

REPORT

The State of Augmented Reality in Facilities Management: 2021

Resonai

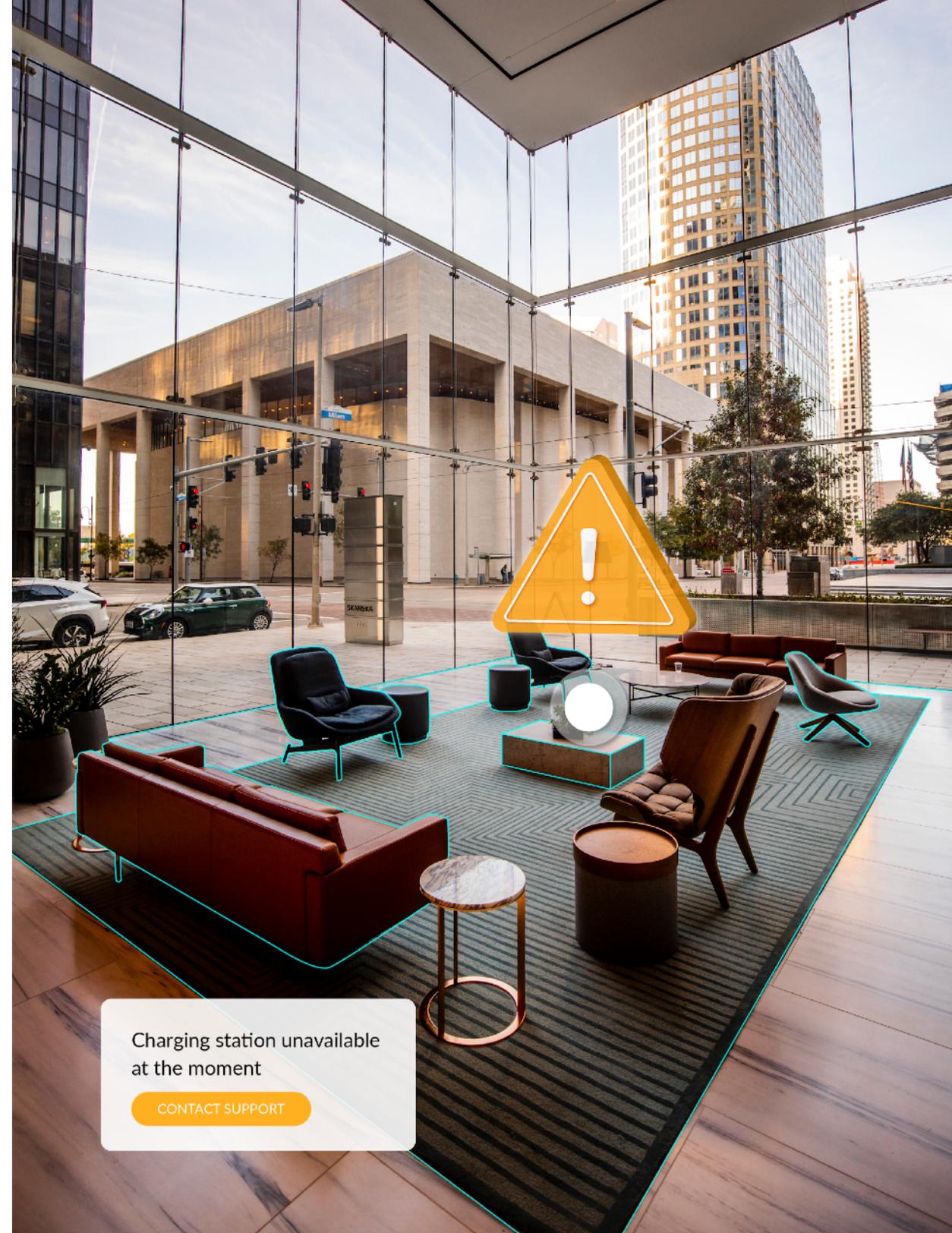


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Executive Summary

Facilities management (FM) is undergoing a digital transformation driven by augmented reality (AR) and a growing need for visitor-centric solutions. Chief among AR's most valued benefits is the ability to streamline building operations, automate maintenance and repair processes, and facilitate health & safety requirements during global crises like the COVID-19 pandemic.

In addition to these are the myriad opportunities to enrich visitor experiences at an individual level. Through personalized navigation and instruction, AR allows facility managers to author compelling visitor experiences while exploring new revenue-generating and insight-gathering opportunities through AR-based advertising and analytics.

To better understand these trends, we surveyed senior facility management professionals to learn more about how AR figures into their current operational strategies, as well as when they plan to prioritize them in future.



At 30% adoption, healthcare facilities have embraced AR more than other properties.



Marketing applications such as tours and demos are the most common uses of AR, at 20% adoption.



The greatest benefit of AR for facilities managers is the automation of maintenance processes.



Cost is the most commonly perceived barrier to AR adoption.



75% of facilities managers have IoT-enabled devices in their buildings.

Executive Summary

We discovered the following:



Hospitals and medical facilities have embraced AR more than other types of properties, at 30 percent adoption; they are followed by manufacturing facilities (26%), educational facilities (25%), and corporate offices (23%).



The most common uses of AR among facilities managers are marketing applications such as tours and virtual demonstrations (20%), followed by industrial manufacturing applications (18%), smart maintenance and repairs (12%), tenant and visitor services (10%), and training/tutorials (10%).



Facilities managers cite a broad range of benefits to using AR, including the automation of maintenance processes (49%), prevention of maintenance issues (45%), reduction of physical contact during the COVID-19 pandemic (27%), creation of new revenue opportunities (27%), insights derived from AR-based analytics (22%), and more.



Cited by 40 percent of facilities managers, cost is the most commonly perceived barrier to AR adoption, although this concern is offset by AR's ability to bring in new revenue opportunities, which was cited as the technology's greatest potential benefit by 30 percent of those facilities managers already using AR or expecting to do so within 24 months.



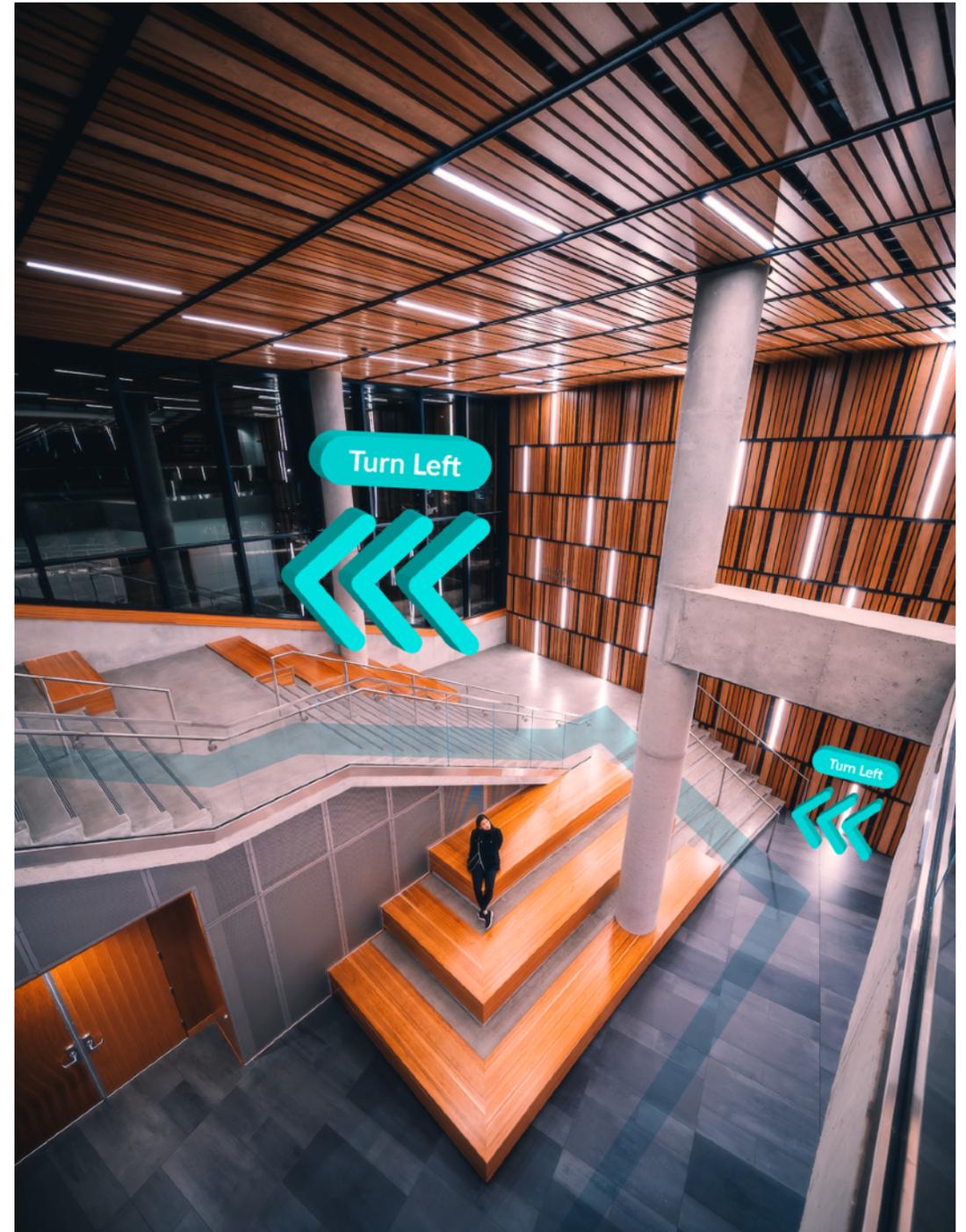
Seventy-five percent of facilities managers currently have Internet of Things (IoT)-enabled devices in their buildings, such as environment sensors (44%), HVAC systems (42%), security systems (33%), doors (25%), lights (25%), and more. AR can help manage the complexity that comes with these emerging technologies.

Introduction

The digital transformation many industries experienced at the turn of the century never slowed down for facilities management. New tools emerge and evolve every day to support today's FM professionals, including computer-aided facilities management (CAFM), building information modeling (BIM), and sophisticated property maintenance software platforms. As more of our physical assets gain online connectivity for remote access, what's the next step for facility managers?

In 2021, augmented reality (AR) represents the next step in the world of digital opportunities. A growing number of facility managers and technicians already leverage AR tools for development planning, real-time reporting, daily maintenance, and much more. More importantly, AR can build on the capabilities of existing digital tools to help facility managers leverage them more effectively.

For this report, we surveyed senior facility management executives across multiple industries to understand their perspective on AR and the needs this technology can address in the immediate future.



Current Adoption Rates of AR In Facilities Management

Survey results show that across respondents who work in all industries, including those that did not fall into typical industry verticals, an average of 20% already use AR technology in the workplace.

Hospitals and medical facilities have embraced AR more than other types of properties, at 30% adoption; they are followed by manufacturing facilities (26%), educational facilities (25%) and corporate offices (23%).



Hospitals & Medical Facilities

30%



Manufacturing Facilities

26%



Educational Facilities

25%



Corporate Office Buildings

23%



Shopping Malls & Centers

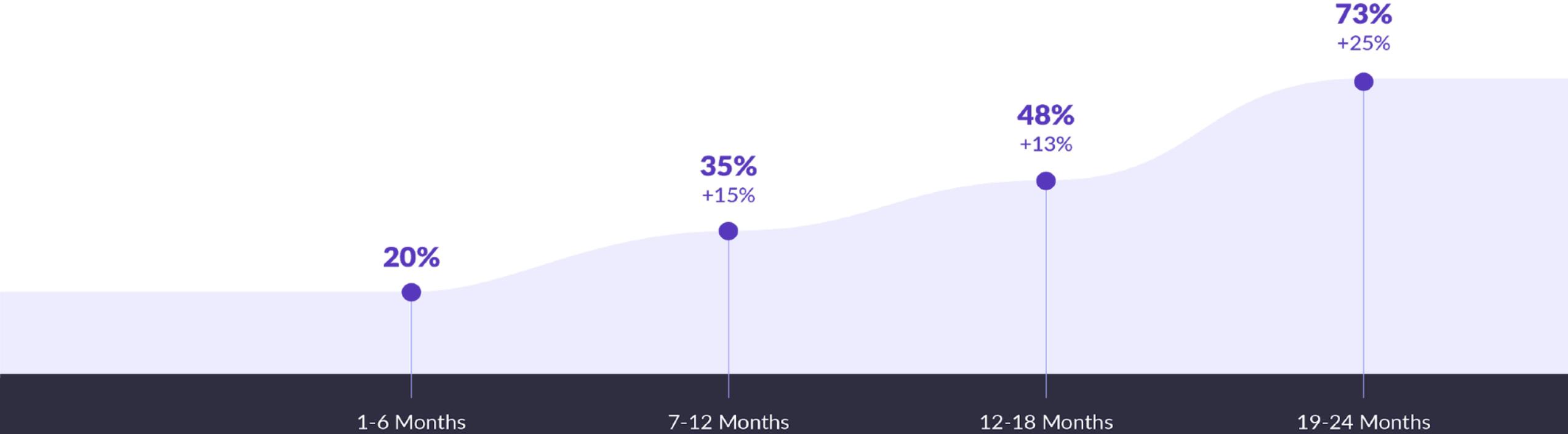
22%

Expected Timeline for AR Adoption

We can expect to see augmented reality adoption in facilities management reach new heights sooner rather than later. 73% of facility managers who do not currently use AR expect to implement the technology at their workplace sometime within the next two years.



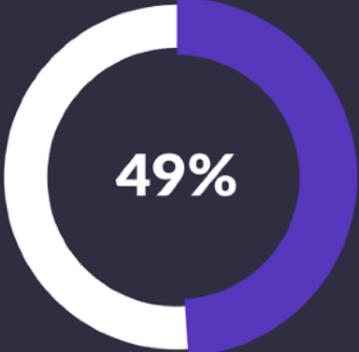
Nearly 3 out of 4 facilities managers expect to implement AR within **2 years**



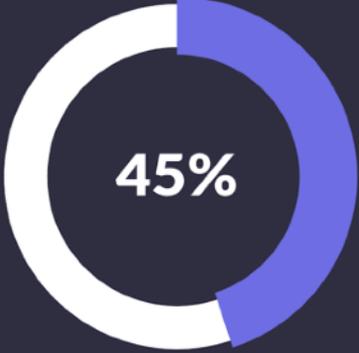
Perceived Benefits of AR Adoption

When it comes to the benefits of AR, its potential to cut costs by streamlining maintenance operations is widely understood among today's facility management professionals. Maintenance automation (49%) and preventative maintenance (45%) are the most commonly perceived benefits of an AR integration.

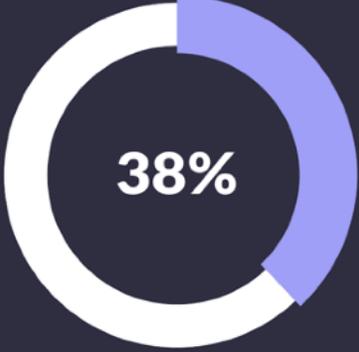
Training and tutorials (38%) follow closely thereafter. As the FM industry continues to trend towards digital transformation, it's not surprising to see that professionals are eager to replace cumbersome, outdated training manuals with dynamic, true-to-life experiential training. A variety of market leaders are already well on their way to embracing the benefits of AR training, including retail powerhouses like Walmart.



Maintenance automation



Preventative maintenance



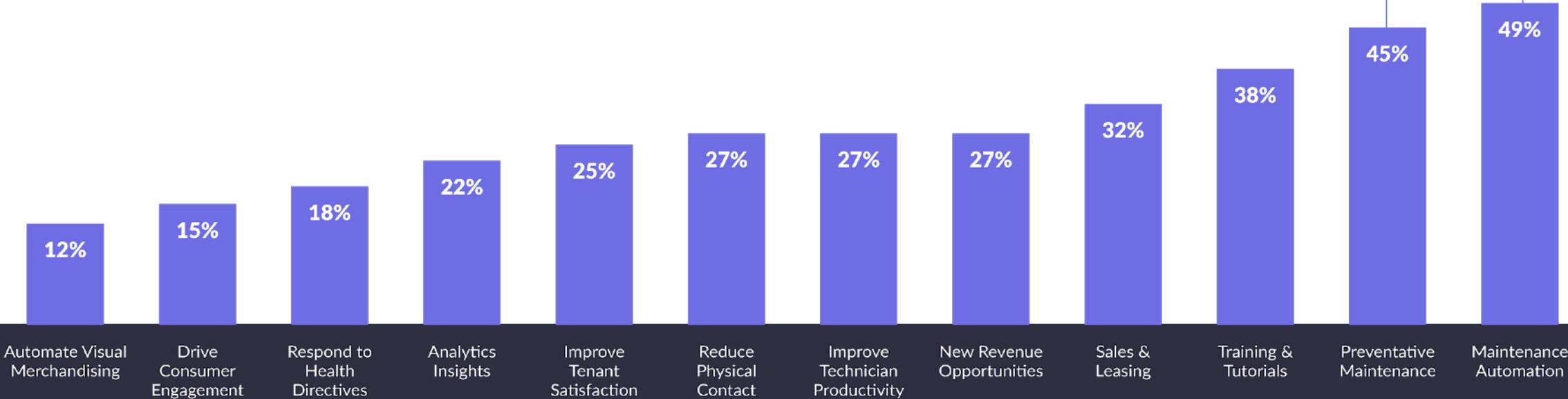
Training & tutorials

Perceived Benefits of AR Adoption

Survey results suggest that a similar understanding is shared by facility managers when it comes to property sales and leasing (32%), where Goldman Sachs projects AR will come to represent an \$80 billion market by 2025. Adjacent to property sales is the promise of new revenue opportunities (27%), which includes the creation of new digital advertising real-estate within AR, an opportunity relevant to facilities managers of all verticals.



Improved maintenance is the greatest perceived benefit of AR



Current AR Use Case Adoption

Among those who already make use of AR, the use cases that have seen the highest adoption are branded marketing applications like tours and virtual demonstrations (20%), followed closely by industrial manufacturing applications (18%) and smart maintenance & repairs (12%).

The growing traction among technical professionals is already showing signs of spilling over into customer-facing fields. People-centric solutions like AR training & tutorials (10%) and tenant and visitor services (10%) allow facility managers to deliver automated guest experiences at scale. This can be especially valuable for service-oriented facilities like hospitals and medical buildings, where visitor turnover is a key metric that augmented reality can help impact through intuitive, goal-oriented wayfinding and navigation.



Brand & Marketing

20%



Industrial Manufacturing

18%



Smart Maintenance & Repairs

12%



AR Training & Tutorials

10%



Tenant & Visitor Services

10%



Indoor Navigation & Wayfinding

8%



Control of IoT Devices

8%



Entertainment & Games

2%

Future AR Use Case Adoption

With the global COVID-19 pandemic top-of-mind for most respondents, many FM professionals are focused on solutions that can help ensure their facilities remain operational and that guests feel safe whenever they're able to return.

The promise of smart maintenance and repairs (45%) that can help cut down repair times while keeping health & safety prioritized for both visitors and maintenance teams see the greatest anticipated adoption. In the same vein, tenant & visitor services (40%) and indoor navigation & wayfinding (38%) follows shortly thereafter.



Brand & Marketing

27%



Industrial Manufacturing

15%



Smart Maintenance & Repairs

45%



AR Training & Tutorials

27%



Tenant & Visitor Services

40%



Indoor Navigation & Wayfinding

38%



Control of IoT Devices

25%



Entertainment & Games

7%

Perceived Obstacles to AR Adoption

AR adoption is well underway, but some professionals still see obstacles to implementation. Presented with a list of potential barriers, the primary perceived concern for facility managers is cost: 40% of respondents believe that AR platforms are too expensive to acquire and set up.

While this may have been true in the past, the industry has come a long way in making AR affordable. The costly, custom-built solutions that characterized AR's early days have given way to scalable solutions as the most popular, high-value use cases are identified. Most AR solutions are now offered on a SaaS basis with variants for all budgets.

Even so, some managers also aren't confident they will be able to support these AR platforms with on-site personnel. 38% of survey respondents see the fact that their companies have no internal position equipped to manage AR solutions to be an issue.



40%
Believe that AR platforms are too expensive



Perceived Obstacles to AR Adoption

Thankfully the same market dynamics that have made AR scalable are also making it approachable, with greater focus being put on platforms that can be implemented and managed without specialized technical knowledge. This has allowed companies to start with smaller projects at smaller costs in order to validate platforms before advancing to larger-scale deployments.

Primary Obstacle By Facility Type

It's worth noting that these concerns tend to be localized among respondents from specific industries. Issues of cost are often the main concern for those in consumer-facing retail roles and large-scale manufacturing sectors. Staffing issues are common among corporate/educational offices and residential facility managers. Hospitals and shopping malls are among the most skeptical as to the demand for AR.



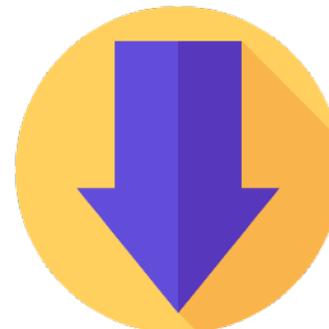
Believes that AR is too expensive

- Retail & Apparel
- Food & Grocery
- Manufacturing
- Entertainment



Lacks internal position to manage AR

- Corporate Offices
- Residential Facilities
- Educational Facilities



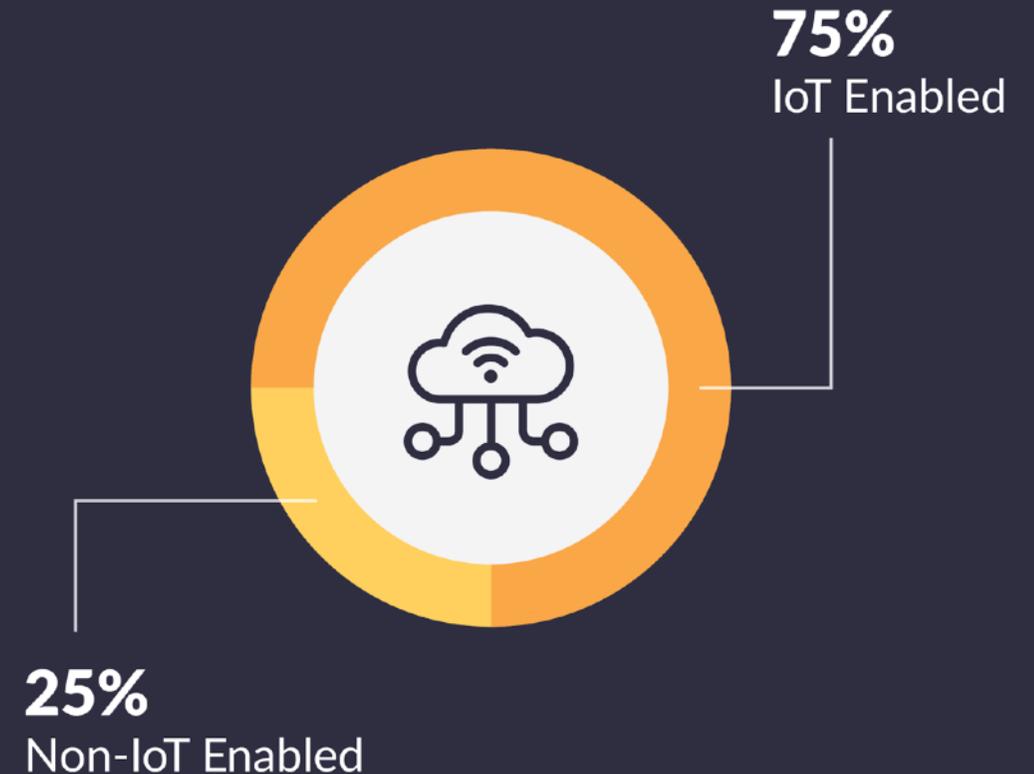
Believes AR demand is limited

- Hospitals
- Shopping Malls

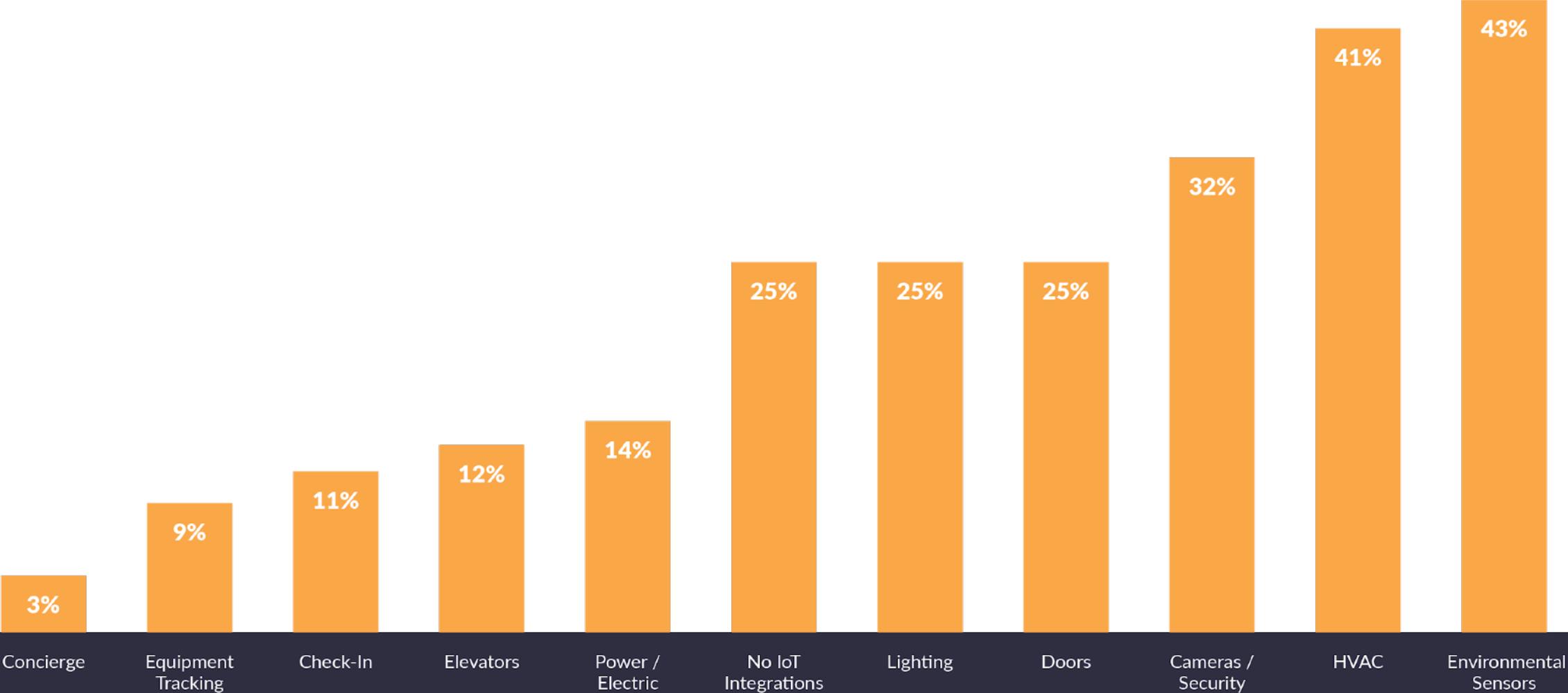
The Internet of Things and the Modern Workplace

One of the reasons AR is becoming more feasible for facility management professionals is the ubiquity of the Internet of Things – a network of online-connected objects that can be accessed and controlled remotely. Our survey reveals that 75% of facility managers and leaders currently work in buildings with IoT functionality. Modern AR platforms can leverage data points from these physical assets for the safe and efficient management of devices and equipment.

Combined with IoT, AR platforms can ingest data from sensors, devices and applications to glean valuable facility-specific insights that can allow for personalized visitor-level experiences. Survey results suggest that we're closer to this outcome than ever before, thanks to a variety of pre-existing IoT integration. Most notably, 44% of respondents use IoT-enabled sensors, while 42% use the technology in HVAC systems. Meanwhile, many businesses use IoT in cameras (32.74%), lighting systems (25.45%), and automated doors (25.45%).



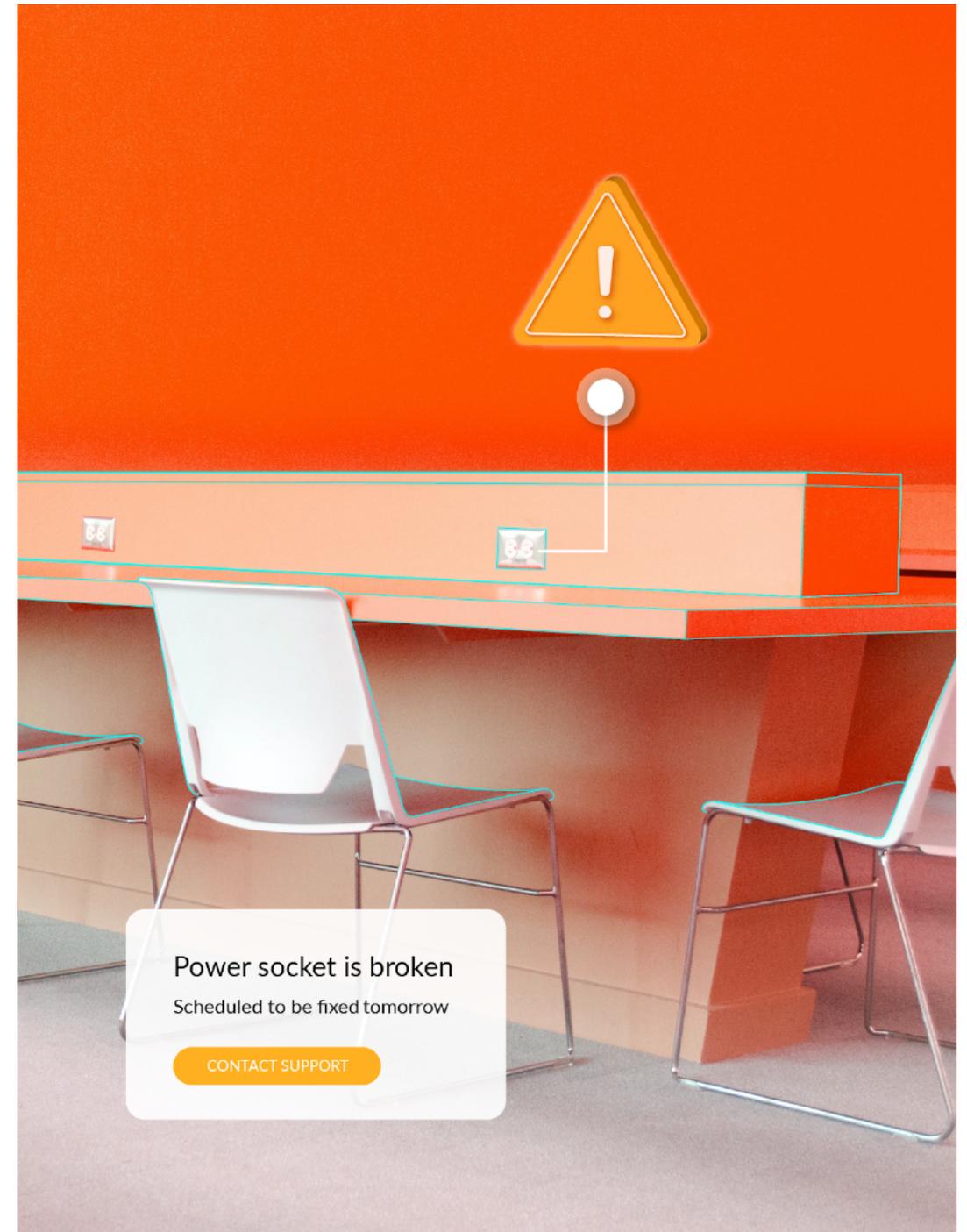
Which of Your Building's Functions Are IoT-Enabled?



There's No Better Time For Workplace AR

Facilities management is undergoing a comprehensive digital transformation, and as survey results suggest, the next few years will be characterized by explosive growth for the industry. Expect to see greater demand from tenants, shoppers, guests, and maintenance teams for personalized AR experiences that help them accomplish their goals faster and more efficiently.

Facility management professionals looking to meet these demands head-on should invest in these solutions today to increase operational efficiencies, provide better services to their tenants, and build a sustainable competitive advantage.



Methodology

The report is based on a digital survey delivered to a curated audience of senior facility management directors and executives throughout the United States and Europe. Participants represented a cross-section of building types, including corporate offices, manufacturing facilities, retail/apparel, residential, hospitals and medical, shopping centers, education, entertainment, and food and grocery. Data was gathered from November 2020 to January 2021.

About Vera™ by Resonai

Vera is an integrated smart building platform with built-in administrative tools, multiple visualization options, and pre-programmed location and tracking services. It leverages advanced AI and augmented reality to power a growing list of mobile applications that address backend efficiency and power top-line growth.

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Survey Period	November 2020 - January 2021
Total Number of Respondents	76 Respondents
Number of Reported Industries	11 Industries



* Icons by Freepik and Noun Project.