CONSULTING - SPECIFYING engineer

Fire & Life Safety Systems

June 2019

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Introduction and methodology

Objective
This study was conducted by *Consulting-Specifying Engineer* to evaluate the use of fire and life safety systems by consulting engineers. By gathering data about the dollar amounts of fire and life safety systems specified, the types of systems selected and the challenges that fire protection designers face, *Consulting-Specifying Engineer* provides a snapshot of the engineering community's outlook on fire and life safety systems.

Sample
The sample was selected from recipients of *Consulting-Specifying Engineer* for whom email addresses were available. Only respondents involved in the selection of fire and life safety systems were asked topic-related questions.

Method
Subscribers were sent an email asking them to participate in this study. The email included a URL linked to the questionnaire.

- **Data collected:** March 22, 2019, through April 15, 2019
- **Number of respondents:** 156
  - *Margin of error: +/- 7.8% at a 95% confidence level*
- **Incentive:** Survey participants were offered the opportunity to enter a drawing for a $100 Amazon.com gift card.

Summary of findings

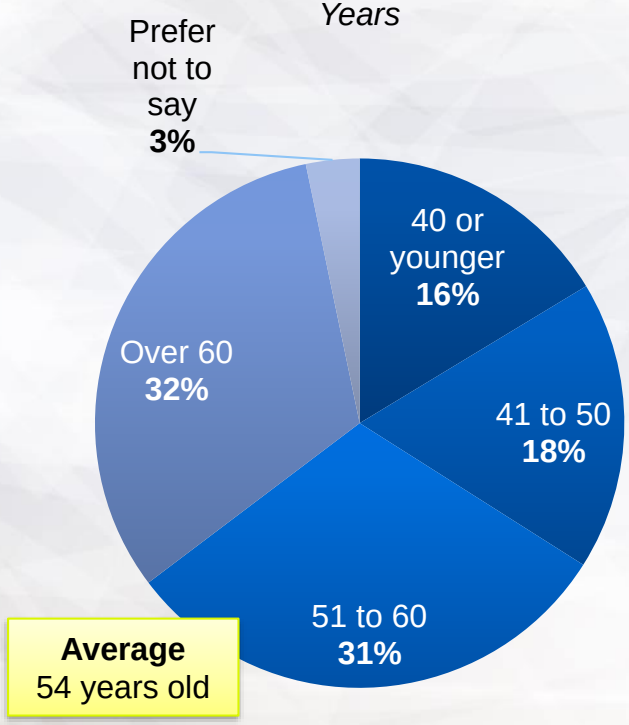
- **Involvement:** Eighty-three percent of engineers are responsible for determining the requirements/writing specifications for fire and life safety systems; 76% research and evaluate these systems for consideration on a project; and 58% recommend the brand of system to be used.
- **Annual revenue:** During the most recently completed fiscal year, the average engineering firm earned $8.8 million in mechanical, electrical, plumbing and fire protection (MEP/FP) design revenue—up 17% over the previous year. The average total dollar amount of fire and life safety systems specified for new and existing buildings has also increased from $1.9 million to $2.6 million year-over-year (+40%).
- **Project types:** Forty-four percent of last year's design revenue was generated through new construction projects, 37% retrofit/renovation, 8% maintenance/repair/operations and 7% commissioning/retro-commissioning. The top building types for which fire and life safety systems were specified into include office buildings, industrial/manufacturing warehouses/facilities, college/university buildings and hospitals/health care facilities.
- **Fire, life safety systems:** Engineers most commonly specify smoke detection, control systems, dampers, etc. and fire, smoke, heat and linear detection systems for new and existing nonresidential buildings.
- **Recent changes:** Changes to building information modeling, codes and standards, integration and wireless devices/systems have been affecting engineers and their projects over the past 12 to 18 months.
- **Writing specifications:** Engineering firms most commonly write performance or prescriptive fire and life safety systems specifications; 29% always use performance specifications (those in which text is restricted to stating the required performance).
- **Current challenges:** Having an inadequate budget for high-quality design remains the top challenge for fire protection engineers. Other difficult tasks include adhering to the expected project delivery date and the subjective interpretations of regulations by code authorities.
- **Design factors:** When comparing fire and life safety systems, engineers are heavily weighing product quality, previous experience with the manufacturer, service support, and manufacturer's reputation.

Respondent profile

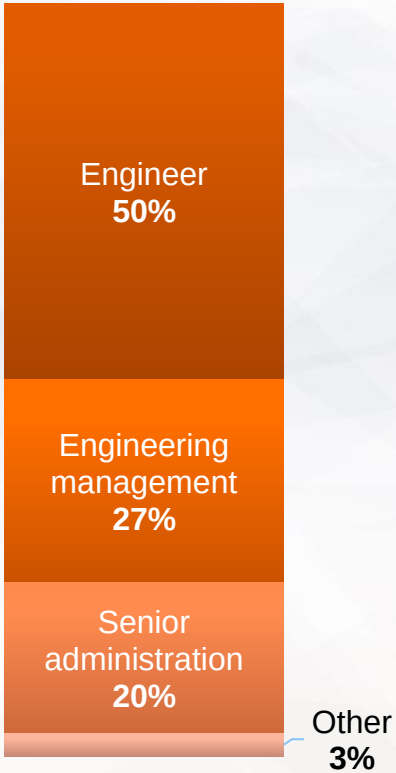
Age, primary job function, experience

The average respondent is 54 years old, with 23 years of industry experience. Forty-seven percent of respondents have engineering management or senior administration primary job functions; another 50% are professional engineers.

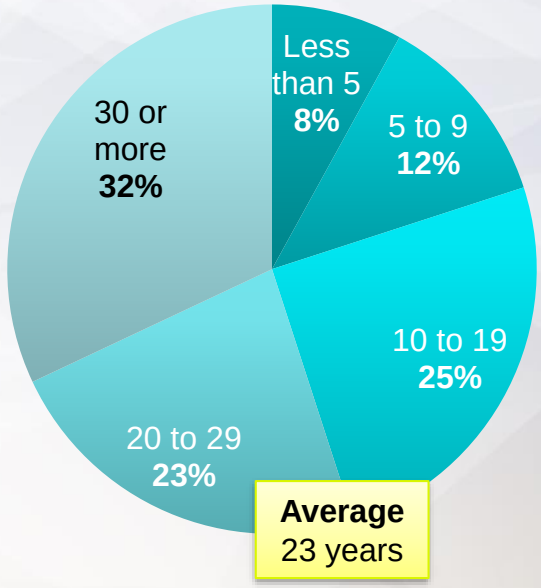
Age
Years



Primary job function



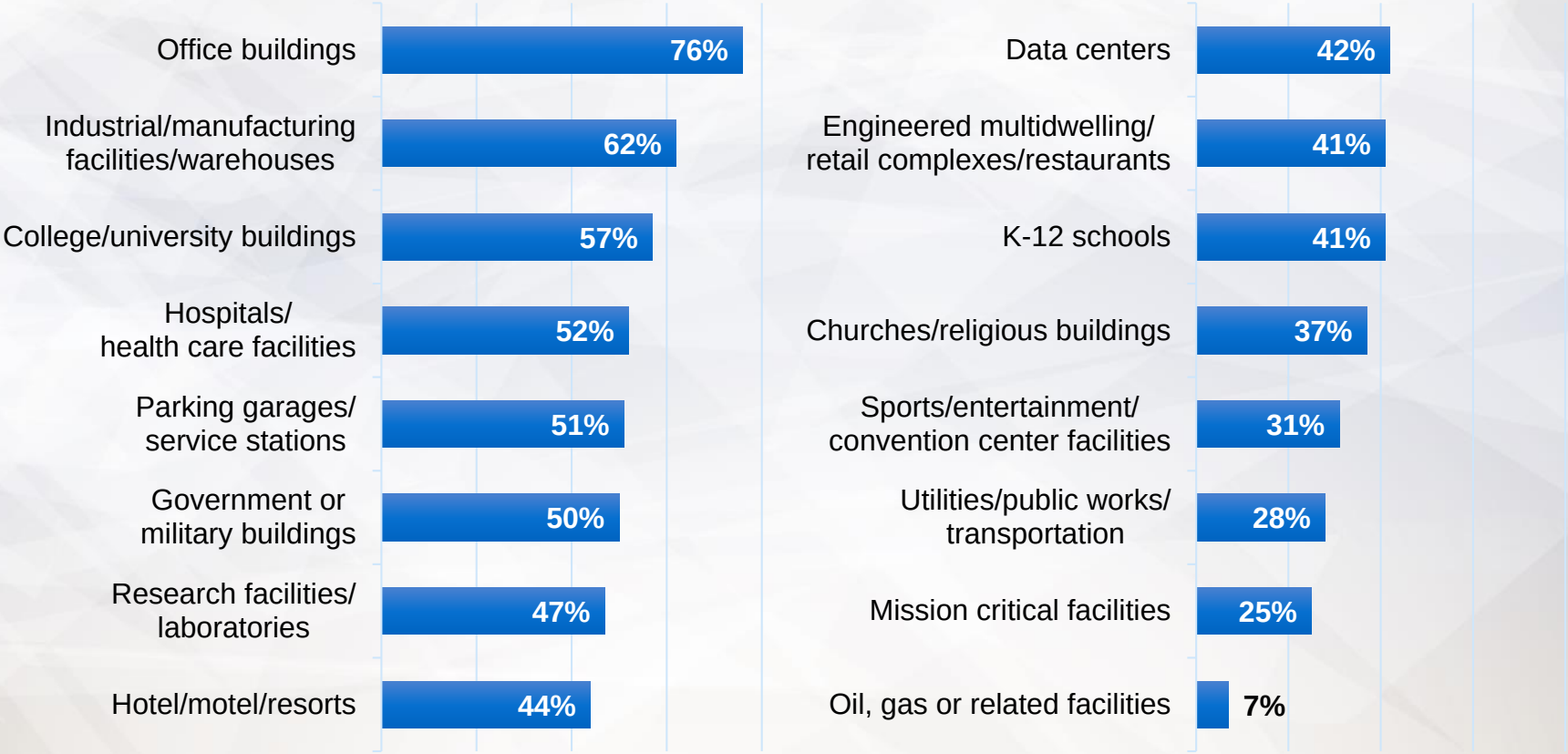
Industry experience
Years



Q: Which of the following ranges includes your current age? (n=153);
Q: Which of the following best describes your job title? (n=152); Q: For approximately how many years have you worked in fire and life safety systems? (n=153)

Building structures

The top structures that respondents specify, design or make product selections for are office buildings (76%), industrial/manufacturing facilities/warehouses (62%), college/university buildings (57%) and hospitals/health care facilities (52%).

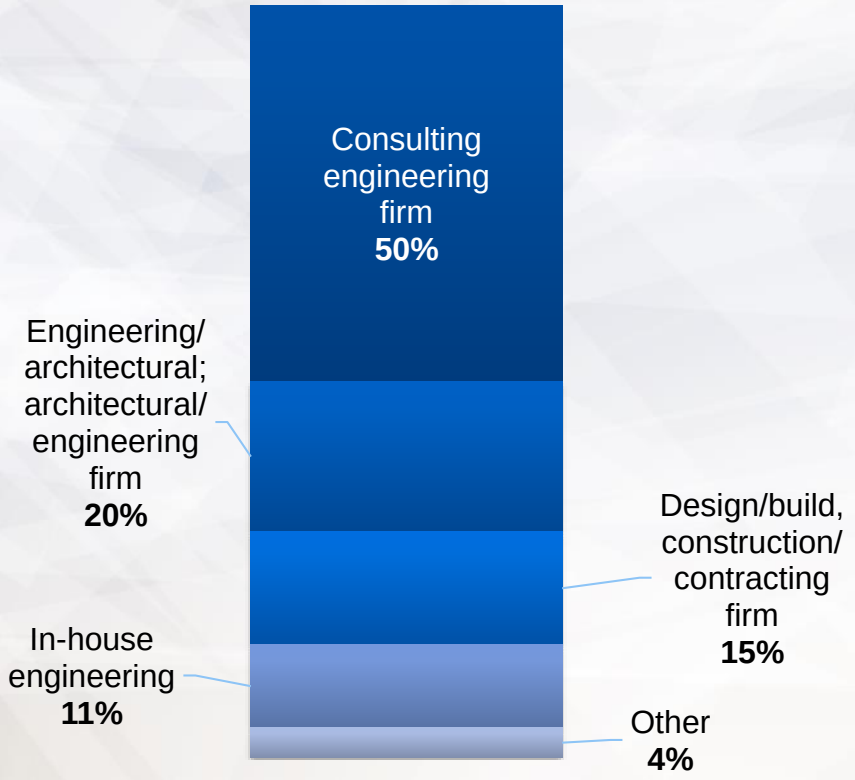


Q: For which of the following types of building structures do you specify, design or make product selections? Check all that apply. (n=156)

Company profile

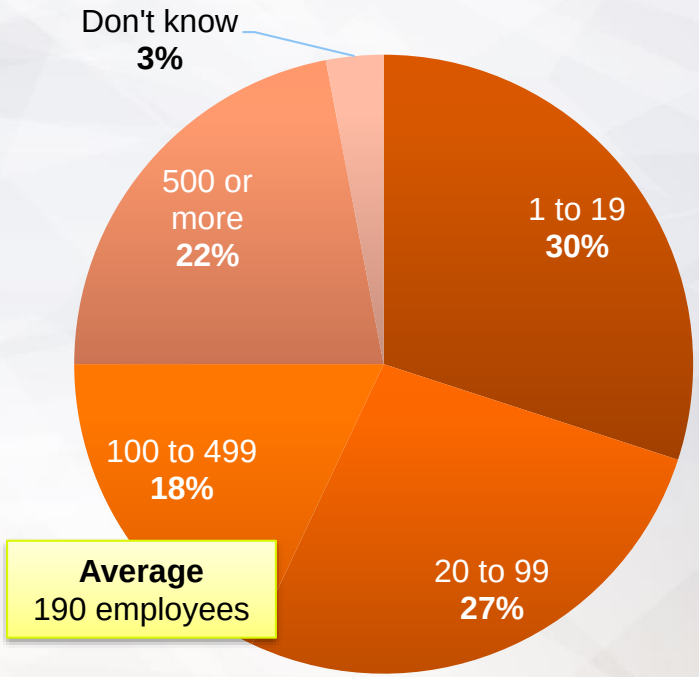
Half of respondents work for a consulting engineering firm, and 57% indicated that their firm employs fewer than 100 people; the average firm employs 190 people.

Company type



Company size

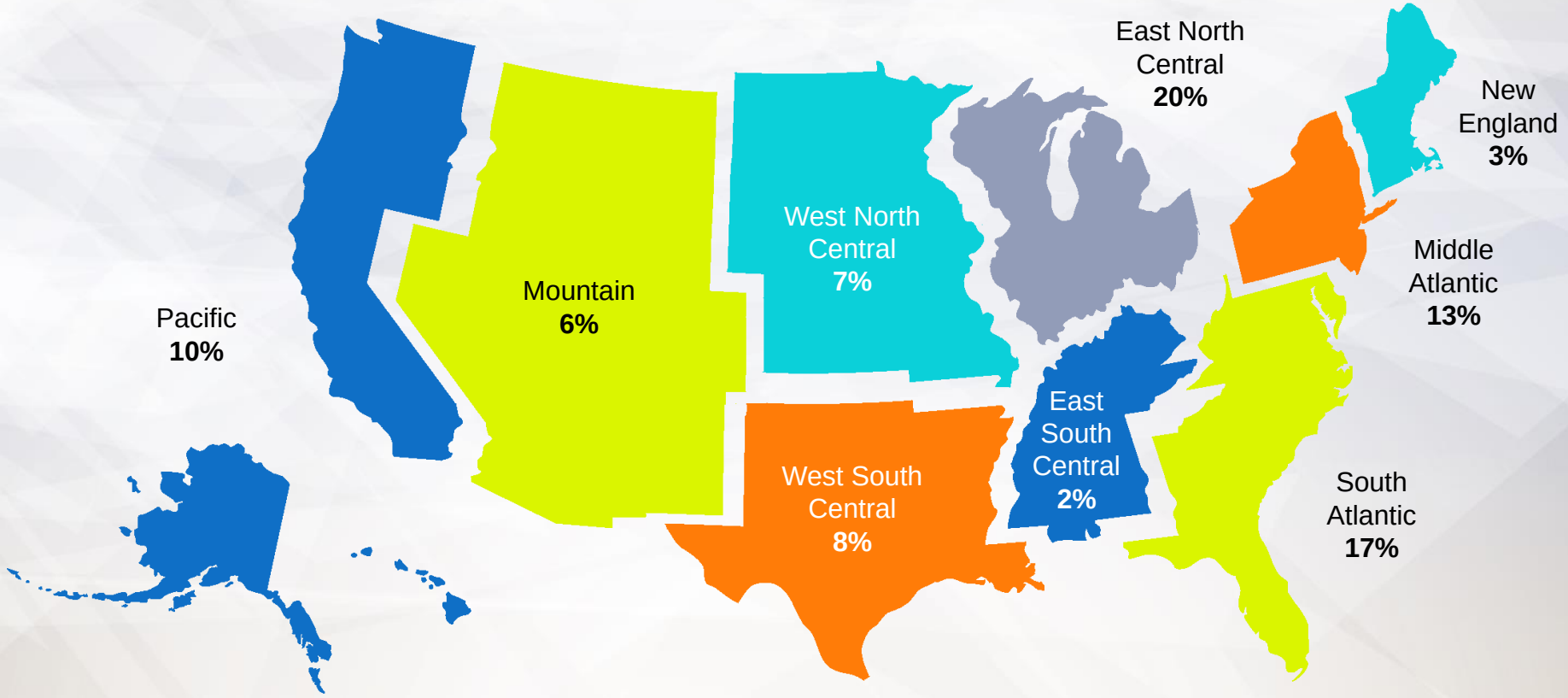
No. of employees



Q: Which of the following best describes your company? (n=153); Q: Approximately how many people are employed by your firm? (n=153)

Location

One-third of respondents are located along the East Coast of the U.S. and another 14% reside beyond the U.S. border. Other countries represented include Canada, Ecuador and Pakistan.

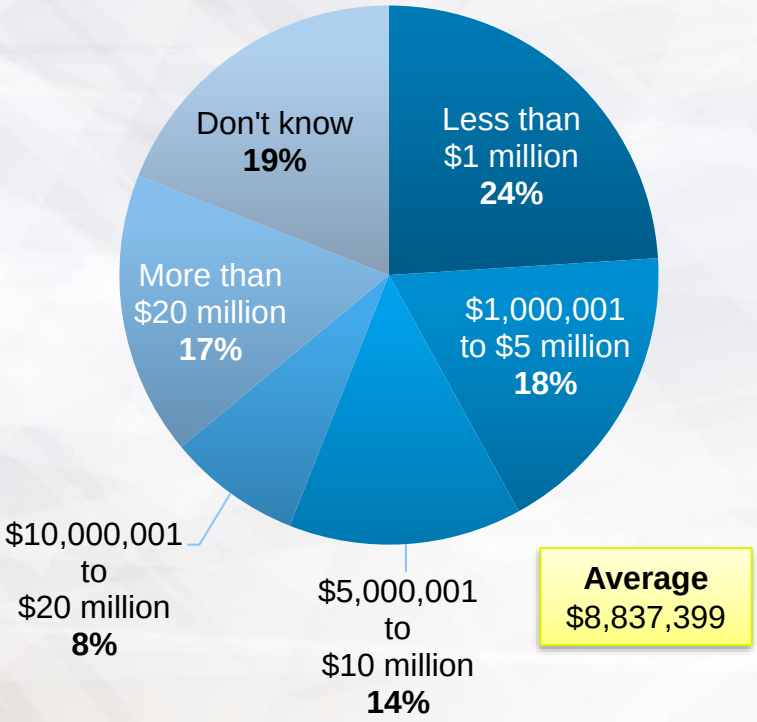


**Data gathered by matching respondents to their* Consulting-Specifying Engineer *audience profiles.*

Annual MEP/FP design revenue

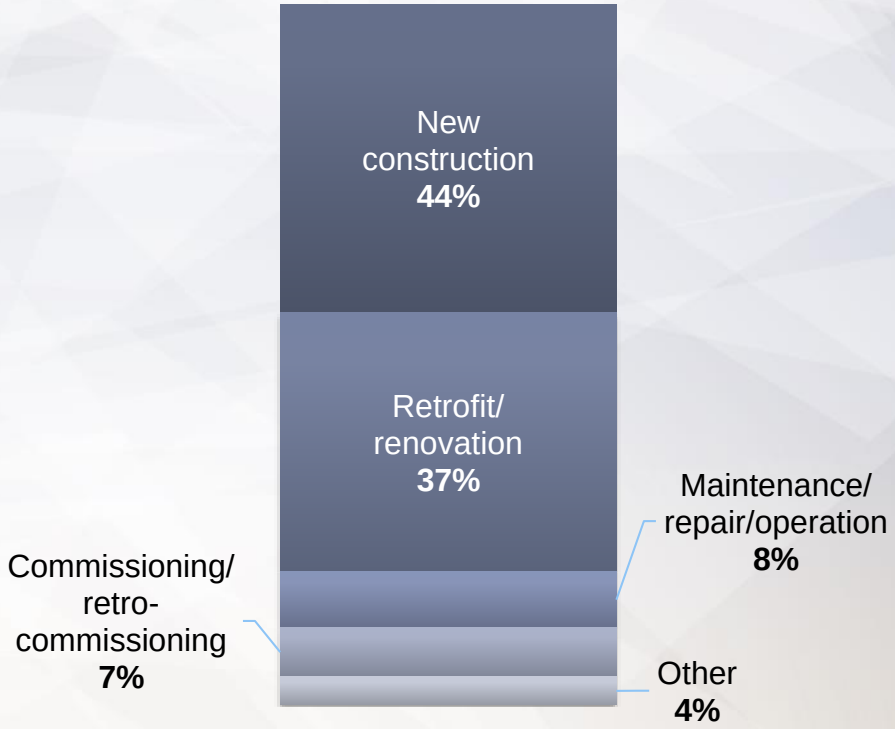
The average firm generated $8.8 million in mechanical, electrical, plumbing and fire protection (MEP/FP) design revenue in 2018. Most MEP/FP design projects in 2018 were new construction or retrofit/ renovations.

Total MEP/FP design revenue



MEP/FP design billings

Average

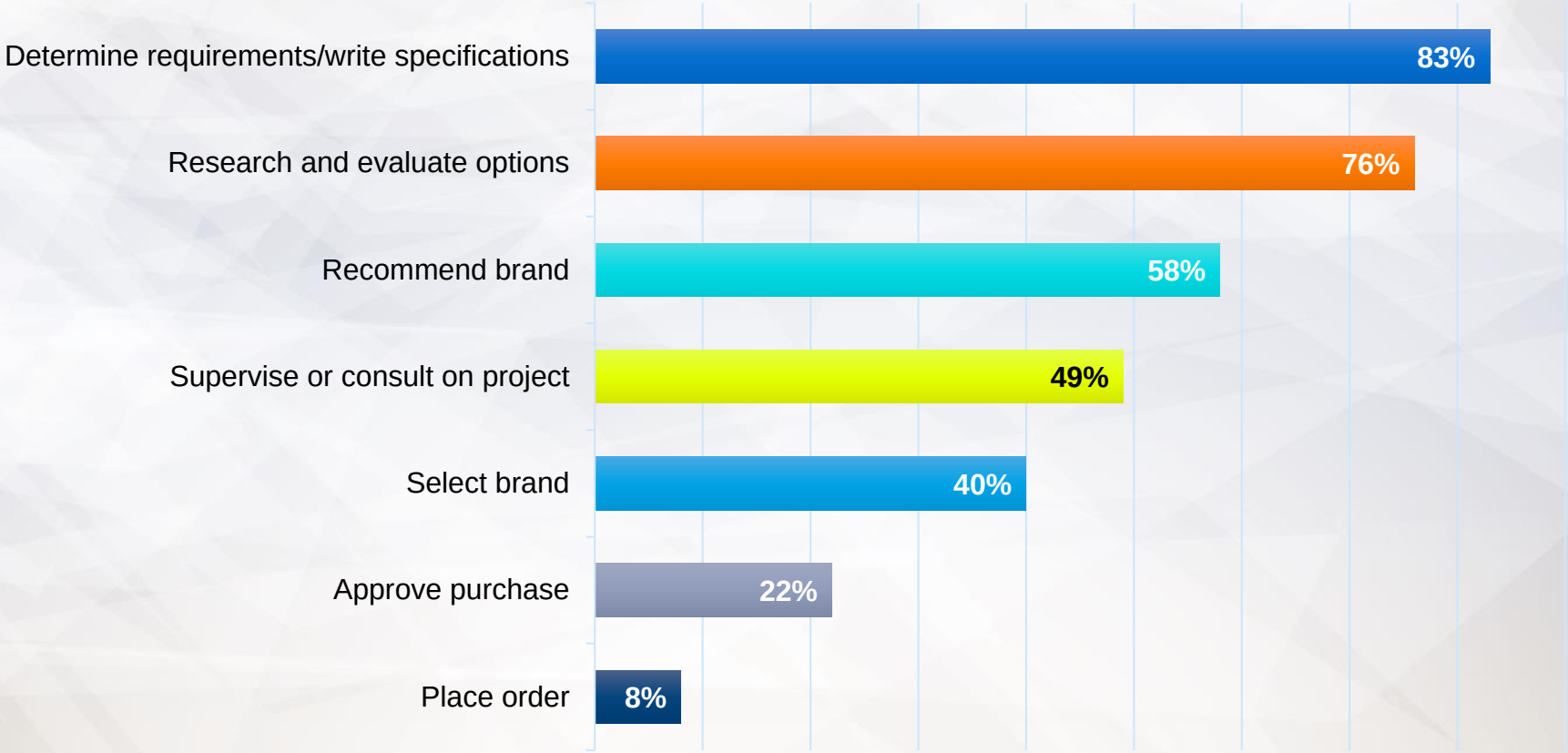


Q: Which of the following ranges best describes your firm's annual mechanical, electrical, plumbing and fire protection design revenue? (n=153);
Q: Define the percentage of last year's design revenue that was spent in each of the areas shown. (n=148)

Fire and life safety systems

Involvement in product selections

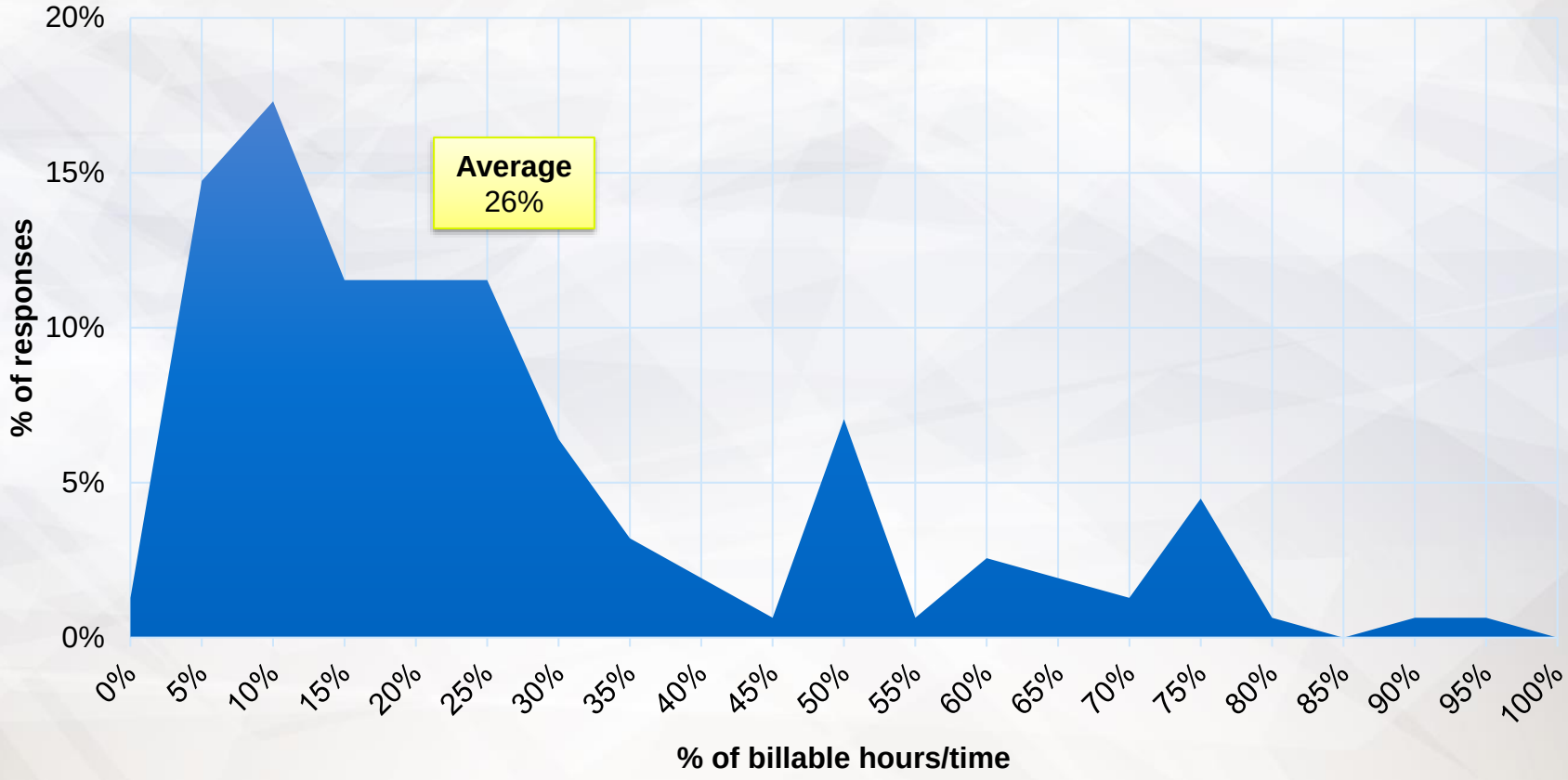
Eighty-three percent of engineers are involved in determining requirements/writing specifications in the selection of fire and life safety systems.



Q: In what ways, if any, are you involved in the selection of fire and life safety systems? Check all that apply. (n=156)

Time spent researching/specifying

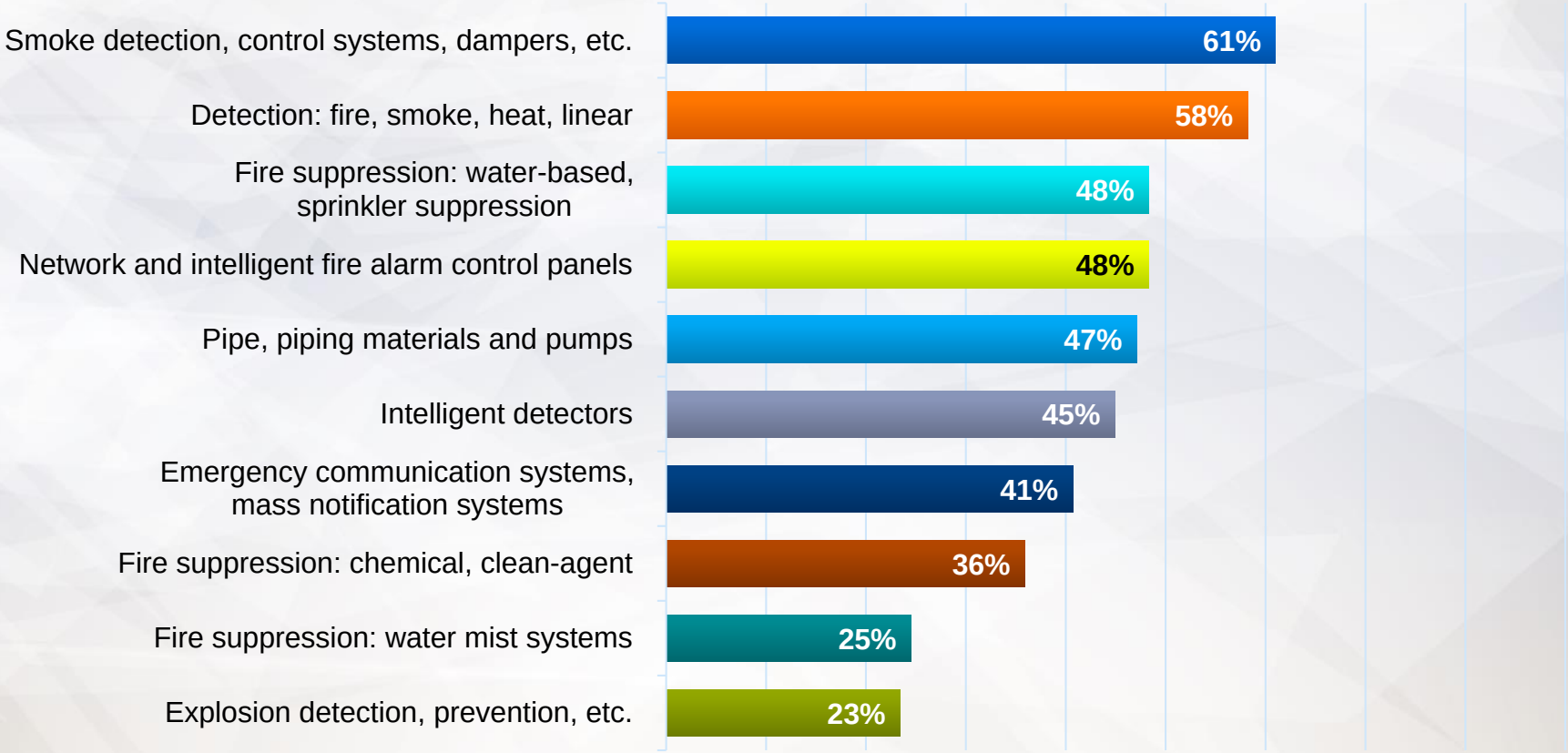
On average, engineers spend 26% of their billable hours/time at work researching and/or specifying fire and life safety systems.



Q: What percentage of your billable hours/time at work is spent researching and/or specifying fire and life safety systems? (n=156)

Fire, life safety systems specified

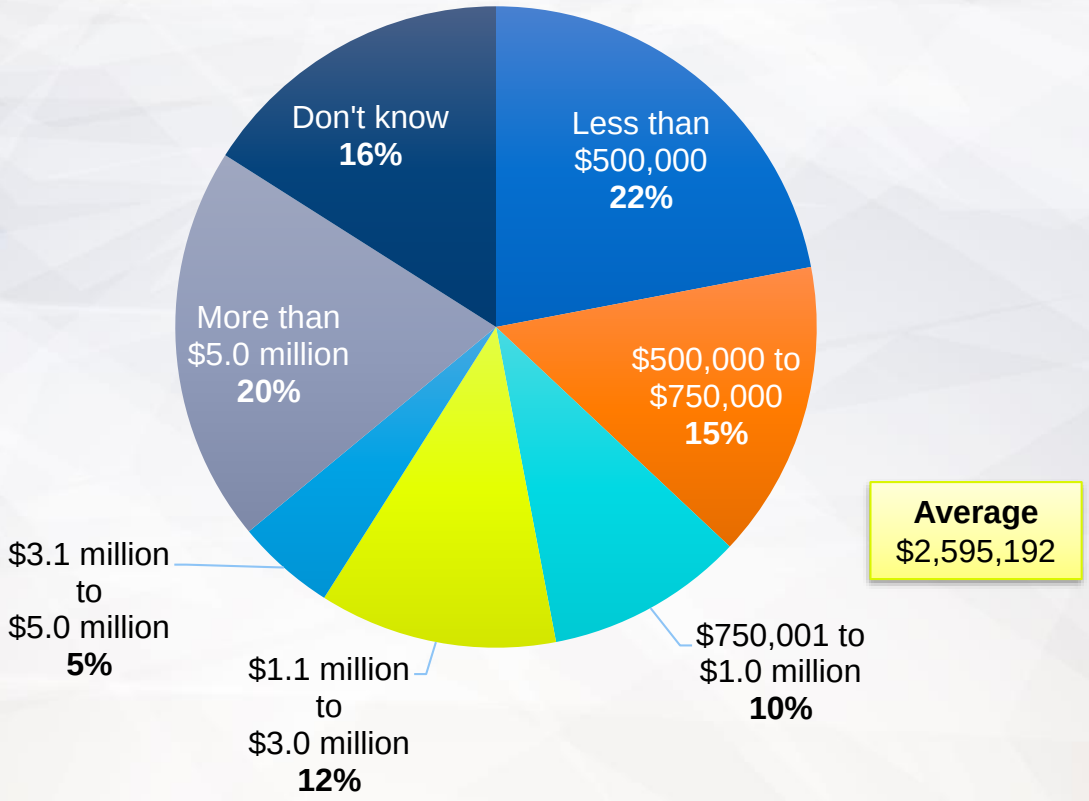
The top fire and life safety systems currently being specified by engineers are smoke detection, control systems, dampers, etc. (61%); fire, smoke, heat, linear detection (58%); water-based, sprinkler suppression (48%); and network and intelligent fire alarm control panels (48%).



Q: What types of fire and life safety systems do you currently specify? Check all that apply. (n=156)

Dollar amount specified for fire, life safety systems

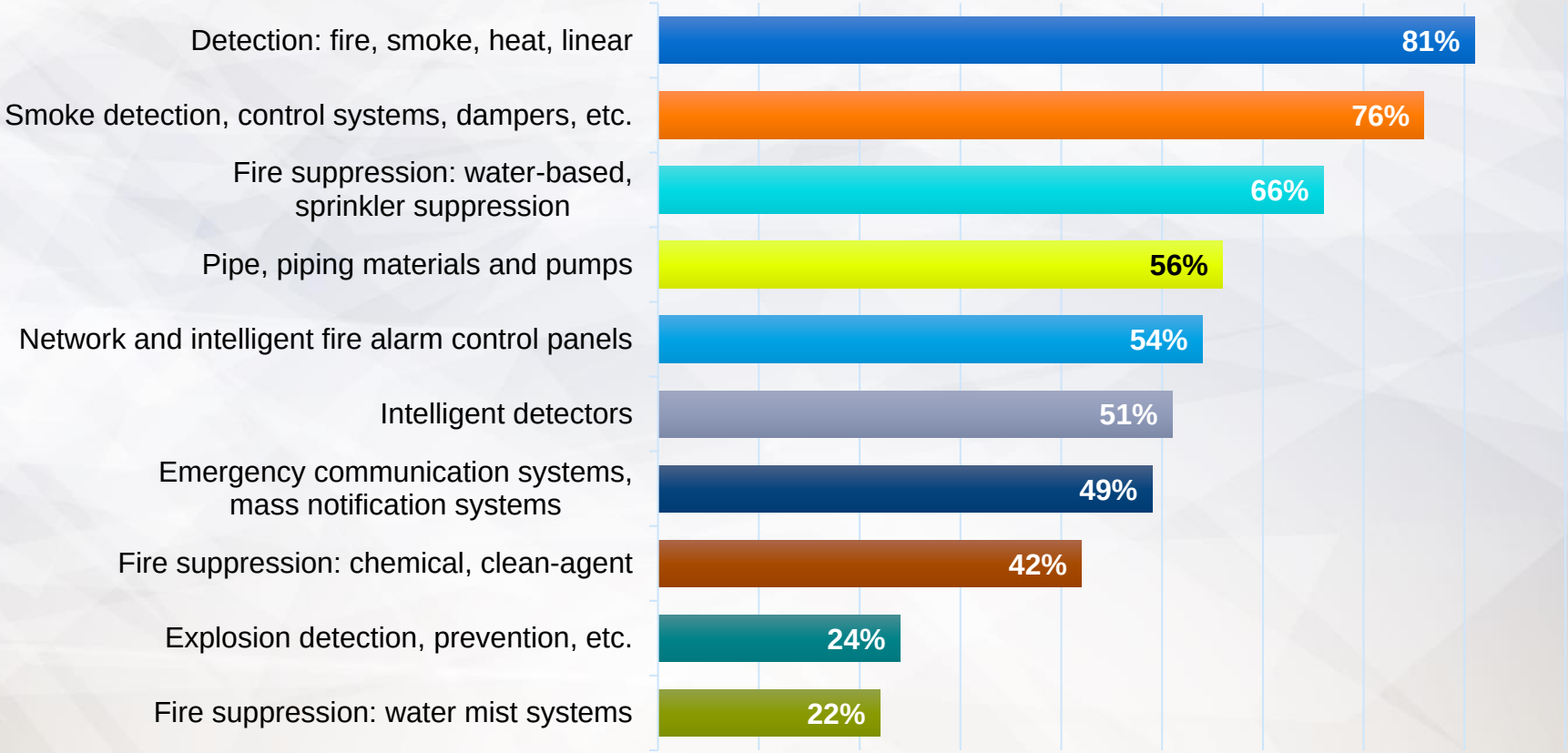
Thirty-seven percent of fire and life safety systems specified on an annual basis by engineering firms for new and existing buildings were valued at more than $1 million.



Q: What is the total annual dollar amount of fire and life safety systems specified by your firm for new and existing buildings? (n=156)

Revenue generation

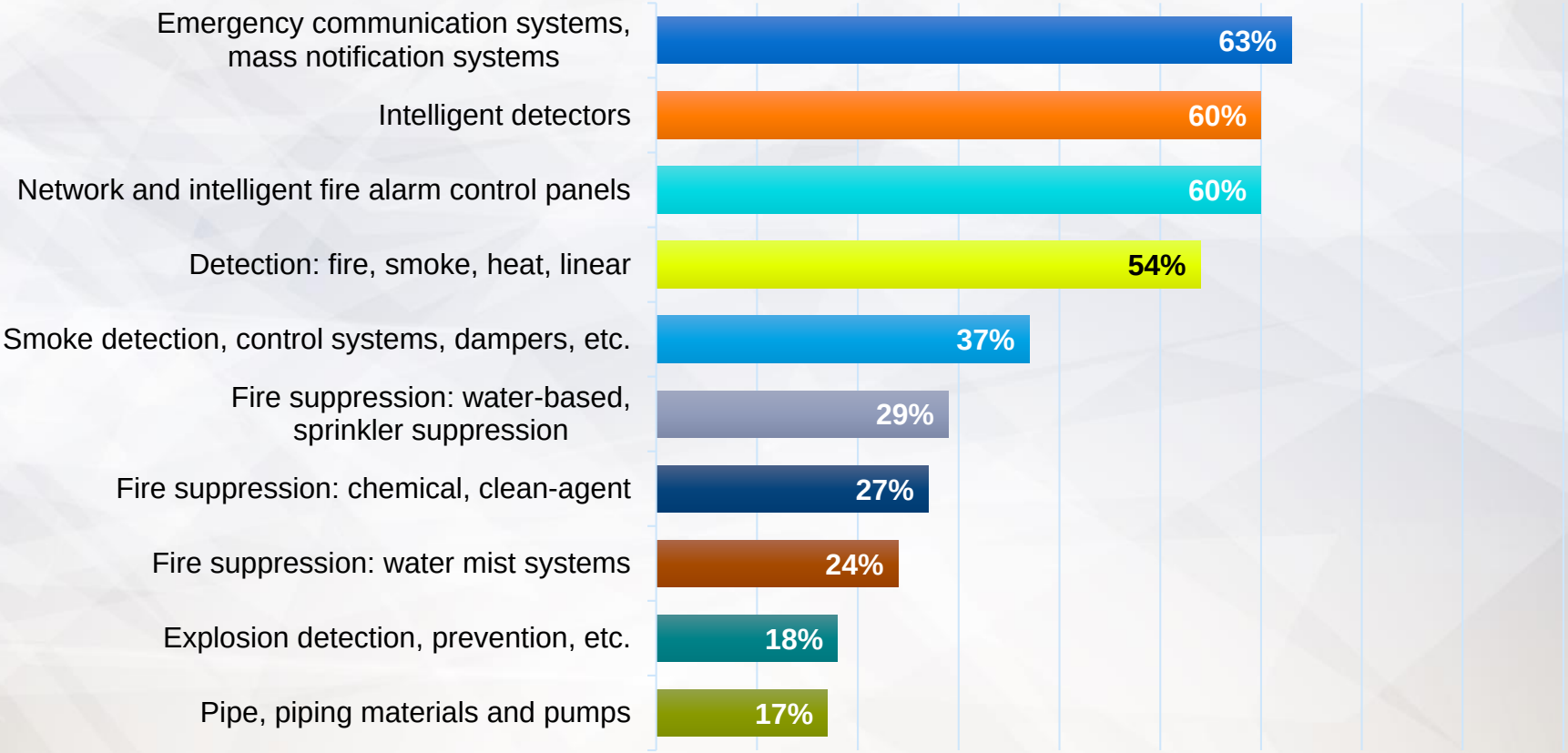
In the past year, firms have obtained design revenue for projects involving fire, smoke, heat and linear detection systems (81%); smoke detection, control systems, dampers, etc. (76%); and fire suppression systems (water-based, sprinkler suppression; 66%).



Q: In the past year, for what types of fire and life safety systems has your firm obtained design revenue? Check all that apply. (n=156)

Technologies in demand

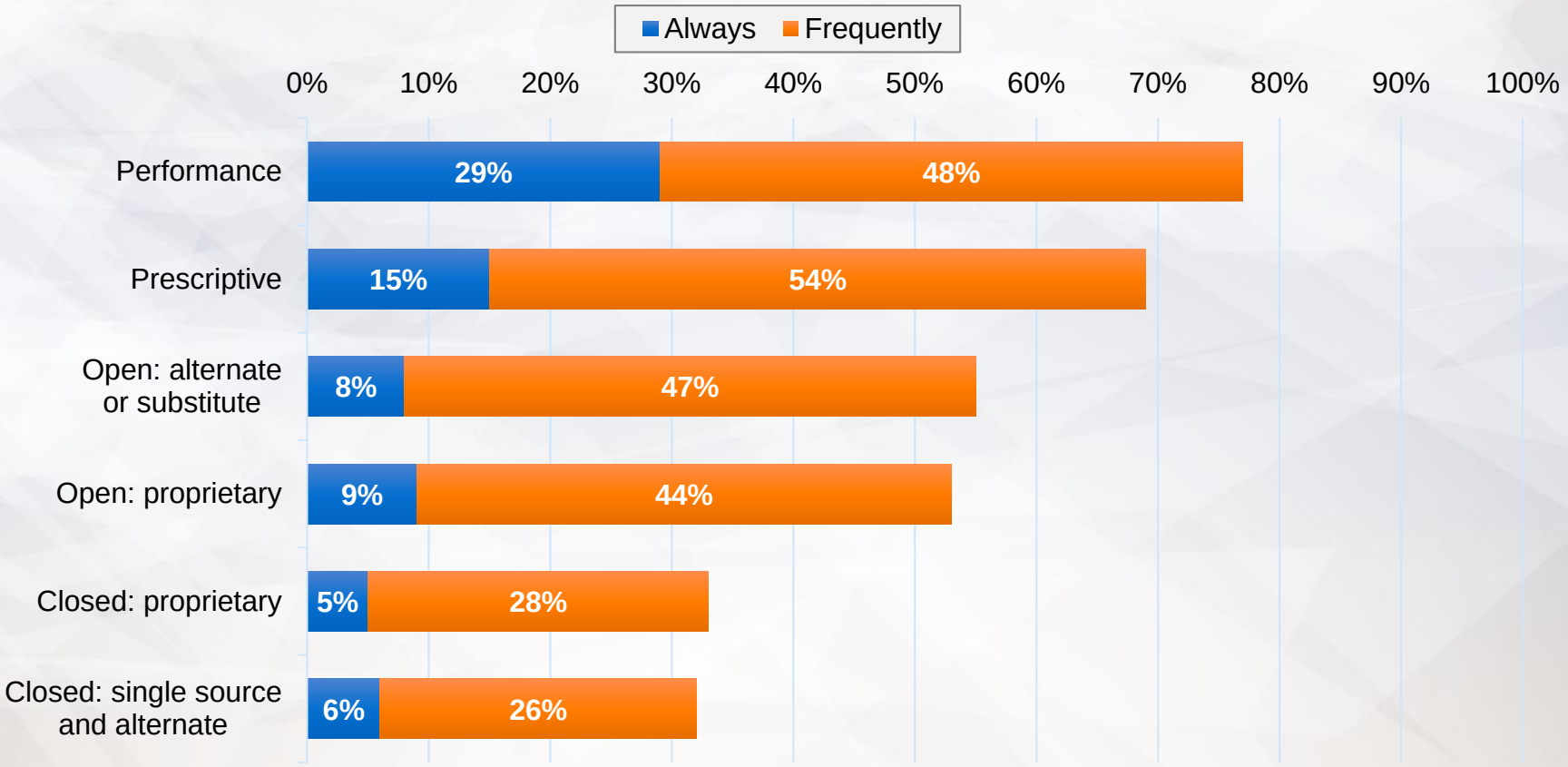
More than half of respondents expect to see an increase in emergency communication systems and mass notification systems; intelligent detectors; network and intelligent fire alarm control panels; and fire, smoke, heat, and linear detection systems in upcoming projects.



Q: For which technologies do you expect to see an increase in projects? Check all that apply. (n=156)

Types of fire, life safety system specifications written

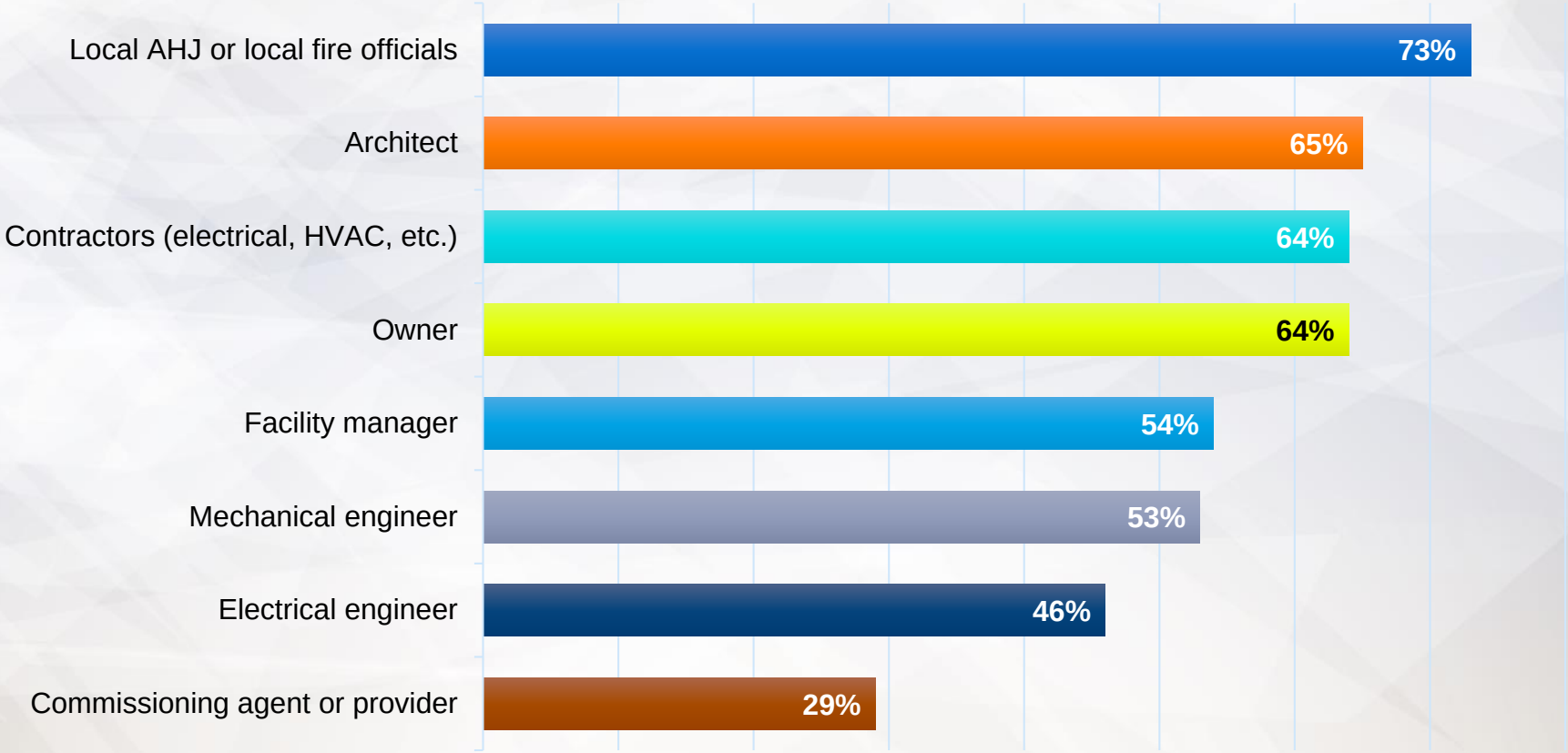
Performance fire and life safety systems specifications—those in which the text is restricted to stating the performance that must be achieved by the completed work—are used by 77% of engineering firms, and 69% generally issue prescriptive specifications.



Q: Of the total fire and life safety systems specifications issued by your firm, how often are you using each of the following? (n=156)

Design coordination

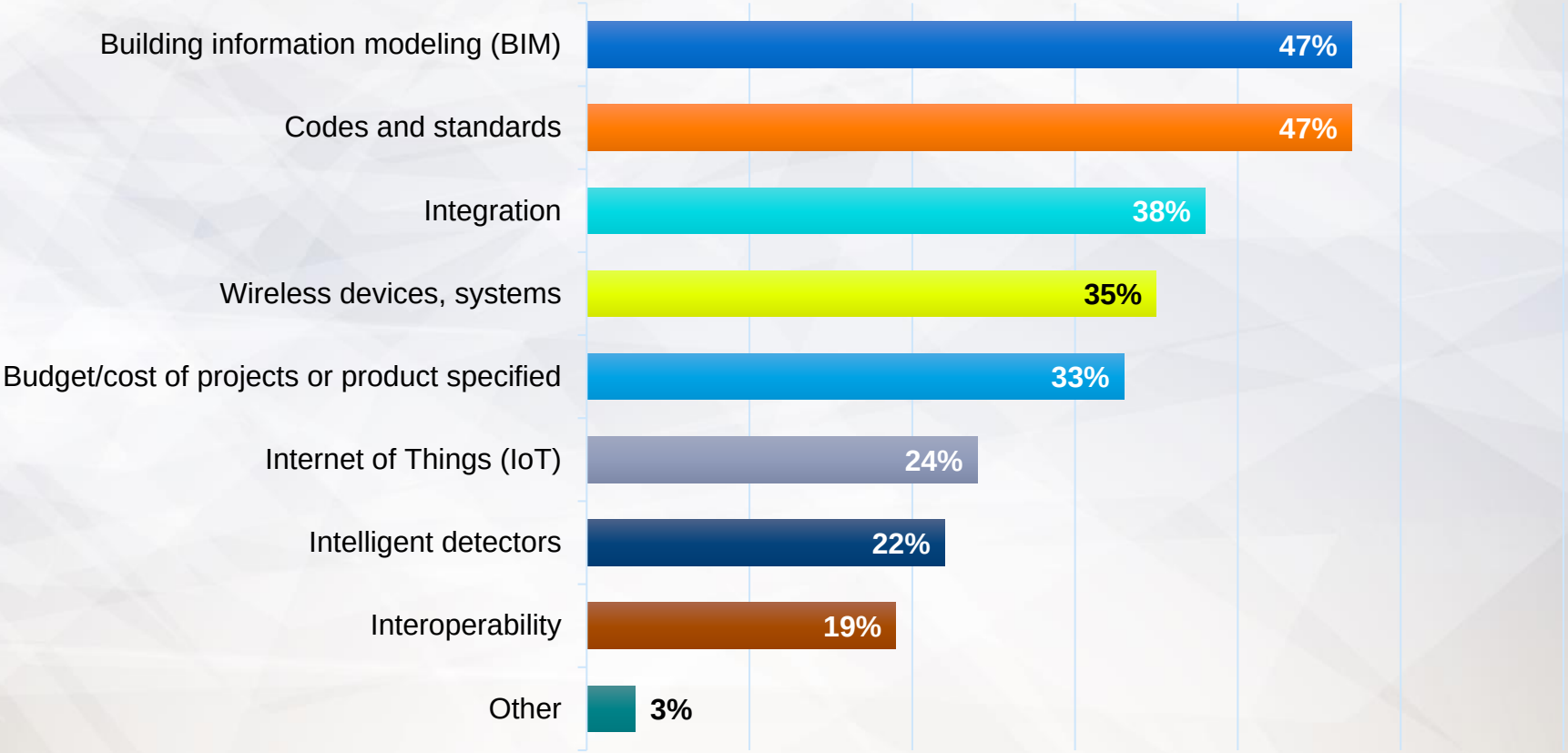
In addition to their fire/life safety design team, 73% of engineers reported local authorities having jurisdiction (AHJs) or local fire officials as having the most impact on projects, followed by architects, contractors and owners.



Q: In addition to your fire/life safety design team, who else has an impact on your projects? Check all that apply. (n=156)

Recent changes in fire, life safety system design

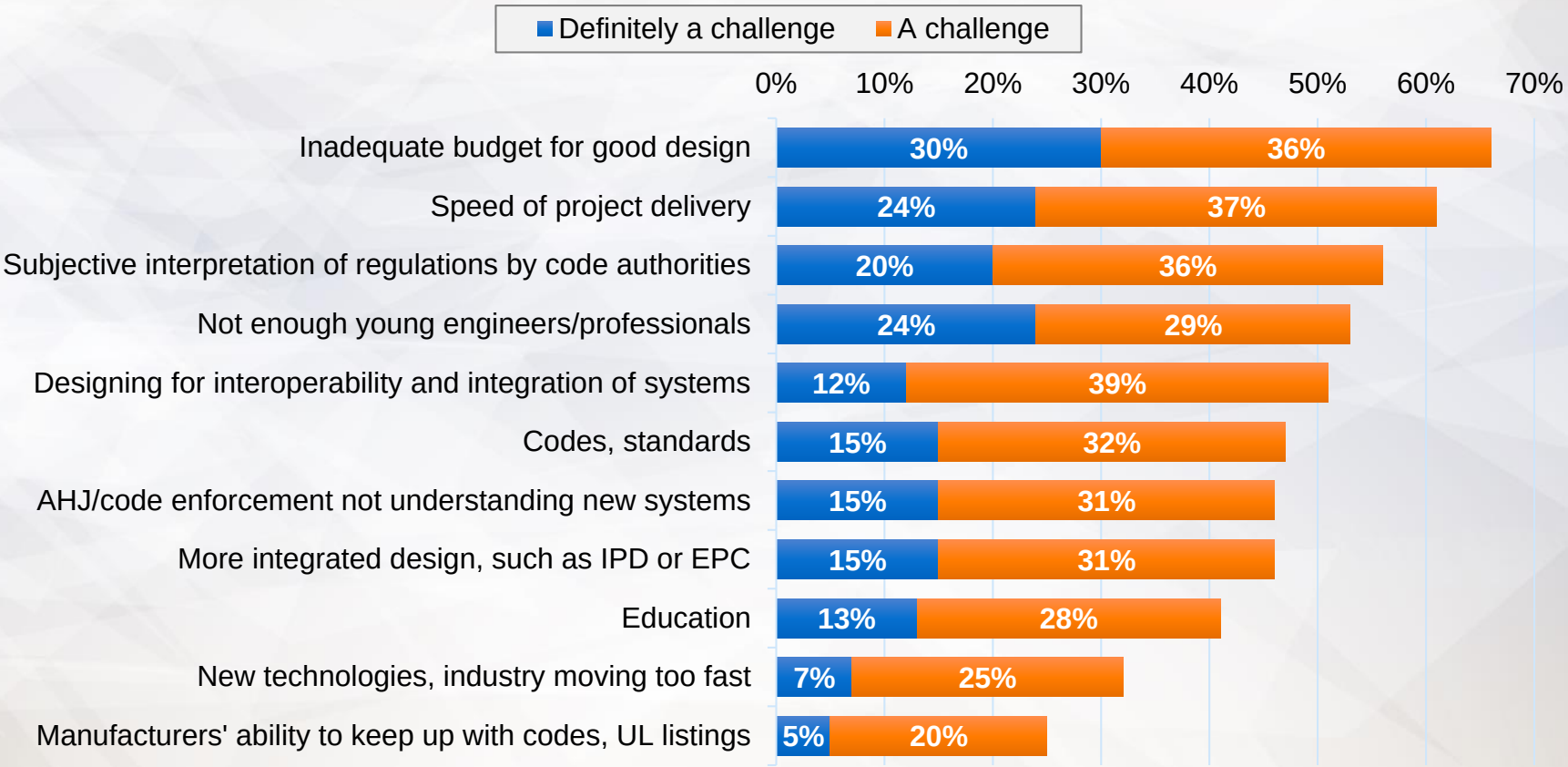
The top changes that respondents have observed in fire and life safety systems during the past 12 to 18 months are those to building information modeling and codes and standards.



Q: What are the biggest changes in fire and life safety systems that you've observed during the past 12 to 18 months? Check all that apply. (n=156)

Challenges facing engineers

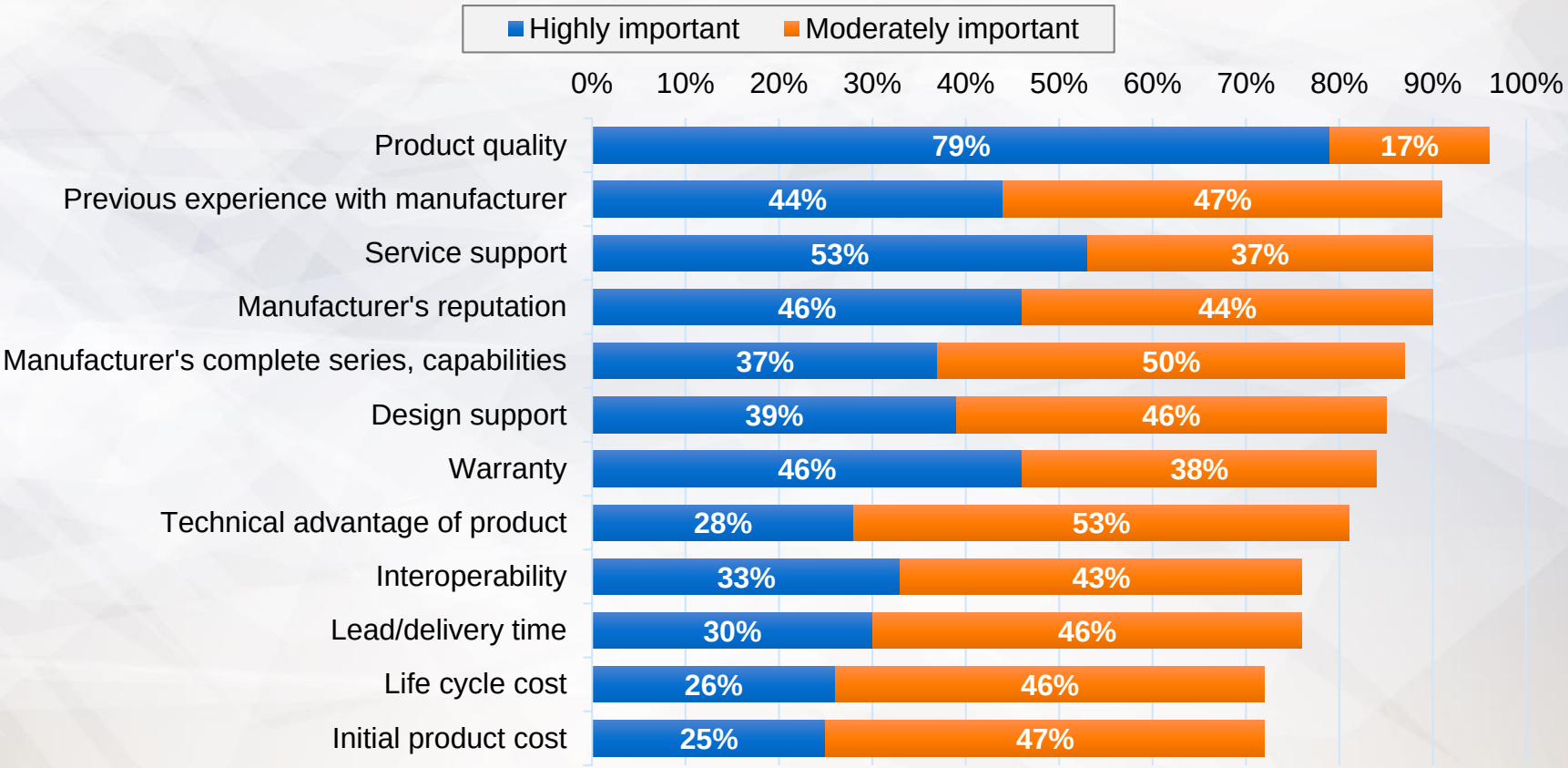
The top fire and life safety system design challenges that today's engineers are facing include inadequate budgets for high quality design, compacted project delivery schedules and the subjective interpretation of regulations by local code authorities.



Q: What are critical challenges or issues affecting the future of fire and life safety systems, engineers and/or the industry? (n=156)

Important product factors

The most important factors to respondents' selection of fire and life safety systems are quality (96%), previous experience with the manufacturer (91%), service support offerings (90%) and manufacturer's reputation (90%).



Q: In your design/specification activity, how important is each of the following factors to your selection of fire and life safety systems over another? (n=156)

Additional resources

Thank you for downloading the *Consulting-Specifying Engineer* 2019 Fire & Life Safety Systems Study. Use the links below to access additional information on fire and life safety news, products and research.

News, articles, products

- Automation, controls
- Building envelope
- Codes and standards
- MNS, ECS
- Suppression systems
- Commissioning
- Energy efficiency
- New Products for Engineers

Online training

- CFE Edu
- Upcoming webcasts
- On demand webcasts

Resources

- Career Smart
- Case studies
- Ebooks
- Newsletters
- White papers
- Videos

Editorial research studies

- 2019 Lighting & Lighting Controls
- 2019 HVAC Systems & Building Automation Systems
- 2018 Salary Survey
- 2018 Electrical Systems & Power Systems
- Additional studies: www.csemag.com/research

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