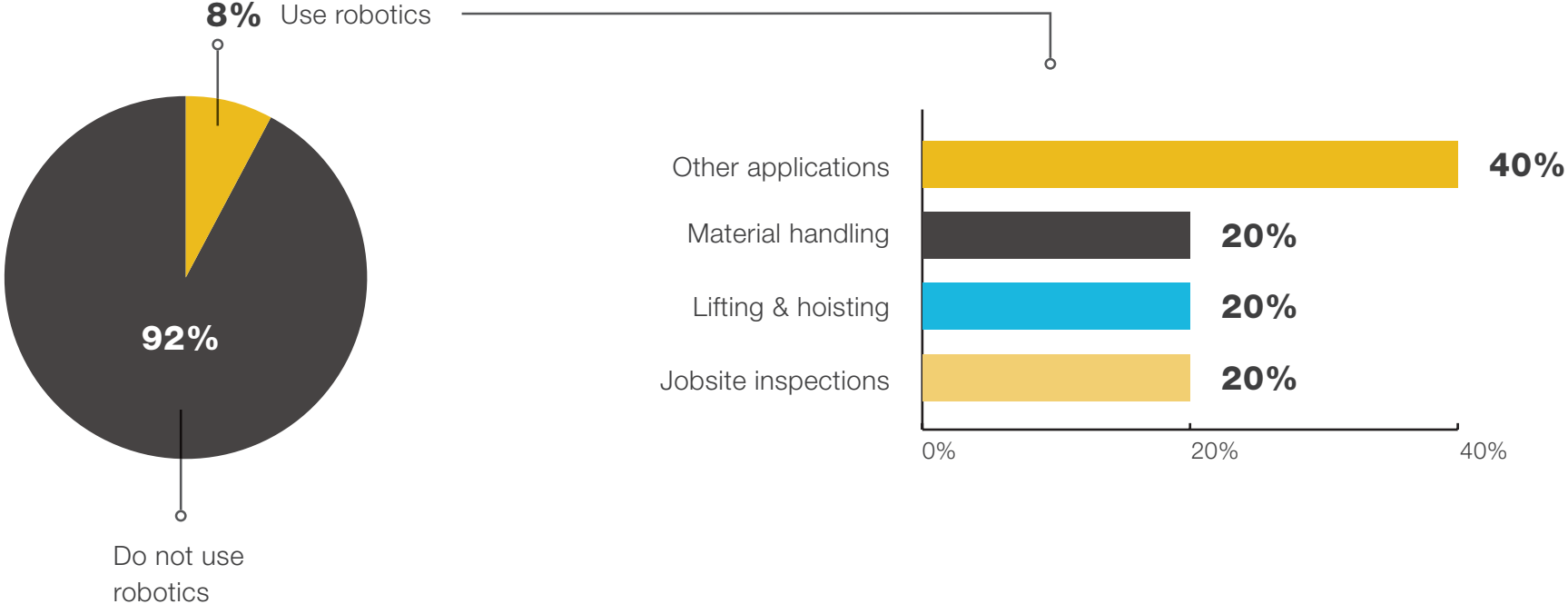
“Record lecture, observe clinical skill exams.”  
“Tech video.”  
“Traffic trucks (for) setting and retrieving cones.”



# SUMMARY OF THE FINDINGS

## ORGANIZATIONAL USE OF EMERGING TECHNOLOGY

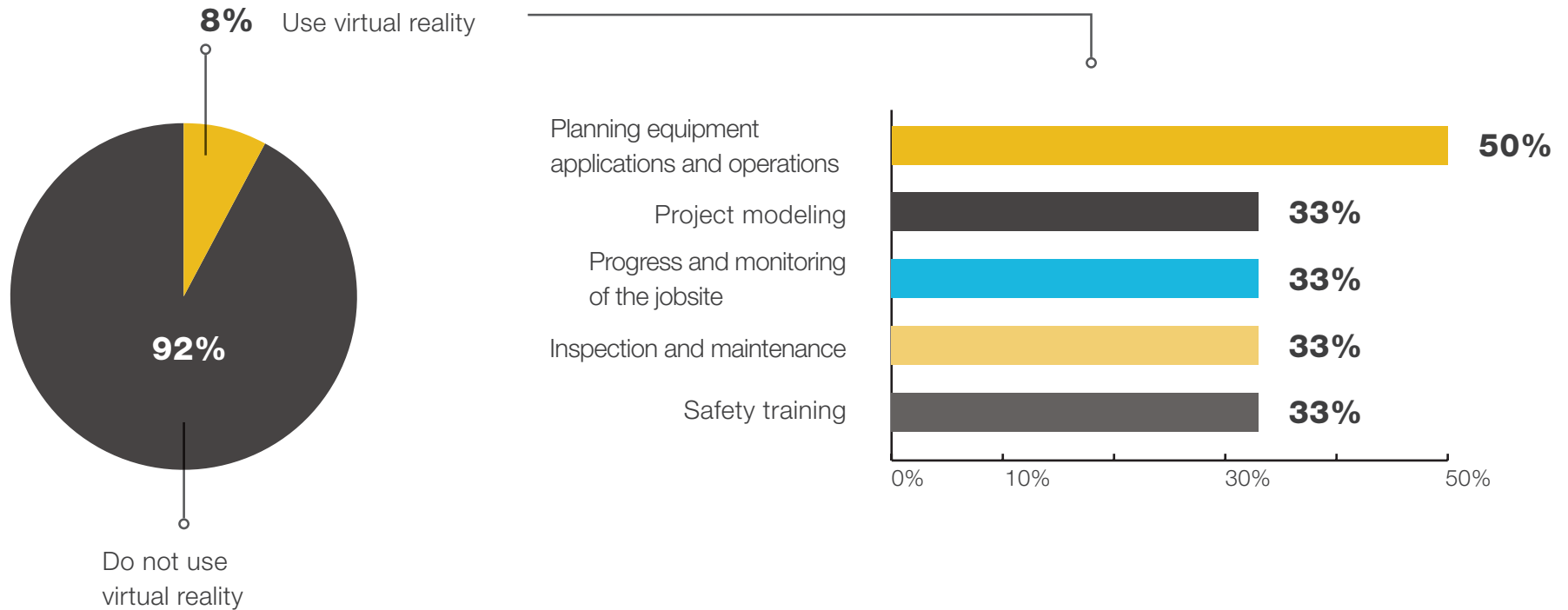
Use of robotics



# SUMMARY OF THE FINDINGS

## ORGANIZATIONAL USE OF EMERGING TECHNOLOGY

### Use of virtual reality



### Use of augmented reality

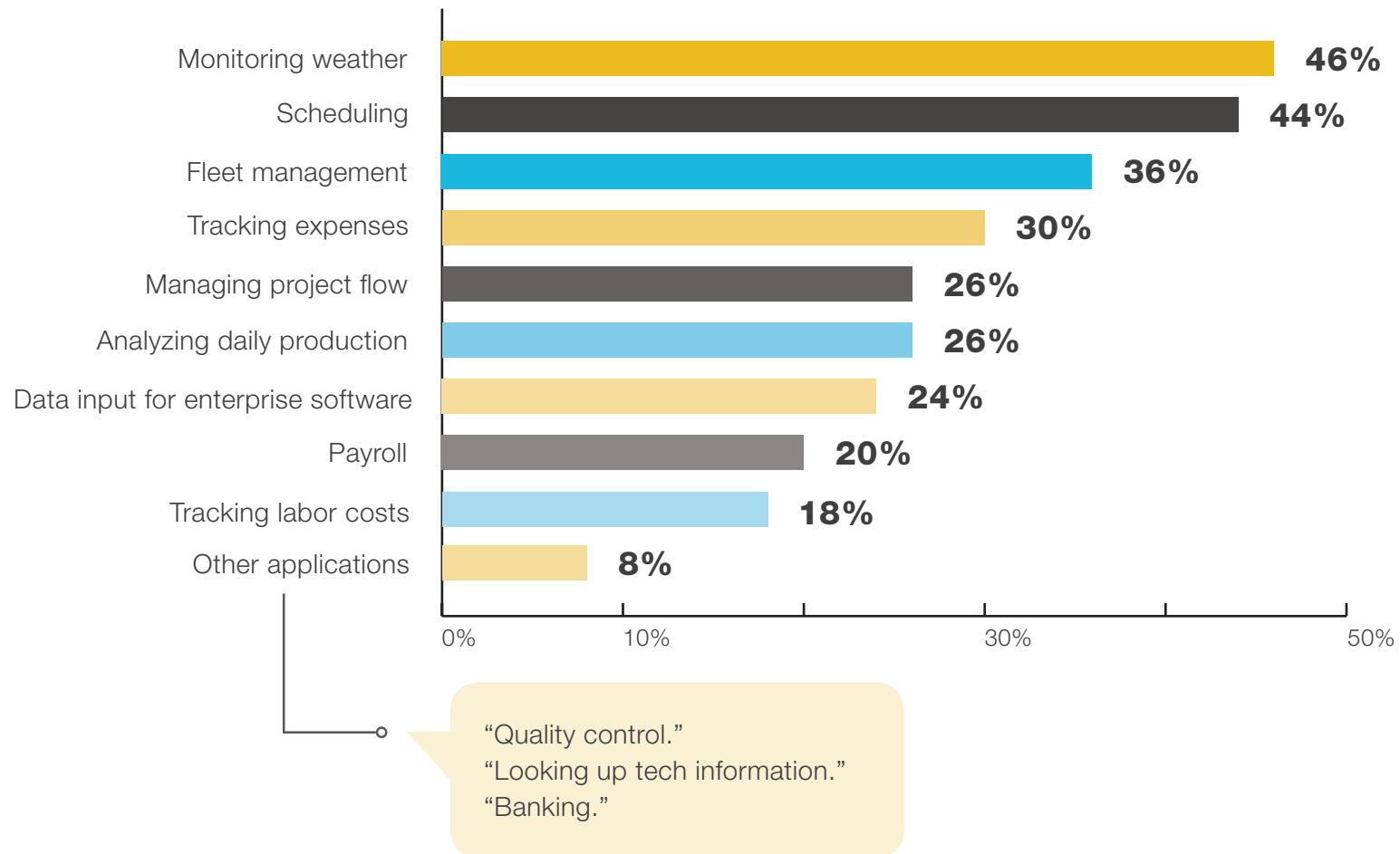
- 100 percent of responders said that they do not use augmented reality.

# SUMMARY OF THE FINDINGS

## ORGANIZATIONAL USE OF EMERGING TECHNOLOGY

*Use of mobile apps as a management tool*

- Nearly 63 percent of respondents say they use mobile apps as a management tool.

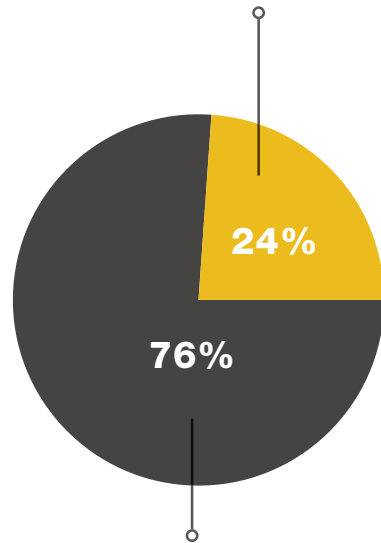


# SUMMARY OF THE FINDINGS

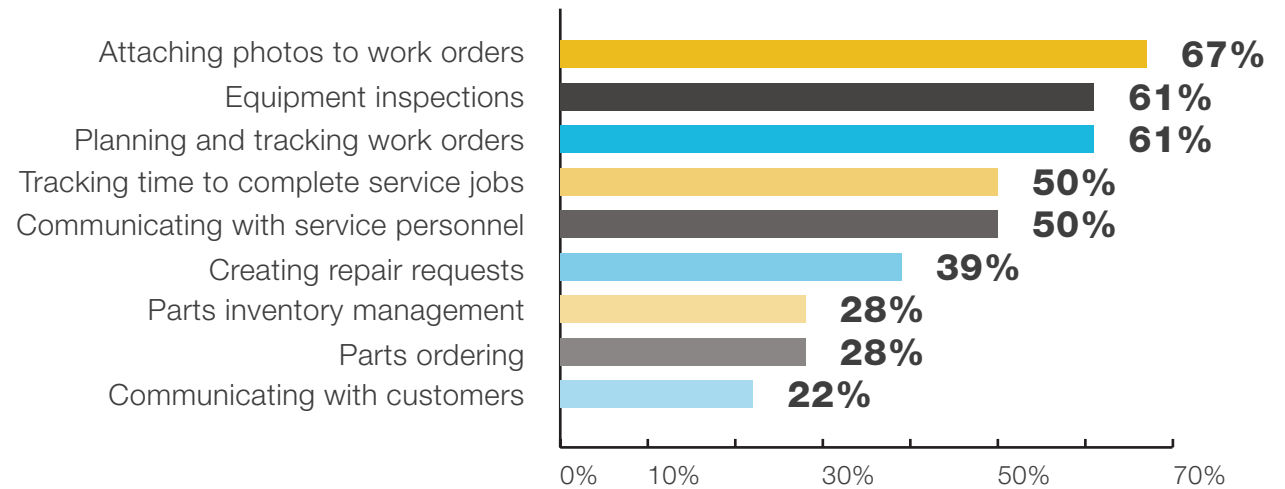
## ORGANIZATIONAL USE OF EMERGING TECHNOLOGY

*Use of mobile apps for in-house or in-field equipment maintenance*

Use mobile apps for in-house or in-field equipment maintenance



Do not use mobile apps for in-house or in-field equipment maintenance

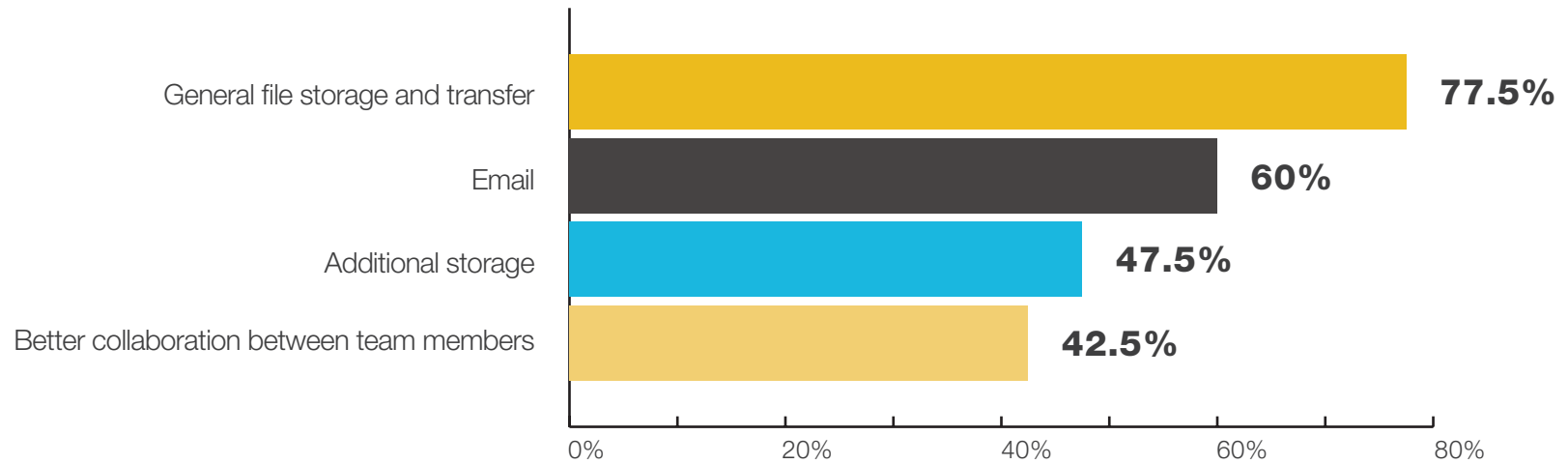


# SUMMARY OF THE FINDINGS

## ORGANIZATIONAL USE OF EMERGING TECHNOLOGY

### *Use of cloud storage*

- Over half of the responders (52%) said that they do use cloud storage.

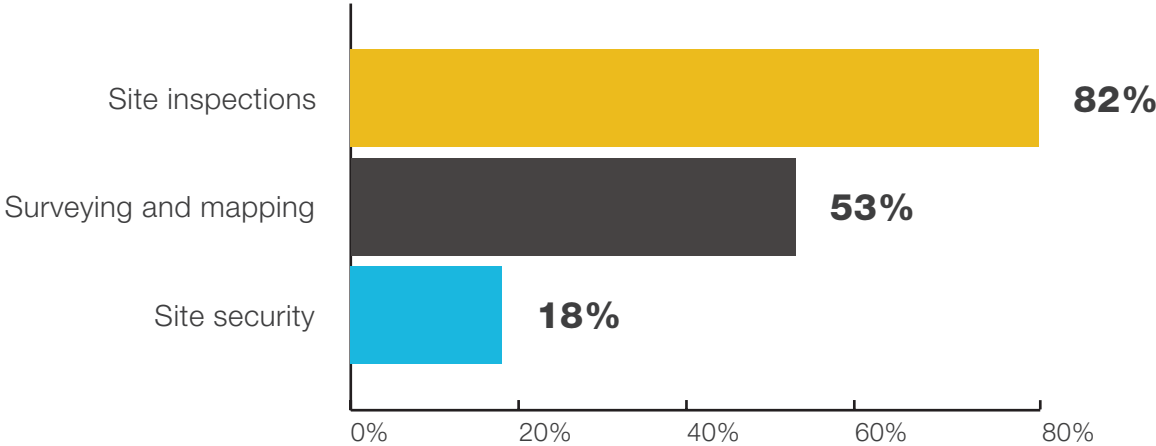


# SUMMARY OF THE FINDINGS

## ORGANIZATIONAL USE OF EMERGING TECHNOLOGY

### Use of UAVs

- Nearly 22 percent of responders say they use UAVs.

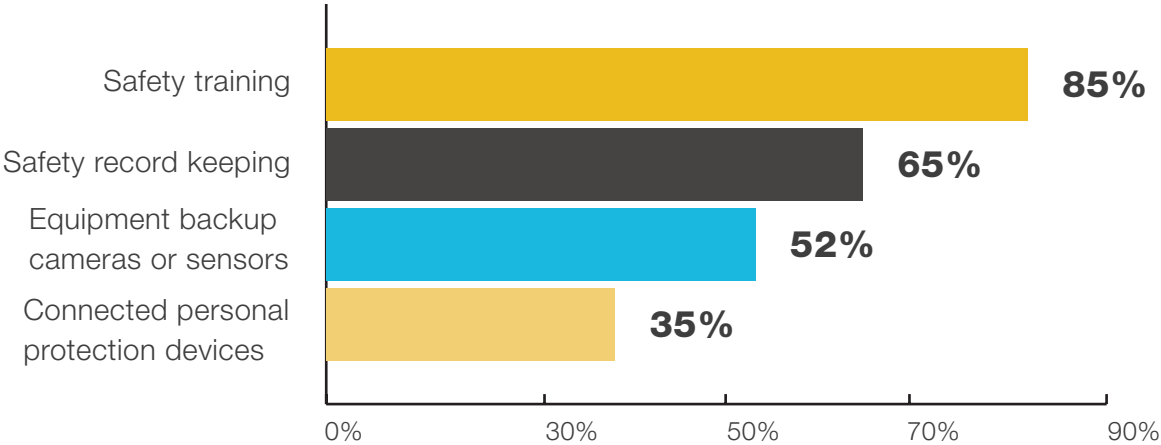


# SUMMARY OF THE FINDINGS

## ORGANIZATIONAL USE OF EMERGING TECHNOLOGY

*Use of safety tools*

- A vast majority of responders, 85 percent, say they use safety tools



# SUMMARY OF THE FINDINGS

## SITE/PROJECT MANAGEMENT

*On the topic of site connectivity, users were asked, “if their company has implemented technology to facilitate data communications in site/project management?”*

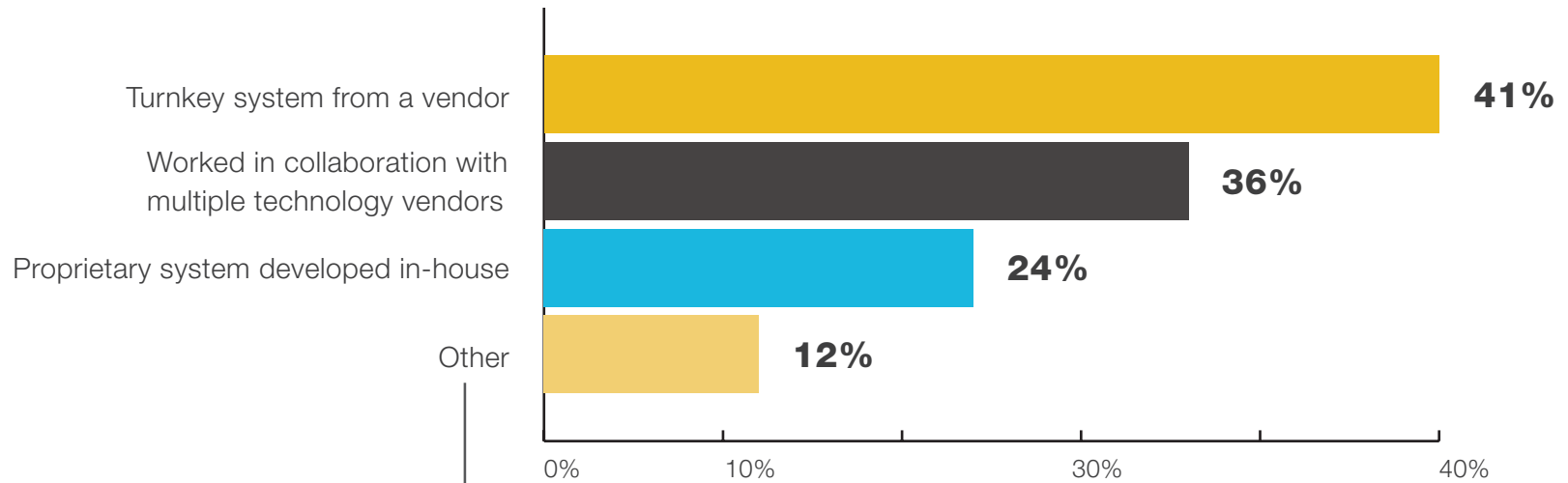
- Just over 45 percent of the responders said that their company has implemented technology to facilitate data communications in site/project management.



# SUMMARY OF THE FINDINGS

## SITE/PROJECT MANAGEMENT

Those surveyed were asked, "How did you implement your site-management system?"

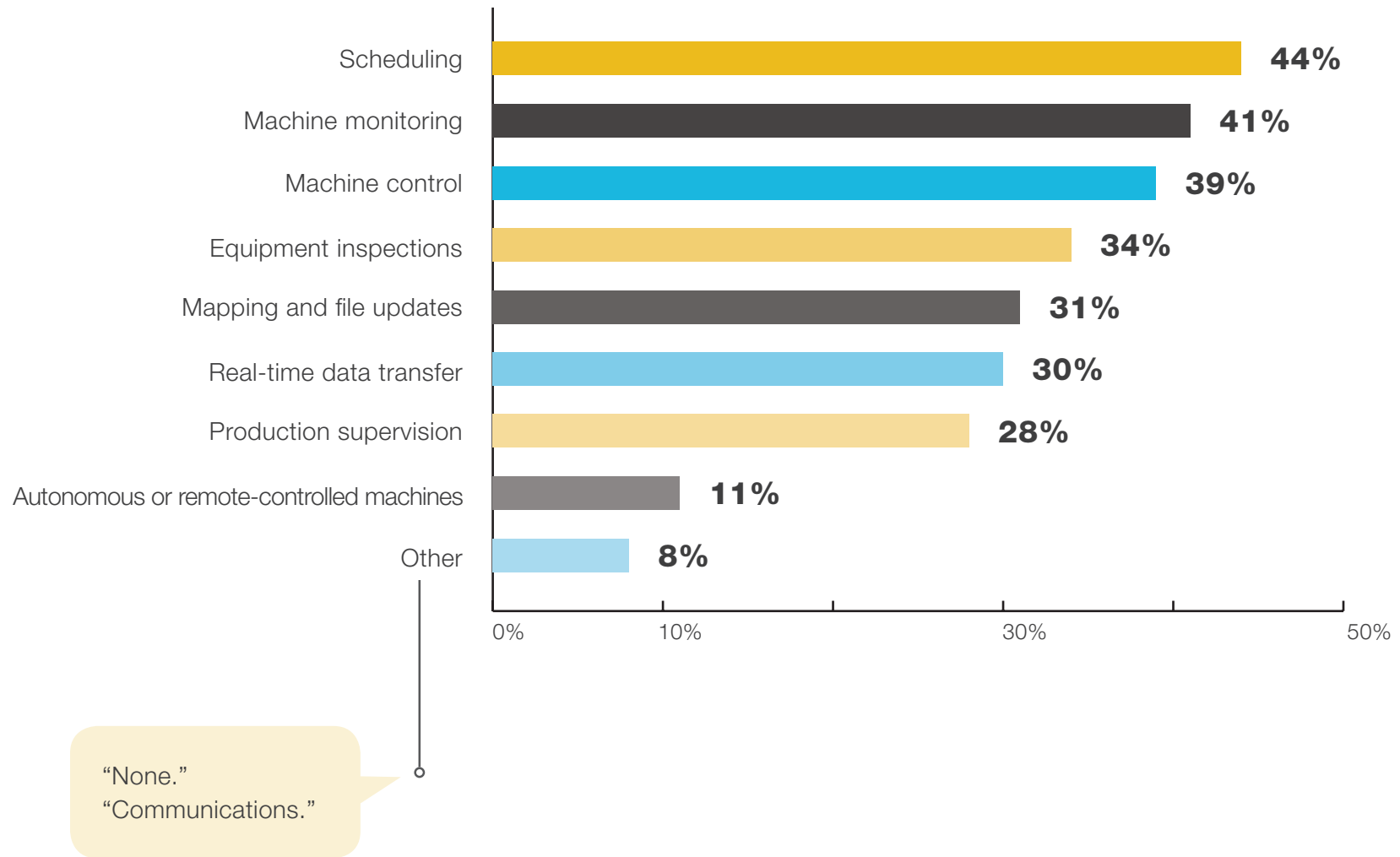


“None.”  
“Standard software & apps.”  
“Paper/pencil.”  
“Equipment dealer.”

# SUMMARY OF THE FINDINGS

## SITE/PROJECT MANAGEMENT

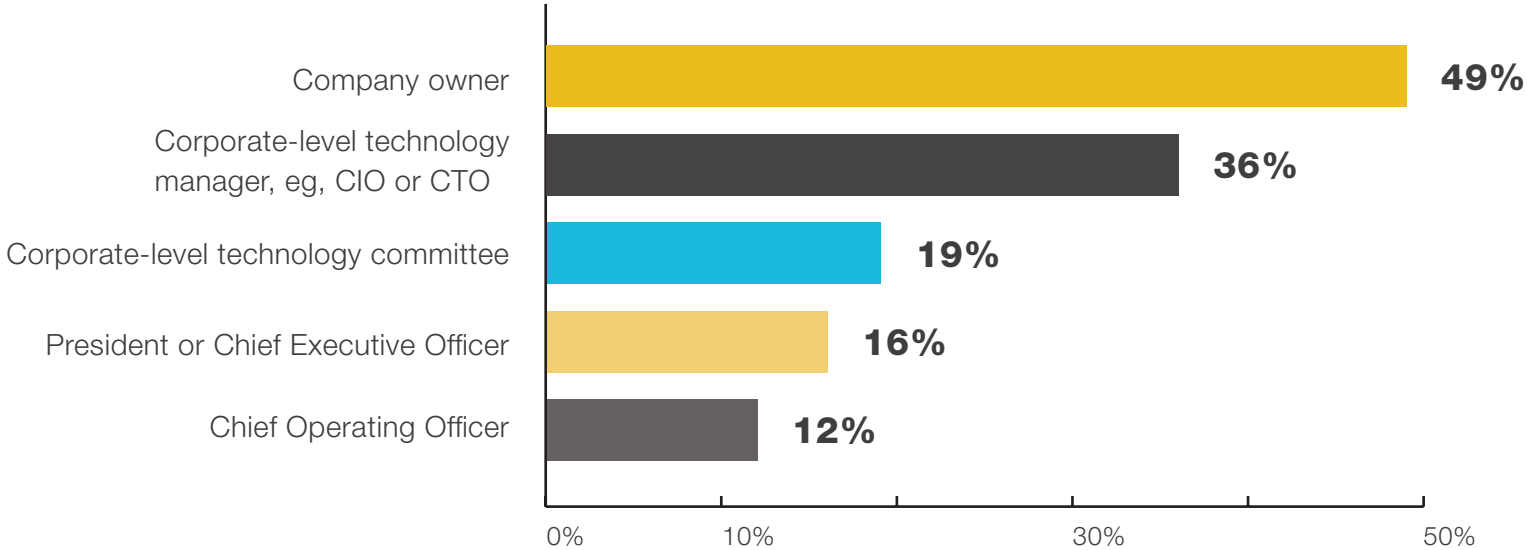
Users were asked, "What does your site-management system include?"



# SUMMARY OF THE FINDINGS

## ORGANIZATIONAL TECHNOLOGY OVERSIGHT

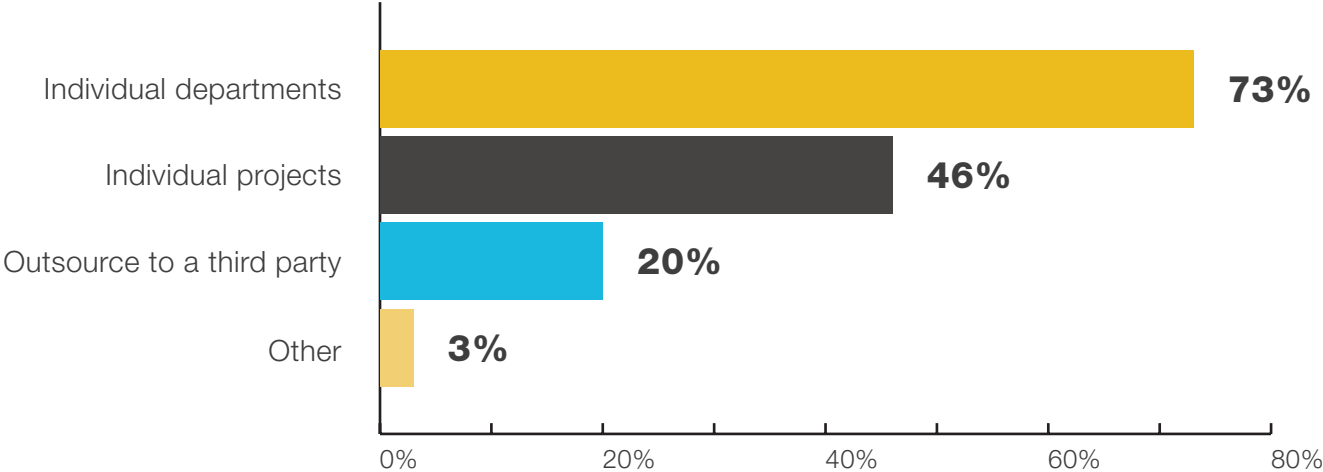
When it comes to corporate management, responders were asked, "Who is responsible for technology strategy and implementation?"



# SUMMARY OF THE FINDINGS

## ORGANIZATIONAL TECHNOLOGY OVERSIGHT

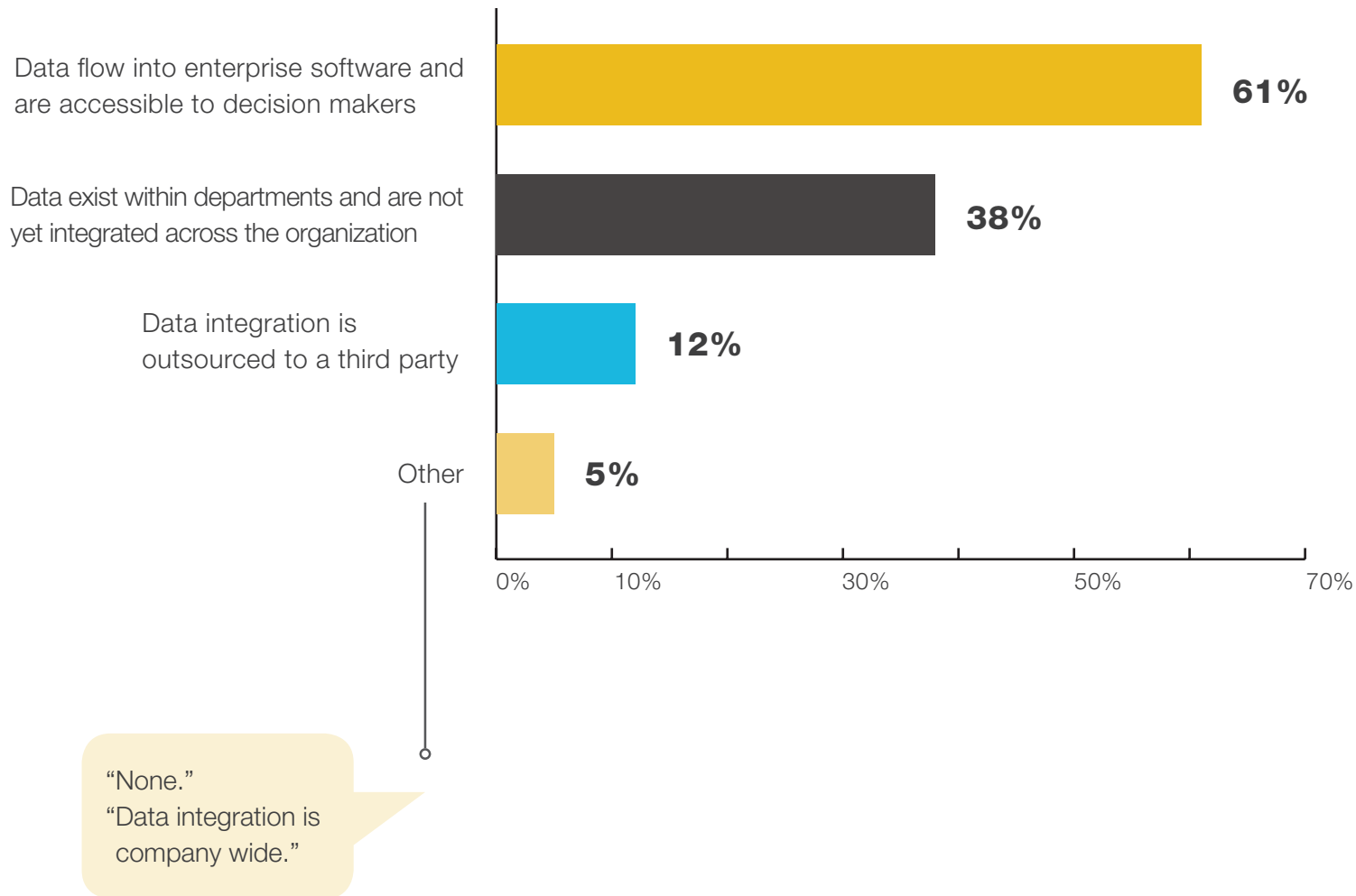
*Who is involved?*



# SUMMARY OF THE FINDINGS

## ORGANIZATIONAL TECHNOLOGY OVERSIGHT

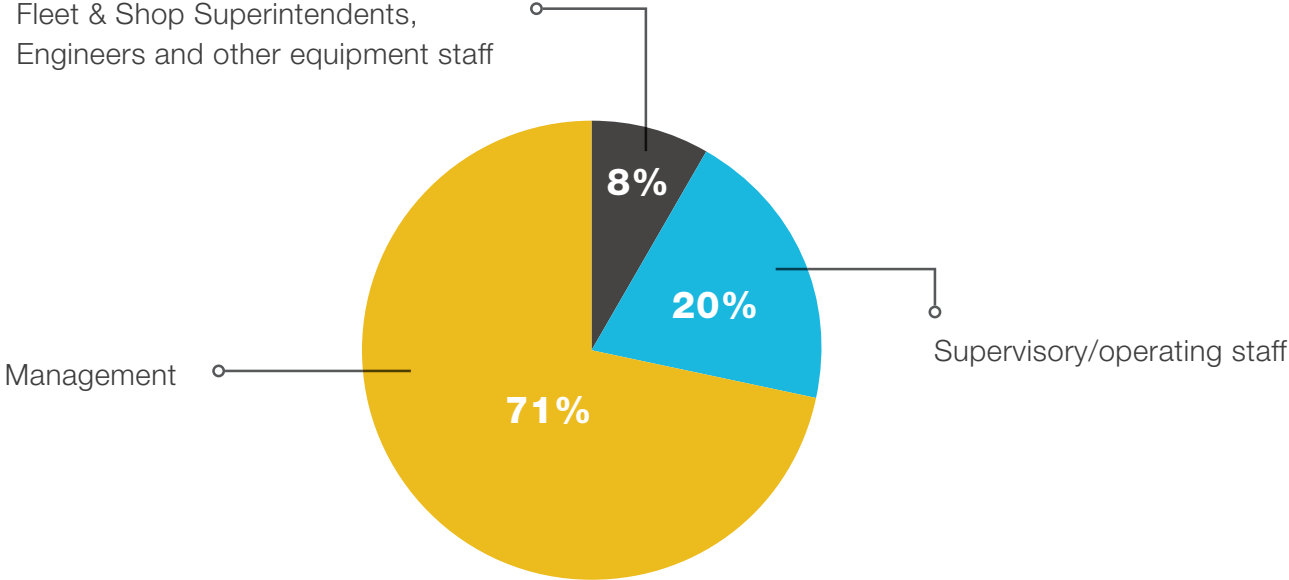
*Users were asked how they integrate data technology into the organization*



# SUMMARY OF THE FINDINGS

## DEMOGRAPHICS

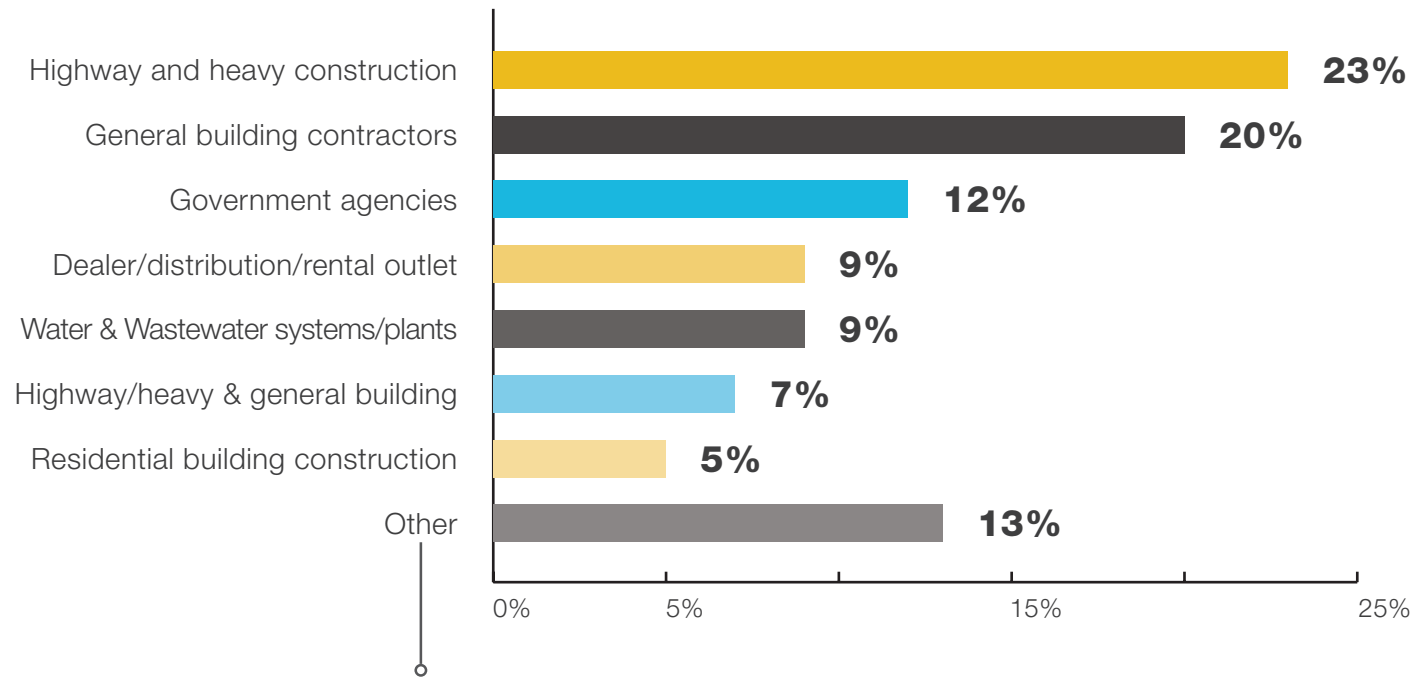
Those surveyed were asked to best describe their title



# SUMMARY OF THE FINDINGS

## DEMOGRAPHICS

Equipment users were asked, "Which of the following best describes your organization?"

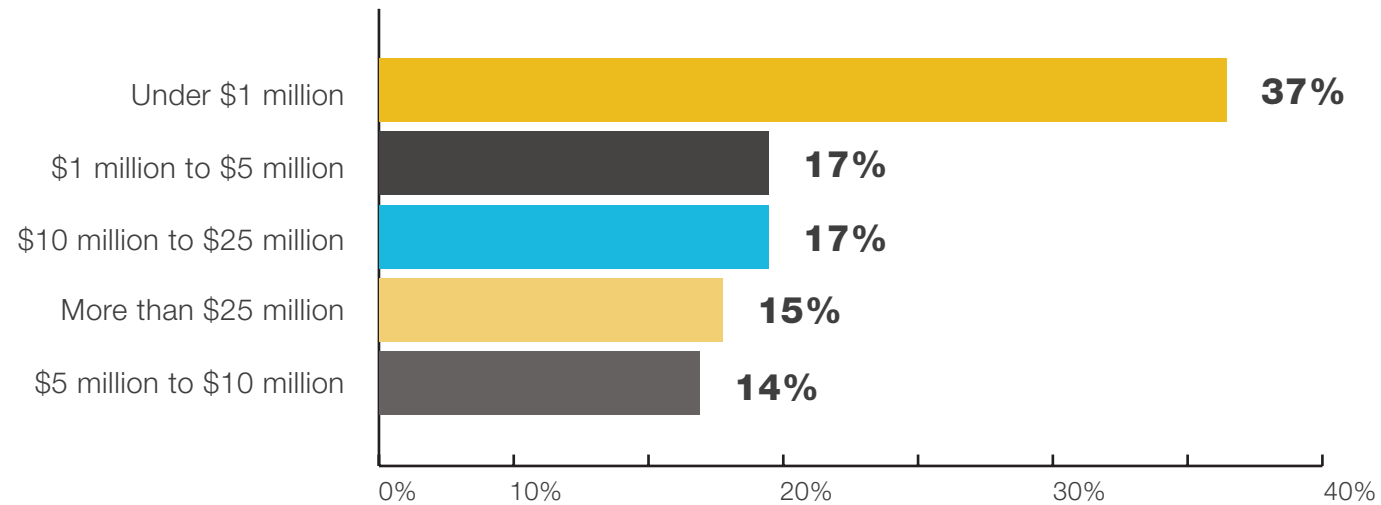


“Geotechnical Engineering.”  
“Water treatment sales and service.”  
“Mining.”  
“Driveway and parking lot maintenance.”  
“Painting contractor.”  
“Environmental cleanup contractor.”

# SUMMARY OF THE FINDINGS

## DEMOGRAPHICS

*Users were asked, "Construction Equipment & Trucks owned/leased company wide"*

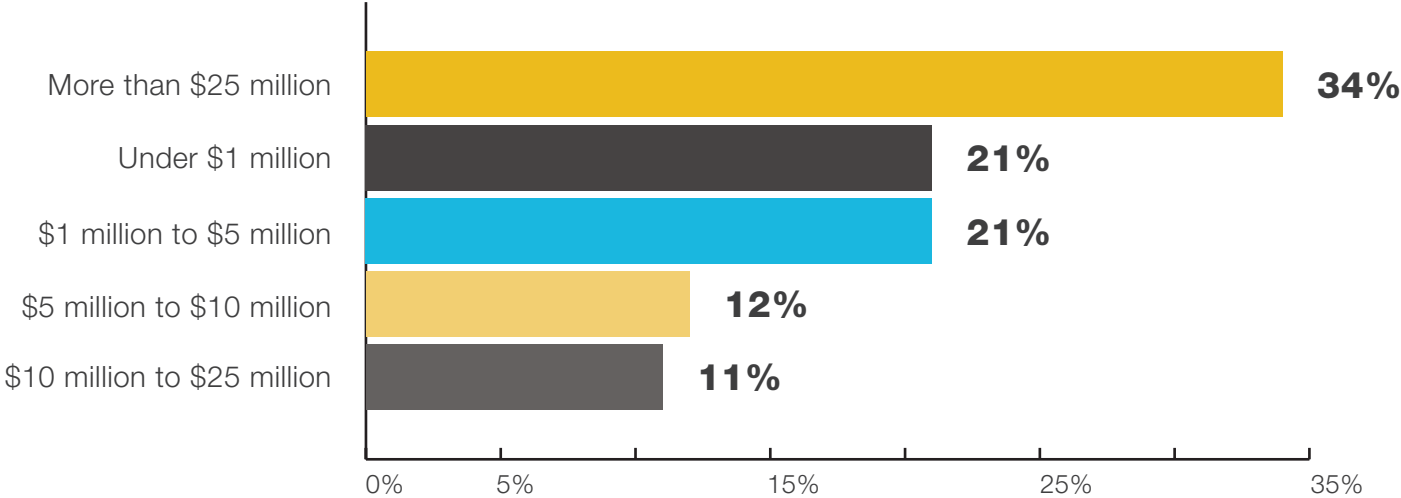




# SUMMARY OF THE FINDINGS

## DEMOGRAPHICS

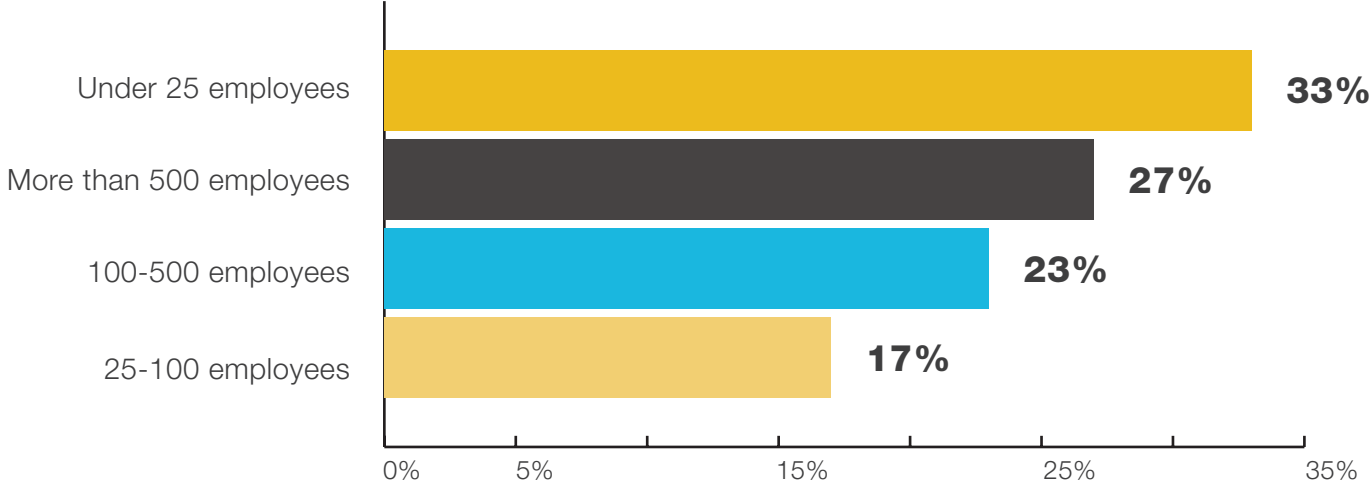
Your organization's Annual Contract Volume (Non-government agencies)



# SUMMARY OF THE FINDINGS

## DEMOGRAPHICS

*Those surveyed were asked the number of people their organization employs*





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