

COMMERCIAL SECURITY SYSTEM MARKET WITH COVID-19 IMPACT ANALYSIS

GLOBAL FORECAST TO 2026

BY HARDWARE (FIRE PROTECTION, VIDEO SURVEILLANCE,
ACCESS CONTROL), SERVICE (SYSTEM INTEGRATION, REMOTE
MONITORING), SOFTWARE, VERTICAL, AND GEOGRAPHY

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LIST OF ABBREVIATIONS

ABBREVIATION	FULL FORM
APAC	Asia Pacific
ASP	Average Selling Price
AV	Audio/Video
AVC	Advanced Video Coding
AVS	Audio Video Standard
CAGR	Compound Annual Growth Rate
CDN	Content Delivery Network
EMEA	Europe, the Middle East, & Africa
FMV	Full Video Motion
HD	High Definition
HDR	High Dynamic Range
HEVC	High-efficiency Video Coding
IABM	International Association for Broadcast & Media Technology Suppliers
IBC	International Broadcasting Convention
IP	Internet Protocol
IPTV	Internet Protocol Television
IRD	Integrated Receiver/Decoder
MPEG	Moving Picture Experts Group
NAB	National Association of Broadcasters
NGN	Next-Generation Network
ONVIF	Open Network Video Interface Forum
OTT	Over-the-Top
PSIA	The Physical Security Interoperability Alliance
PTZ	Pan-Tilt-Zoom
R&D	Research & Development
RIVA	Real-time Intelligent Video Analytics

SD	Standard Definition
SIA	Security Industry Association
UEFA	Union of European Football Association
UHD	Ultra-High Definition
VNI	Visual Networking Index
VSaaS	Video Surveillance-as-a-Service

1 INTRODUCTION

1.1 STUDY OBJECTIVES

- To describe and forecast the overall commercial security system market by hardware, software, service, vertical, and region, in terms of value
- To describe the different types of commercial security systems
- To forecast the market for various segments with regard to 4 regions—North America, Europe, Asia Pacific (APAC), and Rest of the World (RoW)
- To provide detailed information regarding drivers, restraints, opportunities, and challenges that influence the growth of the commercial security system market
- To provide a detailed overview of the commercial security system value chain and industry trends, along with the impact of COVID-19 on the commercial security system market players
- To strategically analyze micromarkets¹ with respect to individual growth trends, prospects, and contribution to the overall market
- To analyze opportunities in the commercial security system market for stakeholders by identifying the high-growth segments
- To strategically profile key players, comprehensively analyze their market share and core competencies, and detail the competitive landscape for market leaders
- To analyze competitive developments such as acquisitions, product launches and developments, contracts, expansions, investments, partnerships, collaborations, and agreements in the overall commercial security system market

1.2 MARKET DEFINITION AND SCOPE

The commercial security system market includes different sets of security measures to protect a person, community, organization, and other valuables from various threats such as theft, burglary, and other unethical practices in non-residential verticals. Major security systems deployed to avoid these threats include fire protection systems, video surveillance systems, access control systems, and entrance control equipment.

1.2.1 INCLUSIONS AND EXCLUSIONS

SEGMENT	INCLUSION	EXCLUSION
Hardware	Fire protection systems, video surveillance systems, access control systems, entrance control systems (pedestrians), intruder alarms, and thermal cameras	Wireless system types, entrance control systems, and intruder alarms
Software	Fire analysis, video surveillance software, and access control software	Cybersecurity solutions
Service	Integration services, remote monitoring services, fire protection services, video surveillance services, and access control services	NA
Vertical	Commercial (office spaces, data centers, and hospitality), government, military & defense, transportation, retail, banking & finance, education, industrial, energy and utility, sports and leisure, and healthcare	NA
Region	North America, Europe, APAC, and RoW	Country-level market size for Rest of Europe, Rest of APAC, and RoW

1.3 STUDY SCOPE

1.3.1 MARKETS COVERED

The report covers the demand and supply sides of the market. The supply-side market segmentation is based on hardware, software, and services. The demand-side market segmentation is based on verticals and regions. The following images provide an overview of the commercial security system market.

FIGURE 1 COMMERCIAL SECURITY SYSTEM MARKET SEGMENTATION



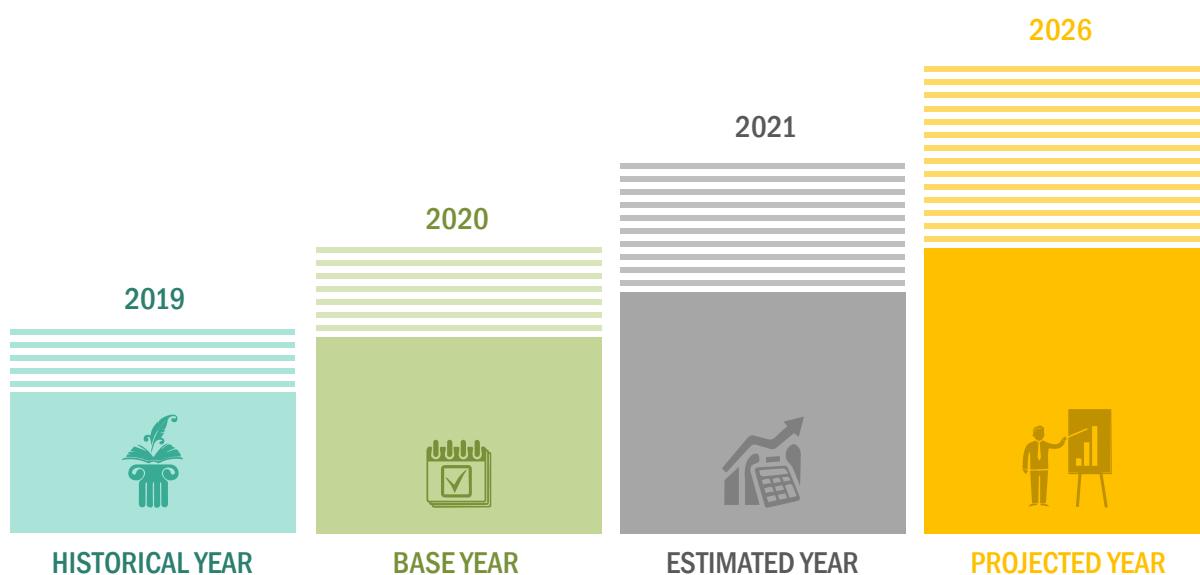
Source: Secondary Literature, Expert Interviews, and MarketsandMarkets Analysis

1.3.2 REGIONAL SCOPE

			
NORTH AMERICA	EUROPE	ASIA PACIFIC (APAC)	REST OF THE WORLD (ROW)
<ul style="list-style-type: none"> ▪ US ▪ Canada ▪ Mexico 	<ul style="list-style-type: none"> ▪ Germany ▪ UK ▪ France ▪ Italy ▪ Russia ▪ Rest of Europe 	<ul style="list-style-type: none"> ▪ China ▪ Japan ▪ India ▪ South Korea ▪ Rest of APAC 	<ul style="list-style-type: none"> ▪ Middle East & Africa ▪ South America

Source: Secondary Literature, Expert Interviews, and MarketsandMarkets Analysis

1.3.3 YEARS CONSIDERED



Note: The forecast period is from 2021 to 2026. The base year considered for company profiles is 2020. Wherever the information for the base year was not available, the year prior to the base year has been considered.

1.4 CURRENCY

The currency used in the report is the US dollar (USD), with the market size indicated in USD million/billion.

- Revenues of companies have been obtained from their latest annual reports. For companies that provide revenue in USD, it has been sourced as it is, whereas for those reporting their revenues in other currencies, the currency exchange rate pertaining to the month of that year has been used to convert the value to USD.

1.5 STAKEHOLDERS

- Raw material and manufacturing equipment suppliers
- Component designers, manufacturers, and suppliers
- Original equipment manufacturers (OEMs) of fire protection systems, video surveillance, access control systems, and entrance control systems
- ODM and OEM technology solution providers
- Suppliers and distributors
- Security organizations
- Forums, alliances, and associations
- Technology investors
- System integrators
- Middleware providers
- Assembly, testing, and packaging vendors
- Analysts and strategic business planners
- Research institutes and organizations
- Technology standards organizations, forums, alliances, and associations
- Governments, financial institutions, and regulatory bodies

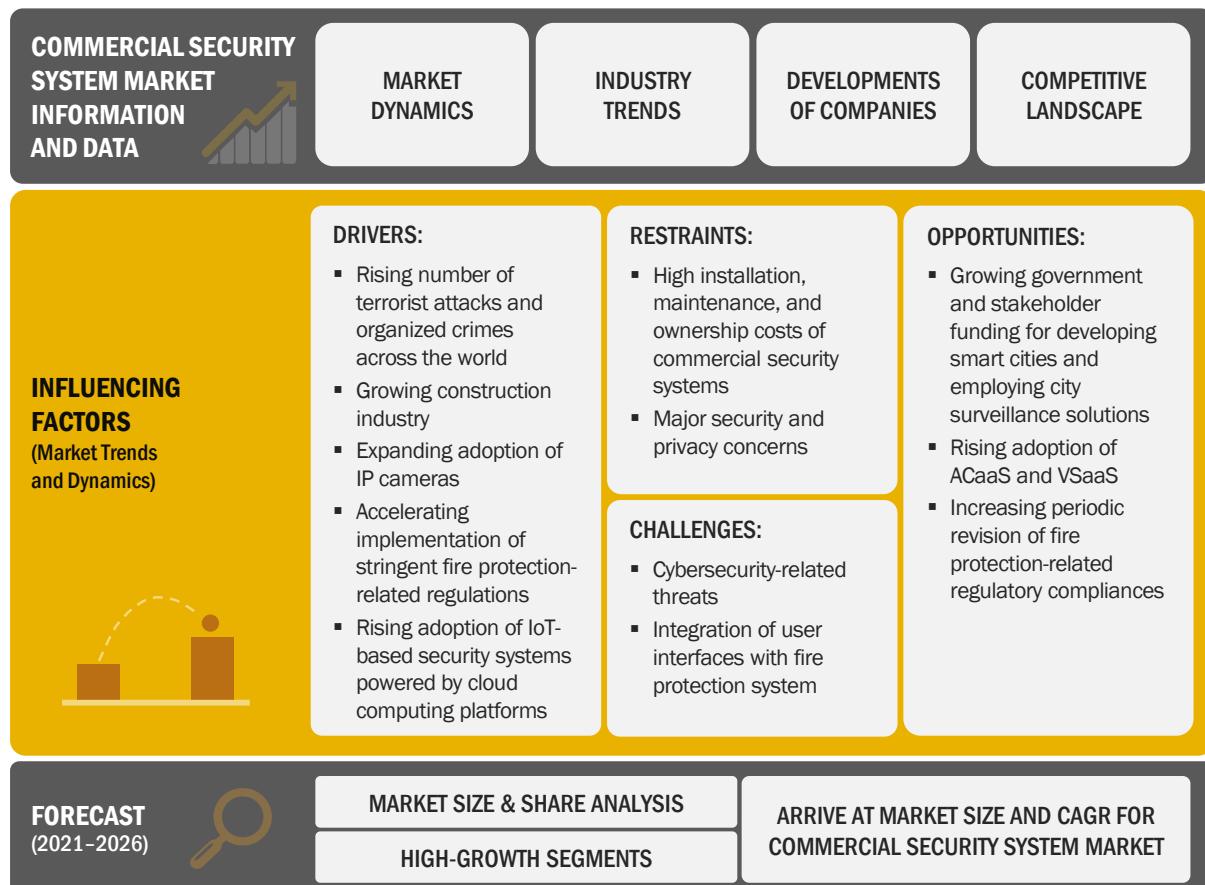
2 RESEARCH METHODOLOGY

2.1 RESEARCH DATA

This research study involved extensive use of secondary sources, directories, and databases (such as companies' annual reports or presentations, industry association publications, directories, technical handbooks, World Economic Outlook (WEO), trade websites, Hoovers, Bloomberg Businessweek, Factiva, and OneSource) to identify and collect information useful for the technical, market-oriented, and commercial study of the commercial security system market. The primary sources mainly comprise experts from the core and related industries, along with preferred suppliers, manufacturers, distributors, service providers, system providers, technology developers, alliances, and standards and certification organizations related to various phases of this industry's value chain.

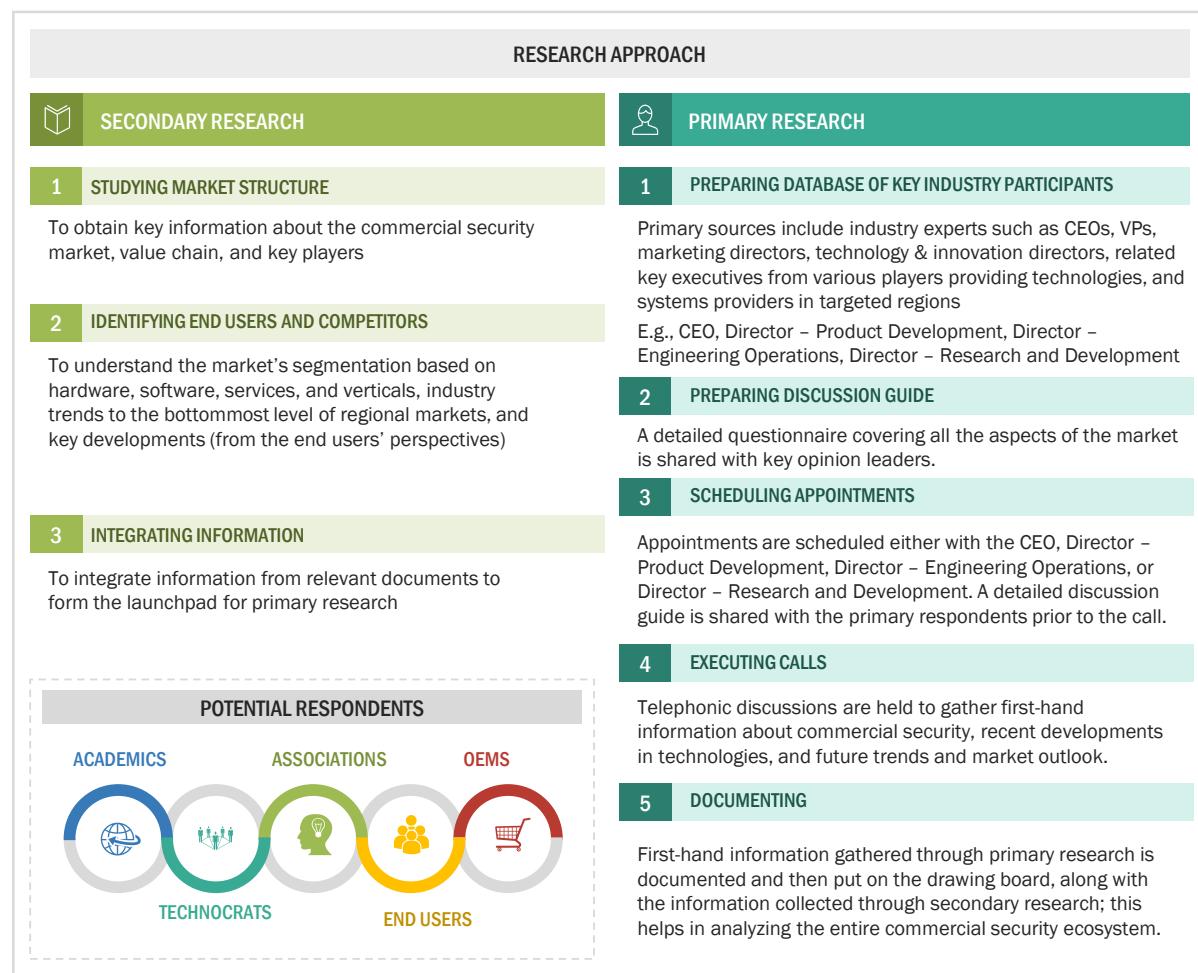
In-depth interviews have been conducted with primary respondents, including key industry participants, subject matter experts (SMEs), C-level executives of key market players, and industry consultants, to obtain and verify critical qualitative and quantitative information, as well as to assess prospects. The following figure shows the market research methodology applied in making this report on the commercial security system market.

FIGURE 2 COMMERCIAL SECURITY SYSTEM MARKET: RESEARCH DESIGN



2.1.1 SECONDARY AND PRIMARY RESEARCH

The illustrative figure below shows how primary and secondary research activities have been accomplished.



2.1.2 SECONDARY DATA

Secondary sources referred to for this research study include corporate filings (such as annual reports, investor presentations, and financial statements); trade, business, and professional associations; white papers and commercial security system-related journals and certified publications; articles from recognized authors; gold- and silver-standard websites; directories; and databases.

Secondary research has been mainly conducted to obtain key information about the industry's supply chain, the market's value chain, the total pool of key players, market classification and segmentation according to industry trends to the bottommost level, regional markets, and key developments from both market- and technology-oriented perspectives. The secondary data has been collected and analyzed to arrive at the overall market size, which has been further validated by primary research.

2.1.2.1 Major secondary sources

SOURCE	WEB LINK
GPS.gov	https://www.gps.gov/
Federal Aviation Administration (FAA)	https://www.faa.gov/
Resilient Navigation and Timing Foundation	https://rntfnd.org/
VideoSurveillance.com	https://www.videosurveillance.com/
SecurityInfoWatch.com	https://www.securityinfowatch.com/video-surveillance
Electronic Security Association (ESA)	https://esaweb.org/
Security Magazine	https://www.securitymagazine.com/
National Fire Protection Association (NFPA)	https://www.nfpa.org/
Fire Protection Association (FPA)	https://www.thefpa.co.uk/
International Association of Certified Thermographers	http://iactthermography.org/

2.1.2.2 Secondary sources

PARAMETER	SOURCE
 MARKET SIZE (In Terms of Value)	<ul style="list-style-type: none"> ▪ Company Financials ▪ Magazines ▪ Journals ▪ Press Releases ▪ Paid Databases ▪ MarketsandMarkets Data Repository
 COMPANY REVENUE	<ul style="list-style-type: none"> ▪ Annual Reports ▪ Company Websites ▪ Public Databases ▪ MarketsandMarkets Data Repository
 QUALITATIVE INFORMATION (Market Dynamics and Trends)	<ul style="list-style-type: none"> ▪ Company Websites ▪ Annual Reports ▪ Press Releases ▪ MarketsandMarkets Data Repository

2.1.3 PRIMARY DATA

In the primary research process, various primary sources from both supply and demand sides have been interviewed to obtain qualitative and quantitative information for this report. Primary sources from the supply side include experts such as CEOs, vice presidents, marketing directors, technology and innovation directors, subject matter experts (SMEs), consultants, and related key executives from major companies and organizations operating in the commercial security system market.

After the complete market engineering (which includes calculations for market statistics, market breakdown, market size estimations, market forecasting, and data triangulation), extensive primary research has been conducted to gather information and verify and validate the critical numbers arrived at. Primary research has also been conducted to verify the identified segmentation types, industry trends, key players, competitive landscape, and factors affecting the market dynamics (drivers, restraints, opportunities, and challenges), along with the key strategies adopted by players.

Several primary interviews have been conducted with experts from both the demand and supply sides across 4 major regions—North America, Europe, APAC, and RoW (which includes the Middle East and Africa, and South America). Approximately 25% of the primary interviews have been conducted with the demand side and 75% with the supply side. This primary data has been collected through questionnaires, emails, and telephonic interviews.

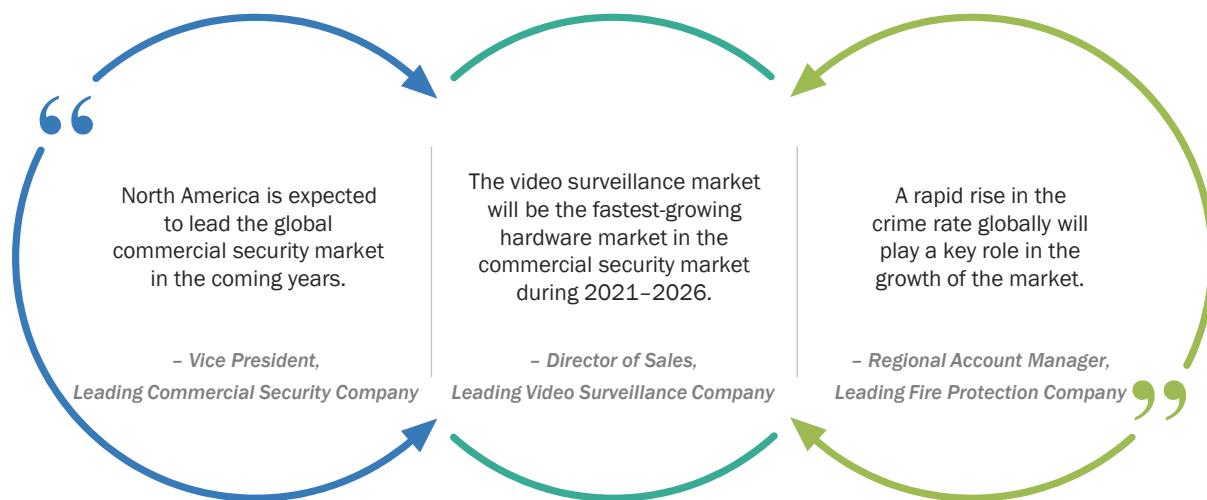
2.1.3.1 Primary interviews with experts

VALUE CHAIN	INTENDED PARTICIPANTS AND KEY OPINION LEADERS
Supply and Demand Side	<ul style="list-style-type: none"> ▪ Component providers ▪ Commercial security product providers ▪ End users ▪ Investors and distributors ▪ Industry consultants and experts

2.1.3.2 Key data from primary sources

TYPE	PARAMETER	KEY DATA
GEOGRAPHIC SPLIT	<ul style="list-style-type: none"> ▪ Overall market and subsegments in 2020 ▪ CAGR of each region during the forecast period (2021–2026) 	<ul style="list-style-type: none"> ▪ Commercial security system market, by region: North America, Europe, Asia Pacific, and RoW
GLOBAL MARKET SIZE	<ul style="list-style-type: none"> ▪ Global market size for 2020 ▪ CAGR for the forecast period (2021– 2026) 	<ul style="list-style-type: none"> ▪ Commercial security system market ▪ Commercial security system market, by subsegment
MARKET SPLIT	<ul style="list-style-type: none"> ▪ Commercial Security <ul style="list-style-type: none"> • By Hardware • By Software • By Service • By Vertical 	<ul style="list-style-type: none"> ▪ Hardware: Fire protection system, video surveillance, access control system, and entrance control system ▪ Software: Fire analysis, video surveillance software, and access control software ▪ Service: Security system integration service, remote monitoring, fire protection service, video surveillance service, and access control service ▪ Vertical: Commercial, government, transportation, retail, banking and finance, education, industrial, energy and utility, sports and leisure, healthcare, and military and defense

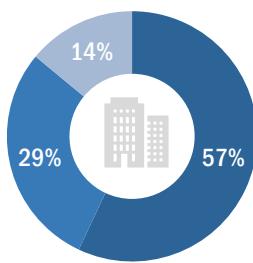
2.1.3.3 Key industry insights



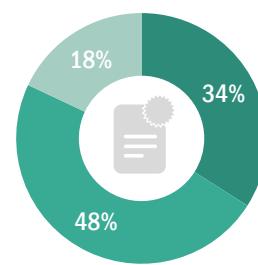
Source: Expert Interviews and MarketsandMarkets Analysis

2.1.3.4 Breakdown of primaries

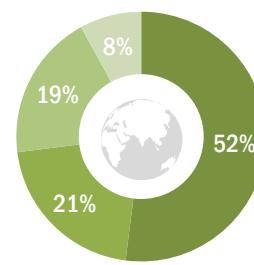
BY COMPANY TYPE



BY DESIGNATION



BY REGION



Note: “Others” includes sales, marketing, and product managers. The 3 tiers of companies have been defined according to their total revenue as of 2019; tier 3 = <USD 500 million, tier 2 = USD 500 million to <USD 1 billion, and tier 1 = ≥USD 1 billion.

2.2 MARKET SIZE ESTIMATION

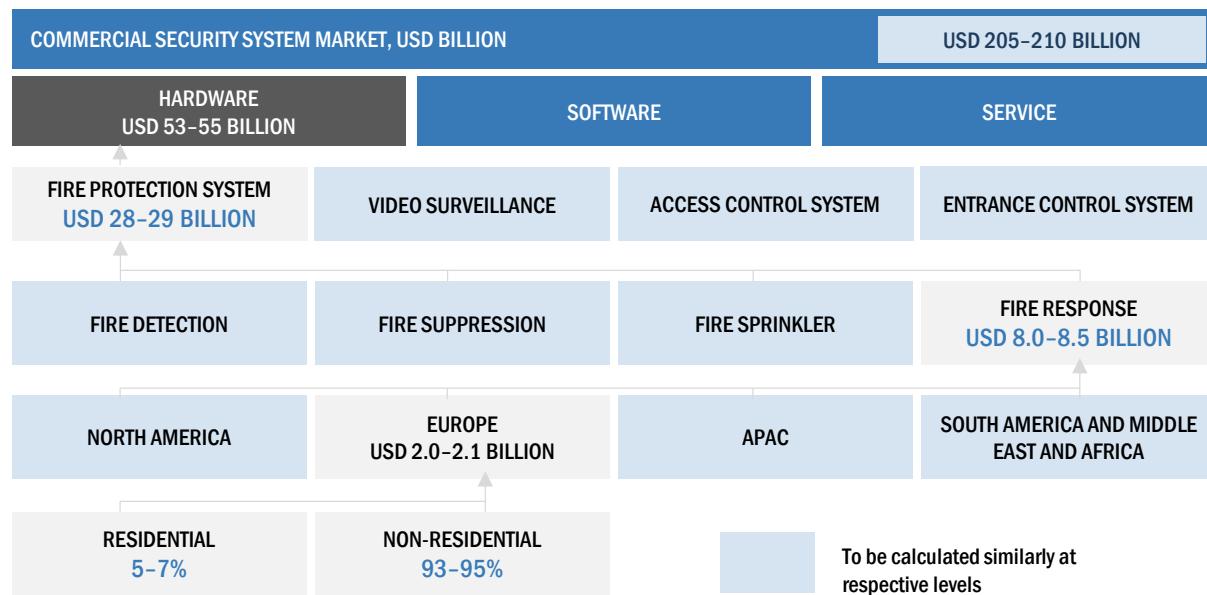
In the complete engineering process, both top-down and bottom-up approaches, along with several data triangulation methods, have been used to estimate and validate the size of the commercial security system market and other dependent submarkets. Key players in the market have been determined through primary and secondary research. This entire research methodology involves studying the annual and financial reports of the top market players and extensive interviews with industry experts such as CEOs, VPs, directors, and marketing executives for key insights (both qualitative and quantitative) about the commercial security system market.

All percentage shares, splits, and breakdowns have been determined using secondary sources and verified through primary sources. All the possible parameters that affect the market segments covered in this research study have been accounted for, viewed in extensive detail, verified through primary research, and analyzed to get the final quantitative and qualitative data. This data has been consolidated and supplemented with detailed inputs and analysis from MarketsandMarkets and presented in the report.

2.2.1 BOTTOM-UP APPROACH

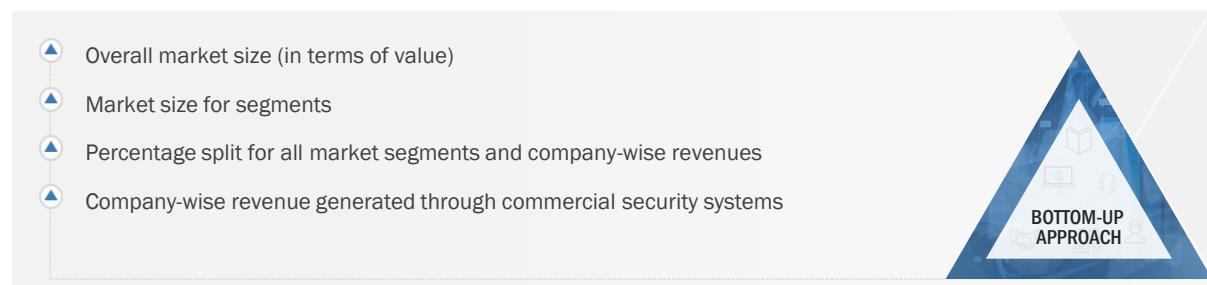
The bottom-up approach has been employed to arrive at the overall size of the commercial security system market from the calculations based on the revenues of key players and their shares in the market. For instance, key players in the commercial security system market, such as Johnson Controls (Ireland), Honeywell International (US), Hikvision (China), dormakaba (Switzerland), and Carrier (US), have been studied, and market estimations have been done considering the market size of hardware, software, and service offerings.

FIGURE 3 MARKET SIZE ESTIMATION METHODOLOGY: APPROACH 1—BOTTOM-UP (DEMAND SIDE) – DEMAND FOR COMMERCIAL SECURITY SYSTEM



Source: Industry Experts, Company Websites, and MarketsandMarkets Database

FIGURE 4 COMMERCIAL SECURITY SYSTEM MARKET: BOTTOM-UP APPROACH

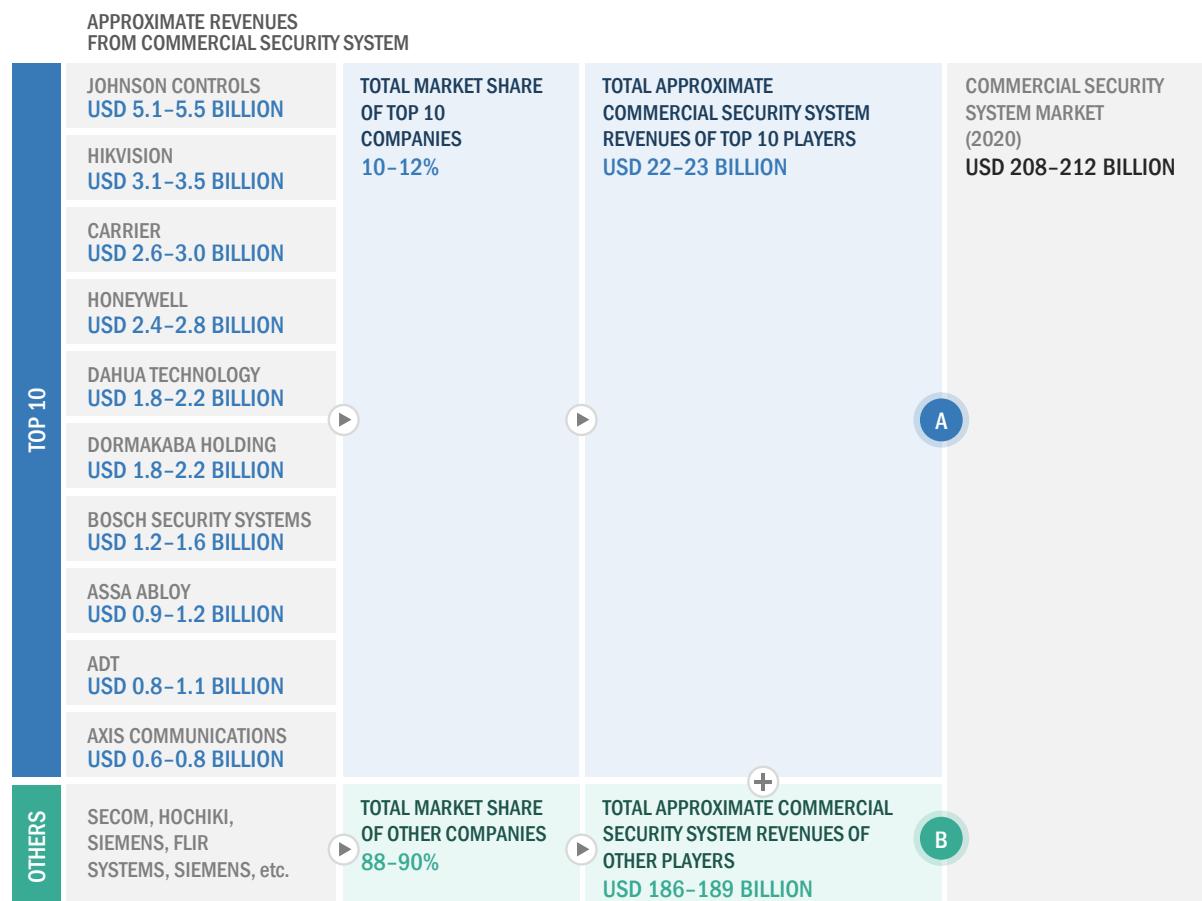


2.2.2 TOP-DOWN APPROACH

In the top-down approach, the overall market size has been used to estimate the size of the individual markets (mentioned in the market segmentation) through percentage splits obtained from secondary and primary research. To calculate the commercial security system market segments, the market size obtained by implementing the bottom-up approach has been used to implement the top-down approach, which has then been later confirmed with the primary respondents across different regions. The bottom-up approach has also been implemented for the data extracted from secondary research to validate the market size of various segments.

The market share of each company has been estimated to verify the revenue shares used earlier in the bottom-up approach. With the help of data triangulation procedure and data validation through primaries, the overall parent market (commercial security system market) size and each individual market size have been determined and confirmed in this study. The data triangulation procedure used for this study has been explained in the next section.

**FIGURE 5 MARKET SIZE ESTIMATION METHODOLOGY: APPROACH 2 (SUPPLY SIDE)—
REVENUE GENERATED FROM COMMERCIAL SECURITY SYSTEM RELATED PRODUCTS**



Source: Annual Reports, SEC Filings, Investor Presentations, Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

FIGURE 6 MARKET SIZE ESTIMATION METHODOLOGY: APPROACH 2 (SUPPLY SIDE)—ILLUSTRATION OF REVENUE ESTIMATION FOR ONE MARKET PLAYER

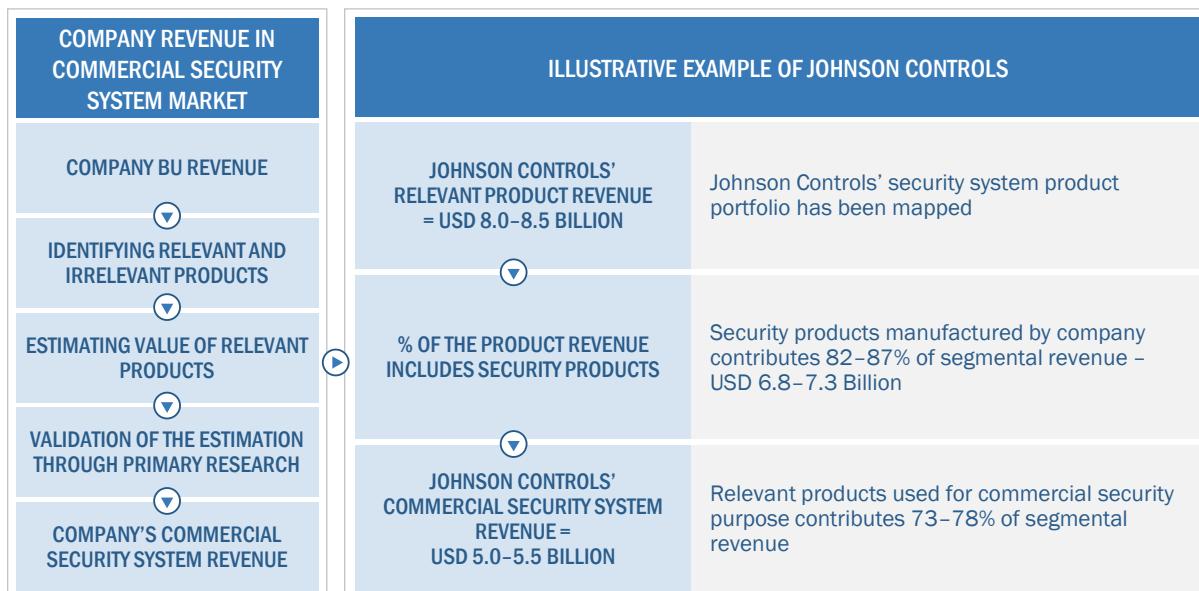
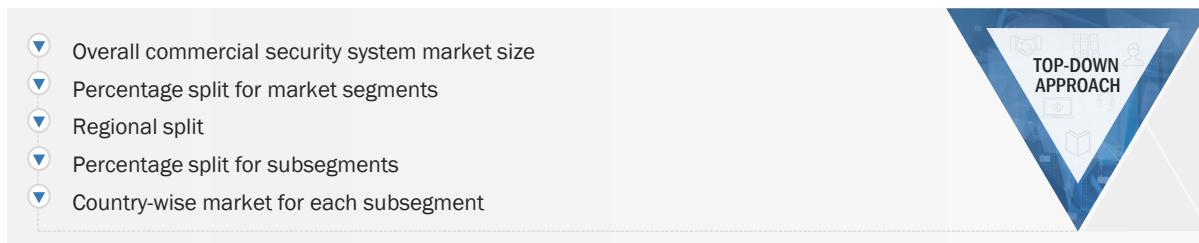


FIGURE 7 COMMERCIAL SECURITY SYSTEM MARKET: TOP-DOWN APPROACH



In this approach for market estimation, the top 10 companies offering commercial security systems contributing almost 10–12% of the global commercial security system market have been identified. After confirmation from primary interviews with industry experts, the total revenue has been estimated by referring to annual reports, SEC filings, paid databases, and MnM Knowledge Store. These companies' revenues pertaining to the business units (BUs) and product portfolios that offer commercial security systems have been identified through similar sources. Then, through primaries, the data of revenue generated through specific commercial security systems has been calculated. The collective revenue of key companies that offer commercial security systems has been again confirmed through primary interviews with industry experts. With the assumption that the rest of the market is contributed by smaller players (part of the unorganized market), the market share of organized players (80–90%) and unorganized players (10–20%) collectively has been assumed to be the market size of the global commercial security system market for FY 2020.

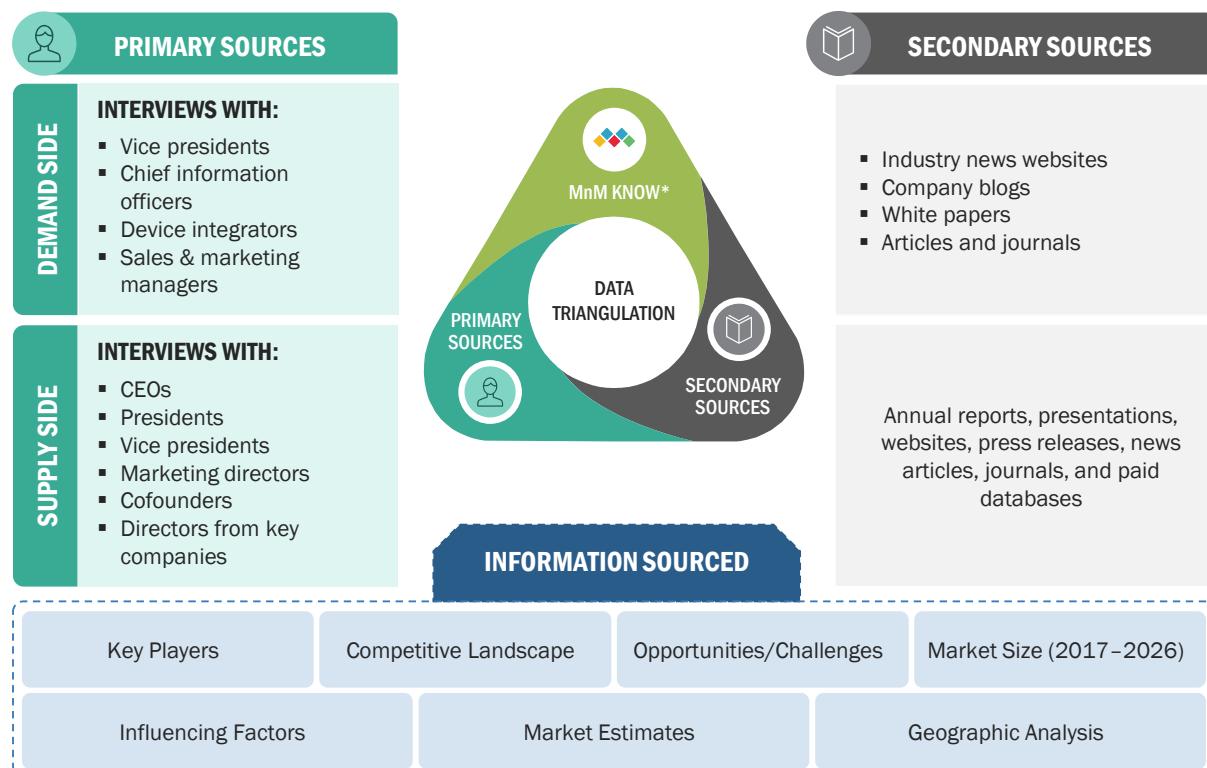
In the above figure, an illustration of how revenues for individual companies are collated has been depicted. Business units or product portfolios of each company offering commercial security systems have been identified. Revenues generated from the sale of products contributing to the commercial security system market have been estimated and validated with company executives through primary research. Similar analyses for all the companies contributing to the commercial security system market growth have been carried out.

Further, both top-down and bottom-up approaches also have been used to estimate and validate the size of the overall commercial security system market and other dependent submarkets. Key players in the market have been identified through secondary research, and their market rankings in respective regions have been determined through primary and secondary research. This entire research involved studying annual and financial reports of top players, as well as interviewing industry experts (such as CEOs, VPs, directors, and marketing executives) for key insights (both quantitative and qualitative) on the commercial security system market. All percentage shares, splits, and breakdowns have been determined using secondary sources and verified through primary sources. All possible parameters that may affect the market covered in this research study have been accounted for, viewed in detail, verified through primary research, and analyzed to obtain the final quantitative and qualitative data. This data has been consolidated and supplemented with detailed inputs and analysis from MarketsandMarkets and presented in this report.

2.3 MARKET BREAKDOWN AND DATA TRIANGULATION

After arriving at the overall market size from the market size estimation process explained in the previous section, the total market has been split into several segments and subsegments. To complete the overall market engineering process and arrive at the exact statistics for all segments and subsegments, market breakdown and data triangulation procedures have been employed, wherever applicable. The data has been triangulated by studying various factors and trends from both the demand and supply sides. Along with this, the commercial security system market has been validated using both top-down and bottom-up approaches.

FIGURE 8 DATA TRIANGULATION



MnM KNOW* stands for MarketsandMarkets' Knowledge Asset Management framework. In this context, it stands for the existing market research knowledge repository of over 5,000 granular markets, our flagship competitive intelligence and market research platform Knowledge Store, subject matter experts, and independent consultants. MnM KNOW acts as an independent source that helps us validate the information gathered from primary and secondary sources.

2.4 RESEARCH ASSUMPTIONS

The following global economic assumptions have been taken into consideration to complete the overall market engineering of the commercial security system market:

TABLE 1 STUDY ASSUMPTIONS

FACTOR	ASSUMPTION	IMPACT
Economy	<ul style="list-style-type: none"> ▪ A negative global economy is expected to continue until the end of the Apr-Jun quarter of 2021. ▪ In 2019, the global GDP was 3%, which was substantially lower than 3.6% in 2018. 	<ul style="list-style-type: none"> ▪ A negative economic impact is expected to sustain due to declining spending resulting from the global pandemic. There are preliminary signs of a decline in the economy. The projected recovery for global growth remains uncertain. ▪ The global economy was projected to grow from 2.9% in 2019 to 3.3% in 2020 and 3.4% by 2021, by World Economic Outlook in October 2019; however, there is an estimated downward revision of 0.1 % for 2019 and 2020 and 0.2% for 2021. ▪ However, MarketsandMarkets expects a tepid growth in the 2021 market size due to the major impact of COVID-19 on most verticals.
Exchange Rates	<ul style="list-style-type: none"> ▪ MarketsandMarkets assumes that dollar fluctuations will not be serious enough to affect the forecast to a significant extent. 	<ul style="list-style-type: none"> ▪ A fall in the dollar value is expected to create revenue growth opportunities for US multinationals, whereas stability in the dollar value is expected to stabilize the price of imports and exports.
Financial Statistics	<ul style="list-style-type: none"> ▪ MarketsandMarkets extracts all revenues and financial insights from companies' websites or annual reports. 	<ul style="list-style-type: none"> ▪ MarketsandMarkets ensures the authenticity of the financials mentioned in the reports.
COVID-19 Impact	<ul style="list-style-type: none"> ▪ The market has dipped in 2020 due to the COVID-19 pandemic. It is assumed to start recovering in 2021 with relatively slower growth. 	<ul style="list-style-type: none"> ▪ The COVID-19 outbreak has significantly impacted the growth of the global market.

Source: IMF and MarketsandMarkets Analysis

2.5 LIMITATIONS

The following limitations were taken into consideration to complete the overall market engineering of the commercial security system market:

2.5.1 METHODOLOGY-RELATED LIMITATIONS

- The report mainly focuses primarily on the hardware, software, and service offerings of commercial security systems for the purpose of calculating the market size across various segments.
- The quantitative information for some of the market segments has been kept confidential by industry players. Hence, the qualitative insights gathered during the course of the study have been used to arrive at the market size, in terms of value, for such segments.
- The impact of COVID-19 has been considered. This may have a significant impact on the growth of the commercial security system market.
- We have used secondary and primary sources while considering revenues for private companies.
- The size of the overall market has been arrived at using a holistic and systematic approach.

2.5.2 SCOPE-RELATED LIMITATIONS

- The market size for other complementary, substitute, or competing technologies has not been provided.
- The study provides estimated market sizes with a holistic approach toward all commercial security system segments.

3 EXECUTIVE SUMMARY

A commercial security system can be defined as a set of security measures taken to protect a person, community, dwelling, personal belongings, or an organization from any harm in a commercial environment. To avoid such threats in a commercial environment, various security products are used. The demand for security systems has increased because of the requirement to protect individuals and assets from rapidly increasing threats and rising consumer awareness and security concerns and willingness to pay for security systems. Security products including fire protection systems, video surveillance, access control systems, entrance control systems, remote monitoring service, and security system integration service have been covered in the report.

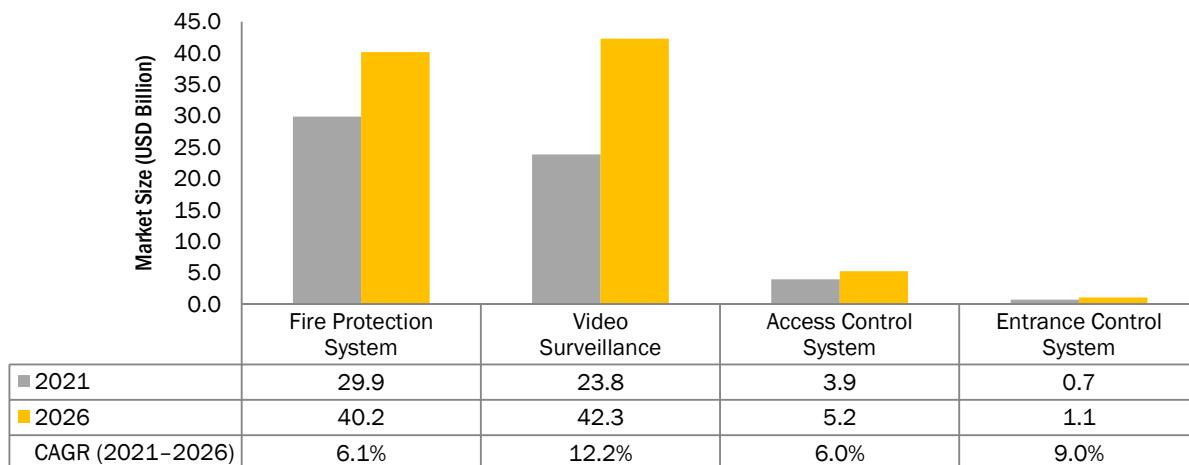
Video surveillance products are expected to dominate the commercial security system market in terms of their market growth rate as well as market size. Video surveillance systems use video cameras to monitor people, facilities, or places from a distance. Video surveillance is an extremely useful and economical method to ensure the security of people, buildings, and valuables. Fire protection systems help prevent fire accidents and, subsequently, the damages caused by them. Such systems also reduce the impact of uncontrolled fires, thus saving lives and property. Fire accidents can be prevented by using fire protection systems such as fire alarms and detection systems, fire sprinkler systems, and fire suppression systems. The demand for fire protection systems has grown considerably in the last decade as most countries are committed to safety regulations. Access control systems consist of authentication systems such as cards and readers, biometric readers, and multi-technology readers. Cards and readers include magnetic stripes, proximity cards, and smart cards. Biometric access control systems include fingerprint readers, hand geometry readers, iris scanners, and facial recognition readers. Electronic locks are also widely used in access control as they provide low-cost automation in entrance systems.

Key factors contributing to the growth of the commercial security system market include the rising number of terrorist attacks and organized crimes across the world, growing construction industry, expanding adoption of IP cameras, accelerating implementation of stringent fire protection-related regulations, and rising adoption of IoT-based security systems powered by cloud computing platforms. However, high installation, maintenance, and ownership costs of commercial security systems and major security and privacy concerns are the major challenges to the commercial security system market. Moreover, growing government and stakeholder funding for developing smart cities and employing city surveillance solutions, rising adoption of ACaaS and VSaaS, and increasing periodic revision of fire protection-related regulatory compliances provide new opportunities for the growth of the commercial security system market. On the other hand, cybersecurity-related threats and integration of user interfaces with fire protection systems are a few key challenges for the market's growth.

The market is segmented into hardware, software, service, vertical, and region. This report is based on an extensive research study of the commercial security system market and aims to analyze the entire market and all its subsegments through extensively detailed classifications. Region-wise, North America and APAC are expected to hold major market shares, and the market in these regions is expected to grow at a significant rate.

Johnson Controls (Ireland), Hikvision (China), Carrier (US), Honeywell International (US), Dahua Technology (China), dormakaba Holding (Sweden), Bosch Security Systems (Germany), ADT (US), Axis Communications (Sweden), SECOM (Japan), and ASSA ABLOY (Sweden) are among the leading players in the commercial security system market.

FIGURE 9 VIDEO SURVEILLANCE TO WITNESS HIGHEST CAGR IN COMMERCIAL SECURITY HARDWARE MARKET DURING FORECAST PERIOD

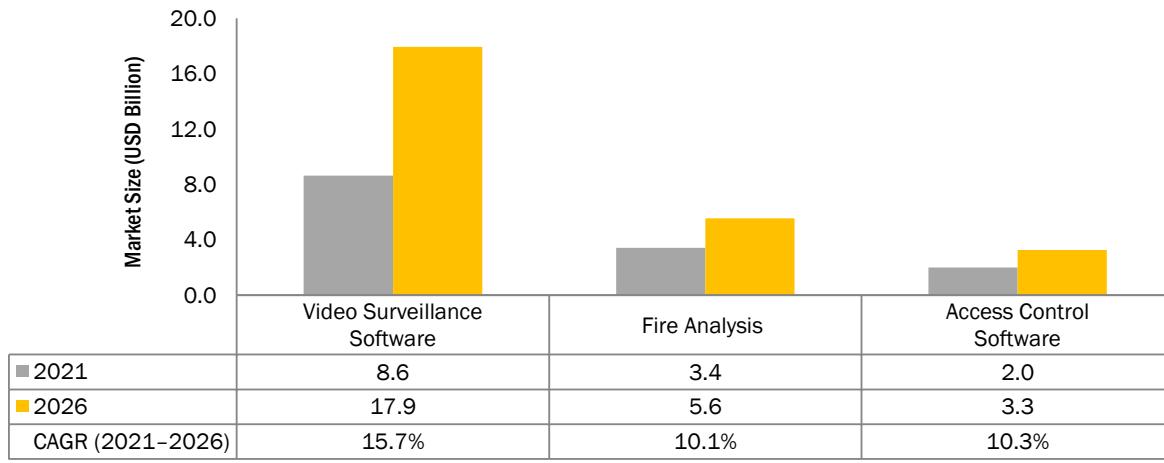


Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

The construction industry is becoming larger and complex, and construction activities are expected to increase after 2021. This growth will be primarily driven by the US, China, and India. Growth in the construction industry in the US is attributed to the high demand for housing and commercial places. These factors are expected to play a key role in driving the fire protection system market.

The increased adoption of IP cameras made video surveillance cost effective as installation expenses are minimized. Moreover, high-definition IP cameras bring significantly improved capabilities. Thus, better functionalities ranging from basic to advanced analytics, improved performance, and increased features—all available at a reduced cost—have led to a growth in the video surveillance market.

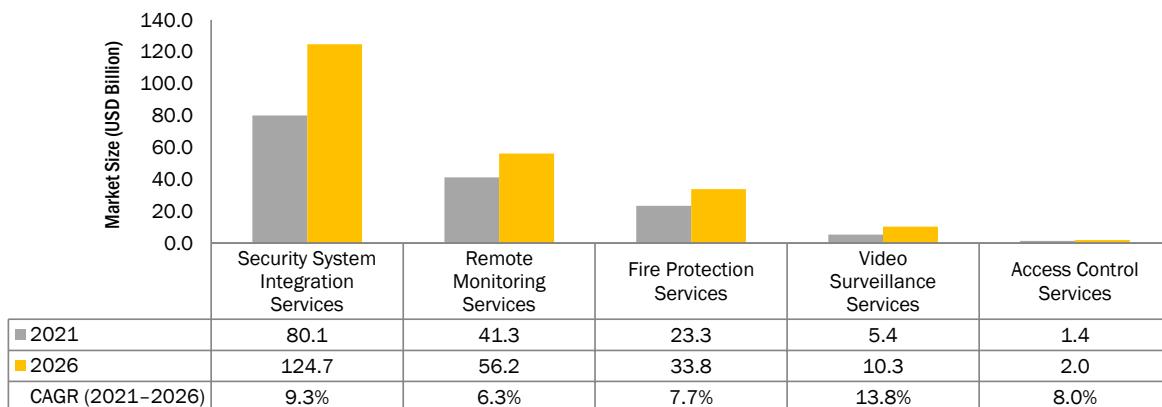
FIGURE 10 VIDEO SURVEILLANCE SOFTWARE TO WITNESS HIGHEST CAGR IN COMMERCIAL SECURITY SOFTWARE MARKET DURING FORECAST PERIOD



Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

Video surveillance software will be the leading and fastest-growing commercial security software market globally. The primary reason driving the growth of this market is the adoption of artificial intelligence (AI) in video surveillance systems. The ability of AI to analyze images and audio from the live streams of video surveillance and recordings, coupled with its ability to use image recognition algorithms to recognize faces, objects, and events, among others, is driving the video surveillance software market globally.

FIGURE 11 VIDEO SURVEILLANCE SERVICES TO WITNESS HIGHEST CAGR IN COMMERCIAL SECURITY SERVICE MARKET DURING FORECAST PERIOD

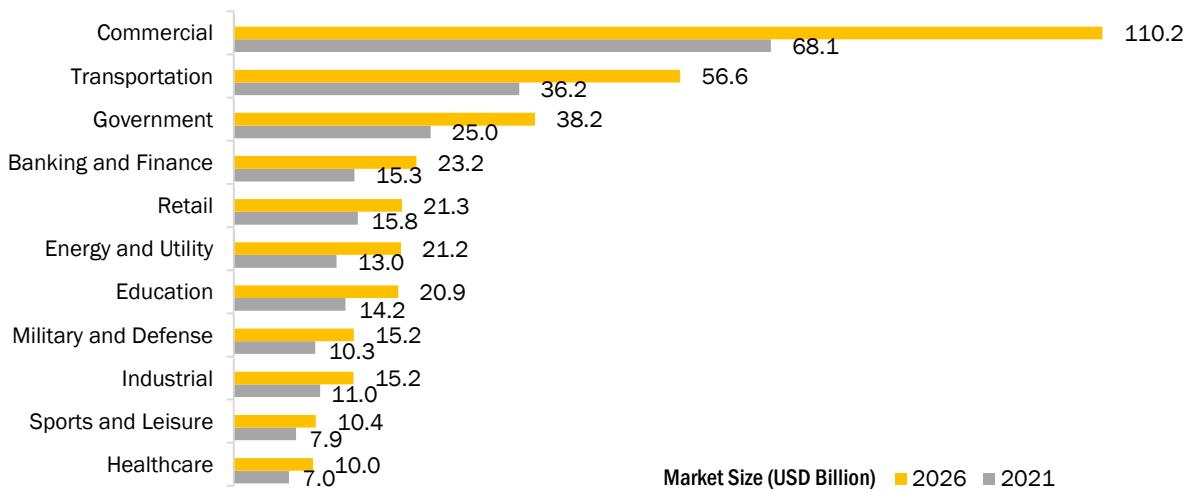


Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

Security system integration services will lead the commercial security service market. This dominant position is primarily due to it being a common service required for the operation of all other commercial security system products. The use of cloud storage for surveillance, use of mobile credentials and contactless biometric systems, and rising adoption of AI are the key drivers for this market.

Video surveillance services are expected to grow primarily due to a rise in the adoption of Video Surveillance-as-a-Service (VSaaS). The growth in this market is driven by the increasing importance of VSaaS in various application areas due to benefits such as remote access and management. As video feeds are stored in the cloud, customers can access and manage them using a desktop, laptop, or mobile device from any location with an internet connection.

FIGURE 12 COMMERCIAL VERTICAL TO HOLD LARGEST SIZE OF COMMERCIAL SECURITY SYSTEM MARKET IN 2021



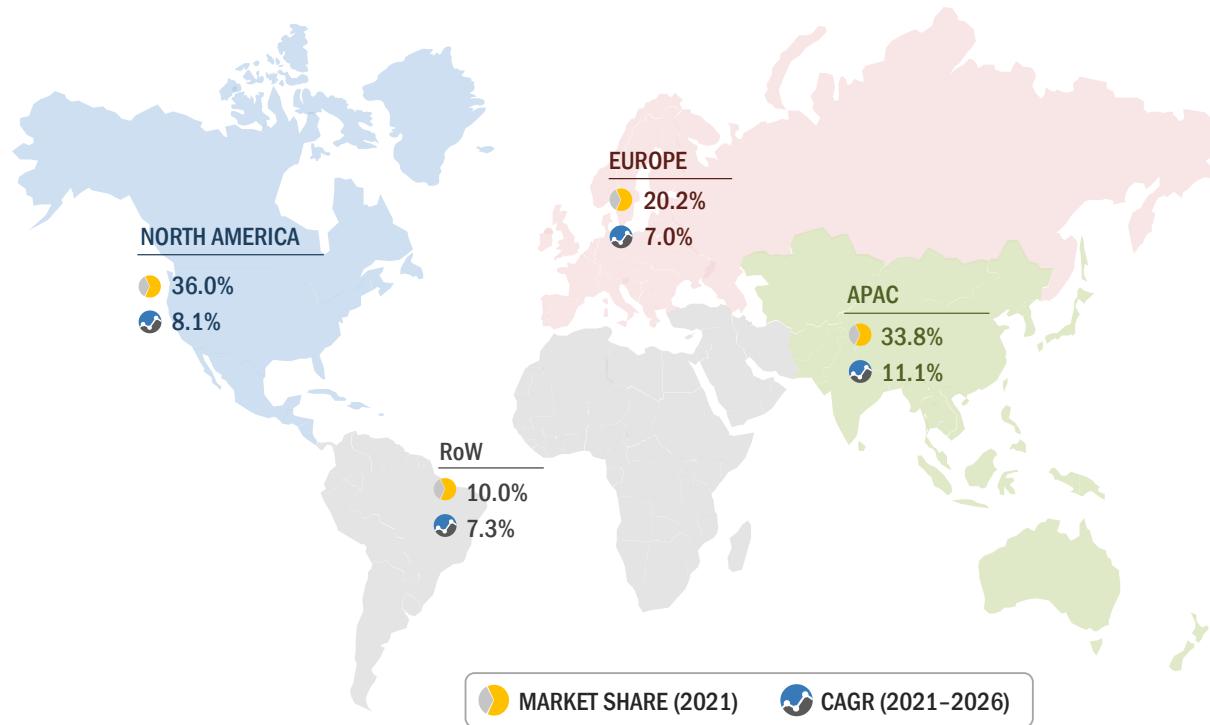
Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

The largest size of this market for the commercial segment is attributed to the increasing incidences of robbery and theft in commercial buildings. To protect commercial assets, property owners are buying security systems. Also, robberies and crimes pertaining to information security are major concerns nowadays. Corporates invest millions of dollars in security technology with the intention of increasing

security, protecting people, and solving security issues. Moreover, corporate companies are very sensitive toward data and information protection, which has led to many data companies adopting access control systems for their server rooms. Huge companies use biometric security systems to protect against unauthorized access to data centers. Further, in business process outsourcing (BPOs), finger vein-based door access control systems are used to protect data and server rooms. Door access controls are physical security systems that assure the security of a server room by means of limiting access to authorized persons only. Such advanced security needs further propel the demand for security systems in the commercial sector.

The adoption rate of security products, such as video surveillance systems, fire protection systems, and access control systems, is high as they protect assets and human life. To maintain the flawless performance of such systems, regular maintenance services are required, which is driving the demand for the commercial security service market globally.

FIGURE 13 COMMERCIAL SECURITY SYSTEM MARKET IN APAC TO GROW AT HIGHEST CAGR DURING FORECAST PERIOD



Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

Countries such as the US and Canada are the early adopters of security solution technologies, which is a key factor contributing to the growth of the security solutions market in the Americas. The APAC region is developing, and countries such as China, Japan, and South Korea are driving the overall growth of the security solutions market. The technological and economic advancements in the APAC region are expected to drive the overall demand for security systems. In this region, many governments have formulated safety norms for various sectors; the execution of these policies would create a significant demand for security systems in the future. For instance, fire security is a major concern in this region, and the rapid development of the construction and real estate sector is expected to drive the commercial fire protection system market in the coming years. Also, the increasing terror threats and criminal cases in APAC countries, coupled with the low police officer-to-population ratio, is expected to lead to a higher demand for security systems in the region.

4 PREMIUM INSIGHTS

4.1 ATTRACTIVE OPPORTUNITIES IN COMMERCIAL SECURITY SYSTEM MARKET

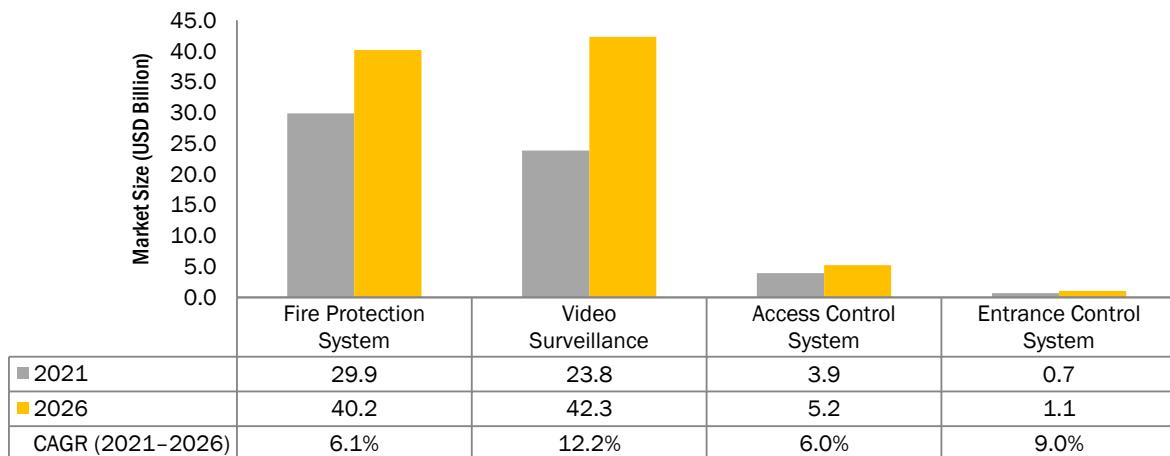
FIGURE 14 INCREASING DEMAND FOR VIDEO SURVEILLANCE, FIRE PROTECTION SYSTEM, AND ACCESS CONTROL SYSTEM TO BOOST MARKET GROWTH



Source: Press Releases, Investor Presentations, Annual Reports, Expert Interviews, and MarketsandMarkets Analysis

4.2 COMMERCIAL SECURITY HARDWARE MARKET, BY OFFERING

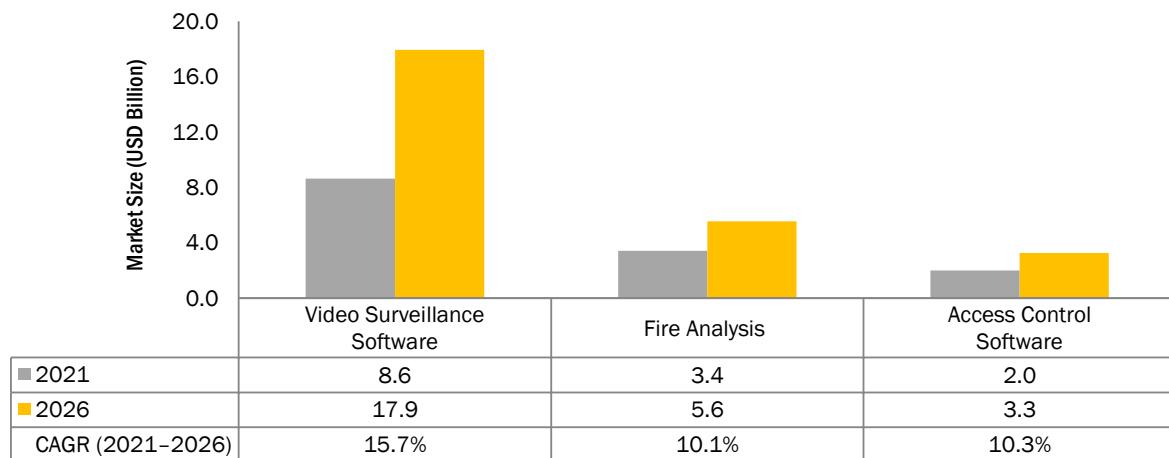
FIGURE 15 FIRE PROTECTION SYSTEM TO CONTINUE TO HOLD LARGEST SIZE OF COMMERCIAL SECURITY SYSTEM MARKET DURING FORECAST PERIOD



Source: Press Releases, Investor Presentations, Annual Reports, Expert Interviews, and MarketsandMarkets Analysis

4.3 COMMERCIAL SECURITY SOFTWARE MARKET, BY OFFERING

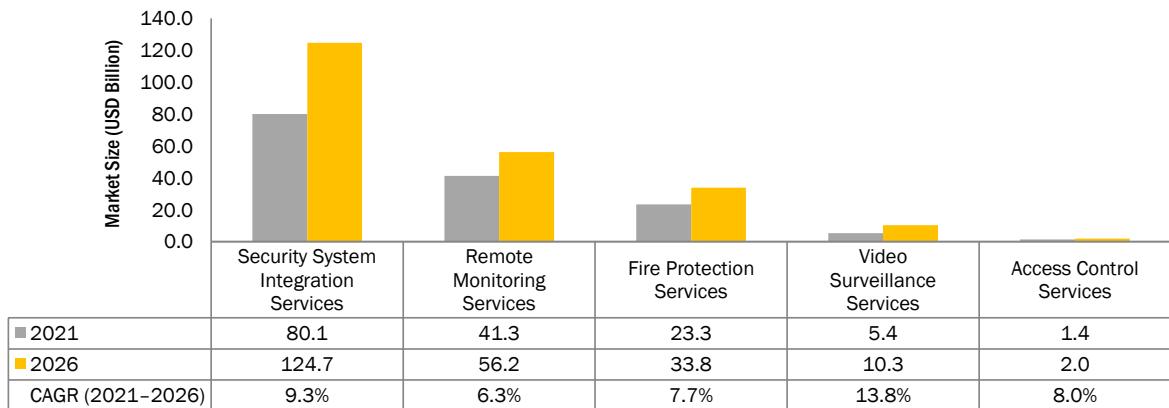
FIGURE 16 VIDEO SURVEILLANCE SOFTWARE TO ACCOUNT FOR LARGEST MARKET SHARE IN 2021



Source: Press Releases, Investor Presentations, Annual Reports, Expert Interviews, and MarketsandMarkets Analysis

4.4 COMMERCIAL SECURITY SERVICE MARKET, BY OFFERING

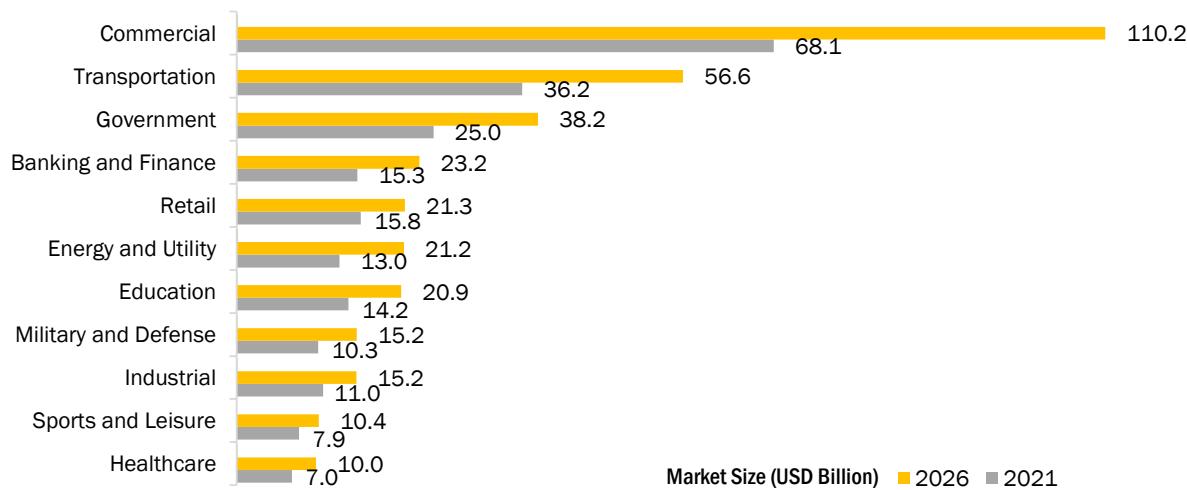
FIGURE 17 SECURITY SYSTEM INTEGRATION SERVICES TO DOMINATE COMMERCIAL SECURITY SERVICE MARKET DURING FORECAST PERIOD



Source: Press Releases, Investor Presentations, Annual Reports, Expert Interviews, and MarketsandMarkets Analysis

4.5 COMMERCIAL SECURITY SYSTEM MARKET, BY VERTICAL

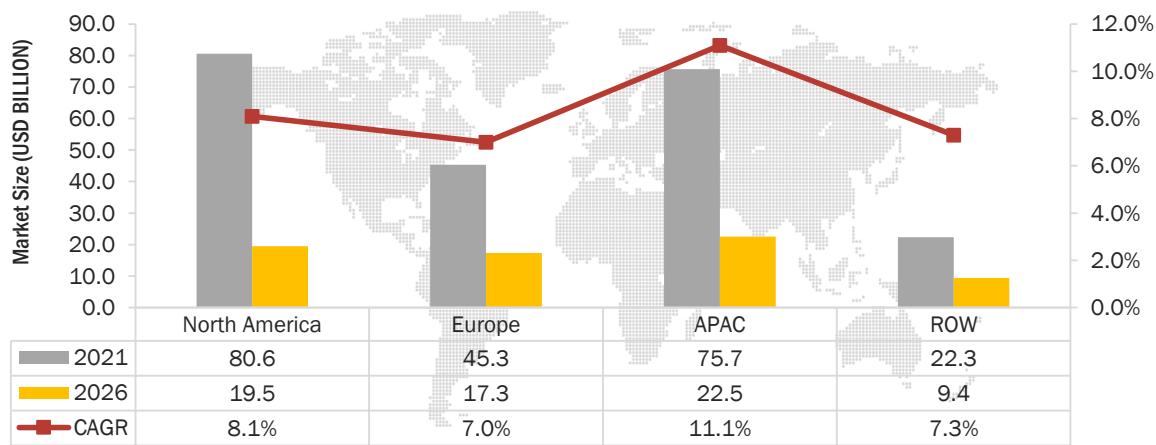
FIGURE 18 COMMERCIAL VERTICAL TO HOLD LARGEST SIZE OF COMMERCIAL SECURITY SYSTEM MARKET IN 2021



Source: Press Releases, Investor Presentations, Annual Reports, Expert Interviews, and MarketsandMarkets Analysis

4.6 COMMERCIAL SECURITY SYSTEM MARKET, BY REGION

FIGURE 19 NORTH AMERICA TO ACCOUNT FOR LARGEST SIZE OF COMMERCIAL SYSTEM MARKET THROUGH 2021–2026



Source: Press Releases, Investor Presentations, Annual Reports, Expert Interviews, and MarketsandMarkets Analysis

5 MARKET OVERVIEW

5.1 INTRODUCTION

This section describes the factors—drivers, restraints, opportunities, and challenges—influencing the growth of the commercial security system market. The global commercial security system market is expected to exhibit substantial growth during 2021–2026. The commercial security system market is in the growth phase at present and is highly competitive, with the presence of multiple established giant players. Currently, companies offer a wide range of commercial security systems, such as fire protection systems, video surveillance, access control systems, intruder alarms, and entrance control systems. North America is likely to contribute significantly to the growth of the commercial security system market. Similarly, APAC is expected to be the fastest-growing market given the escalating security expenditure for the protection of critical infrastructure across the region, boosting the demand for advanced commercial security systems.

5.2 MARKET DYNAMICS

5.2.1 DRIVERS

FIGURE 20 COMMERCIAL SECURITY SYSTEM MARKET DRIVERS AND THEIR IMPACT

DRIVERS	2 YEARS	5 YEARS	REASON
Rising number of terrorist attacks and organized crimes across the world	●	●	The implementation of permanent, manned security, video surveillance, and access control systems is expected to rise significantly in the near future.
Growing construction industry	●	●	The construction industry in APAC and Europe is expected to grow significantly over the next 6 years, driven by increasing infrastructure spending in both regions despite the challenges in the financial market.
Expanding adoption of IP cameras	●	●	An IP camera can be easily installed and, using a single coaxial cable for each camera, connected to the existing data network, with minimal effort. Due to their high resolution, IP cameras can provide high quality and extremely detailed images.
Accelerating implementation of stringent fire protection-related regulations	●	●	Fire protection involves the combined efforts of federal custodians, tenants, private sector building owners, and local fire service agencies. Policies and regulations differ from region to region and are meant to safeguard human life and property.
Rising adoption of IoT-based security systems powered by cloud computing platforms	●	●	With the growing number of cloud platforms, security and privacy concerns in IoT are also increasing, which is driving the market for new business models, such as Access Control as a Service (ACaaS) and Video Surveillance as a Service (VSaaS).
IMPACT LEVEL:		HIGH	● MEDIUM ● LOW ● VERY LOW

Source: Expert Interviews and MarketsandMarkets Analysis

5.2.1.1 Rising number of terrorist attacks and organized crimes across the world

A growing number of crimes and terrorist attacks globally has led to increased concerns for the safety and security of assets and people. According to the Global Terrorism Database documents, in 2019, there were more than 9,600 terrorist attacks across the world, which killed more than 20,309 people. Terrorist violence remained heavily concentrated in certain locations and coincided with other types of political

violence. More than half of the deaths took place in 5 countries—Afghanistan (21%), Yemen (9%), Iraq (8%), India (7%), and Nigeria (6%). More than half of the total deaths took place in 2 countries—Afghanistan (41%) and Nigeria (8%).

TABLE 2 TOP 10 COUNTRIES WITH HIGHEST NUMBER OF TERROR ATTACKS AND FATALITIES, 2019

Country	Total No. of Attacks	Total no. of Fatalities
Afghanistan	1,804	8,249
Yemen	771	1,219
Iraq	642	798
India	623	311
Nigeria	507	1,718
Philippines	464	396
Pakistan	362	416
Somalia	360	860
Syria	292	1,102
Democratic Republic of the Congo	250	642
Worldwide	8,473	20,309

Source: National Consortium for the Study of Terrorism and Responses to Terrorism (START), and MarketsandMarkets Analysis

The National Counter Terrorism Security Office (UK) issued counter-protective security recommendations to organizations and industries to mitigate the risks and vulnerabilities to their businesses by strengthening physical security with the deployment of access control and CCTV surveillance systems. It mandates the separation of public and private areas by employing better security systems.

These systems enable prompt and effective real-time response during terrorist attacks and other criminal activities. The use of smart cards, biometric devices, and electronic devices for enhanced security and authentication plays an important role in providing improved security and safety to commercial, government, and industrial sectors. Access control systems are also installed in highly restricted areas, nuclear plants, and organizations to enhance the security of personnel and assets.

The implementation of permanent, manned security, video surveillance, and access control systems is expected to rise significantly in the near future. In addition, these security solutions must be constantly upgraded with technological advancements to meet the requirements of different applications in high-end security facilities, such as airport terminals and border security points.

5.2.1.2 Growing construction industry

The construction industry is becoming larger and complex. According to the Global Construction Perspective, the global construction market is expected to grow to USD 8 trillion by 2030. This growth will be driven by the US, China, and India. Growth in the construction industry in the US is attributed to the high demand for housing and commercial places. The construction industry in APAC and Europe is expected to grow significantly over the next 6 years, driven by increasing infrastructure spending in both regions despite the challenges in the financial market.

Rising urbanization in emerging markets such as China, India, Indonesia, and Nigeria is anticipated to accelerate infrastructure spending for vital infrastructure sectors, including transportation, water & wastewater treatment, and power. This, in turn, will urge infrastructure financing toward consumer sectors, including manufacturing and transportation, which facilitate the production and distribution of raw materials for consumer goods. Growth in new and retrofit infrastructure has heavily boosted the

construction industry in developing countries. With new development plans and projects, the use of construction equipment is also growing. In the construction industry, there have been tremendous advancements in facility management in developing countries over the past several years, especially in the area of building automation.

Fire protection systems in buildings have become common, as these systems are useful in detecting, containing, and extinguishing fires at an early stage. Advanced technologies have been developed for communicating during fires, which enables quick deployment of response teams to the affected site. For example, Terma offers T.react Radio Dispatch. This solution works on the TETRA communication infrastructure for safe communication. It enables security staff to handle all voice-based communications on the TETRA network during crises as well as daily operations.

5.2.1.3 Expanding adoption of IP cameras

An Internet Protocol (IP) camera is a networked digital video camera that sends signals to the main server or computer screen through the internet or a network link. An IP camera can be easily installed and, using a single coaxial cable for each camera, connected to the existing data network, with minimal effort. Due to their high resolution, IP cameras can provide high quality and extremely detailed images. They also support two-way communication and can send customized alerts if any suspicious activity occurs. IP cameras are faster and more reliable than analog closed-circuit cameras and can be accessed from any location. Low-cost storage options, for example, hosted video, make IP cameras more affordable. IP cameras are, therefore, widely replacing analog cameras owing to their remote surveillance option and digital zoom feature. IP cameras find applications in commercial, institutional, government, corporate, and defense sectors, among many others.

The increased adoption of IP cameras has consequently led to a significant reduction in their prices. The average selling price (ASP) of IP cameras has constantly been declining over the past 5 years. In some cases, IP megapixel cameras can be further cost-effective as the installation expenses are minimized by controlling the existing Ethernet ports. Despite the falling prices, high-definition IP cameras bring significantly improved capabilities. Thus, better functionalities ranging from basic to advanced analytics, improved performance, and increased features, all available at a reduced cost, have led to the growing demand for IP-based cameras for the video surveillance application. The need for highly efficient, time-saving surveillance systems at affordable costs fuels the growth of the market for video surveillance solutions.

5.2.1.4 Accelerating implementation of stringent fire protection-related regulations

Fire protection involves the combined efforts of federal custodians, tenants, private sector building owners, and local fire service agencies. Policies and regulations differ from region to region and are meant to safeguard human life and property. For instance, the Australian Building Codes Board (ABCB) oversees issues related to safety, health, amenity, accessibility, and sustainability in buildings. ABCB is working with Fire and Rescue New South Wales (FRNSW), the Australasian Fire and Emergency Services Authorities Council (AFAC), and the Fire Protection Association of Australia (FPAA) to extend the current deemed-to-satisfy (DtS) provisions for sprinkler protection to medium-rise multistory buildings. The Korean Fire Protection Association was established in 2011 as an outcome of the fire prevention law—the Act on the Indemnification for Fire-caused Loss and the Purchase of Insurance Policies. This association provides fire safety inspection and consulting services to specific buildings, such as manufacturing facilities, educational institutions, schools, and public properties. The governments of most developed economies provide monetary support for the installation and maintenance of fire protection systems, e.g., smoke detectors, in commercial buildings.

The European norm DIN 14676 states that smoke detectors must be installed in bedrooms, children's rooms, and hallways (escape routes). They must also be installed in all living and hobby rooms, heating and workspaces, as well as the basement. Some codes and standards set by NFPA—such as NFPA 80

(standard for fire doors and other opening protectives) and NFPA 220 (standard on the type of building construction)—are made to deal with construction rules related to insurance and building codes. Because of the increase in fire hazards, government agencies worldwide are implementing stringent measures to reduce fire losses. These regulatory compliances not only help increase the awareness and adoption of fire protection systems but are also expected to impact market growth positively in the coming years.

5.2.1.5 Rising adoption of IoT-based security systems powered by cloud computing platforms

IoT has enhanced the quality and efficiency of automation systems by linking smart objects to the internet and allowing them to exchange data securely. Connected security systems communicate with devices through the cloud and help monitor key areas remotely. Moreover, IoT-based security systems are safe because they are authenticated with passwords to avoid hacking. Many businesses are shifting their traditional practices to IoT as the technology can be used in numerous solutions, such as smart alarm systems and smart garage door openers.

IoT is integrated with cloud computing as the data can be stored online (on the cloud) and can be accessed from anywhere. With the growing number of cloud platforms, security and privacy concerns in IoT are also increasing, which is driving the market for new business models, such as Access Control as a Service (ACaaS) and Video Surveillance as a Service (VSaaS). An example of IoT-enabled security system deployment is the installation of sensor-equipped devices to identify and track real-time data on a wireless network using cloud services. The large-scale adoption of VSaaS, ACaaS, and cloud computing platforms fuels the growth of the global commercial security system market.

With the rapid development of smoke detectors, along with IoT and big data technologies, the concept of smart smoke detectors has come to the fore, leading to the expansion of the smoke detector market. Smart smoke detectors are programmable and can be easily connected to Wi-Fi networks in commercial spaces. These detectors provide smoke detection alerts and easy control through mobile devices and facilitate easy monitoring of the battery status. Such devices can send notifications or fire alerts through text messages or emails and facilitate color-coded alerts in case hearing-impaired people are using the detectors. This recent shift toward the use of smart smoke detectors is expected to create new opportunities for the smoke detector segment during the forecast period.

5.2.2 RESTRAINTS

FIGURE 21 COMMERCIAL SECURITY SYSTEM MARKET RESTRAINTS AND THEIR IMPACT

RESTRAINTS	2 YEARS	5 YEARS	REASON
High installation, maintenance, and ownership costs of commercial security systems	●	●	High costs associated with the installation and maintenance of access control systems is expected to be the key factor hindering the growth of the market.
Major security and privacy concerns	●	●	Governments and private sector organizations should take necessary steps to lower the impact of video surveillance systems and biometric-powered access control systems on the privacy of people by issuing certain guidelines.
IMPACT LEVEL:	● HIGH	● MEDIUM	● LOW ● VERY LOW

Source: Expert Interviews and MarketsandMarkets Analysis

5.2.2.1 High installation, maintenance, and ownership costs of commercial security systems

High costs associated with the installation and maintenance of access control systems is expected to be the key factor hindering the growth of the market. Customers are increasingly becoming aware of the benefits of access control systems; however, expensive hardware and the high cost of ownership have hampered its adoption to a great extent in emerging countries. Expensive hardware and consultation regarding the use of these systems increase the installation cost. Similarly, the cost of ownership will be even higher as it includes maintenance charges, monitoring subscription fees, the replacement cost of parts, as well as installation costs. Also, software solutions installed in the access control system for advanced analytics are expensive, which also adds to the overall cost of a device. Thus, the high cost of advanced multilevel access control solutions is a major market restraint. Moreover, the threat of hackers affects the perception of consumers regarding the reliability of access control systems operated through mobile phones. If not updated timely, wireless access control solutions can become vulnerable to hackers. Further, as such devices operate on battery power or electrical supply, power failure or exhausted batteries could disrupt their functioning.

Similarly, high initial investments are required for the implementation of fire protection systems. This is due to the complexity of networks and the need to develop sophisticated tools to counter a fire situation. Due to this, vendors need to upgrade their solutions and develop new technologies regularly. Companies are spending a large amount of money on developing these advanced technologies, thereby increasing the cost of procurement for enterprises and government agencies to provide complete fire protection to infrastructure. Also, regular maintenance, along with other services, is essential for fire protection systems; this increases operational costs. These systems require routine inspection and testing to keep them in line with the code requirements of NFPA and the International Code Council (ICC). The maintenance of these fire protection systems requires inspection of thermal insulation, joints, alternative enclosures, and so on, at regular intervals. Additionally, enterprises need to review building certifications that depend on the age of a building structure. These factors add up to the costs; thus, high initial costs act as a restraint for the growth of the market.

5.2.2.2 Major security and privacy concerns

Video surveillance systems are used in private and public domains in areas where security is of utmost importance, such as highways, parking lots, parks, transportation platforms, retail stores, financial and educational institutions, and offices. While such systems facilitate theft control and overall security, video surveillance is often viewed as a violation of privacy and is opposed by several civil liberties groups and activists. People expect that their personal information is used only for legitimate and specific purposes, and there have been concerns about who watches the video and how the video might be used or misused.

In most industries, physical and logical security are separate departments as their requirements and approaches are different. An access control system is always prone to threats from anyone with an intention to breach either physical or logical security. Even in the case of integrated IT and security systems, cyberattacks are common. Security systems are being developed to overcome and block these threats; however, a system that gives complete security—physical and logical—has not yet been developed or implemented. Moreover, ACaaS, being a completely cloud-based solution, is prone to data breaches and cyberattacks. Any security concern, such as data breach and unauthorized access to resources, can lead to significant monetary and reputational losses. Weak authentication and abuse of access authority are the major reasons behind data breaches in ACaaS. The centralization of identity and access management is considered to be the best way to trace the source of disruption or attack.

The increasing interconnectivity of IoT-enabled devices for sharing and collecting data increases the number of vulnerabilities within a system significantly. Also, government agencies, data collectors, and hackers may get unauthorized access to critical information while it is in transit. This might compromise not only the privacy of an individual but also pose a security threat. If personal information is passed to a

non-intended recipient, it may be misused and lead to a security breach. Thus, the risk of cyberattacks through smart devices or IoT-enabled devices hinders the growth of this market. Therefore, the threat of attacks on physical and logical assets persists.

Governments and private sector organizations should take necessary steps to lower the impact of video surveillance systems and biometric-powered access control systems on the privacy of people by issuing certain guidelines. For example, liberal democracies have laws that restrict the use of surveillance and biometric authorization by the domestic government and private organizations, limiting it to circumstances where public safety is at risk.

5.2.3 OPPORTUNITIES

FIGURE 22 COMMERCIAL SECURITY SYSTEM MARKET OPPORTUNITIES AND THEIR IMPACT

OPPORTUNITIES	2 YEARS	5 YEARS	REASON
Growing government and stakeholder funding for developing smart cities and employing city surveillance solutions	●	●	Governments in developing economies, including China and India, are focusing on developing smart cities, through huge government and stakeholder funding, to curb the long-term challenges arising from growing urbanization. .
Rising adoption of ACaaS and VSaaS	●	●	VSaaS is web-hosted, cloud-based video surveillance. It allows users to remotely store, manage, record, play, and monitor surveillance footage entirely on the cloud or secure servers.
Increasing periodic revision of fire protection-related regulatory compliances	●	●	Authorities in most developed countries, such as the US, Canada, and Japan, have amended their standard building codes for mandates related to fire suppression system installations.
IMPACT LEVEL:	● HIGH	● MEDIUM	● LOW ● VERY LOW

Source: Expert Interviews and MarketsandMarkets Analysis

5.2.3.1 Growing government and stakeholder funding for developing smart cities and employing city surveillance solutions

Nowadays, cities need innovative solutions to overcome long-term challenges such as controlling traffic flows, managing waste, meeting energy efficiency targets, controlling security breaches, and managing city surveillance owing to rapid urbanization. Governments in developing economies, including China and India, are focusing on developing smart cities, through huge government and stakeholder funding, to curb the long-term challenges arising from growing urbanization. Video surveillance can be used efficiently for traffic monitoring, operations monitoring, law enforcement, vandalism deterrence, and remote and mobile monitoring applications. With increasing threats from terrorism, both international and domestic, public-concentrated areas, including government offices, buildings, schools, prisons, and parks, are exposed to security threats. Thus, governments across the world, especially in developing countries, are concentrating on investing more in video surveillance through smart city and city surveillance projects.

5.2.3.2 Rising adoption of ACaaS and VSaaS

VSaaS is web-hosted, cloud-based video surveillance. It allows users to remotely store, manage, record, play, and monitor surveillance footage entirely on the cloud or secure servers. The advantages of such services include cost efficiency, remote access to data, secure data storage, and high reliability. Low capital investment is required to use these services. The increase in demand for real-time and remote access for surveillance data and the flexible scalability offered by VSaaS are likely to provide lucrative opportunities to players in the video surveillance market.

Access control systems manage readers, door sensors, locks, access rights, and other kinds of centralized access to facilities. These access control products are connected to the internet, which gives companies centralized access to all facilities. The option of ACaaS is cost effective and flexible compared to other options such as a virtual private network (VPN) and other types of traditional access controls. A typical power and utility company has a large mobile workforce of linemen and technicians who need to access remote facilities; ACaaS enables centralized access control to remote facilities. For instance, if any worker is fired, one just needs to log in to the administrative account of the concerned worker and revoke all his permissions. In addition, many companies are introducing advanced ACaaS. The use of access control systems is expected to grow owing to the following reasons: increasing need to monitor visitor access from a central location; growing requirement to integrate customized blast-proof, fireproof, and high-security doors with access control systems to restrict access to off-limit areas; and surging demand for access control-integrated mechanical locks, electromechanical locking systems, and padlocks.

5.2.3.3 Increasing periodic revision of fire protection-related regulatory compliances

Authorities in most developed countries, such as the US, Canada, and Japan, have amended their standard building codes for mandates related to fire suppression system installations. For example, the impact of the Sarbanes-Oxley Act on US-based companies has changed the fiduciary responsibilities of executive leadership, which now is not just about financial reporting but extends to all areas of risk management, including safety concerns. As a result, firms are spending millions of dollars to evaluate and correct shortcomings in fire suppression systems of their facilities, especially in locations where firefighting infrastructure is weak.

Revised codes mandate the installation of fire alarm equipment in all offices, commercial and manufacturing sites, and educational and entertainment buildings. The revision of codes is directly related to the secular trends in the overall market for fire alarm equipment. Buildings under renovation are also included in the amended codes, resulting in further growth of the market. The Americans with Disabilities Act (ADA) is the latest act that focuses on the safety and security of disabled citizens and mandates the installation of visual devices (strobies) to alert the hearing impaired in a rescue situation.

5.2.4 CHALLENGES

FIGURE 23 COMMERCIAL SECURITY SYSTEM MARKET CHALLENGES AND THEIR IMPACT

CHALLENGES	2 YEARS	5 YEARS	REASON
Cybersecurity-related threats	●	●	IP networks allow for more intelligence for surveillance than legacy analog networks. The increasing use of cloud-based services can lead to cybersecurity threats for the data that is uploaded to the cloud platform.
Integration of user interfaces with fire protection system	●	●	A key challenge facing the fire protection system market is the integration of user interfaces when multiple solutions are being used in a control mechanism.
IMPACT LEVEL:	● HIGH	● MEDIUM	● LOW
	● VERY LOW		

Source: Expert Interviews and MarketsandMarkets Analysis

5.2.4.1 Cybersecurity-related threats

As surveillance and the use of biometric access control continue to grow exponentially, millions of cameras and access control systems are deployed to help keep people, properties, and organizations secure. IP networks allow for more intelligence for surveillance than legacy analog networks. The increasing use of cloud-based services can lead to cybersecurity threats for the data that is uploaded to the cloud platform. The rising deployment of IP and Power over Ethernet (PoE)-based network devices provides several opportunities for cyberattacks, thereby causing cybersecurity threats. Increasing use of wireless systems, IP systems, and cloud services pose a cybersecurity threat to the market. To overcome such threats, companies have to take steps, such as undertaking various programs to train and educate dealers and end users about best practices for cybersecurity. Therefore, companies need to adopt an innovative yet protection-oriented approach to deal with as well as reduce cybersecurity threats across the commercial security market.

5.2.4.2 Integration of user interfaces with fire protection system

A key challenge facing the fire protection system market is the integration of user interfaces when multiple solutions are being used in a control mechanism. Fire protection systems can be efficient and cost effective if integrated directly into a centralized building control system so that the information can be obtained from a central point, and corresponding follow-up regulatory measures can proceed automatically in an emergency.

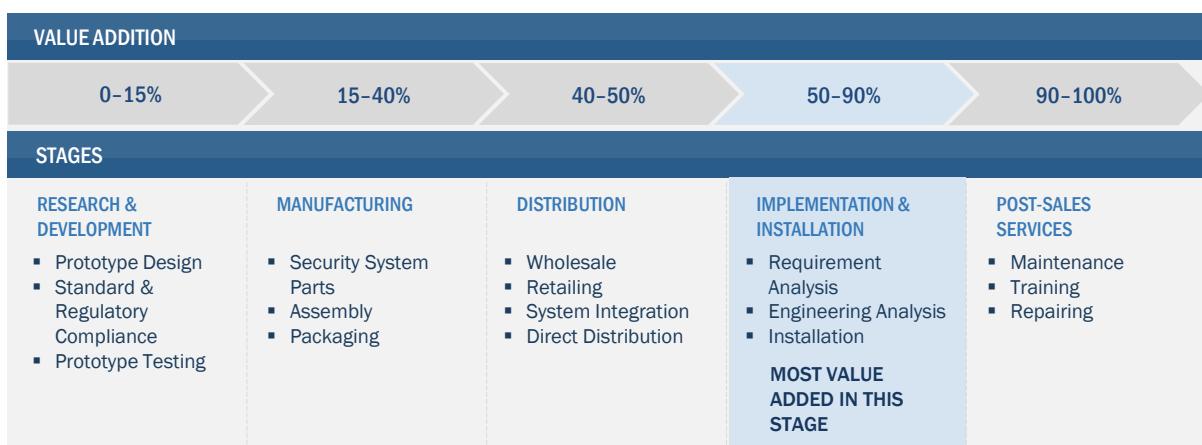
By integrating these systems, a user can monitor the status of multiple systems from one location or access features such as remote notification, trending, or maintenance management, which may not be available directly through a fire protection system. Threats regarding security and fire protection to industries and commerce in the modern era, with more demanding compliance codes and standards, raise the need for more comprehensive and integrated solutions. However, owing to the complexity of the system and the increasing number of components that are included in it, the integration and configuration of the entire system becomes complicated. This factor poses a challenge for the market.

6 INDUSTRY TRENDS

6.1 VALUE CHAIN ANALYSIS

Value chain analysis is a systematic approach to examining all the activities occurring throughout the production of security systems. It helps in analyzing the sources of competitive advantage among the market players—from R&D to post-sales services. This model explains the working of strategically relevant activities to understand the behavior of costs and to identify any sources of differentiation. For a firm to gain a competitive advantage, it has to achieve cost reduction in these strategically important activities. The value chain explains the flow of activities performed by the companies to develop and deliver the products to consumers.

FIGURE 24 VALUE CHAIN ANALYSIS: COMMERCIAL SECURITY SYSTEM MARKET



Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

The figure above shows the network among the core industry segments and the flow of products and services.

The complete value chain of the commercial security solutions ecosystem starts from the research and development phase and ends with post-sale services. Each phase adds value to the complete value chain.

Research and development: The first stage in the value chain involves the designing of new products and developing and testing of prototypes. Companies such as ASSA ABLOY (Sweden), Honeywell (US), and Bosch Security Systems (Germany) are extensively involved in research and development to offer innovative products.

Prototype development makes it easy to design a completely iterative process for security systems, and prototype testing helps improve the design of these systems. Also, standard and regulatory compliance is important to meet the specific requirements of security devices.

Product manufacturing: The next phase of the value chain involves the manufacturing of the parts of security systems and assembling them for consumers. Manufacturers include players that supply all kinds of manufacturing equipment for the production process throughout the value chain. A few manufacturers, including Johnson Controls (US), Honeywell (US), SECOM (Japan), and ASSA ABLOY (Sweden), are involved in the production of components necessary for security systems, such as fire alarms, motion sensors, cameras, and control panels.

Distribution: Security systems are sold through wholesalers, retailers, system integrators, and direct distributors. Many companies work directly with end users of security systems. Companies such as Godrej & Boyce Manufacturing Company Limited (India), Control4 (US), and Alarm.Com (US) are a few of the major technology distributors in the security solutions market.

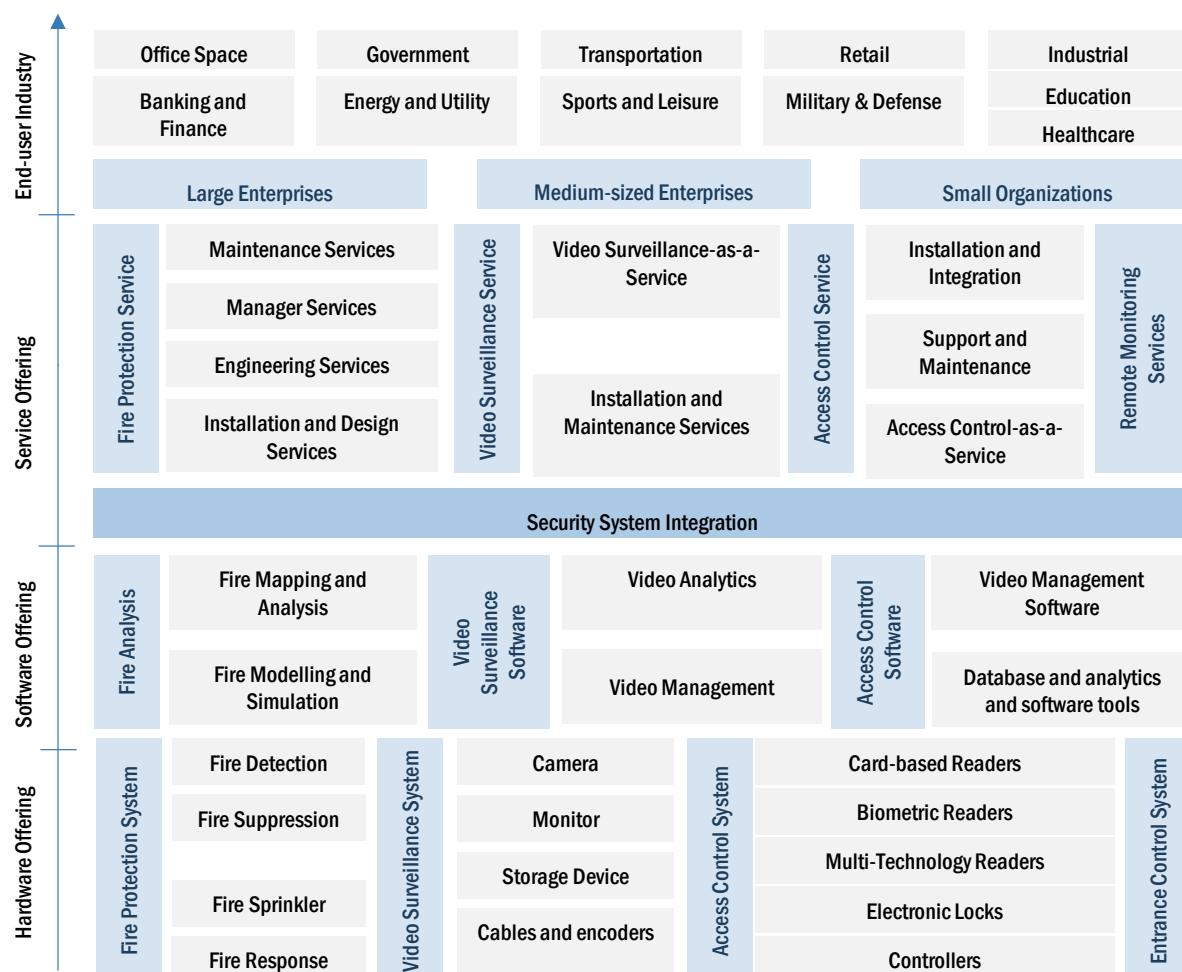
Implementation and installation: The next phase is the implementation and installation phase. This phase adds the maximum value to the entire value chain. It involves understanding client requirements pertaining to home security systems. It also involves performing the engineering analysis of a project site, checking the feasibility of security solutions, designing the implementation plan, and installing security systems. The implementation and installation of security systems require trained staff to ensure the smooth operation of the product in the future course of action.

Post-sales services: The final phase of the value chain is post-sales services, covering aspects such as training, maintenance, and repairing, whenever customers demand such services. This phase involves maintaining software and components used in security systems.

6.2 COMMERCIAL SECURITY SYSTEM ECOSYSTEM/MARKET MAPPING

Market mapping explains the hardware, software, services, and verticals involved in the complete ecosystem of commercial security systems.

FIGURE 25 ECOSYSTEM OF COMMERCIAL SECURITY SYSTEMS



Source: Secondary Literature, Expert Interviews, and MarketsandMarkets Analysis

The figure provided above depicts the schematic ecosystem analysis of the commercial security system market. The main hardware components of this system are fire protection systems, video surveillance systems, access control systems, and entrance control systems. The different types of software used for the functioning of a system are fire analysis, video surveillance software, and access control software. Security system integration is a service common to all the types of hardware and 3 types of software covered in this report. This system is used by the following verticals: office spaces, data centres, hospitality, government, banking and finance, education, military and defense, energy and utility, sports and leisure, retail, transportation, healthcare, and industrial.

6.3 COMMERCIAL SECURITY SYSTEM REGULATIONS

6.3.1 FIRE PROTECTION AND SAFETY REGULATIONS

The International Building Code (IBC) and the International Fire Code (IFC) are the most popular fire protection model codes globally. Any country can adopt and adapt to these jurisdictions. These codes have been adopted in most of the US. However, these codes have not been adopted on a wide scale anywhere else in the world.

The IFC and IBC are published every 3 years by the International Code Council (ICC), a group formed in the US in 2003, with the latest edition published in 2018. The IBC deals with fire prevention in the construction and design of new buildings, while the IFC deals with fire prevention and fire risks associated with a completed and occupied building or facility. The IFC is in use or adopted in 42 US states, including the District of Columbia, New York City, Guam, and Puerto Rico. The following are the major benefits of IFC standards:

- The provisions of this code provide protection for public health, safety, and welfare from the hazards of fire, explosion, or dangerous conditions in buildings, structures, and premises.
- This model code is flexible in that it allows for the use of alternative and innovative materials and performance-based methods in achieving code compliance.
- This code does not give undue preferential treatment to particular types or classes of materials, products, or construction methods.
- This code references nationally developed consensus standards.
- This code addresses extraordinary fire risks in existing buildings with retrospective requirements, but only in this limited area is there a need for alterations, as long as the building and its occupancies comply with reasonable fire prevention provisions.
- This code includes reasonable yet comprehensive regulations for hazardous materials.
- This code includes requirements or expanded requirements for vacant premises, indoor displays, fire protection water supply, fire apparatus access roads, key boxes, high-piled storage, tire rebuilding and tire storage, mechanical refrigeration systems, explosion control, smoke and heat vents, and lead-acid battery systems.

The EN Eurocodes is the code used as a model for structural design. From the perspective of fire safety, structural fire design is the major area covered by the Eurocodes fire safety standards. The EU member states and the European Free Trade Association (EFTA) use EN Eurocodes serve as reference documents for the development of their standards. Fire protection standards for buildings differ from country to country throughout Europe. The following table shows some of the major fire protection standards followed by European countries:

TABLE 3 FIRE PROTECTION STANDARDS IN EUROPEAN COUNTRIES

COUNTRY	LEGISLATION
United Kingdom	The Building Act 1984
Germany	National model building code, Musterbauordnung
Spain	DB-SI (Documento basico desseguridad en caso de incendio)
Italy	Decreto Ministeriale 3 agosto 2015 – Approvazione di norme tecniche di prevenzione incendi, ai sensi dell'articolo 15 del decreto legislativo 8 marzo 2006
Finland	Land Use and Building Act (132/1999)
Sweden	BBR (Boverkets Byggregler)
The Netherlands	The Woningwet (housing law)

Source: Secondary Literature, Expert Interviews, and MarketsandMarkets Analysis

6.3.2 VIDEO SURVEILLANCE PRIVACY AND WIRETAPPING REGULATIONS

The increasing use of video surveillance in the workplace has raised privacy concerns and highlighted important legal issues. A company with operations confined to a particular jurisdiction ensures that its video surveillance practices comply with the local laws. However, an MNC faces a much more complex challenge. The reason being that legal implications differ so widely for different regions and companies have to adapt their practices specific to each area. Laws affecting video surveillance are primarily related to

- Privacy laws
- "Wiretapping" laws
- Employment laws
- Specific statutes on video surveillance

In the UK, data protection law regulates the use of personal data and imposes separate regulations on data disclosing individuals' race and ethnic origin (Data Protection Act 1998). The UK Information Commissioner issues specific guidance on the use of video surveillance in the workplace and considers it legal only if the conditions of the UK Information Commissioner's CCTV Code of Practice 1998 are adhered to.

In Spain, the use of video cameras raises data protection law issues similar to those of the UK, as most EU countries have enacted data laws that are consistent with Directive 46/1995/EC on data protection (Data Protection Directive).

The US has no comprehensive data protection statute analogous to the Data Protection Directive. However, there are sector-specific federal and state privacy laws imposing some limits on video surveillance in the workplace. Most significant US laws affecting video surveillance are state and federal statutes that mainly regulate wiretapping-related laws. Since wiretapping laws focus on sound recording, video surveillance with an audio track is subject to the US federal wiretapping law, the Electronic Communications Privacy Act 1996 (ECPA), and some of its related parallel state laws.

6.3.3 GOVERNMENT REGULATIONS RELATED TO FAIR AND TRANSPARENT USE OF BIOMETRIC SYSTEM-POWERED ACCESS CONTROL

According to the World Economic Forum (WEF) Head of Artificial Intelligence Kay Firth-Butterfield, as governments have started deploying facial recognition technology-based access control systems, they must start considering the privacy of individuals as well. It has also been suggested that the potential for facial recognition can hamper citizens' civil liberties, which need to be handled carefully. The WEF is advising governments to ensure the transparent and fair use of facial recognition systems in the public and private sectors. Scottish Parliament's Justice Sub-Committee on Policing will look into the use of facial recognition in law enforcement and invasive monitoring of citizens' privacy. For instance, as of December 2019, in Beijing, the use of the internet through a phone or computer cannot be done without a facial recognition check. In recent years, many people have been arrested for posting sensitive topics about the government on the internet. Addressing these concerns with strong legislation from governments will go a long way in further unlocking the potential use of biometric systems in the private and government sectors.

6.4 KEY USE CASES

6.4.1 FIRE PROTECTION SYSTEM

6.4.1.1 Fire protection systems played major role in fighting Australian wildfires

Wildfires in Australia burned 100,000 sq km of land in Australia from July 2019 to January 2020. Firefighting crews have used a combination of aircraft, including helicopters and fixed-wing aircraft, and larger air-tankers dropping water and retardants onto the fires from the sky. Approximately 750 vehicles were used, including firefighting trucks, to extinguish the fire.

6.4.2 VIDEO SURVEILLANCE

6.4.2.1 Mandatory installation of CCTV cameras in Sharjah

As of December 2020, in Sharjah, 2,800 industrial companies mandatorily installed CCTV cameras that were directly linked to the Sharjah Police Operation Room. This is expected to play a key role in enhancing security in the industrial sector.

6.4.3 ACCESS CONTROL SYSTEM

6.4.3.1 Eurostar has enabled biometric-enabled boarding for UK passengers

The Eurostar rail line has started expanding the base of its passengers, with the use of biometric processing, in partnership with iProov. The face recognition system matches passengers' faces against their image on the identity document. This access control system has been integrated with the Eurostar app, allowing passengers to bypass the traditional ticketing system and border checks, making the boarding process contactless at the St. Pancras railway station.

6.4.4 ENTRANCE CONTROL SYSTEM

6.4.4.1 Multi-biometric powered entrance control system in UAE enables seamless border crossing

The Ministry of Interior (MoI), UAE, and IDEMIA have together developed e-Registration stations located in dedicated offices across the UAE, allowing multi-biometric capture and identity and background verification. These checks are for citizens and residents who have registered to use Automated Border Control (ABC) e-Gates but have not used this entrance control system at the airport before. These entrance

control systems will help passengers pass through effortlessly through border control, without any human inspection.

6.5 PATENT ANALYSIS

The following section contains various patents filed between 2018 and 2020 with their analysis. The section also contains patent descriptions along with the applicant name and application date.

TABLE 4 **IMPORTANT INNOVATIONS AND PATENTS REGISTRATION**

APPLICATION DATE	PUBLICATION NUMBER OF PATENT	APPLICANT	DESCRIPTION	LOCATION OF PATENT FILING
June 2019	EP3753801A1	Mitsubishi Heavy Industries, Ltd.	Surveillance system for infrastructure and/or a vehicle with event detection	Germany
June 2019	EP3754548A1	SAP SE	A method for recognizing an object in an image using features/vectors of an encoding neural network	Netherlands
October 2020	AU2020102725A4	China Coal Research Institute and China University of Mining & Technology	High-temperature fire source peephole detection device	Australia
October 2020	KR20200127131A	Jsg Sang Gyun	Installation of spray facilities for fire suppression connection in high-rise buildings	South Korea
October 2020	KR20200123046A	MYOUNG SUNG FIRE PROT CO LTD	Improved fire detection system relates to an improved automatic material detection system that prevents the entire short circuit of the fire alarm device, and more particularly, a plurality of fire alarm devices electrically connected to the alarm output unit	South Korea
June 2020	20200394859	Security Enhancement Systems, LLC	Electronic access control system and method for arc flash prevention	United States
May 2020	20200394600	HONGFUJIN PRECISION ELECTRONICS (YANTAI) CO., LTD. and HON HAI PRECISION INDUSTRY CO., LTD.	Fire protection inspection method, fire protection inspection device, and remote device	United States

November 2020	20200360748	Welles; Marcus Henry	A fire sprinkler station mobile is a system for fighting fire that includes a timer unit with an electrical power input and out line	United States
November 2020	KR20200138120A	Hanwha Techwin Co., Ltd.	Surveillance camera transmitting still image and video according to the input of a specific signal to the server; the video management server provided videos and still images related to the video	South Korea
June 2019	US2020394855A1	VAN TILL STEVEN	Indexing a video surveillance stream to match an access control credential or token with the best facial image detected at a security portal method of operation and system	United States
October 2018	US10871023B1	WELLS FARGO BANK	Portable locker and docking station system	United States
September 2020	AU2020102380A4	Dr Banda Latha; Dr Dwivedi Rakesh Kumar; Dr Jain Arpit; Khan Tayyab; Dr Manjul Manisha; Dr Sagar Bharat Bhushan; Dr Sarkar Biplob Kumar Prof; Dr SINGH KARAN; and Vats Satvik	IMT-voice-based mobile banking: Intelligent money transfer using voice-based mobile banking	Australia
September 2020	KR102172463B1	Universe-Top Engineering & Architects Co., Ltd.	An access monitoring and control system using communication facilities in apartment housing	South Korea
August 2020	CN111741033A	Tencent Technology (Shenzhen) Company Ltd.	Account cross-device login management method and device, equipment and medium	China

Source: European Patent Office and USPTO Patent Database

To get broader insights into the trends in patent filing, a time series analysis of the patenting trends related to the commercial security market from 2018 to 2020 was done. The global patenting trend analysis demonstrates that most of the patent application filing activity was from China. Major R&D activities were done in the area of biometric-powered access control systems and their integration with video surveillance in the building automation system. These are the areas that will witness a major amount of commercial product launches in the future.

6.6 PORTER'S FIVE FORCES MODEL

The Porter's five forces model describes the current scenario in the commercial security system market. This model helps companies in making decisions regarding the entry and exit strategies in the market. The changes in these forces can have a significant impact on the commercial security system market. Porter's five forces analyze the competition in the commercial security system market from 5 different perspectives, namely the intensity of rivalry within a market, the threat from new entrants, bargaining power of suppliers, bargaining power of buyers, and threat from substitutes.

TABLE 5 COMMERCIAL SECURITY SYSTEM MARKET: PORTER'S FIVE FORCES ANALYSIS

PORTER'S FIVE FORCES	IMPACT
Degree of Competition	High
Bargaining Power of Suppliers	Medium
Bargaining Power of Buyers	Medium
Threat from Substitutes	Low
Threat from New Entrants	Medium

Source: Secondary Literature, Expert Interviews, and MarketsandMarkets Analysis

Competitive rivalry and the bargaining power of buyers are the major forces influencing the commercial security system market. This market has many players, both established and start-up companies, that have product portfolios with unique value propositions—some targeted toward high-end buyers. Companies design and manufacture hardware component, develop software in-house or outsource it to a third-party, and mostly the manufacturers provide services themselves. However, companies retain their intellectual property rights. This has ultimately resulted in a medium impact on the bargaining power of suppliers in the commercial security system market. However, good interoperability among different commercial security devices has given buyers some freedom to choose their desired commercial security systems.

6.7 AVERAGE SELLING PRICE

TABLE 6 AVERAGE SELING PRICE OF COMMERCIAL SECURITY SYSTEM HARDWARE, 2020–2026 (USD)

Offering	2020	2022	2024	2026
Video Surveillance Camera	200–400	196–390	190–375	185–365
Access Control System	150–250	140–235	130–220	120–200
Entrance Control System	450–550	440–535	430–520	420–500

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 7 AVERAGE SELING PRICE OF VIDEO SURVEILLANCE CAMERA, BY TYPE, 2020 (USD)

type	AVERAGE SELLING PRICE (ASP) PER UNIT
Wireless/IP Camera	200–300
Wired/CCTV Camera	150–250

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 8 AVERAGE SELLING PRICE OF ACCESS CONTROL SYSTEM, BY TYPE, 2020 (USD)

type	AVERAGE SELLING PRICE (ASP) PER UNIT
Card-based Readers	130-180
Biometric Readers	180-230
Electronic Locks	110-160

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

The historic and forecast prices were compiled from various sources, such as tier-1 supply portals, press releases, company presentations, industry experts, white papers, and the MnM data repository. Upon analysis, the projected price was derived based on OEM announcements, contracts, new product developments, projected future demand, and historical price trends.

Entrance control system units are more expensive than other products primarily due to them being a form of electronic door, making it much larger in size and complicated to build. These costs do not include installation costs and only cover the unit price of the product.

6.7.1 PRICING TREND FOR COMMERCIAL SECURITY SYSTEM MARKET

An access control system is the most technology-intensive product and is also a relatively newer technology. Its prices are expected to decline way more rapidly compared to the other 2 products. Moreover, the emergence and growth of new-generation contactless technologies are further accelerating the trend of declining prices as these next-generation technologies will witness a quick adoption only when processes decline. Entrance control systems will witness a relatively slower decline in price compared to access control primarily because it is not an R&D-intensive industry with most of the innovation being in the area of integration of entrance control systems with different technologies. Video surveillance is also expected to witness a fall in price primarily because of the increase in shipments and entry of aggressive new entrants, predominantly from China.

6.8 TECHNOLOGY ANALYSIS

There has been a lot of innovations happening in the commercial security system market. These innovations perform a crucial role in improving the level of security provided by these systems.

6.8.1 IOT-POWERED FIRE PROTECTION SYSTEM

IoT is an ever-growing network of people, as well as smart devices, machines, and other devices that feature an internet protocol (IP) address for internet connectivity to exchange data for intelligent machine applications and services. It allows objects to be controlled and sensed remotely across existing network infrastructure, making integration between physical and digital worlds more efficient, accurate, and economically beneficial.

The increased number of fire accidents globally is a primary factor raising the demand for the integration of IoT with fire protection devices to prevent fire accidents. Sensors and actuators are connected to smartphones via an IP, which sends emergency alerts to the fire brigade about fire accidents. Technological advancements in wireless solutions and the evolution of IoT may have a transformative impact on various industry verticals, especially in building management. This technology integrates fire protection and life safety devices, where fire alarm panels, detectors, and other devices are connected together to improve safety and operations, thus making it cost efficient. At present, IoT is not connected directly to most fire protection systems and probably will not be for quite some time as systems need to be upgraded with Underwriters Laboratories (UL) standards.

6.8.2 CLOUD-BASED FIRE PROTECTION SYSTEM

Fire departments have identified the need to modernize administrative functions by making the transition from paper-driven management systems to paperless technology solutions. Paperless solutions help in managing a variety of administrative tasks, such as supply chain for all consumable products and equipment, asset management for facilities, and personnel record management.

Fire protection systems are being designed, keeping in view the experiences of firefighters and are being made compatible with cloud-based software, which can provide access to information from anywhere. Cloud-based systems also eliminate the need for keeping software on individual machines or devices and ensure that a firefighting department's software is always updated with the latest, real-time information. With the use of cloud-based solutions, fire safety plans are now digital and free for fire services. Firefighters can access floor plans and critical infrastructure. Also, fire department personnel can conduct safety sessions with building residents from the station at any time.

6.8.3 VIDEO IMAGE SMOKE AND FLAME DETECTION SYSTEM

Video image smoke and flame detection systems are a new trend in the FPS market. These systems are generally used to protect large areas that are prone to fire accidents and protect assets with high value. They are mostly preferred in industrial plants, turbines, chemical laboratories, and oil & gas facilities. They require at least some light in the room to detect smoke, but they do not need light for flame detection.

Video image smoke and flame detection systems are offered with a digital camera that is linked to a video analytics software programmed on a computer. Video cameras are grouped in a network, and the images are sent to the computer programmed with video analytics software.

The software determines the presence of fire through captured video images. These systems use different lenses that are capable of capturing large areas. The captured images are analyzed multiple times by the software. Cameras analyze each pixel in the image. These systems detect the brighter pixels and identify fire based on the brightness. If a fire is detected, a signal is sent to the fire alarm control panel that alerts residents or fire brigades. These systems should comply with the NFPA 72 standard. Software and hardware components used in these systems should be UL-listed.

6.8.4 EMERGENCE OF CONTACTLESS BIOMETRICS

Contactless biometric solutions primarily use technologies such as iris recognition, face recognition, or voice recognition. COVID-19 has made people wary of using touch-based biometrics as these carry a risk of the spread of the disease. This has led to encouragement from companies and people to adopt contactless biometric solutions based on face, iris, and voice recognition technologies. As a result, secure contactless financial transactions are likely to increase. Similarly, at the government level, contactless biometric technology is gaining traction to be integrated into passports. Along with it, schools, hospitals, and other public institutions have also started deploying contactless biometric systems for security purposes.

Growth in digital banking is a major driver for the adoption of facial, voice, or iris recognition technologies in the BFSI sector. Its use makes it a convenient and user-friendly way for customer verification, which helps deliver secure authentication across the channels. Along with it, software vendors have started providing advanced development kits, which help contactless biometric technology providers offer advanced contactless biometric software along with hardware. There has been a decline in cash circulation during the COVID-19 pandemic. People have started using contactless payment options during this pandemic, and they are likely to become comfortable with contactless transactions. Mobile wallets, coupled with the in-phone biometric authentication process, is another key factor boosting the growth of the contactless biometric market.

6.8.5 USE OF THERMAL CAMERAS IN ACCESS CONTROL

When it comes to continuous, reliable detection with a low rate of false alarms, thermal cameras are the obvious choice. Thermal cameras work far better than visual cameras in a dark environment. They detect people and objects, as well as incidents 24/7, everywhere from dark areas to sunlight areas. These are also less sensitive to different lighting conditions, such as shadows, backlight, and darkness. Thermal cameras are capable of performing in difficult weather conditions, such as smoke, haze, dust, and light fog. As thermal cameras can detect even a minor change in temperature, it is difficult for a human to blend with the background. Therefore, thermal cameras are excellent at detecting humans obscured by complex backgrounds or hidden in deep shadows. In addition, objects such as vehicles also have a different temperature than the surrounding environment, making detection easy. A combination of thermal cameras with an access control system helps to keep premises secure. A majority of break-ins occur through forcible entry; the use of thermal cameras helps prevent burglary.

Thermal cameras are used in a wide range of security applications, such as perimeter protection around industrial and commercial sites, airports, and power plants. Face recognition technology combined with access control helps in border control. Governments and law enforcement agencies across the world have started implementing thermal cameras in public places, such as airports, malls, railway stations, and tunnels, for public security and access control.

6.8.6 3D FACE RECOGNITION

3D face recognition is a critical innovation in the biometric system-powered access control market. It uses facial biometrics based on the detailed measurements of rigid tissues and cranial structures. The 3D biometric template is obtained from the precise geometric data accurate up to the sub-millimeter of the cranial curvature, where rigid tissues are most visible, such as areas around eye sockets, superciliary arches, the chin zone, and the bridge of a nose. The structured light approach from 3D face readers throws an infrared pattern of grid light on the user's face to map the geographic pattern of the face. It uses distortions caused by the grid pattern to 3D map the face and from different facial positions. This makes the verification process fast as the user needs to pause only for a short period in front of the reader.

6.8.7 INTELLIGENT AND CONTEXT-AWARE VIDEO DATA COLLECTION

Advancements in the signal processing technology enable the development of intelligent video surveillance systems that can flexibly adapt the rate of video data collection. Whenever there is a security incident, the indicator sends a signal to increase the rate of data collection, which can provide more detailed information to help with an accurate and credible analysis of the incident.

6.8.8 MOBILE ACCESS CONTROL SYSTEM

Mobile access control refers to using a smartphone to identify a person and granting/denying access to an entrance. In the past, physical access control systems, such as keys, magnetic stripe cards, proximity cards, were generally used to enable access to a building. Now, credential technology has been developed using near-field communication (NFC) and Bluetooth technologies. Mobile access control is a standard method that supports a growing number of products and technology platforms. Various access control systems offer application-based mobile integration that allows users to install and use apps in their smartphones to interact with access control systems. However, sometimes, these apps are designed with limited features and capabilities. Avigilon Corporation (Canada) provides Access Control Manager, a browser-based access control system with full manageability that connects to any smartphone or tablet. This application allows multiple operators to connect and operate simultaneously. ACM is a browser-based system, which means a user can access it from anywhere. Also, HID Global (US) is one of the worldwide leaders of identity solutions. Millions of people in healthcare, education, financial, government sectors across the world use HID products and services. HID Global has been launching several new products based on the Seos platform, including readers and cards. The company focuses on providing advanced technology platform-based mobile access control solutions.

6.9 TRADE AND TARIFF ANALYSIS

6.9.1 TRADE ANALYSIS FOR VIDEO SURVEILLANCE

Commercial security system hardware includes access control systems, video surveillance, fire protection systems, and entrance control systems. These products are used for safety and security purposes in the commercial environment.

HS code 8525 includes transmission apparatus for radio broadcasting or television, be it incorporating reception apparatus or sound recording or reproducing apparatus; television cameras, digital cameras, and video camera recorders. The HS code 852580 represents television cameras, digital cameras, and video camera recorders. The import and export data provided below is against the HS code 852580.

TABLE 9 TELEVISION CAMERAS, DIGITAL CAMERAS, AND VIDEO CAMERA RECORDERS EXPORT, BY COUNTRY, 2015–2019 (USD MILLION)

Country	2015	2016	2017	2018	2019
China (Excluding Taipei)	11,763.6	9,478.9	9,068.1	10,663.6	9,746.3
Hong Kong	2,344.8	2,127.6	2,678.7	3,365.1	3,714.5
Japan	3,646.0	3,566.2	3,433.8	3,239.3	2,727.1
Germany	1,672.9	1,862.7	2,192.6	2,389.9	2,439.3
Vietnam	871.4	901.3	1,358.9	2,268.4	1,976.7
Netherlands	2,765.7	2,499.8	2,378.5	2,090.9	1,864.0
US	1,539.3	1,696.2	1,986.7	1,861.2	1,839.3
Thailand	1,720.4	1,441.6	1,407.6	1,340.8	1,306.2
Taipei, China	1,351.0	1,177.3	1,124.6	1,147.3	1,124.0
Hungary	265.4	273.2	381.6	547.5	742.3
Rest of the World	6,839.3	7,955.8	7,656.7	7,497.6	7,538.0
Global	34,779.8	32,980.6	33,667.8	36,411.6	35,017.5

Note: HS code 8525 includes transmission apparatus for radio-broadcasting or television, whether or not incorporating reception apparatus or sound recording or reproducing apparatus; television cameras, digital cameras, and video camera recorders.
Source: ITC Trade Map

TABLE 10 TELEVISION CAMERAS, DIGITAL CAMERAS, AND VIDEO CAMERA RECORDERS IMPORT, BY COUNTRY, 2015–2019 (USD MILLION)

Country	2015	2016	2017	2018	2019
US	5,770.7	5,850.7	6,796.1	7,522.8	7,770.0
China	9,670.3	5,910.8	4,683.3	4,501.9	3,382.3
Hong Kong	3,153.6	2,756.6	2,981.5	3,423.2	3,224.5
Germany	1,996.3	2,177.8	2,380.6	2,491.4	2,546.2
Japan	1,625.1	1,542.7	1,893.2	2,191.3	2,427.1
India	708.8	620.7	903.9	1,562.3	2,083.4
Netherlands	2,066.0	1,851.1	1,886.6	1,643.3	1,592.9
UK	1,094.8	961.3	1,059.6	1,104.0	1,089.6
Vietnam	1,087.7	607.7	678.0	780.2	945.9
Canada	683.9	715.8	892.9	883.7	934.5
Rest of the World	11,034.1	10,838.6	12,346.5	12,691.8	12,655.0
Global	38,891.4	33,833.9	36,502.1	38,795.9	38,651.6

Note: HS code 8525 includes transmission apparatus for radio-broadcasting or television, whether or not incorporating reception apparatus or sound recording or reproducing apparatus; television cameras, digital cameras, and video camera recorders.

Source: ITC Trade Map

China, Hong Kong, and Japan were the largest exporters of television cameras, digital cameras, and video camera recorders in 2019, followed by Germany and Vietnam. In 2019, these countries accounted for a share of 27.8%, 10.6%, 7.8%, 7.0%, and 5.6%, respectively. The presence of major television camera, digital camera, and video camera recorder companies in China, Hong Kong, Japan, Germany, and Vietnam and their capability to manufacture video surveillance systems is driving the export from these countries. Conversely, the US, China, Hong Kong, Germany, and Japan were the largest importers of television cameras, digital cameras, and video camera recorders in 2019.

6.9.2 TRADE ANALYSIS FOR FIRE PROTECTION SYSTEM

This section covers the commercial fire protection system trade data. The HS code 8424 includes powders, Not elsewhere specified (n.e.s.); charged and uncharged fire extinguishers (excluding fire-extinguishing bombs and grenades); spray guns and similar appliances (excluding electric machines and apparatus for hot spraying of metals or sintered metal carbides of heading 8515); steam or sand blasting machines and similar jet projecting machines; and their parts. The HS code 842410 represents fire extinguishers. The import and export data provided below is against the HS code 842410.

TABLE 11 FIRE EXTINGUISHERS EXPORT, BY COUNTRY, 2015–2019 (USD MILLION)

Country	2015	2016	2017	2018	2019
China	300.5	280.2	328.9	359.9	363.6
US	247.4	218.7	206.3	190.3	188.0
Mexico	108.0	102.5	109.7	151.6	140.1
Germany	121.5	117.5	138.6	145.6	132.1
Poland	71.1	75.0	81.2	88.9	79.0
Sweden	71.3	50.8	53.3	61.4	67.7
Italy	62.8	58.1	75.4	72.2	66.0
UK	41.6	42.0	52.1	51.9	49.6
Korea	53.3	45.9	32.3	34.1	36.4
Netherlands	28.3	20.2	32.7	32.0	32.3
Rest of the World	278.6	273.9	320.1	321.5	320.3
Global	1,384.6	1,284.9	1,430.5	1,509.3	1,475.0

Note: HS code 8424 includes Mechanical appliances, whether or not hand-operated, for projecting, dispersing or spraying liquids or powders, n.e.s.; fire extinguishers, charged or not (excluding fire-extinguishing bombs and grenades); spray guns and similar appliances (excluding electric machines and apparatus for hot spraying of metals or sintered metal carbides of heading 8515); steam or sand blasting machines and similar jet projecting machines; parts thereof.

Source: ITC Trade Map

TABLE 12 FIRE EXTINGUISHERS IMPORT, BY COUNTRY, 2015–2019 (USD MILLION)

Country	2015	2016	2017	2018	2019
US	113.1	114.1	123.9	173.5	161.7
Germany	66.3	75.4	90.2	94.7	86.7
UK	61.6	57.5	61.7	64.8	63.2
France	44.1	45.8	46.2	54.5	57.0
Canada	46.0	44.7	43.7	47.3	50.1
China	44.9	36.1	26.1	35.7	43.1
UAE	38.6	34.9	41.8	41.6	42.7
Japan	34.7	33.6	36.0	41.9	42.4
Slovakia	36.4	5.9	1.8	3.6	41.7
Saudi Arabia	49.9	37.3	49.9	43.1	39.7
Rest of the World	712.5	682.7	758.8	836.8	814.5
Global	1,248.2	1,167.9	1,280.2	1,437.5	1,442.7

Note: HS code 8424 includes Mechanical appliances, whether or not hand-operated, for projecting, dispersing or spraying liquids or powders, n.e.s.; fire extinguishers, charged or not (excluding fire-extinguishing bombs and grenades); spray guns and similar appliances (excluding electric machines and apparatus for hot spraying of metals or sintered metal carbides of heading 8515); steam or sand blasting machines and similar jet projecting machines; parts thereof.

Source: ITC Trade Map

China, the US, and Mexico were the largest exporters of fire extinguishers in 2019, followed by Germany and Poland. In 2019, these countries accounted for a share of 24.6%, 12.7%, 9.5%, 9.0%, and 5.4%, respectively. The presence of major fire extinguisher manufacturing companies in China, the US, Mexico,

Germany, and Poland is driving the market for fire protection equipment exports from these regions. The US, Germany, the UK, France, and Canada were the largest importers of fire extinguishers in 2019.

6.9.3 TARIFF ANALYSIS FOR VIDEO SURVEILLANCE AND FIRE PROTECTION SYSTEMS

An MFN (Most Favored Nation) tariff is the lowest possible tariff a country can assess on another country. For example, if a country's lowest tariff is 2% of the value of a good, this is its MFN tariff, and it charges this percentage on an import from a country with the MFN status. Members of the World Trade Organization are required to extend MFN status to other members, though exceptions exist. In the US, MFN status is formally called permanent normal trade relations.

The countries with the highest tariffs for importing television cameras, digital cameras, and video camera recorders were Montserrat (40%), Djibouti (26%), Ecuador (25%), Saint Kitts and Nevis (25%), and Sudan (25%).

TABLE 13 MFN TARIFFS FOR TELEVISION CAMERAS, DIGITAL CAMERAS AND VIDEO CAMERA RECORDERS EXPORTED BY CHINA

Country	MFN Tariffs (2020)
Hong Kong	0%
US	0%
Japan	0%
Netherlands	0.56%
India	10%
Germany	0.56%
UK	0.56%
South Korea	0%
Russian	3.29%
Australia	0%

Source: ITC Trade Map

TABLE 14 MFN TARIFFS FOR TELEVISION CAMERAS, DIGITAL CAMERAS, AND VIDEO CAMERA RECORDERS EXPORTED BY HONG KONG

Country	MFN Tariffs (2020)
US	0%
China	2.32%
Japan	0%
Netherlands	0.56%
UK	0.56%
Germany	0.56%
Australia	0%
Philippines	0%
France	0.56%
Thailand	0%

Source: ITC Trade Map

The countries with the highest tariffs for importing fire extinguishers were the Bahamas (45%), Algeria (30%), Djibouti (26%), Malaysia (25%), and Bermuda (25%).

TABLE 15 MFN TARIFFS FOR FIRE EXTINGUISHERS EXPORTED BY CHINA

Country	MFN Tariffs (2020)
Japan	0%
Australia	5%
UK	0.85%
South Korea	8%
UAE	5%
Vietnam	0%
Greece	0.85%
Spain	0.85%
US	0%
Sweden	0.85%

Source: ITC Trade Map

TABLE 16 MFN TARIFFS FOR FIRE EXTINGUISHERS EXPORTED BY US

Country	MFN Tariffs (2020)
Canada	6.5%
Germany	0.85%
Saudi Arabia	12%
Mexico	0%
UK	0.85%
China	8%
France	0.85%
UAE	5%
Peru	0%
Denmark	0.85%

Source: ITC Trade Map

For television cameras, digital cameras and video camera recorders, and fire extinguishers exported by China to European Union countries in 2019, the MFN tariff levied was in the range of 0.5–1.0%. Similarly, the MFN tariff for exports of television cameras and digital cameras and video camera recorders to APAC countries was 0% for countries such as Japan, South Korea, Australia, and Thailand. The recent tariffs imposed by the US due to the ongoing US–China trade war had no impact on the tariff rate levied by the US on Chinese imports of television cameras, digital cameras and video camera recorders, and fire extinguishers as the tariffs have remained unchanged at 0%. However, the tariff levied for the import of fire extinguishers by China on the US imports is 8%.

7 COMMERCIAL SECURITY SYSTEM MARKET, BY HARDWARE

KEY FINDINGS

- The commercial security system market for hardware in a post-COVID-19 scenario is likely to grow at a CAGR of 8.8% from 2021 to 2026.
- Fire protection system for hardware was valued at USD 28.4 billion in 2020 and is expected to reach USD 40.2 billion by 2026.
- Growth in the construction industry is expected to lead to the demand for fire protection systems.
- The video surveillance market for hardware was valued at USD 21.8 billion in 2020 and is expected to grow to USD 42.3 billion by 2026, at a CAGR of 12.2% from 2021 to 2026.

7.1 INTRODUCTION

Fire protection products can be categorized into fire detection, fire suppression, fire sprinkler, and fire response. These products collectively provide reliable fire prevention and protection.

The video surveillance hardware market has been segmented into cameras, monitors, storage devices, and accessories. Today, video surveillance hardware products have become technologically more advanced and affordable. PTZ cameras, panoramic and body-worn or spy cameras are among the most recent trends in the video surveillance industry. Cameras with a resolution of more than 5 megapixels are also expected to gain space in the market in the coming years.

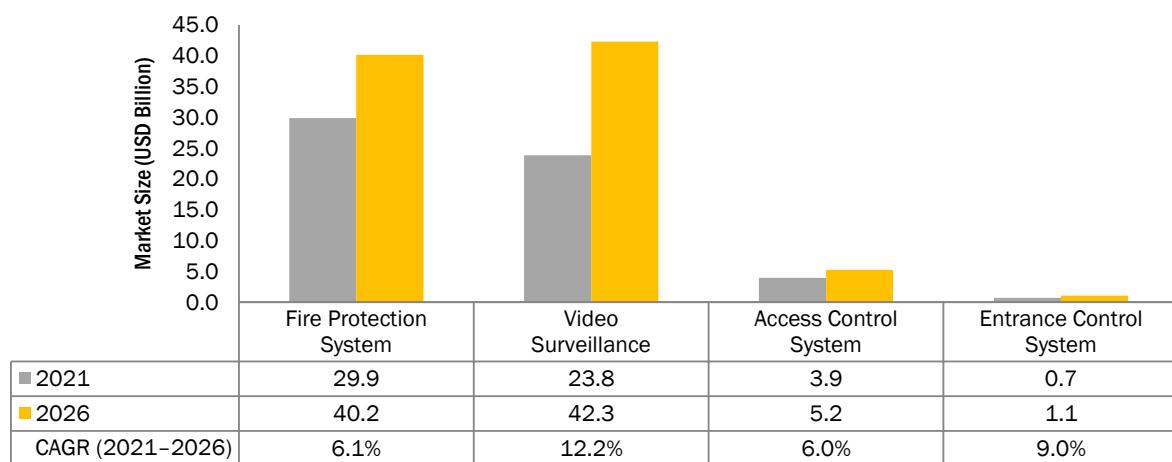
Access control systems are authenticated using ID cards, biometric readers, controllers, and access control system management software. Readers in access control systems provide data for authentication, while controllers grant or deny access. The market in APAC is expected to register the highest CAGR globally owing to the increase in the number of terrorist attacks every year and active conflicts. Also, changing regulatory frameworks, rapid digitization, and speedy industrialization provide strong growth opportunities for access control system vendors in the region.

FIGURE 26 COMMERCIAL SECURITY HARDWARE MARKET, BY OFFERING



Source: Press Releases, Expert Interviews, and MarketsandMarkets Analysis

FIGURE 27 VIDEO SURVEILLANCE TO WITNESS HIGHEST CAGR IN COMMERCIAL SECURITY HARDWARE MARKET DURING FORECAST PERIOD



Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 17 COMMERCIAL SECURITY HARDWARE MARKET, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Fire Protection System	26.43	28.60	30.89	28.36
Video Surveillance	17.48	19.92	22.54	21.84
Access Control System	3.42	3.65	3.90	3.74
Entrance Control System	0.46	0.55	0.63	0.61
Total	47.79	52.72	57.96	54.56

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 18 POST-COVID-19 COMMERCIAL SECURITY HARDWARE MARKET, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Fire Protection System	29.87	32.02	34.19	36.32	38.34	40.17	6.1%
Video Surveillance	23.83	26.79	30.18	33.92	38.00	42.33	12.2%
Access Control System	3.92	4.17	4.44	4.71	4.97	5.23	6.0%
Entrance Control System	0.68	0.76	0.83	0.91	0.98	1.05	9.0%
Total	58.30	63.74	69.63	75.85	82.29	88.78	8.8%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 19 PRE-COVID-19 COMMERCIAL SECURITY HARDWARE MARKET, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Fire Protection System	35.7	38.2	40.6	43.0	45.3	47.4	5.8%
Video Surveillance	27.5	30.2	33.1	36.1	39.2	42.5	9.0%
Access Control System	4.4	4.7	4.9	5.2	5.5	5.8	5.5%
Entrance Control System	0.8	0.9	0.9	1.0	1.1	1.2	8.0%
Total	68.4	73.9	79.6	85.3	91.0	96.8	7.2%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 20 COMMERCIAL SECURITY HARDWARE MARKET, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	16.3	17.9	19.5	18.2
Europe	11.7	13.0	14.0	12.7
APAC	14.0	16.0	18.1	17.6
RoW	5.7	5.9	6.4	6.1
Total	47.8	52.7	58.0	54.6

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 21 POST-COVID-19 COMMERCIAL SECURITY HARDWARE MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	19.3	20.9	22.7	24.4	26.2	28.0	7.7%
Europe	13.3	14.2	15.3	16.3	17.3	18.2	6.5%
APAC	19.3	21.7	24.4	27.4	30.6	34.1	12.1%
RoW	6.4	6.9	7.3	7.8	8.2	8.6	5.9%
Total	58.3	63.7	69.6	75.9	82.3	88.8	8.8%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 22 PRE-COVID-19 COMMERCIAL SECURITY HARDWARE MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	22.7	24.4	26.0	27.7	29.3	30.9	6.3%
Europe	16.0	17.1	18.1	19.0	20.0	20.8	5.4%
APAC	22.5	24.9	27.5	30.2	33.1	36.1	9.9%
RoW	7.2	7.6	8.0	8.4	8.7	9.0	4.6%
Total	68.4	73.9	79.6	85.3	91.0	96.8	7.2%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

The construction industry is becoming larger and complex, and construction activities are expected to increase after 2021. This growth will be primarily driven by the US, China, and India. Growth in the construction industry in the US is attributed to the high demand for housing and commercial places. These factors are expected to play a key role in driving the fire protection system market.

The increased adoption of IP cameras made video surveillance cost effective as installation expenses are minimized. Moreover, high-definition IP cameras bring significantly improved capabilities. Thus, better functionalities ranging from basic to advanced analytics, improved performance, and increased features—all available at a reduced cost—have led to a growth in the video surveillance market.

7.2 FIRE PROTECTION SYSTEM

7.2.1 INCREASED SPENDING ON PROTECTING ASSETS FROM FIRE HAZARDS, ALONG WITH ROBUST GROWTH IN INFRASTRUCTURE DEVELOPMENT, TO BOOST GROWTH

Fire protection systems comprise fire detection, fire suppression, fire sprinklers, fire analysis, and fire response systems that are required in emergencies. The current impact of COVID-19 on the fire safety system market and the consumer demand have led to a decline in the commercial fire protection market in 2020. This has been due to the fall in component manufacturing in the short term, followed by a disruption in the product supply chain, leading to a fall in the availability of fire protection systems.

Global demand for commercial fire protection systems was affected as many projects were put on hold and are restarting at a slow rate. The current market estimation in the report is done based on both the pre-COVID-19 and post-COVID-19 situation. In the post-COVID-19 situation, the market is expected to have witnessed negative growth in 2020–2021. This is to be followed by relatively lower growth in the 2021–2022 commercial fire protection market.

TABLE 23 COMMERCIAL FIRE PROTECTION SYSTEM MARKET, BY HARDWARE, 2017–2020 (USD BILLION)

Hardware	2017	2018	2019	2020
Fire Detection	2.6	2.9	3.1	2.9
Fire Suppression	12.5	13.2	14.0	12.6
Fire Sprinkler	3.9	4.4	4.9	4.6
Fire Response	7.4	8.1	8.9	8.3
Total	26.4	28.6	30.9	28.4

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 24 POST-COVID-19 COMMERCIAL FIRE PROTECTION SYSTEM MARKET, BY HARDWARE, 2021–2026 (USD BILLION)

Hardware	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Fire Detection	3.0	3.3	3.5	3.8	4.0	4.2	6.7%
Fire Suppression	13.0	13.6	14.2	14.8	15.2	15.5	3.6%
Fire Sprinkler	5.0	5.5	6.0	6.5	7.0	7.6	8.7%
Fire Response	8.9	9.7	10.5	11.3	12.1	12.9	7.8%
Total	29.9	32.0	34.2	36.3	38.3	40.2	6.1%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 25 PRE-COVID-19 COMMERCIAL FIRE PROTECTION SYSTEM MARKET, BY HARDWARE, 2021–2026 (USD BILLION)

Hardware	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Fire Detection	3.6	3.9	4.2	4.5	4.7	5.0	6.5%
Fire Suppression	15.5	16.2	16.9	17.4	17.9	18.2	3.3%
Fire Sprinkler	6.0	6.5	7.1	7.7	8.3	9.0	8.5%
Fire Response	10.6	11.5	12.5	13.4	14.3	15.2	7.5%
Total	35.7	38.2	40.6	43.0	45.3	47.4	5.8%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 26 COMMERCIAL FIRE PROTECTION SYSTEM HARDWARE MARKET, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	9.6	10.4	11.3	10.4
Europe	7.1	7.9	8.5	7.4
APAC	5.7	6.2	6.8	6.4
RoW	4.1	4.0	4.3	4.2
Total	26.4	28.6	30.9	28.4

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 27 POST-COVID-19 COMMERCIAL FIRE PROTECTION SYSTEM HARDWARE MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	10.9	11.8	12.6	13.4	14.2	14.9	6.3%
Europe	7.7	8.2	8.7	9.2	9.6	10.0	5.3%
APAC	6.8	7.4	8.0	8.6	9.2	9.7	7.4%
RoW	4.4	4.6	4.9	5.1	5.4	5.5	4.8%
Total	29.9	32.0	34.2	36.3	38.3	40.2	6.1%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 28 PRE-COVID-19 COMMERCIAL FIRE PROTECTION SYSTEM HARDWARE MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	13.1	14.1	15.0	15.9	16.8	17.6	6.1%
Europe	9.7	10.3	10.9	11.5	12.0	12.5	5.3%
APAC	8.1	8.7	9.4	10.1	10.7	11.4	7.1%
RoW	4.8	5.1	5.3	5.5	5.7	5.9	4.1%
Total	35.7	38.2	40.6	43.0	45.3	47.4	5.8%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

Increased spending for the protection of assets from fire hazards, along with robust growth in infrastructure development, is a significant factor driving the growth of the fire protection system market. The growth of the fire suppression system market is propelled by technological advancements and innovations in the construction industry, a rise in the number of policies, regulations, and government mandates, and increased damage to human life and property due to fire breakouts. The growth of the market for fire sprinklers is driven by the increase in fire protection-related expenditure of various enterprises, rise in fire-related deaths, and governmental norms.

7.2.2 FIRE DETECTION

Fire detection systems are a critical part of any building design. Fire detectors are available for residential, commercial, and industrial use. Such systems are permanently installed manual and automatic systems that detect fires at an early stage and quickly inform the relevant emergency service. Fire detection products such as flame detectors, smoke detectors, and heat detectors alert occupants through alarms, as well as trigger automatic fire extinguishers such as sprinklers. Successful fire prevention and protection depends on the performance of fire detection products; thus, they are expected to offer accurate and early detection of fire.

7.2.2.1 Flame detectors

A flame detector or sensor is an optical fire detection device that detects and responds to flame or fire. Flame detectors are designed to detect the absorption of light at specific wavelengths and discriminate between flames and false alarm sources. A key advantage of an optical flame detector is its ability to detect small fire from a long distance. Flame detectors identify flames via optical methods such as ultraviolet (UV) and infrared (IR) spectroscopy and visual flame imaging.

Flame detectors are available in 2 categories—detectors in fire alarm systems for noticing fire and scanners for monitoring the condition of a flame in a burner. Halma, Honeywell International, Johnson Controls, and Spectrex are among the companies that provide fire flame detectors. The market for flame detectors has been segmented based on type into single IR, single UV, dual UV/IR, multi IR, and triple IR (IR3). The growing use of flame detectors in indoor applications across verticals has boosted the growth of this market.

7.2.2.2 Smoke detectors

Smoke detectors are designed to provide early warning of a potential fire involving ordinary combustible materials. The installation of smoke detectors in buildings to identify fires has been in practice much before that of flame and heat detectors. Fire creates smoke that spreads faster than the actual fire; therefore, smoke detectors can detect fire, trigger fire alarms, and warn occupants about the fire. There are 3 main types of smoke detectors based on smoke sensing technology—ionization, photoelectric, and a combination of both.

7.2.2.3 Heat detectors

Heat detectors respond to the thermal energy of fire. Heat detectors trigger fire alarms when the temperature of the building increases beyond the predetermined limit. Such detectors are generally located at or near the ceiling of a building and are best suited for fire detection in small, confined spaces, where rapidly growing, high-heat-output fires may be expected. These detectors respond either at a fixed temperature, a specified rate of temperature change, or both. There are several types of heat detectors, such as mechanical heat detectors, electronic heat detectors, fixed-temperature heat detectors, and linear heat detectors. System Sensor, Apollo Fire Detectors, Honeywell, and Siemens are among the suppliers of heat detectors.

TABLE 29 COMMERCIAL FIRE DETECTION SYSTEM HARDWARE MARKET, BY REGION, 2017–2020 (USD MILLION)

Region	2017	2018	2019	2020
North America	1,018	1,106	1,200	1,106
Europe	757	814	874	797
APAC	593	650	712	670
RoW	280	302	325	298
Total	2,648	2,873	3,110	2,871

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 30 POST-COVID-19 COMMERCIAL FIRE DETECTION SYSTEM HARDWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	1,173	1,267	1,362	1,457	1,550	1,635	6.9%
Europe	837	894	952	1,008	1,061	1,108	5.8%
APAC	716	780	847	914	980	1,043	7.8%
RoW	313	335	357	378	398	416	5.8%
Total	3,040	3,276	3,517	3,757	3,989	4,203	6.7%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 31 PRE-COVID-19 COMMERCIAL FIRE DETECTION SYSTEM HARDWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	1,407	1,515	1,624	1,733	1,838	1,940	6.6%
Europe	1,005	1,071	1,137	1,201	1,261	1,317	5.6%
APAC	850	924	999	1,075	1,151	1,225	7.6%
RoW	373	398	422	446	468	489	5.6%
Total	3,635	3,908	4,183	4,455	4,719	4,972	6.5%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

Oil, gas, and mining is one of the most fire-sensitive verticals in which a fire accident can harm lives and cause maximum resource damage. Therefore, this vertical has a high demand for the deployment of advanced fire detection products, such as smoke detectors and flame detectors. These products detect fire immediately and help in its rapid prevention.

7.2.3 FIRE SUPPRESSION

A fire suppression system starts operating once it receives fire alerts from different sensors and detectors. By product, the fire suppression market has been segmented into fire sprinklers, nozzles, caps, and control heads; fire suppressors; and fire detectors and control panels. Fire suppressors are used to prevent the spread of fire and put it out. Fire extinguishers spray water, foam, carbon dioxide (CO₂), and other fire-resistant materials to control fire. Different types of fire extinguishers are used for different types of fires, and accordingly, extinguishers are labeled based on their extinguishing ability. For instance, water extinguishers are used in fires caused by wood, paper, textile, and other carbonaceous materials; these are effective on class A fires. Water foam extinguishers eliminate fire by allowing water to take away the heat component of fire, while foam separates oxygen from the fire. CO₂ extinguishers are used in fires caused by electrical equipment, flammable liquids, and petroleum spirits; these are effective on class B and C fires. Dry chemical extinguishers extinguish a fire by interrupting the chemical reaction of fire; these are effective on class A, B, and C fires. Wet chemical extinguishers extinguish a fire by removing heat and preventing barriers between oxygen and fuel, so a fire cannot be reignited; these are effective on class A and K fires. Clean agent extinguishers use both halon and halocarbon, which interrupt the chemical reaction component of fire; these are used on Class B and C fires. Dry powder extinguishers are similar to dry chemical extinguishers that separate fuel from oxygen or remove the heating element of fire; these are used on class D (combustible metal) fires only.

Fire sprinklers use water to extinguish a fire, and nozzles are used in fire sprinklers to control the direction of a fluid flow, especially to increase velocity. Also, fire extinguishers are used to prevent the spread of a fire and to put it out by spraying water, CO₂, and other fire-resistant materials. Fire detectors and control panels include smoke detectors, heat detectors, flame detectors, and gas detectors, which detect and indicate the start of a fire. All these products are part of fire suppression systems that help in preventing and controlling fire.

7.2.3.1 Fire detectors and control panels

Fire detectors and control panels (including smoke, heat, flame, and gas detectors) play an essential part in fire safety. Fire detectors and control panels are especially used in homes for fire detection. As fires spread, a detector initiates the alarm and warns residents, giving them enough time to get to safety. According to the NFPA, a working detector could reduce the chances of fatal fire accidents by 50%. Over 60% of all fire-related deaths happen in the residential space due to the absence of detectors. These devices typically cost ~USD 15–100 and need to be replaced every 10 years. They should also be checked every 3 months for batteries, which may cost an additional USD 5–10.

A heat detector not only detects smoke but also detects the rise in temperature in a room. It typically costs ~USD 60–100 and has high monthly maintenance fees. Flame and gas detectors are also used for detecting fire. Carbon monoxide (CO) detectors have gained popularity as CO is invisible, odorless, and colorless. The activation of the detector would initiate the fire suppression system that suppresses the fire through various suppression agents.

7.2.3.2 Fire sprinklers, nozzles, caps, and control heads

A fire sprinkler system consists of components such as fire sprinkler heads, piping, stop valves, alarm valves, alarm test valves, and motorized alarm bells. Nozzles are used with fire sprinkler systems to control the flow of water. These are available in different varieties, including spray nozzles (widely used for water mist), cone nozzles (for wet chemical and deluge systems), and foam system nozzles (custom-designed for low-, medium-, and high-expansion foam systems). Fire sprinkler systems are mostly used in residential, commercial, and industrial buildings and are now being increasingly used in smart buildings and homes. Moreover, authorities in most developed countries such as the US, Canada, and Japan have amended their standard building codes and norms to install residential fire sprinklers, thereby contributing to the growth of the fire suppression market.

7.2.3.3 Fire suppressor reagent

Fire suppressors are used to prevent the spread of fire and put it out. By suppression agent, the fire suppression market has been segmented into chemical, gaseous, water, and foam. Fire suppression systems suppress fire by immediately releasing a suppression agent. The use of suppression agents in fire suppression systems varies according to the sector. For instance, the residential sector generally uses water-based suppression agents, while the industrial sector uses gaseous and foam-based suppression agents due to the critical nature of operations.

7.2.3.3.1 Chemical

Chemical fire suppression systems are used to restrict fire, coat the fuel that the fire is consuming to prevent contact with oxygen, and reduce combustion ability. Chemical fire suppression systems are available in 2 forms—dry and wet chemical. Dry chemicals work on class D (combustible metal) fires, while wet chemicals work on class K (kitchen) fires.

7.2.3.3.2 Gaseous

A gaseous agent in a fire suppression system works in one of 2 ways—inert the atmosphere to reduce oxygen concentration to a level that can no longer sustain combustion or react chemically with the fire, subsequently absorbing heat and breaking down the chain reaction of combustion.

7.2.3.3.3 Water

Water-based fire suppression systems are used to extinguish oil fire and fire involving flammable liquids and gases using water. Such systems are available in 4 forms—wet system, pre-action system, deluge system, and dry system. In a wet system, the water in a system's pipes is ready to be activated by the opening of fire sprinkler heads. The pre-action system is a combination of wet and dry pipe fire sprinkler

systems and is not activated until a fire is detected. The deluge system is controlled by a valve that releases water and is used where fire can spread quickly. A dry system has air in pipes, and water is activated after a slight delay; these systems are used where water in pipes could freeze.

7.2.3.3.4 Foam

Foam-based fire suppression systems use an aggregate of air-filled bubbles formed from aqueous solutions. The bubbles form a coherent floating blanket on flammable and combustible liquids to prevent or extinguish fires by excluding air and cooling the fuel. After this, the bubbles prevent re-ignition by suppressing the formation of flammable vapor and sticking to surfaces, thus providing a degree of exposure protection from adjacent fires. Foam systems are widely used to protect flammable liquid storage vessels, aircraft hangars, warehouses, hydrocarbon bulk storage vessels, and fuel loading racks that require more than just water-based fire protection. The foam works on class A (ordinary combustibles such as wood and paper) and B (fueled by flammable or combustible liquids, which include oil and gasoline) fires.

Various types of foam concentrates are used according to sectors—aqueous film-forming foam concentrate (AFFF), film-forming fluoroprotein foam concentrate (FFFP), fluoroprotein foam concentrate, synthetic foam concentrate, and alcohol-resistant foam concentrate (used for fighting fires on materials usually destructive to regular AFFF or FFFP foams, as well as fires involving hydrocarbons).

TABLE 32 COMMERCIAL FIRE SUPPRESSION SYSTEM HARDWARE MARKET, BY REGION, 2017–2020 (USD MILLION)

Region	2017	2018	2019	2020
North America	4,355	4,608	4,877	4,383
Europe	3,307	3,468	3,636	3,232
APAC	2,600	2,779	2,970	2,721
RoW	2,258	2,380	2,508	2,256
Total	12,520	13,235	13,990	12,592

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 33 POST-COVID-19 COMMERCIAL FIRE SUPPRESSION SYSTEM HARDWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	4,525	4,751	4,965	5,156	5,318	5,437	3.7%
Europe	3,306	3,439	3,560	3,663	3,741	3,788	2.8%
APAC	2,838	3,009	3,175	3,329	3,466	3,577	4.7%
RoW	2,319	2,424	2,522	2,608	2,677	2,725	3.3%
Total	12,987	13,622	14,221	14,756	15,202	15,527	3.6%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 34 PRE-COVID-19 COMMERCIAL FIRE SUPPRESSION SYSTEM HARDWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	5,416	5,668	5,899	6,104	6,275	6,408	3.4%
Europe	3,964	4,111	4,238	4,344	4,423	4,474	2.4%
APAC	3,365	3,557	3,738	3,905	4,052	4,178	4.4%
RoW	2,758	2,873	2,976	3,064	3,134	3,186	2.9%
Total	15,504	16,209	16,850	17,418	17,884	18,246	3.3%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

Commercial buildings are overpopulated during peak hours, and there is a constant risk of fire accidents that can result in loss of lives and property damage. Therefore, commercial fire suppression systems are expected to witness a rise in adoption from the non-residential end-user industry.

7.2.4 FIRE SPRINKLER SYSTEM

Fire sprinkler systems are effective in controlling or suppressing fire. Sprinkler systems are made up of a network of pipes in the walls and ceilings that have sprinkler heads, providing protection to hallways, rooms, stairways, and other areas of a building. Although fire sprinkler systems are mostly used in commercial and industrial buildings, they are also being increasingly used in smart buildings and homes. A fire sprinkler system is a fire protection system consisting of components such as fire sprinkler heads, alarm test valves, alarm valves, stop valves, and motorized alarm bells.

Fire sprinkler systems contribute significantly to protection from fire-related hazards. These systems can be categorized into wet sprinkler systems, dry sprinkler systems, pre-action sprinkler systems, deluge sprinklers, and others (foam water sprinkler systems and water spray sprinkler systems).

7.2.4.1 Wet

Wet pipe fire sprinklers always have water in them. These are the most commonly used sprinklers and are reliable due to their simplicity in terms of design and ease of operation. Wet pipe systems are commonly used in high-rise or office buildings with a few floors. Such sprinkler systems employ automatic sprinkler heads attached to a piping system containing water and connected to a water supply. The water gets discharged quickly from the sprinkler opened by excess heat or a rise in temperature in the event of a fire. Wet pipe fire sprinkler systems are cost efficient and require low maintenance.

TABLE 35 ADVANTAGES AND DISADVANTAGES OF WET FIRE SPRINKLER SYSTEMS

ADVANTAGES	DISADVANTAGES
<ul style="list-style-type: none"> ▪ Simple and reliable ▪ Low cost of installation and maintenance ▪ Ease of modification ▪ Quick response to fire 	<ul style="list-style-type: none"> ▪ Cannot be used in subfreezing environments ▪ Concerns regarding vandalism

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

7.2.4.2 Dry

Dry fire sprinklers have been specifically designed for areas where sprinklers may be subjected to freezing conditions. Such conditions are witnessed in buildings/structures in which the pipes may be exposed to temperatures below 40° F and are thus likely to freeze. In this system, pipes are filled with pressurized air or nitrogen rather than water. A remote, dry pipe valve is held by the pressurized air in a closed position. Located in a heated space, dry pipe valves prevent water from entering the pipe until a fire causes one or more sprinklers to operate. This causes the air to escape from the pipe that releases the dry pipe valve. Water then enters the pipe, flowing through open sprinklers onto the fire.

Advantages of dry pipe sprinkler systems

Use in cold spaces: Dry pipe sprinkler systems provide automatic protection in cold spaces where freezing is possible. Such systems are typically installed in unheated warehouses and attics, exterior loading docks, and commercial freezers.

Disadvantages of dry pipe sprinkler systems

- Complexity: Dry pipes require additional control equipment and air pressure supply components, which increase the complexity of the system. If not maintained properly, this equipment may be less reliable compared with a wet pipe system.
- High installation and maintenance costs: Increased complexity leads to an increase in the overall dry pipe installation cost. It also increases the maintenance expenditure of the system, primarily due to added service labor costs.
- Limited design flexibility: Dry pipe systems have limitations regarding the permitted size (typically 750 gallons). This limits flexibility while designing dry pipe sprinkler systems.
- Delay in fire response: In dry pipe sprinkler systems, the time duration between the opening of sprinkler and discharge of water onto fire may be up to 60 seconds. This delay in fire extinguishing actions may result in increased damage.
- Increased potential for corrosion: Dry pipe sprinkler systems must be kept completely drained and dried after operation. Otherwise, the remaining water may cause pipe corrosion and premature system failure.

7.2.4.3 Pre-action

Pre-action fire sprinkler systems are filled with air, and water is allowed to pass through when the smoke alarm or detector goes off. Pre-action fire sprinklers are similar to dry pipe systems, with the only difference being that in a pre-action fire sprinkler, water is held from piping by an electrically operated valve, known as a pre-action valve, and the valve operation is controlled by independent flame or smoke detection. Pre-action systems are used in places where sprinklers are necessary when there is an actual fire so that other items in the building do not experience damage from water due to accidental sprinkling.

Advantages of pre-action sprinkler systems

- Less risk of inadvertent discharge: The pre-action valve must operate, and sprinkler heads must fuse to initiate pre-action fire sprinklers. This feature reduces the risk of an accidental discharge. Owing to this, pre-action systems are mostly employed in water-sensitive environments such as archival vaults, fine art storage rooms, rare book libraries, and computer centers.

Disadvantages of pre-action sprinkler systems

- High installation and maintenance costs: These systems are highly complex due to the presence of additional components, which adds to the overall system cost.
- Difficult to modify: Modification in pre-action sprinkler systems is limited due to specific size constraints.
- Less reliable: High complexity of pre-action systems leads to the possibility of failure of some parts or systems, thereby reducing reliability.

7.2.4.4 Deluge

A deluge fire sprinkler system is similar to a pre-action system that also needs a smoke or heat detector. Deluge fire sprinkler systems are needed where high-velocity suppression is necessary to prevent fire spread. Deluge fire sprinkler systems are attached to a water supply through a deluge valve that is opened by the operation of a heat or smoke detector. The detector is installed in the same area as the sprinkler. All sprinkler heads in the system discharge water once the detection system gets activated. Deluge systems help prevent fire spread in areas where high-velocity suppression is required. Hence, such systems are used in hazardous areas such as power plants, aircraft hangars, and chemical storage or processing facilities.

Advantages of deluge sprinkler systems

- Protection of extra-hazardous occupancies: Deluge fire sprinkler systems are employed in areas that are exposed to liquids with a low flash point or large amounts of combustible liquids. These types of hazards may include oil extraction processes, transformers, tank or vessel protection, and distillation processes.

7.2.4.5 Other fire sprinkler systems

These include foam water sprinkler systems and water spray sprinkler systems. In a foam water sprinkler system, a mixture of water and low-expansion foam concentrate is discharged on the fire. Such systems are used in airport hangars, where associated fire risk is high.

TABLE 36 COMMERCIAL FIRE SPRINKLER SYSTEM HARDWARE MARKET, BY REGION, 2017–2020 (USD MILLION)

Region	2017	2018	2019	2020
North America	1,437	1,626	1,814	1,707
Europe	1,125	1,263	1,397	1,305
APAC	881	1,009	1,150	1,097
RoW	424	478	532	498
Total	3,867	4,376	4,893	4,607

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 37 POST-COVID-19 COMMERCIAL FIRE SPRINKLER SYSTEM HARDWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	1,843	2,024	2,214	2,409	2,605	2,795	8.7%
Europe	1,397	1,523	1,653	1,784	1,913	2,036	7.8%
APAC	1,200	1,335	1,479	1,630	1,784	1,938	10.1%
RoW	534	582	632	684	734	782	7.9%
Total	4,973	5,464	5,978	6,506	7,037	7,551	8.7%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 38 PRE-COVID-19 COMMERCIAL FIRE SPRINKLER SYSTEM HARDWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	2,212	2,425	2,646	2,872	3,100	3,327	8.5%
Europe	1,678	1,825	1,976	2,128	2,278	2,425	7.6%
APAC	1,427	1,585	1,751	1,924	2,102	2,284	9.9%
RoW	637	693	750	809	866	923	7.7%
Total	5,953	6,528	7,122	7,733	8,346	8,959	8.5%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

The growth in the fire sprinkler system market can be attributed to the growth of the industrial sector, where the probability of a fire disaster is more due to the presence of flammable materials such as oil and gas. In the energy and power production industry, sprinkler systems are mostly used for fire protection as they are equipped with hydraulic, pneumatic, or electric triggers and can suppress fire quickly due to open nozzles. The growth of this sector is driving the growth of the fire sprinkler market. Increasing demand for fire sprinkler systems from shopping complexes and offices across the world is also playing a key role in driving the commercial fire sprinkler system hardware market.

7.2.5 FIRE RESPONSE

Fire response systems are activated simultaneously with fire suppression systems to prevent fire spread. These systems alert occupants in a building by triggering alarms, siren systems, and warnings by public alerts, and sending emergency messages to police, freighting troops, and ambulance. Fire response systems considered in this study are emergency lighting systems, public alert systems, secure communication systems, and fire alarm devices.

7.2.5.1 Emergency lighting systems

An emergency light is a power-backed lighting device that turns on automatically during situations such as fires. Emergency lights help in routing people in the right direction during emergencies. Emergency lighting systems are fitted in stairwells, escalators, corridors, ramps, walkways, and exit ways. Spectrum, Fire Systems Inc., and Cooper Lighting and Safety are among the companies that offer emergency lighting systems.

7.2.5.2 Voice evacuation and public alert systems

A voice evacuation life safety system is an effective, fast, and safe means of evacuating or messaging occupants in an emergency. Voice evacuation and public alert systems are the means through which a control center provides information directly to the public through devices such as cell phones, community broadcast (CB) radios, family radio services, general mobile radio services, amateur radio, 911 calls, public safety answering point and call dispatch, wireless, and other emergency telephone notification systems.

7.2.5.3 Secure communication systems

In an emergency, reliable and quick communication is necessary between emergency units. A well-established infrastructure requires first responders such as police force, emergency response teams, and firefighters in case of fire emergencies. Secure communication allows quick and reliable interaction between first responders and the firefighting staff. It enables the quick deployment of response teams to the affected site. Terma A/S (Denmark) offers a solution called T.react Radio Dispatch, which works on TETRA communication infrastructure for safe communication.

7.2.5.4 Fire alarm devices

Fire alarm devices include annunciators, notification devices, and manual pull stations. Within fire alarm devices, notification devices represent the largest segment, while manual pull stations form the fastest-growing segment. Several companies, such as Gentex, Halma, HOCHIKI, and Honeywell, offer fire alarm systems.

TABLE 39 COMMERCIAL FIRE RESPONSE SYSTEM HARDWARE MARKET, BY REGION, 2017–2020 (USD MILLION)

Region	2017	2018	2019	2020
North America	2,811	3,104	3,410	3,172
Europe	1,880	2,350	2,552	2,061
APAC	1,615	1,795	1,992	1,901
RoW	1,088	869	941	1,161
Total	7,394	8,118	8,895	8,295

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 40 POST-COVID-19 COMMERCIAL FIRE RESPONSE SYSTEM HARDWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	3,403	3,716	4,042	4,374	4,704	5,020	8.1%
Europe	2,189	2,367	2,549	2,731	2,908	3,073	7.0%
APAC	2,060	2,271	2,495	2,726	2,960	3,189	9.1%
RoW	1,220	1,304	1,388	1,469	1,545	1,612	5.7%
Total	8,872	9,658	10,473	11,300	12,117	12,894	7.8%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 41 PRE-COVID-19 COMMERCIAL FIRE RESPONSE SYSTEM HARDWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	4,089	4,452	4,825	5,205	5,582	5,956	7.8%
Europe	3,026	3,277	3,532	3,789	4,041	4,288	7.2%
APAC	2,433	2,674	2,924	3,182	3,443	3,705	8.8%
RoW	1,060	1,116	1,170	1,218	1,261	1,296	4.1%
Total	10,608	11,520	12,451	13,394	14,327	15,244	7.5%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

The fire response market is expected to witness a high adoption from the oil, gas, and mining end-user industry. The increasing concerns regarding human safety across various industries and the regulation standards set by governments worldwide are playing a key role in driving the demand for the commercial fire response system hardware market across the world.

7.3 VIDEO SURVEILLANCE

7.3.1 TECHNOLOGICAL ADVANCEMENTS RESULTED IN THE AVAILABILITY OF A VARIETY OF SURVEILLANCE CAMERAS

The video surveillance market by hardware is segmented into cameras, monitors, storage devices, and accessories. Video surveillance solutions are used for security, monitoring, and analysis. The emergence of COVID-19 has impacted the video surveillance market as it has resulted in a decline in consumer demand. Along with it, device manufacturing has also declined in 2020. Disruptions in production and supply chains have also impacted the market to some extent. As the consumers of these components are mainly the tier 1 players in the video surveillance market, the supply of components has pulled down the market in 2020. With countries such as the US, Italy, Germany, the UK, and India being impacted by COVID-19, there has been a decline in demand for video surveillance solutions throughout 2020. However, the impact is expected to last till 2021, and with improvements in the situation, the market is expected to recover by FY 2022.

TABLE 42 COMMERCIAL VIDEO SURVEILLANCE MARKET, BY HARDWARE, 2017–2020 (USD BILLION)

Hardware	2017	2018	2019	2020
Camera	7.9	9.0	10.1	9.8
Storage Devices	4.9	5.6	6.4	6.3
Monitor	3.8	4.3	4.8	4.7
Other Accessories	0.9	1.0	1.2	1.1
Total	17.5	19.9	22.5	21.8

Note: "Other Accessories" consists of encoders and cables.

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 43 POST-COVID-19 COMMERCIAL VIDEO SURVEILLANCE MARKET, BY HARDWARE, 2021–2026 (USD BILLION)

Hardware	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Camera	10.6	11.9	13.4	15.0	16.7	18.5	11.7%
Storage Devices	6.9	7.8	8.8	10.0	11.2	12.6	12.8%
Monitor	5.1	5.7	6.4	7.2	8.1	9.0	12.1%
Other Accessories	1.2	1.4	1.6	1.8	2.0	2.2	12.8%
Total	23.8	26.8	30.2	33.9	38.0	42.3	12.2%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 44 PRE-COVID-19 COMMERCIAL VIDEO SURVEILLANCE MARKET, BY HARDWARE, 2021–2026 (USD BILLION)

Hardware	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Camera	12.3	13.4	14.6	15.9	17.2	18.6	8.6%
Storage Devices	7.9	8.8	9.6	10.6	11.6	12.6	9.7%
Monitor	5.9	6.5	7.1	7.7	8.3	9.0	8.9%
Other Accessories	1.4	1.6	1.7	1.9	2.1	2.3	9.6%
Total	27.5	30.2	33.1	36.1	39.2	42.5	9.0%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 45 COMMERCIAL VIDEO SURVEILLANCE HARDWARE MARKET, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	5.3	6.0	6.7	6.4
Europe	3.4	3.8	4.2	4.0
APAC	7.4	8.7	10.0	9.9
RoW	1.3	1.5	1.6	1.5
Total	17.5	19.9	22.5	21.8

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 46 POST-COVID-19 COMMERCIAL VIDEO SURVEILLANCE HARDWARE MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	6.9	7.6	8.4	9.3	10.3	11.3	9.9%
Europe	4.3	4.7	5.1	5.6	6.1	6.6	8.7%
APAC	11.0	12.7	14.7	16.9	19.4	22.0	14.4%
RoW	1.6	1.7	1.9	2.1	2.2	2.4	8.2%
Total	23.8	26.8	30.2	33.9	38.0	42.3	11.7%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 47 PRE-COVID-19 COMMERCIAL VIDEO SURVEILLANCE HARDWARE MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	7.9	8.5	9.1	9.8	10.5	11.1	7.6%
Europe	4.9	5.2	5.6	5.9	6.2	6.5	6.4%
APAC	12.9	14.5	16.2	18.1	20.2	22.3	12.0%
RoW	1.9	2.0	2.1	2.2	2.4	2.5	6.1%
Total	27.5	30.2	33.1	36.1	39.2	42.5	9.4%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

The growth in safety and security concerns, the rise in crime rates, and the increase in the number of terror attacks are major factors driving the growth of the market for cameras used for video surveillance. The continuous decrease in the prices of cameras has resulted in the increased adoption of surveillance cameras across the world, which, in turn, has created significant demand for storage solutions and monitors.

Technological advancements have resulted in highly specialized surveillance cameras that can be programmed to zoom-in scan items such as harmful equipment. Technological advancements resulted in

the availability of a variety of surveillance cameras, such as those with high resolution and better quality, cameras with more than 5 mega-pixels, body-worn, mobile, or spy cameras, ultra-low-light cameras, panoramic 360-degree cameras, robust outdoor cameras for harsh climates, cameras for sensitive environments, and those with integration capabilities for various applications such as people counting or retail management. These cameras fulfill the varying requirements of non-residential end users, thereby driving the commercial video surveillance hardware market.

7.3.2 CAMERA

Video surveillance solutions are used for security, monitoring, and analysis. The video surveillance system primarily consists of hardware products such as cameras, monitors, and storage units, and accessories. Of the most recent trends in the video surveillance industry, high-definition (HD) cameras, wireless cameras, PTZ, panoramic, spy cameras, and IP cameras are the most attractive.

Cameras are utilized to capture video footage of places under surveillance and can range from robust outdoor cameras for harsh climates to discreet products for sensitive environments. Cameras with various capabilities are available in the market, including high definition (HD), wide dynamic range (WDR), infrared (IR), and light finder, which ensures clear video, even in difficult lighting conditions. Cutting-edge cameras based on innovative technologies and with advanced video analytics features such as motion detection, audio detection, and tempering alarm have also been launched in the market.

Surveillance cameras are broadly divided into analog and IP cameras. An internet protocol camera or IP camera is a type of a digital video camera commonly deployed for surveillance and which, unlike analog (CCTV) cameras, can send and receive data through a computer network.

The basic stationary camera is appropriate for fixed indoor and fixed location observation applications. The selection of components, such as an imager and a processor, determines the quality of the video data. The imager consists of semiconductor charge-coupled devices (CCDs) or active-coupled or active pixel sensors in Complementary Metal-Oxide-Semiconductor (CMOS) to detect and convey the information that constitutes an image by converting the variable attenuation of light waves into electrical signals that process imagery information. The imager digitizes the image data and transmits the information on high-speed serial links to the processor. The processor provides all the storage, communication, and control functions necessary for viewing details that cannot be seen with the human eye. The audio input can provide audio signals for the monitored video. The control processor acts as a controlling device for all the interfaces connected. Random access memory (RAM) is used to access memory quickly, and flash memory chips are used to store the video data. The monitoring device is used to monitor activities on a screen.

The image sensor, the most important part of a surveillance camera, is the electronic component that converts light into an electrical signal. There are mainly 2 types of image sensors used in cameras—CCD and CMOS. CMOS security cameras use complementary and symmetrical pairs of p-type and n-type metal-oxide semiconductor field-effect transistors for logic functions. CMOS image sensors are widely used in security cameras owing to advantages such as high resolution, faster frame rate, low power consumption, and cost effectiveness. In CCD (charged-couple device) cameras, pixels are represented by p-doped metal-oxide-semiconductors capacitors. CCD cameras perform well in low-light conditions and have a great wide dynamic range (WDR).

The lens on a video surveillance camera is the first element in the imaging chain, which focuses light or IR energy from the outside onto the image sensor of the camera. The role of a lens is to deliver an undistorted, evenly focused, accurate image to the imaging sensor. Systems that require superior quality images start with lenses engineered to produce a high-quality image for the imaging sensor. Lenses are generally classified by their focal length, usually stated in millimeters. Based on the focal length distance, there are 2 major lenses available for video surveillance cameras—fixed focal length lens and varifocal lens.

The camera market is primarily made up of 2 types—analog and IP cameras. In recent times, network or IP cameras have gained popularity in video surveillance. Network/IP cameras capture images digitally and transmit those using standard internet protocols. They are easier to install, have more features, and can be monitored or configured from anywhere in the world.

TABLE 48 IP CAMERA VS. ANALOG CAMERA

FACTOR	IP CAMERA	ANALOG CAMERA
Video Quality	IP cameras excel in capturing high-definition megapixel images but have trouble with low-lighting conditions.	Analog CCD cameras perform well across a variety of lighting conditions and manage the motion very well.
Cabling Infrastructure	Network wiring by standard follows TIA/EIA-568-B guidelines, which limit the total distance from switch to camera to 330 feet.	Using active baluns, an analog video can be transmitted over a mile and power over 1,000 feet on the standard Cat5 cabling.
Video Transmission	IP traffic, like Voice-over-Internet (VoIP), is subject to potential faults such as bandwidth limitations, network congestion, varying bit rates, large file sizes, load balancing, viruses, and latency. If the network fails, even momentarily, the recorded or monitored video will cease or degrade.	Analog video traffic is not subject to any networking issues or risks. The bandwidth is virtually unlimited. It is a passive connection, similar to an analog telephone connection, and cannot be interfered with due to problems external to the video surveillance system.
Fault Tolerance Capacity and Reliability	While some IP cameras can store videos of a limited size internally, network failure will result in losing all live viewing and the recorded server video.	Analog devices are limited to failures of individual cameras, which means the loss of a single piece of hardware will not cause substantial degradation of the system.
Security	IP video streams can be encrypted and are difficult to intercept. On the other hand, the network itself is subject to viruses and other types of attacks.	Analog signals are less secure and can be intercepted or viewed by anyone with access to the cabling infrastructure.
Maintenance	An IP camera is a network appliance and requires skilled professionals to operate.	Analog cameras are unmanaged devices; once installed, they require no skilled professionals for operation.
Wireless	One of the clear advantages of IP cameras is their flexibility to integrate with a wireless network. Wireless IP is “virtually” unlimited in terms of expansion and bandwidth, while topology is still a concern.	Analog cameras use radio frequencies to transmit videos and possess limited bandwidth and transmission speeds.
Compatibility	IP cameras require a network video recorder (NVR) or browser that will communicate with each model of camera, which is proprietary and unique.	Any analog camera can plug into any DVR. There are no compatibility issues when changing either the DVR or any of the cameras.
Scalability	One of the advantages of IP cameras is their ability to simply add on cameras by plugging into any network connection.	Analog cameras can be virtually expanded as there is no requirement for bandwidth or data transmission between the cameras and the recorders.

Source: Secondary Sources and MarketsandMarkets Analysis

Surveillance cameras, by form, has been divided into dome, pan-tilt-zoom (PTZ), box and bullet, and panoramic, fish-eye, and body-worn cameras.

Surveillance cameras used for video surveillance can be categorized on the basis of resolution into the following ranges: 0.3 to 1 megapixel, 1.1 to 2.9 megapixel, 3 to 5 megapixel, and greater than 5 megapixels. The resolution is measured in vertical and horizontal pixel dimensions.

7.3.3 MONITOR

Monitors are one of the important components of video surveillance systems. A monitor is always a part of the video surveillance system, be it analog or IP, because it is the only component that analyzes security-related threats related to property or humans. Currently available monitors have the ability to endure 24/7 usage and produce highly detailed images necessary for making security-related decisions.

With advancements in display technology, monitors have also undergone technological improvisation. Earlier, in the conventional CCTV setup, operators could view footage from a central location on a monitor, very much like a TV, but with higher resolution for better picture quality. Over time, monitors have changed from Cathode Ray Tube (CRT) to Liquid-Crystal Display (LCD) and from LCD to Light Emitting Diode (LED) displays. LCD and LED monitors offer lower power consumption, lower cost, lower weight, and are smaller in size.

Monitors used in video surveillance systems can be categorized on the basis of their screen size into up to 20 inches and more than 20 inches.

Factors that must be considered for video surveillance monitors are size, aspect ratio, viewing angle, resolution, imaging performance, brightness, and contrast.

7.3.4 STORAGE DEVICE

Storage devices have been segmented on the basis of type into Digital Video Recorder (DVR), Network Video Recorder (NVR), Direct-Attached Storage (DAS), Network-Attached Storage (NAS), and IP Storage Area Networks (IP SAN).

Video surveillance systems generate large volumes of critical and sensitive data. As a result, capturing, protecting, and mobilizing this data is essential for a regular IT framework. White box video servers and storage solutions, including DAS, NVR, SAN, NAS, are not designed for write-intensive 24/7 IP video surveillance workloads.

7.3.4.1 Digital video recorders

7.3.4.1.1 Cost-effective solutions mainly used for analog cameras

Digital video recorders (DVRs) are used as storage devices for recording surveillance data. They convert the analog video file to digital and also allow users to stream a video over a network for remote viewing from different locations. DVRs use hard disk drives (HDDs) or solid-state drives (SSDs) to store the data from cameras. These devices generally do not offer scalability and flexibility in terms of storage space and provide limited connectivity to cameras. DVRs are considered to be cost-effective storage solutions, and they mostly work with analog cameras. With the rising use of IP cameras, new-generation DVRs provide recording over the IP, but they fail to match the operating performance of NVRs.

7.3.4.2 Network video recorders

7.3.4.2.1 Easy to deploy and provide more flexibility

An NVR (Network Video Recorder) is an IP-based recording solution that can record from multiple cameras over a centralized network. NVRs can be connected to all cameras in the local area network (LAN), wide area network (WAN), or through the internet, thereby providing more flexibility than any other recording solutions available. They can be accessed and managed remotely through web-based systems. NVRs are categorized into box appliance NVRs and PC-based NVRs.

7.3.5 ACCESSORIES

Accessories also play a very important role in the hardware of video surveillance systems. Accessories include video encoders and cables.

7.3.5.1 Cables

2 types of cables are used for the installation of security cameras and DVRs—plug and play (PnP) and RG59 Coax Siamese cables.

These cables allow both the video and the power to run on one cable. Each cable has a male BNC connector on each end to connect the security camera to the DVR. The power side of the cable can connect a surveillance camera's power lead to an individual power supply or to a power supply box through a PT-3 power cable lead.

7.3.5.2 Encoders

The video encoder, also known as a video server, allows an existing analog CCTV system to be integrated with a network camera system. When there are many analog cameras to be maintained, the video encoder plays a significant role in the installation. A video encoder camera connects to an analog video camera through a coaxial cable and converts analog video signals into digital video streams. The video is sent over a wired or wireless IP-based network such as LAN, WLAN, or the internet. To monitor the video or record the digital video, computer monitors and PCs can be used instead of DVRs or VCRs and analog monitors.

7.4 ACCESS CONTROL SYSTEM

7.4.1 BIOMETRIC READERS TO WITNESS HIGHEST CAGR IN ACCESS CONTROL MARKET, BY HARDWARE, DURING FORECAST PERIOD

In access control systems, different hardware components are used to communicate and authenticate data and grant/deny access. Various types of hardware products include cards and readers, biometric systems, electronic locks, multi-technology readers, and control panels or controllers.

Major Chinese manufacturers of home security systems are headquartered in Hubei Province, the epicenter of the pandemic, thereby impacting domestic vendors such as Hikvision, ZKTeco, and Dahua with labor shortages and production delays throughout the country.

COVID-19 will have an impact on the global supply of security equipment, which will largely depend on how the situation stabilizes globally and by when factories resume operations at full capacity. Also, the chances of a trade war between the US and China have led many American suppliers to cautiously stockpile products and components manufactured in China. The access control market has potential challenges that could impact supply chains as the majority of biometric readers are produced by domestic Chinese manufacturers. Most access control equipment in APAC are also supplied by South Korean, Japanese, and Taiwanese vendors such as Hitachi, Mitsubishi, Secom, NEC Electric, Suprema, and Union Community. If the number of COVID-19 cases starts increasing again in these countries, the market for biometric readers will be adversely impacted to a great extent.

TABLE 49 COMMERCIAL ACCESS CONTROL MARKET, BY HARDWARE, 2017–2020 (USD MILLION)

Hardware	2017	2018	2019	2020
Card-based Readers	810	871	939	908
Biometric Readers	802	878	961	944
Multi-technology Readers	300	320	343	329
Electronic Locks	345	373	405	393
Controllers	826	858	893	833
Others	334	345	358	332
Total	3,416	3,646	3,899	3,740

Note: "Others" includes RFID tags, door sets, keypads, and servers.

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 50 POST-COVID-19 COMMERCIAL ACCESS CONTROL MARKET, BY HARDWARE, 2021–2026 (USD MILLION)

Hardware	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Card-based Readers	958	1,029	1,103	1,179	1,255	1,330	6.8%
Biometric Readers	1,012	1,102	1,198	1,299	1,401	1,505	8.3%
Multi-technology Readers	345	368	392	416	440	464	6.1%
Electronic Locks	417	450	485	521	557	593	7.3%
Controllers	848	877	905	930	951	968	2.7%
Others	336	345	354	361	366	370	2.0%
Total	3,916	4,171	4,436	4,705	4,971	5,230	6.0%

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 51 PRE-COVID-19 COMMERCIAL ACCESS CONTROL MARKET, BY HARDWARE, 2021–2026 (USD MILLION)

Hardware	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Card-based Readers	1,079	1,154	1,230	1,309	1,388	1,468	6.3%
Biometric Readers	1,139	1,236	1,337	1,442	1,550	1,660	7.8%
Multi-technology Readers	389	413	437	462	487	512	5.6%
Electronic Locks	470	505	541	578	616	655	6.9%
Controllers	955	984	1,010	1,033	1,052	1,068	2.3%
Others	378	387	395	401	405	408	1.5%
Total	4,411	4,678	4,950	5,224	5,499	5,770	5.5%

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 52 COMMERCIAL ACCESS CONTROL HARDWARE MARKET, BY REGION, 2017–2020 (USD MILLION)

Region	2017	2018	2019	2020
North America	2,373	2,508	2,678	2,537
Europe	1,698	1,836	1,942	1,825
APAC	1,524	1,703	1,910	1,899
RoW	560	586	632	607
Total	6,155	6,633	7,162	6,868

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 53 POST-COVID-19 COMMERCIAL ACCESS CONTROL HARDWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	2,665	2,849	3,043	3,241	3,440	3,635	6.4%
Europe	1,899	2,009	2,123	2,237	2,347	2,452	5.2%
APAC	2,089	2,334	2,602	2,890	3,194	3,512	11.0%
RoW	644	695	749	806	863	921	7.4%
Total	7,296	7,888	8,517	9,174	9,844	10,520	7.6%

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 54 PRE-COVID-19 COMMERCIAL ACCESS CONTROL HARDWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	3,130	3,317	3,507	3,699	3,891	4,080	5.4%
Europe	2,235	2,350	2,463	2,575	2,684	2,789	4.5%
APAC	2,197	2,438	2,694	2,967	3,257	3,559	10.1%
RoW	699	745	793	842	891	941	6.1%
Total	8,261	8,850	9,458	10,083	10,724	11,369	6.6%

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

Card-based readers are proven to be more reliable than biometric readers and electronic locks. Increasing requirement for smart and proximity cards to monitor and record employee activities is one of the factors driving the growth of the market for card-based readers. Johnson Controls provides card readers and controllers for various commercial, industrial, and government applications.

Biometric readers are rapidly gaining traction worldwide owing to the growing need for security and surveillance in the private and business sectors. The adoption of voice recognition systems in BFSI is expected to fuel the growth of the market for biometric readers in the coming years.

7.4.2 CARD-BASED READERS

Cards are used as credentials to authenticate users' identities and determine access grant/denial (also the appropriate level of access). Access control readers can be magnetic stripes and proximity or smart card readers.

Smart cards are proven to be more reliable than magnetic stripes and proximity cards. Increasing use of smart cards to monitor and record employee activities in organizations is one of the major factors driving the growth of the market for smart card readers.

To ensure enhanced security, magnetic stripes are replaced with proximity and smart card readers. Smart cards and readers are likely to account for the largest market share, primarily due to the rising demand for contactless smart cards and readers.

Smart cards are proven to be more reliable than magnetic stripe cards and proximity cards. By 2025, smart card readers are expected to surpass proximity card readers because of rapid technological developments and large-scale manufacturing of smart card readers.

7.4.2.1 Magnetic stripe cards and readers

A magnetic stripe card or a card is a plastic card with a magnetic stripe that stores data. A magnetic stripe card reads the information stored on the magnetic stripe of a card and transmits it to an access control unit. However, the information can be easily stolen and duplicated. Magnetic stripe cards and readers have minimal security as the data stored on a magnetic stripe card or a reader can be easily read. Also, magnetic stripe cards store only a limited volume of data (~2 kB), and they support minimal functionality.

7.4.2.2 Proximity cards and readers

A proximity card or a reader is a contactless card that contains programmed data and operates on RFID technology at the frequency of 125 kHz. Such a card consists of a coiled antenna and chips and holds specific numerical programming. The card carries a set of binary numbers that are converted by a reader into a protocol and transmitted to an access control panel for authentication. Proximity cards and readers communicate through interface technologies such as RS232, RS485, Ethernet, and 24- or 32-bit Wiegand.

7.4.2.3 Smart cards and readers

Access to infrastructure can be electronically controlled by smart cards and readers. Smart cards are embedded with microprocessors and memory modules and are classified into 2 types—contact and contactless smart cards. Contact smart cards have 8 contact points and are inserted into a smart card reader for authentication. These smart cards are used for physical access control in applications wherein the transaction speed is not important—for example, parking. Contactless smart cards have embedded antennas that enable communication with readers without any physical contact; these cards use radio-based technology to transfer data. Typically, smart card readers do not make access decisions but send card data to access control panels that verify the data against access lists.

Smart card readers operate at a frequency of 13.56 MHz and follow the ISO 14443 standard. These cards securely manage, store, and provide access to data. The data or information stored in a smart card is read by a reader that is typically a part of a computer system. Smart cards provide better convenience and transaction security than magnetic stripe cards and proximity cards. Smart cards, also known as integrated circuit cards or chip cards, are supported by embedded integrated circuit chips that can be used for data storage, authentication, identification, and application processing. Readers can process data imprinted on smart cards either through direct contact (contact smart cards) or without contact (contactless smart cards) through near-field communication (NFC) systems. Smart cards have several application areas, including identification, health cards, public transit, ATM cards, credit cards, fuel cards, and security tokens. Major players that offer smart cards include Samsung (South Korea), Fujitsu (Japan), Infineon (Germany), and NXP (Netherlands).

Contact smart cards can operate without a battery; power is supplied through the card reader. Contact smart cards are required to make physical contact with the card reader. While inserting the contact smart card through the reader, electronic contact is made between the card and the reader, and the data is fetched and processed. Contact smart cards can be used for a single function or multiple functions. Contact smart cards find applications in credit and debit cards, fuel cards, health cards, and direct-to-home (DTH) smart cards, among many others. Contactless smart cards operate without any direct physical contact with card readers; the data is exchanged between the card and reader via electromagnetic or magnetic fields. An antenna is embedded inside a contactless smart card, which enables communication between the card and the reader. Contactless smart cards are increasingly being used in the retail industry for faster payments and automatic access applications as they require lesser processing time than that of contact smart cards.

7.4.3 BIOMETRIC READERS

Biometric technologies are used to measure different physiological parameters for identification and authentication purposes in access control systems. Authentication by biometric verification has become increasingly popular in a wide range of applications. Biometric devices consist of a reader and software that convert the scanned information into digital format and a database that stores the biometric data for comparison. Each person has a unique overall pattern that cannot be duplicated. This makes biometrics a popular method of authentication. Biometrics is one of the fastest-growing technologies used to secure perimeters. This technology enables identifying a person's physical characteristics to provide controlled physical access to infrastructure. This technology is being increasingly used in government facilities, manufacturing units, power stations, defense establishments, and enterprises.

The market for biometric reader-based access control systems has been further categorized into fingerprint recognition, palm recognition, iris recognition, face recognition, and voice recognition. The increasing use of several types of biometric systems for identification applications at hospitals, organizations, government institutions, educational facilities, etc., is fueling the growth of the biometric access control system market. Key players in the biometric reader market include NEC Corporation (Japan), Thales Group (France), Johnson Controls International plc (Ireland), Napco Security Technologies, Inc. (US), and IDEMIA (France).

In biometrics, fingerprint recognition is most commonly used as it is one of the oldest, easy-to-install, and low-cost technologies. Fingerprint readers provide a high level of security; hence, they are widely used in government, BFSI, and healthcare verticals. Face recognition is also an advanced technology in terms of security features. It takes 2 to 3 facial features to identify an individual; hence, it is difficult to copy. Therefore, the adoption of face recognition technology is expected to be high in the access control market.

The growing adoption of facial recognition solutions to enhance physical safety measures and control unauthorized access to assets or locations is expected to foster the growth of the market for face recognition systems. Major manufacturers of face recognition readers include IDEMIA (France), Stonelock Global (US), and Thales Group (France). The Federal Aviation Administration (US) uses face scan, voice print, fingerprint, hand geometry, and iris scan for increasing aviation security in the US; the United States Immigration and Naturalization Service uses hand geometry and voice print to ensure improved security at border crossing points; and the Office of Legislative Counsel, House of Representatives (US), uses an iris scanner to secure sensitive documents.

7.4.3.1 Fingerprint recognition

Fingerprint recognition is an effective and simple method for identifying and authenticating individuals. Every person has unique fingerprints, which are a series of minutiae points, furrows, and ridges. There are 2 categories of fingerprint matching—minutiae-based and pattern-based. Minutiae points are important for finding and calculating the matching points with the fingerprint of a person. Pattern-based algorithms compare the basic fingerprint patterns (arch, whorl, and loop) of a person with stored templates. Fingerprint recognition is also used in police investigations, defense-related purposes, and immigration applications.

Fingerprint scanners are widely used in organizations as a method of employee identification. These scanners are also installed on mobile phones and laptops to authenticate users. The increasing adoption of automated fingerprint identification systems (AFIS) is expected to fuel the growth of the market for fingerprint recognition solutions. 3 types of fingerprint scanners—capacitive, sweep, and optical—are used in access control systems. Optical scanners are preferred for no-contact and hygienic applications. ASSA ABLOY AB (Sweden), Suprema HQ Inc. (South Korea), IDEMIA (France), Thales Group (France), and SecuGen Corporation (US) are the major biometric reader manufacturers.

After the outbreak of the COVID-19 pandemic, users worldwide are avoiding the use of fingerprint scanners. For instance, hundreds of businesses in Hyderabad (India) have stopped using fingerprint-based access control systems after orders from state government authorities. Similarly, there have been other countries or cities wherein the use of fingerprint systems has either been limited or stopped—for example, Schenectady (New York), Oman (Middle East), and Mumbai (India). As a result, the demand for fingerprint-based biometric systems is likely to decrease in the coming years.

7.4.3.2 Palm recognition

Palm recognition technology-based biometric products measure hand geometry—the size of the palm, length and width of fingers, the distance between knuckles—to authenticate user identity and grant access. All biometric techniques differ based on the security level, user acceptance, cost, and performance. Palm print matching techniques are of 3 types—minutiae-, correlation-, and ridge-based.

Minutiae-based palm print matching is similar to fingerprint matching—it relies on the minutiae points. Correlation-based matching involves superimposing palm images and comparing the ridges. Ridge-based matching relies on ridge pattern landmark features such as sweat pores, spatial attributes, and geometric characteristics or local texture analysis. This method overcomes some of the difficulties associated with extracting minutiae from low-quality images. Palm recognition-based biometric screening is considered to provide a medium level of security compared to other techniques. COVID-19 has led to a fall in demand for touch-based biometric systems, which will have a significant and long-term impact on the manufacturers, distributors, and customers of biometric solutions, causing a drop in revenue of fingerprint sensor vendors.

7.4.3.3 Iris recognition

Biometric iris recognition systems record the unique patterns in the colored circle of a person's eye to verify and authenticate identity. Iris recognition technology is one of the most accurate and fastest technologies; additionally, it can operate on long distances. In this recognition method, an "iris code" is generated on the basis of iris texture, and this code is unique for every individual. Iris scanners use the mathematical pattern-recognition technique from the video image of one or both the irises of an individual's eyes. Irises have complex patterns, and they are unique and stable. Iris recognition algorithm identifies more than 200 identification points, including rings, furrows, and freckles within an iris. Irises are more detail oriented, thereby providing a high level of security.

Vendors of contactless access control systems, including iris recognition, are forced to adapt to the threat of COVID-19 as there has been a sudden spike in demand for iris recognition devices. To curtail the spread of the coronavirus, worldwide authorities are reducing the use of contact-heavy biometrics programs, leading to a rise in demand for contactless biometric systems, such as iris recognition.

7.4.3.4 Facial recognition

Face recognition is a software application that can identify an individual by comparing and analyzing patterns in a digital image. It is used for surveillance and security purposes. Facial recognition systems use numeric codes called face prints. These systems identify and use nodal points on a human face to measure variables such as the width of the nose, eyes, and cheekbones. To achieve more accuracy, 3D recognition systems are being used. 3D face readers use 3D sensors to capture information, which is then used for recognizing distinctive facial features such as the contour of eye sockets, nose, and chin.

There are different matching modes available through facial recognition readers, such as one-to-many or “identification” (1:N), one-to-one or “verification” (1:1), and 1:few segmented “identification” (1:Few). Most access control systems use 1:1 matching. 1:1 biometric “verification” matching authenticates an individual’s identity by comparing a captured biometric template with a biometric template pre-stored in a database. Face recognition readers read the global, local, individual data point-based features to recognize an individual. The global data set includes graph mesh, while local points include groups of reference points and individual characteristic points. The result is a face print used to compare captured images.

Similar to iris recognition devices, face recognition access control devices are also expected to witness a rise in demand. Vendors of face recognition technology-based access control systems have started providing additional features, such as retrofitting new software to screen and detecting individuals not wearing protective masks.

7.4.3.5 Voice recognition

Voice recognition is a non-contact, nonintrusive, and easy-to-use biometrics technology. It is a method of identifying and authenticating an individual’s vocal modalities. This technology uses audio capturing devices to record voice data at the time of enrolment and then extracts unique features from the data to create a template for future identification and verification. Voice recognition technology is the only solution that can provide remote authentication. It is ideal for situations where distant verification is required, such as telephone-based transactions. Voice recognition applications include account access to financial services, customer authentication for service calls, monitoring offenders under house arrest by making random calls, and voice mining surveillance in intercepted phone calls.

7.4.4 MULTI-TECHNOLOGY READERS

Multi-technology readers employ both card and biometrics. Multi-technology readers provide a multi-protocol, multi-frequency solution; they can read multiple 13.56-MHz smart cards, MIFARE-encrypted sectors, and 125-kHz proximity cards. Multi-technology readers provide a way to transition from proximity cards or magnetic stripes to smart cards. Major providers of multi-technology readers include ASSA ABLOY AB (Sweden), Allegion Plc (Ireland), IDEMIA (France), and Johnson Controls International Plc (Ireland).

7.4.5 ELECTRONIC LOCKS

An electronic lock is a locking device that operates on electricity. It can be standalone or can be integrated with access control systems. Key advantages of electronic locks include the key control, addition of keys without altering the lock cylinder, ease of access control, transaction logging, and remote operation. There are 3 types of electronic locks—electromagnetic locks, electric strikes, and wireless locks.

Electronic locks provide better security compared to mechanical locks. Electronic mechanisms and access methods provide additional security as these systems cannot be tampered with. Electronic locks can be combined with biometric authentication systems, such as fingerprint scanning. The rapid adoption of the electronic access control system is a key factor for the growth of the market for different types of electronic locks. As a result, electronic locks are rapidly replacing mechanical locks across the world. ASSA ABLOY AB (Sweden) is one of the global players providing locks and integrated software.

Currently available electronic locks come with advanced technologies such as RFID, keypads, biometrics (fingerprint), touchscreen panels, and Bluetooth.

Electromagnetic locks include large electromagnets mounted on door frames and attached armature mounted on doors. Magnetic locks are simple to install and are attack resistant. These locks are engaged by powering them with electricity and require a constant supply of electricity to remain locked.

Electric strikes, also known as electric latches, replace standard strikes mounted on door frames. Electric strikes can be the simplest to install when they are designed for one-for-one drop-in replacement of a standard strike, but for some electric strike designs, the door frame needs to be heavily modified.

Wireless locks or smart locks are electromechanical locking systems that can be operated through authorized connected devices such as smartphones and tablets. Smart locks perform the function of locking and unlocking after receiving instructions from authorized devices through a wireless communications protocol. The wireless communications protocol is a digital description that sets the rule for the transfer of data between devices. Wireless locks are inbuilt with any of the following wireless technologies: Bluetooth, Zigbee, and Zwave. The benefits of smart locks over traditional locks include easy connectivity, high security, high convenience, and full access controls. These lock systems allow users to go keyless and lock or unlock their assets with smartphones, tablets, or similar devices. However, the batteries of these devices need regular monitoring and timely replacement to avoid dysfunction.

7.4.6 CONTROLLERS

The access controller or control panel is the main part of an access control system. Control panels have various options that are configured according to customer requirements. Control panels transmit data between readers and software through various types of communication interfaces, including Wiegand, RS232, RS 485, and TCP/IP. The controller receives the credentials from the reader and compares them with the rules configured for the access card, and accordingly, access is granted or denied. All controllers have common features, including a graphical user interface for configuring and management of access control systems, report generation to communicate between different departments of an organization, alarm notifications such as message or email, allowing multiple access credentials and modes, and enabling each credential only once with the anti-passback feature.

Based on the operational technology, there are 2 main types of controllers—serial access controllers and IP access controllers.

7.4.7 OTHERS

Others mainly include RFID tags, keypads, door sets, and servers. A server is used as a storage and communication device for access control readers and entrance systems, such as turnstiles or door contacts. The access control server serves as the central database and file manager for recording system activity and distributing information to and from access controllers. Access control keypads are devices that are used in the place of card readers. This device has numeric keys for entering codes. When access control keypads are used in conjunction with card readers, a valid card and a correct code are required for granting access. RFID tags include key fobs, wristbands, ISO cards, clamshell cards, and vehicle mount tags. These tags are widely used for secure access, people tracking, and vehicle access applications.

7.5 ENTRANCE CONTROL SYSTEMS

7.5.1 MARKET FOR ENTRANCE CONTROL SYSTEMS FOR PEDESTRIANS IN APAC TO GROW AT HIGHEST CAGR DURING FORECAST PERIOD

The entrance control system is designed to secure large commercial buildings, corporate offices, shopping malls, and government offices. The entrance control system, for instance, a biometric system, protects the company's database, private client data, and server rooms. Building residents/employees expect security actions to be taken to protect their safety. Also, though a building has security guards present at the entrance, intruders can slip in unobserved when the guards are busy manually checking IDs. Hence, it is absolutely crucial to have entrance control systems. There are many entrance control systems designed by industry players. For instance, security entrance lanes are built to achieve maximum pedestrian pass throughput while providing a high level of security check. Tripod turnstiles are used in continually manned industrial, covered outdoor or interior areas where appearance and speeds are not that important. They come in various sizes and shapes and can be modified according to customer needs.

TABLE 55 COMMERCIAL ENTRANCE CONTROL SYSTEM HARDWARE MARKET, BY REGION, 2017–2020 (USD MILLION)

Region	2017	2018	2019	2020
North America	100	117	132	127
Europe	152	180	204	197
APAC	174	208	240	236
RoW	38	44	50	49
Total	463	549	626	609

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 56 POST-COVID-19 COMMERCIAL ENTRANCE CONTROL SYSTEM HARDWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	141	155	168	180	192	204	7.7%
Europe	220	243	265	286	307	328	8.3%
APAC	268	301	334	367	401	436	10.2%
RoW	54	60	66	72	77	83	8.7%
Total	683	758	833	905	978	1,051	9.0%

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 57 PRE-COVID-19 COMMERCIAL ENTRANCE CONTROL SYSTEM HARDWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	162	176	189	202	213	224	6.7%
Europe	253	276	299	320	341	360	7.4%
APAC	307	342	377	411	445	478	9.2%
RoW	63	69	75	80	86	91	7.7%
Total	784	864	940	1,013	1,084	1,153	8.0%

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

Governments in APAC enforce security measures in commercial as well as public places where the entrance control system plays a vital role in granting quick and secure access to many people; hence, the market for entrance control systems in this region is estimated to grow at the highest CAGR.

8 COMMERCIAL SECURITY SYSTEM MARKET, BY SOFTWARE

KEY FINDINGS

- The commercial security system market for software in a post-COVID-19 scenario is likely to grow at a CAGR of 11.6% from 2021 to 2026.
- The fire analysis software market was valued at USD 3.1 billion in 2020 and is expected to reach USD 5.6 billion by 2026.
- Video surveillance services will be the leading and fastest-growing commercial security software market globally.
- The video surveillance market for software was valued at USD 7.7 billion in 2020 and is expected to grow to USD 17.9 billion by 2026, at a CAGR of 15.7% from 2021 to 2026.

8.1 INTRODUCTION

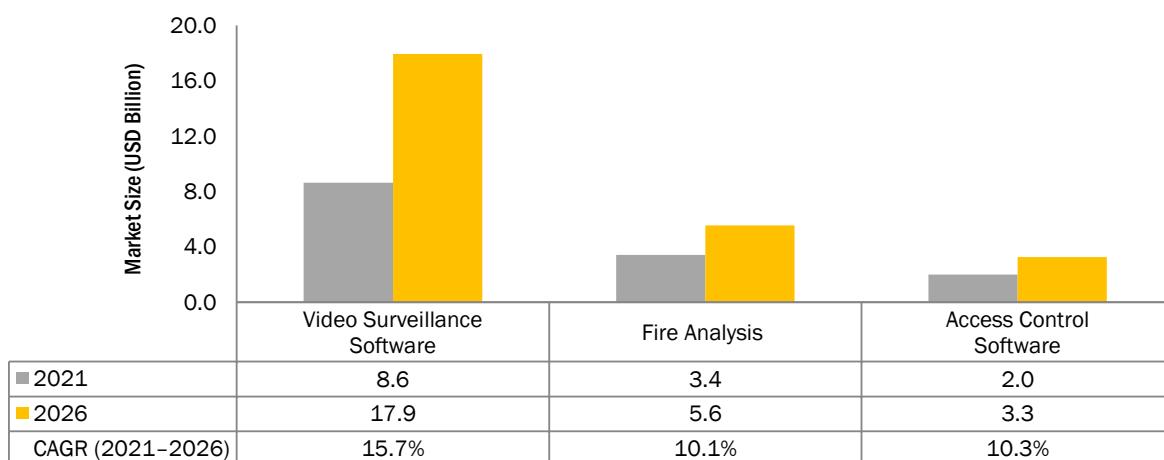
The market for commercial security software includes the software used for commercial security purposes by devices, such as access control software, fire analysis, and video surveillance software.

FIGURE 28 COMMERCIAL SECURITY SOFTWARE MARKET, BY OFFERING



Source: Press Releases, Expert Interviews, and MarketsandMarkets Analysis

FIGURE 29 VIDEO SURVEILLANCE SOFTWARE TO WITNESS HIGHEST CAGR IN POST-COVID-19 COMMERCIAL SECURITY SOFTWARE MARKET DURING FORECAST PERIOD



Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 58 COMMERCIAL SECURITY SOFTWARE MARKET, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Fire Analysis	2.6	2.9	3.3	3.1
Video Surveillance Software	5.6	6.7	7.6	7.7
Access Control Software	1.6	1.7	1.9	1.8
Total	9.8	11.4	12.8	12.6

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 59 POST-COVID-19 COMMERCIAL SECURITY SOFTWARE MARKET, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Fire Analysis	3.4	3.8	4.2	4.7	5.1	5.6	10.1%
Video Surveillance Software	8.6	10.0	11.7	13.5	15.6	17.9	15.7%
Access Control Software	2.0	2.2	2.5	2.7	3.0	3.3	10.3%
Total	14.1	16.1	18.4	20.9	23.7	26.8	13.7%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 60 PRE-COVID-19 COMMERCIAL SECURITY SOFTWARE MARKET, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Fire Analysis	4.1	4.6	5.1	5.6	6.1	6.6	9.9%
Video Surveillance Software	10.0	11.4	12.9	14.6	16.4	18.3	12.8%
Access Control Software	2.3	2.5	2.7	3.0	3.2	3.5	8.6%
Total	16.4	18.5	20.7	23.1	25.6	28.4	11.6%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 61 COMMERCIAL SECURITY SOFTWARE MARKET, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	3.3	3.7	4.2	4.1
Europe	2.3	2.6	2.9	2.8
APAC	3.4	4.1	4.7	4.7
RoW	0.8	1.0	1.1	1.0
Total	9.8	11.4	12.8	12.6

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 62 POST-COVID-19 COMMERCIAL SECURITY SOFTWARE MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	4.5	5.1	5.7	6.4	7.2	8.0	12.2%
Europe	3.1	3.4	3.8	4.2	4.7	5.1	10.9%
APAC	5.4	6.4	7.5	8.7	10.2	11.8	16.8%
RoW	1.1	1.2	1.4	1.5	1.7	1.9	10.9%
Total	14.1	16.1	18.4	20.9	23.7	26.8	13.7%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 63 PRE-COVID-19 COMMERCIAL SECURITY SOFTWARE MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	5.3	5.9	6.5	7.2	7.9	8.6	10.2%
Europe	3.6	4.0	4.3	4.7	5.1	5.5	9.0%
APAC	6.3	7.2	8.3	9.5	10.8	12.3	14.4%
RoW	1.3	1.4	1.5	1.7	1.8	2.0	8.9%
Total	16.4	18.5	20.7	23.1	25.6	28.4	11.6%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

Video surveillance services will be the leading and fastest-growing commercial security software market globally. The primary reason driving the growth of this market is the adoption of artificial intelligence (AI) technology in video surveillance systems. The ability of AI to analyze images and audio from the live streams of video surveillance and recordings, coupled with its ability to use image recognition algorithms to recognize faces, objects, and events, among others, is driving the video surveillance software market globally.

8.2 FIRE ANALYSIS

8.2.1 FIRE ANALYSIS USES FIRE MAPPING AND ANALYSIS SOFTWARE AND FIRE MODELING AND SIMULATION SOFTWARE

A fire protection system can work effectively if a proper analysis of events is done. Fire analysis is an important part of fire protection, which facilitates informed decisions that lead to maximum efficiency. Fire analysis uses fire mapping and analysis software and fire modeling and simulation software.

TABLE 64 COMMERCIAL FIRE ANALYSIS MARKET, BY REGION, 2017–2020 (USD MILLION)

Region	2017	2018	2019	2020
North America	936	1,055	1,187	1,135
Europe	751	838	933	881
APAC	611	696	791	772
RoW	292	325	362	343
Total	2,589	2,914	3,273	3,130

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 65 POST-COVID-19 COMMERCIAL FIRE ANALYSIS MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	1,245	1,390	1,545	1,706	1,872	2,036	10.3%
Europe	957	1,056	1,161	1,268	1,376	1,480	9.1%
APAC	857	966	1,085	1,210	1,341	1,473	11.5%
RoW	372	410	450	490	531	570	8.9%
Total	3,430	3,823	4,240	4,675	5,119	5,559	10.1%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 66 PRE-COVID-19 COMMERCIAL FIRE ANALYSIS MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	1,495	1,666	1,846	2,035	2,228	2,424	10.1%
Europe	1,150	1,267	1,389	1,514	1,639	1,764	8.9%
APAC	1,017	1,145	1,282	1,426	1,577	1,733	11.2%
RoW	444	489	535	581	628	674	8.7%
Total	4,107	4,567	5,052	5,556	6,071	6,595	9.9%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

This growth of the fire analysis software can be attributed to the increasing need for sophisticated fire analysis, which helps in proper decision making and fire prevention. Along with it, an increase in fire protection-related expenditure of various enterprises, rise in fire-related deaths, and stringent governmental norms are also driving the market for fire analysis software.

8.2.2 FIRE MAPPING AND ANALYSIS SOFTWARE

Fire protection systems demand real-time information and analysis of the situation to allocate resources properly for minimal damage. Fire mapping and analysis software provide an interactive map display with a real-time system for decision makers to efficiently and quickly make decisions during fire-related situations. Mapping helps provide a spatial representation of data, presenting groupings and associations that are not clear in a standard data view. Users can merge emergency equipment, boundaries, and topographic data into one display on the map for an immediate snapshot of all the resources in a specific region. Companies such as FireRescue1 and The Omega Group provide fire mapping and analysis software.

8.2.3 FIRE MODELING AND SIMULATION SOFTWARE

Fire protection systems or processes require trained and well-informed fire units. Unit members need to have knowledge and experience to fight in these kinds of disasters. In such cases, fire modeling and simulation software prove to be a useful platform. Such software use spatial data and visualize it in a versatile graphical interface. They are used by agencies to train firefighters. They provide command and staff trainers, scenario and image generators, and operator stations for role players and instructors, dynamic terrain servers, situational awareness stations, and unmanned vehicle controller stations. Several modeling and simulation software are being developed in the market—e.g., Consolidated Model of Fire and Smoke Transport (CFAST), developed by the National Institute of Standards and Technology (NIST). Autodesk Inc. and Harrington Group Inc. also provide fire modeling and simulation software.

8.3 VIDEO SURVEILLANCE SOFTWARE

8.3.1 RISING TRENDS OF DEEP LEARNING AND AI TO DRIVE MARKET GROWTH

The video surveillance market for software is broadly classified into video management software (VMS) and video analytics or intelligent video surveillance (IVS).

TABLE 67 COMMERCIAL VIDEO SURVEILLANCE SOFTWARE MARKET, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Video Analytics	2.3	2.8	3.2	3.2
Video Management System	3.4	4.0	4.5	4.4
Total	5.6	6.7	7.6	7.7

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 68 POST-COVID-19 COMMERCIAL VIDEO SURVEILLANCE SOFTWARE MARKET, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Video Analytics	3.7	4.4	5.1	6.0	7.1	8.2	17.3%
Video Management System	4.9	5.7	6.5	7.5	8.5	9.7	14.5%
Total	8.6	10.0	11.7	13.5	15.6	17.9	15.7%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 69 PRE-COVID-19 COMMERCIAL VIDEO SURVEILLANCE SOFTWARE MARKET, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Video Analytics	4.3	5.0	5.7	6.5	7.4	8.4	14.4%
Video Management System	5.7	6.5	7.2	8.1	9.0	9.9	11.6%
Total	10.0	11.4	12.9	14.6	16.4	18.3	12.8%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 70 COMMERCIAL VIDEO SURVEILLANCE SOFTWARE MARKET, BY REGION, 2017–2020 (USD MILLION)

Region	2017	2018	2019	2020
North America	1,733	2,033	2,284	2,268
Europe	1,125	1,307	1,453	1,430
APAC	2,362	2,882	3,364	3,433
RoW	424	491	545	526
Total	5,644	6,713	7,646	7,658

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 71 POST-COVID-19 COMMERCIAL VIDEO SURVEILLANCE SOFTWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	2,518	2,880	3,296	3,764	4,279	4,836	13.5%
Europe	1,571	1,777	2,011	2,268	2,547	2,841	12.2%
APAC	3,965	4,714	5,609	6,655	7,861	9,228	18.0%
RoW	577	650	734	826	924	1,028	11.9%
Total	8,631	10,021	11,650	13,513	15,612	17,933	15.3%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 72 PRE-COVID-19 COMMERCIAL VIDEO SURVEILLANCE SOFTWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	2,908	3,256	3,628	4,030	4,455	4,908	11.5%
Europe	1,812	2,006	2,209	2,424	2,646	2,877	10.2%
APAC	4,638	5,398	6,254	7,217	8,290	9,487	15.9%
RoW	677	748	822	900	980	1,063	9.9%
Total	10,035	11,408	12,914	14,571	16,371	18,335	13.2%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

VMS is an essential part of any surveillance system. VMS allows the operator to manage the camera and recording settings, view multiple camera feeds, and set alerts for tampering and motion detection. The increasing application areas of video surveillance systems are boosting the market for video management software. As city surveillance cameras are often placed in remote locations, wireless technology is being increasingly used to transmit videos. This, in turn, provides an opportunity for VMS vendors.

8.3.2 VIDEO ANALYTICS

Video analytics software for security cameras is available in several forms; it can be installed on a camera, on an NVR, or used as third-party software. Though the video surveillance market is constantly growing, security personnel are increasingly becoming aware of the fact that with the growing number of cameras, the effectiveness of monitoring is in danger of being lowered. Cameras can provide a wide-ranging view, but they add very little value in analyzing the activities. To address this problem, the Video Content Analysis (VCA) solution was developed. This solution is today referred to as video analytics and is primarily used in corporate or government systems, requiring powerful servers to run each application, along with high-end infrastructure.

Video analytics enhances video surveillance systems by performing the tasks of real-time event detection, post-event analysis, and extraction of statistical data while saving manpower costs and increasing the effectiveness of the surveillance system operation. Video analytics algorithms may be implemented to analyze recorded video, a task that is challenging and time-consuming for a human operator, especially in cases where several videos must be reviewed. Through the rapid analysis of a recorded video, video analytics can pinpoint an event in the recorded video and retrieve the relevant video segment from the stored video.

Video analytics can be used for motion detection, facial recognition, license plate recognition, people counting and dwell time monitoring, and recognizing long checkout lines, as well as for sending alerts.

8.3.3 VIDEO MANAGEMENT SOFTWARE

VMS, also known as a video management system or video management server, acts as a base for video monitoring, recording, and analyzing. Various types of software are available depending on the requirement of customers.

Video management software runs on Windows or Unix/Linux and offers live viewing, storing, and retrieving of video from multiple cameras. The systems installed at multiple sites and locations must be synchronized. Memory allocation is done automatically, and if the storage capacity is full, an alert message is sent through an e-mail. The system works with minimal external assistance, thus reducing operational costs.

VMS is used in applications requiring several cameras to be monitored at the same time. IP-based video surveillance systems were adopted prior to the development of the VMS software. In an IP (network video) system, cameras are connected to the standard computer Ethernet network such as LAN, WAN, or the internet. The video is stored on a central computer server/PC or network-attached storage (NAS) unit. Therefore, a VMS is required to access and handle the videos. The VMS software can be installed on a separate PC or on the same PC. As today's cameras feature in-built VMS software, users only need smartphone/tablet apps to view live and recorded videos.

8.3.4 SOFTWARE BY DEPLOYMENT MODE

8.3.4.1 On-premises

On-premises VMS solutions are installed at the end user's premises. They come with a high installation cost; the installation process includes the installation of OS, configuration, setting up storage servers, and installing the VMS application. The on-premises deployment supports a wide range of analog and IP cameras. On-premises VMS solutions offer customization, upgrades, integration, and security. Other benefits to the end user include scalability, reliability, flexibility, and remote location access. Government, airport, banking, and manufacturing verticals prefer on-premises deployment owing to its security, compliance, and scalability features.

8.3.4.2 Cloud

In cloud implementation, VMS solutions are accessed via the internet and hosted by third-party VMS providers. The video recording, controlling, and video management is performed by the cloud. Cloud-based VMS solutions are more in demand due to their scalability, lower CAPEX, and pay-as-you-go models; they are cost effective and mostly deployed by SMEs. Cloud-based VMS solutions have several benefits, such as no requirement for on-site servers, rapid deployment of solutions without configuration, and easy access through the internet. Cloud-based VMS solutions have been largely adopted by retail, small offices, and logistics users.

8.4 ACCESS CONTROL SOFTWARE

8.4.1 COMPANIES OFFERING SOFTWARE WITH OPEN ARCHITECTURE TO COMBINE SECURITY EQUIPMENT AND SOFTWARE INTO SINGLE PLATFORM

The access control market for software offerings is broadly classified into visitor management systems and others, which includes databases, analytics tools, and software tools. Several companies are offering software with an open architecture to combine security equipment and software into a single security management platform and follow international standards for networking and integration. Biometric devices are also implementing software development toolkits (SDK) and programming algorithms to identify objects and people.

The database is used for storing the data fetched from access control readers and electronic locks. In large organizations, access control software is integrated with other security management platforms, such as video surveillance, intrusion, and visitor management systems. HID Global (US), AMAG Technology, Inc. (US), Johnson Controls International Plc (Ireland), S2 Security Corporation (US), Lenel Systems International, Inc. (US), Sielox LLC (US), and CrossMatch Technologies, Inc. (US) are among a few of the providers of major access control system software.

TABLE 73 COMMERCIAL ACCESS CONTROL SOFTWARE MARKET, BY OFFERING, 2017–2020 (USD MILLION)

Offering	2017	2018	2019	2020
Visitor Management System	910	989	1,076	1,026
Others	659	738	828	815
Total	1,570	1,727	1,904	1,841

Note: "Others" includes databases, analytical tools, and software tools.

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 74 POST-COVID-19 COMMERCIAL ACCESS CONTROL SOFTWARE MARKET, BY OFFERING, 2021–2026 (USD MILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Visitor Management System	1,104	1,208	1,320	1,436	1,556	1,678	8.7%
Others	904	1,019	1,147	1,286	1,436	1,596	12.1%
Total	2,008	2,227	2,467	2,723	2,993	3,274	10.3%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 75 PRE-COVID-19 COMMERCIAL ACCESS CONTROL SOFTWARE MARKET, BY OFFERING, 2021–2026 (USD MILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Visitor Management System	1,257	1,354	1,454	1,557	1,663	1,769	7.1%
Others	1,028	1,142	1,264	1,395	1,535	1,683	10.4%
Total	2,285	2,496	2,718	2,952	3,198	3,452	8.6%

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 76 COMMERCIAL ACCESS CONTROL SOFTWARE MARKET, BY REGION, 2017–2020 (USD MILLION)

Region	2017	2018	2019	2020
North America	592	645	704	675
Europe	440	477	518	493
APAC	414	468	531	527
RoW	124	137	151	146
Total	1,570	1,727	1,904	1,841

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 77 POST-COVID-19 COMMERCIAL ACCESS CONTROL SOFTWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	729	801	878	960	1,044	1,131	9.2%
Europe	530	579	631	686	742	798	8.5%
APAC	590	671	762	861	969	1,085	13.0%
RoW	159	177	196	216	238	260	10.3%
Total	2,008	2,227	2,467	2,723	2,993	3,274	10.3%

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 78 PRE-COVID-19 COMMERCIAL ACCESS CONTROL SOFTWARE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	874	944	1,017	1,092	1,170	1,249	7.4%
Europe	644	694	745	797	851	904	7.0%
APAC	602	680	764	856	956	1,062	12.0%
RoW	165	178	192	207	222	237	7.5%
Total	2,285	2,496	2,718	2,952	3,198	3,452	8.6%

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

Major factors driving the demand for the access control software market are the increasing focus of companies to safeguard their people, IP, facility, and data and to optimize security protocols for the entire visitor cycle proactively.

8.4.2 VISITOR MANAGEMENT SYSTEM

The integration of visitor management software into access control systems helps track and control the entry of visitors to restricted areas. This integration is even more important when visitors have to be given free access to a facility. Incorporating visitor management into an access control system grants access to authorized personnel. Along with it, the rising demand from companies to customize security features, workflows, and branding, making the deployment team manage visitor types, multiple locations, and compliance requirements, is also another major factor boosting the demand for the visitor management software solution.

8.4.3 OTHERS

Others include databases, analytics tools, and software tools. Access control management software is used to fetch saved information (such as data related to fingerprints, hand geometry, iris pattern, and facial features) to match it with the provided information. Access control systems can be optimized for real-time analysis, post-event analysis, and extraction of statistical data. Analytics algorithms may be implemented to analyze recorded data, a task that is challenging and time-consuming for a human operator, especially in cases where a large volume of data must be reviewed.

9 COMMERCIAL SECURITY SYSTEM MARKET, BY SERVICE

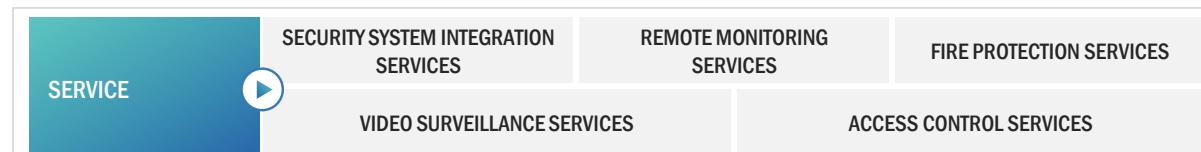
KEY FINDINGS

- The commercial security system market for service in a post-COVID-19 scenario is likely to grow at a CAGR of 8.4% from 2021 to 2026.
- The security system integration services market was valued at USD 73.8 billion in 2020 and is expected to reach USD 124.7 billion by 2026.
- Security system integration services will lead the commercial security service market.
- The video surveillance market for service was valued at USD 4.9 billion in 2020 and is expected to reach USD 10.3 billion by 2026, at a CAGR of 13.8% from 2021 to 2026.

9.1 INTRODUCTION

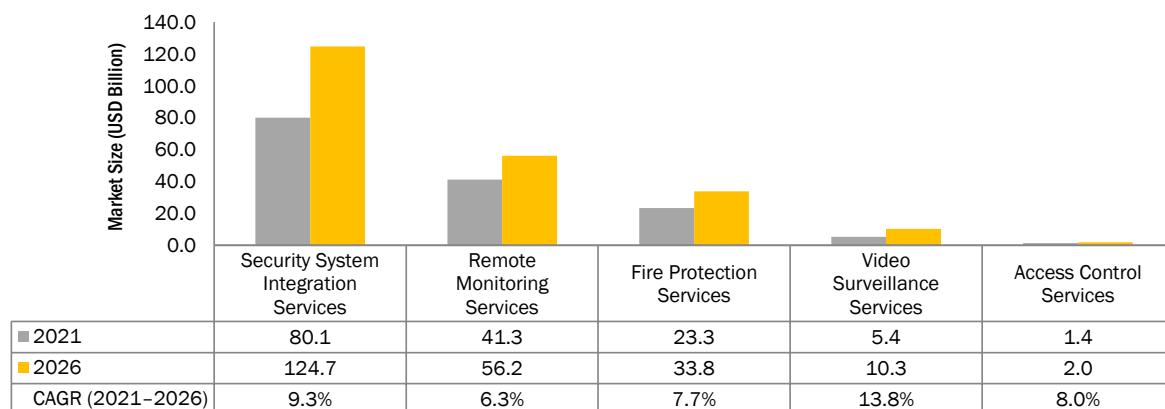
The major types of commercial security system services have been covered in the report, namely security system integration services, remote monitoring services, fire protection services, video surveillance services, and access control services.

FIGURE 30 COMMERCIAL SECURITY SERVICE MARKET, BY OFFERING



Source: Press Releases, Expert Interviews, and MarketsandMarkets Analysis

FIGURE 31 VIDEO SURVEILLANCE SERVICES TO WITNESS HIGHEST CAGR IN COMMERCIAL SECURITY SERVICE MARKET DURING FORECAST PERIOD



Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 79 COMMERCIAL SECURITY SERVICE MARKET, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Security System Integration Services	60.8	66.3	72.6	73.8
Remote Monitoring Services	34.4	36.3	38.6	39.1
Fire Protection Services	19.5	21.4	23.4	21.8
Video Surveillance Services	3.9	4.4	5.0	4.9
Access Control Services	1.2	1.3	1.4	1.3
Total	119.7	129.7	140.9	140.9

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 80 POST-COVID-19 COMMERCIAL SECURITY SERVICE MARKET, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Security System Integration Services	80.1	87.9	96.3	105.3	114.7	124.7	9.3%
Remote Monitoring Services	41.3	44.0	46.9	49.9	53.0	56.2	6.3%
Fire Protection Services	23.3	25.4	27.5	29.7	31.8	33.8	7.7%
Video Surveillance Services	5.4	6.1	7.0	8.0	9.1	10.3	13.8%
Access Control Services	1.4	1.5	1.6	1.7	1.9	2.0	8.0%
Total	151.5	164.9	179.4	194.6	210.5	227.0	8.4%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 81 PRE-COVID-19 COMMERCIAL SECURITY SERVICE MARKET, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Security System Integration Services	87.24	95.40	103.98	113.03	122.41	132.14	8.7%
Remote Monitoring Services	43.84	46.67	49.61	52.64	55.72	58.84	6.1%
Fire Protection Services	27.87	30.23	32.63	35.05	37.45	39.79	7.4%
Video Surveillance Services	6.23	6.94	7.71	8.53	9.41	10.35	10.7%
Access Control Services	1.57	1.68	1.79	1.91	2.03	2.15	6.5%
Total	166.76	180.92	195.72	211.16	227.01	243.27	7.8%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 82 COMMERCIAL SECURITY SERVICE MARKET, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	45.6	49.2	53.2	53.0
Europe	24.1	25.9	27.8	27.3
APAC	37.9	41.6	45.9	46.7
RoW	12.1	13.0	14.0	13.9
Total	119.7	129.7	140.9	140.9

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 83 POST-COVID-19 COMMERCIAL SECURITY SERVICE MARKET, BY REGION, 2021-2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021-2026)
North America	56.8	61.5	66.6	71.9	77.4	83.1	7.9%
Europe	28.9	31.1	33.3	35.6	37.8	40.1	6.7%
APAC	51.0	56.4	62.3	68.6	75.3	82.5	10.1%
RoW	14.8	16.0	17.2	18.6	19.9	21.3	7.5%
Total	151.5	164.9	179.4	194.6	210.5	227.0	8.4%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 84 PRE-COVID-19 COMMERCIAL SECURITY SERVICE MARKET, BY REGION, 2021-2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021-2026)
North America	62.4	67.4	72.6	78.0	83.5	89.2	7.4%
Europe	32.1	34.3	36.6	38.9	41.1	43.3	6.2%
APAC	56.0	61.7	67.7	74.1	80.9	87.9	9.4%
RoW	16.3	17.5	18.8	20.1	21.5	22.8	7.0%
Total	166.8	180.9	195.7	211.2	227.0	243.3	7.8%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

Security system integration services will lead the commercial security service market. This dominant position is primarily due to it being a common service required for the operation of all other commercial security system products. The use of cloud storage for surveillance, use of mobile credentials and contactless biometric systems, and rising adoption of AI are the key drivers for this market.

Video surveillance services are expected to grow primarily due to a rise in the adoption of Video Surveillance-as-a-Service (VSaaS). The growth in this market is driven by the increasing importance of VSaaS in various application areas due to benefits such as remote access and management. As video feeds are stored in the cloud, customers can access and manage them using a desktop, laptop, or mobile device from any location with an internet connection.

9.2 SECURITY SYSTEMS INTEGRATION SERVICES

9.2.1 SECURITY SYSTEM INTEGRATION SERVICES TO OCCUPY LARGEST SHARE DURING FORECAST PERIOD

Security system integration services include the proper installation of smart locks, controllers and readers, emergency security systems, and monitoring devices such as TVs and PDAs. Security system integration includes enabling all such devices to connect with each other and giving communicational signals, which indicate signs according to the situation. Various communication technologies used in security systems include NFC, ZigBee, Bluetooth Smart, and Wiegand 32 bit. Security system integration services include integrating such technologies with other security technologies such as access control systems and intruder alarm management systems.

TABLE 85 COMMERCIAL SECURITY SYSTEM INTEGRATION SERVICE MARKET, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	20.3	22.1	24.2	24.6
Europe	11.8	12.6	13.4	13.3
APAC	22.9	25.3	28.0	28.9
RoW	5.8	6.3	6.9	7.0
Total	60.8	66.3	72.6	73.8

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 86 POST-COVID-19 COMMERCIAL SECURITY SYSTEM INTEGRATION SERVICE MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	26.6	29.2	32.0	34.9	38.0	41.3	9.2%
Europe	14.0	15.0	16.0	16.9	17.9	18.9	6.1%
APAC	31.8	35.4	39.2	43.4	48.0	52.8	10.7%
RoW	7.6	8.4	9.1	10.0	10.9	11.8	9.1%
Total	80.1	87.9	96.3	105.3	114.7	124.7	9.3%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 87 PRE-COVID-19 COMMERCIAL SECURITY SYSTEM INTEGRATION SERVICE MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	29.0	31.7	34.5	37.5	40.5	43.7	8.5%
Europe	15.3	16.3	17.2	18.2	19.1	20.0	5.5%
APAC	34.6	38.4	42.4	46.6	51.2	55.9	10.1%
RoW	8.3	9.1	9.9	10.7	11.6	12.5	8.5%
Total	87.2	95.4	104.0	113.0	122.4	132.1	8.7%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

The major factors driving the popularity of the security system integration market are the rise in network complexities due to third-party application deployment and the increase in the integration of IoT in security system devices. Along with it, security system integration allows for viewing alarms from all systems and its ability to link intrusion or access events to video recordings are also playing a key role in driving the market.

9.3 REMOTE MONITORING SERVICES

9.3.1 NORTH AMERICA TO ACCOUNT FOR LARGEST MARKET IN REMOTE MONITORING SERVICES MARKET

The growing popularity of smartphones and tablet PCs is observed to have a huge impact on the commercial security market. This is mainly because of the deployment of smartphones and tablet PCs, facilitating the development of new user interfaces that are comparatively cheaper than hardware interfaces. This, in turn, eases the process of communication of any unpleasant incident.

Remote monitoring services are provided by companies such as SECOM Co., Ltd. (Japan) and Securitas AB (Sweden). These companies provide subservices, including CCTV surveillance, access control, call service, intruder and fire alarm service, and video analytics, which are critical in many verticals. For instance, commercial properties such as offices, shops, and warehouses would lock their doors at the end of the day. It is a vital need for owners to know instantly if unauthorized access or fire is putting property at risk. Fire alarm services provided by security companies contact the relevant emergency services and owner of the premises to inform them of the emergency situation so that preventative action can be taken at the right time.

TABLE 88 COMMERCIAL SECURITY SYSTEM REMOTE MONITORING SERVICE MARKET, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	16.2	17.0	18.0	18.1
Europe	5.7	6.1	6.5	6.7
APAC	8.7	9.3	10.0	10.2
RoW	3.8	3.9	4.1	4.1
Total	34.4	36.3	38.6	39.1

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 89 POST-COVID-19 COMMERCIAL SECURITY SYSTEM REMOTE MONITORING SERVICE MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	19.1	20.2	21.4	22.7	23.9	25.2	5.8%
Europe	7.1	7.7	8.3	8.9	9.5	10.2	7.5%
APAC	10.8	11.6	12.4	13.3	14.3	15.2	7.1%
RoW	4.3	4.5	4.8	5.0	5.3	5.5	4.9%
Total	41.3	44.0	46.9	49.9	53.0	56.2	6.3%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 90 PRE-COVID-19 COMMERCIAL SECURITY SYSTEM REMOTE MONITORING SERVICE MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	20.2	21.4	22.6	23.9	25.2	26.4	5.5%
Europe	7.6	8.1	8.7	9.4	10.0	10.7	7.2%
APAC	11.5	12.3	13.2	14.1	15.0	15.9	6.8%
RoW	4.6	4.8	5.1	5.3	5.5	5.8	4.7%
Total	43.8	46.7	49.6	52.6	55.7	58.8	6.1%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

Strong social distancing norms during the COVID-19 pandemic are encouraging enterprises to deploy the work-from-home (WFH) mode. This has led to enterprises focusing more on deploying remote monitoring services in order to run their businesses efficiently. This is expected to drive the adoption of remote monitoring services commercially.

9.4 FIRE PROTECTION SERVICES

9.4.1 FIRE PROTECTION SERVICES TO WITNESS HIGHEST GROWTH IN EUROPE

Fire protection systems are useful only if they are properly engineered, designed, installed, managed, and maintained. Fire detection, prevention, and protection are carried out by fire disaster management systems; any malfunctioning in these systems may create a serious problem. By service, the fire protection services market has been segmented into engineering services, installation and design services, maintenance services, managed services, and other services.

TABLE 91 COMMERCIAL FIRE PROTECTION SERVICE MARKET, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Engineering Services	3.5	3.8	4.2	3.8
Installation & Design Services	3.0	3.3	3.7	3.4
Maintenance Services	7.0	7.8	8.7	8.2
Managed Services	4.8	5.2	5.6	5.1
Other Services	1.2	1.3	1.4	1.2
Total	19.5	21.4	23.4	21.8

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 92 POST-COVID-19 COMMERCIAL FIRE PROTECTION SERVICE MARKET, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Engineering Services	4.07	4.39	4.72	5.04	5.36	5.65	6.8%
Installation & Design Services	3.68	4.03	4.38	4.75	5.11	5.46	8.2%
Maintenance Services	8.87	9.77	10.73	11.71	12.71	13.69	9.1%
Managed Services	5.41	5.80	6.20	6.58	6.95	7.28	6.1%
Other Services	1.31	1.40	1.50	1.58	1.67	1.74	5.8%
Total	23.34	25.39	27.52	29.67	31.80	33.81	7.7%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 93 PRE-COVID-19 COMMERCIAL FIRE PROTECTION SERVICE MARKET, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Engineering Services	4.86	5.22	5.59	5.96	6.31	6.65	6.5%
Installation & Design Services	4.40	4.79	5.20	5.61	6.02	6.42	7.9%
Maintenance Services	10.59	11.63	12.72	13.84	14.97	16.11	8.7%
Managed Services	6.46	6.91	7.35	7.78	8.18	8.57	5.8%
Other Services	1.57	1.67	1.77	1.87	1.96	2.05	5.5%
Total	27.87	30.23	32.63	35.05	37.45	39.79	7.4%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 94 COMMERCIAL FIRE PROTECTION SERVICE MARKET, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	7.4	8.1	8.9	8.3
Europe	5.6	6.1	6.6	6.1
APAC	4.4	4.9	5.4	5.2
RoW	2.1	2.3	2.5	2.3
Total	19.5	21.4	23.4	21.8

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 95 POST-COVID-19 COMMERCIAL FIRE PROTECTION SERVICE MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	8.9	9.7	10.5	11.3	12.2	13.0	7.9%
Europe	6.5	7.0	7.5	8.0	8.5	8.9	6.7%
APAC	5.6	6.2	6.8	7.4	8.0	8.6	9.0%
RoW	2.4	2.6	2.8	3.0	3.1	3.3	6.4%
Total	23.3	25.4	27.5	29.7	31.8	33.8	7.7%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

TABLE 96 PRE-COVID-19 COMMERCIAL FIRE PROTECTION SERVICE MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	10.6	11.6	12.5	13.4	14.4	15.3	7.5%
Europe	7.7	8.3	8.9	9.5	10.0	10.6	6.4%
APAC	6.6	7.3	8.0	8.7	9.4	10.1	8.7%
RoW	2.9	3.1	3.3	3.5	3.7	3.8	6.0%
Total	27.9	30.2	32.6	35.1	37.4	39.8	7.4%

Source: Fire Protection Association, National Fire Sprinkler Association, American Fire Sprinkler Association, Alarm Association of Florida, Fire Suppression Systems Association (FSSA), Fire Protection Association Australia (FPA Australia), National Fire Protection Association, Company Websites, Expert Interviews, White Papers, and MarketsandMarkets Analysis

Fire protection services are witnessing growth primarily due to growing maintenance services, managed services, engineering services, and installation and design services. Managed services ensure security as well as the smooth running of business operations. Engineering services are used for understanding the need for fire protection and suggesting ways for fire protection. Installation and design services include coordinating with architects and other sub-contractors.

9.4.2 MAINTENANCE SERVICES

Maintenance services include timely servicing and auditing of fire protection systems to ensure that fire protection systems meet all required fire safety standards and function appropriately during an emergency. Maintenance services include inspection, testing, servicing, and repair of components, and monitoring of fire protection systems and their components. The services comprise equipment supply, system testing and commissioning, and regular preventative maintenance. The types of maintenance services include reactive maintenance, preventive maintenance, informative maintenance, and real-time monitoring. These services are vital for industry verticals such as oil, gas, and mining; energy & power; commercial; and transportation & logistics.

9.4.3 MANAGED SERVICES

Management services help manage fire safety and security in case of an emergency or fire. Presently, companies provide round-the-clock electronic surveillance of buildings' safety systems, which includes video surveillance and security management. Managed services are provided through smart electronic interfaces that allow integrated and semi- or fully automated management of the situation when a fire breaks out. Managed service providers not only ensure the security of business information but also ensure the smooth functioning of business operations. The market for managed security services is dominated by vendors such as Ericsson, IBM, and Accenture. These vendors offer services ranging from design and consultation and upgrading and integration to maintenance and support of processes associated with setting up fire protection infrastructure.

9.4.4 ENGINEERING SERVICES

Fire protection for a residential building, commercial building, or any other complex industrial facility requires comprehensive knowledge of possible hazards. Fire protection engineering services include understanding the need for fire protection and suggesting ways to avoid fire accidents to clients. Engineering service providers are responsible for the fire safety strategy of a project. Such providers understand client needs by examining the facility/building, which is then followed by finding fire burst loopholes or caution areas. Engineers assess the risk of fire and suggest risk management services. In some cases, fire engineering services include understanding fire protection needs and suggesting the designing of fire protection systems. It comprises strategic fire prevention advice, consulting, construction supervision and inspection, and proper fire risk assessment. Engineers need to keep up with the changing environment as the facility/building must be able to adapt to innovative fire designs. With changing government regulations, facilities must be able to update new codes, materials, and rapidly evolving technologies. Wolverine Fire Protection, International Fire Consultants, and Fire Engineering Services are a few companies providing engineering services.

9.4.5 INSTALLATION AND DESIGN SERVICES

Fire safety systems are installed in commercial, industrial, and public buildings to keep people safe in an emergency. Designers design fire protection systems that are client-specific and are expected to detect and respond to fire to ensure occupant safety. Designers coordinate with architects, electricians, owners, and contractors to design foolproof fire protection systems. Installation and design services include system integration services, open protocol options, exports, energy divisions, fire safety training, and other such services. Assured Fire & Security, VFP Fire Systems, ARA Group, Fire Equipment, and EMCOR Group are among the installation and design service providers.

9.4.6 OTHER SERVICES

Other services include tenancy and refurbishment upgrade services. Apart from the services mentioned above, many companies provide more customized services, such as 3D modeling of pool fires and jet fires, and design of thermal radiation screens.

9.5 VIDEO SURVEILLANCE SERVICES

9.5.1 INSTALLATION AND MAINTENANCE SERVICES TO ACCOUNT FOR LARGEST MARKET IN VIDEO SURVEILLANCE SERVICE MARKET

The video surveillance service segment has been classified into VSaaS and installation and maintenance services.

TABLE 97 COMMERCIAL VIDEO SURVEILLANCE SERVICE MARKET, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Installation & Maintenance Services	2.0	2.2	2.4	2.3
Video Surveillance as a Service (VSaaS)	1.9	2.2	2.5	2.5
Total	3.9	4.4	5.0	4.9

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 98 POST-COVID-19 COMMERCIAL VIDEO SURVEILLANCE SERVICE MARKET, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Installation & Maintenance Services	2.5	2.8	3.1	3.5	3.8	4.2	10.6%
Video Surveillance as a Service (VSaaS)	2.9	3.3	3.9	4.5	5.3	6.1	16.4%
Total	5.4	6.1	7.0	8.0	9.1	10.3	13.8%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 99 PRE-COVID-19 COMMERCIAL VIDEO SURVEILLANCE SERVICE MARKET, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Installation & Maintenance Services	2.9	3.2	3.4	3.7	3.9	4.2	7.6%
Video Surveillance as a Service (VSaaS)	3.3	3.8	4.3	4.8	5.5	6.1	13.2%
Total	6.2	6.9	7.7	8.5	9.4	10.3	10.7%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 100 COMMERCIAL VIDEO SURVEILLANCE SERVICE MARKET, BY REGION, 2017–2020 (USD MILLION)

Region	2017	2018	2019	2020
North America	1,190	1,335	1,486	1,442
Europe	767	851	937	909
APAC	1,604	1,874	2,173	2,182
RoW	294	325	357	334
Total	3,854	4,384	4,953	4,867

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 101 POST-COVID-19 COMMERCIAL VIDEO SURVEILLANCE SERVICE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	1,571	1,765	1,985	2,228	2,492	2,771	11.6%
Europe	981	1,089	1,211	1,343	1,483	1,628	10.3%
APAC	2,474	2,889	3,378	3,940	4,578	5,288	16.0%
RoW	360	399	442	489	538	589	10.0%
Total	5,386	6,142	7,016	8,001	9,091	10,275	13.3%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

TABLE 102 PRE-COVID-19 COMMERCIAL VIDEO SURVEILLANCE SERVICE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	1,813	1,988	2,171	2,364	2,564	2,773	9.3%
Europe	1,116	1,209	1,304	1,400	1,498	1,595	7.9%
APAC	2,879	3,288	3,739	4,239	4,784	5,383	13.8%
RoW	424	458	493	528	563	599	7.6%
Total	6,232	6,943	7,707	8,531	9,410	10,350	11.0%

Source: Secondary Literature, Annual Reports, Press Releases, Journals, Industry News, Organizations, Associations, White Papers, Expert Interviews, Blogs, and MarketsandMarkets Analysis

Installation and maintenance services are expected to be driven by the rise in sales of video surveillance hardware. VSaaS adds unprecedented flexibility to the video surveillance system. Since surveillance footage is stored off-site, it is better protected from accidents, theft, and tampering. VSaaS systems only require on-site cameras, offering the most cost-effective solutions to end users. Hence, the VSaaS market is expected to witness rapid growth.

9.5.2 VSAAS

VSAAS refers to hosted cloud-based video surveillance. The service typically includes video recording, storage, remote viewing, management alerts, and cybersecurity. It is a combination of recording and watching images on monitors or mobile phones through data centers. VSAAS servers are installed in data centers and are used by security companies to offer Managed Video Software-as-a-Service (MVaaS). VSAAS, popularly known as hosted and managed video surveillance, incorporates on-site storage, off-site storage, and remote video monitoring through a central station.

VSAAS is a cloud-based surveillance system that allows the operator to remotely manage the recording, storage, viewing, and monitoring of a surveillance video from other locations. In VSAAS, cameras are installed at various locations, and the video is streamed over the internet. These services are made available to users through the internet from a cloud computing server. As VSAAS is managed in the cloud, the operator can access the footage or cameras from anywhere, at any time through a desktop, laptop, or mobile device. Cloud services are designed to provide scalable and easy access to applications or resources. Cloud services include storage backup, hosted office suite, and database processing. VSAAS finds applications in government, city surveillance and infrastructure, banking, retail, transportation, education, and residential sectors. It is segmented into hosted, managed, and hybrid services.

9.5.2.1 Hosted

9.5.2.1.1 Rising adoption of cloud services drives growth of hosted VSAAS market

Hosted service is also termed as off-site or remote VSAAS. In hosted services, data is stored off-site at the location of the security camera. The video generated on-site is transferred over a network to the service provider's data center, where it is managed and stored. The video is either stored at the provider's own data center or at a data center managed by a third party, such as Amazon or Microsoft Azure. Video data is transferred from the security camera to the data center over a wide area network (WAN). Hosted VSAAS is the most significant breakthrough in traditional video surveillance, and it has become the uniform form of cloud services. Hosted VSAAS is expected to create opportunities for small and medium-sized enterprises. However, some system integrators are targeting larger enterprises.

9.5.2.2 Managed

9.5.2.2.1 Reduced operational costs provide opportunities for managed VSAAS

Managed VSAAS is referred to as cloud computing. It involves storing on-site video recordings at the customer's site, which is then remotely maintained, monitored, and managed by the service provider. Managed VSAAS is where the customer has to pay for managing and viewing the video remotely. In some cases, a video is also captured on a storage system at the user's premises. Managed VSAAS simplifies hardware-related issues and lowers the need to monitor manpower.

9.5.2.3 Hybrid

9.5.2.3.1 Ensure more data security, remote access, flexibility, and scalability

Hybrid VSAAS is a combination of hosted and managed VSAAS. In this, the video is transferred to the service provider and also stored at the end user's premises on cameras or on network-attached storage devices. Hybrid VSAAS also provides backup for the stored data. Hybrid services ensure more data security, along with remote access, flexibility to add devices, flexible payment structure, and scalability of data storage. They are widely adopted for commercial applications, including enterprises, retail stores, hospitals, and financial institutions.

9.5.3 INSTALLATION AND MAINTENANCE SERVICES

9.5.3.1 Growing video surveillance market drives growth of service market

Companies provide after-sales services, such as installation, cabling, repairing, and software updates, to end users. Support and maintenance services involve resolving issues, mainly regarding operations, after installation, along with training. However, the ultimate objective of the maintenance process is to keep the system at an acceptable standard.

Maintenance involves a set of actions that are employed during inspection, repair, planned maintenance, and replacement. A repair usually entails a great amount of effort as it involves restoring the equipment to its operating condition. As video surveillance hardware and software markets grow significantly, they will create an opportunity for the services market.

9.6 ACCESS CONTROL SERVICES

9.6.1 GROWING IMPLEMENTATION OF SECURITY SOLUTIONS TO BOOST DEMAND FOR INSTALLATION AND INTEGRATION SERVICES

Post-sales services include installation, cabling, repairing, and software updates. Support and maintenance services are required after implementation to ensure a smooth transition after the system is deployed. After system installation, comprehensive support and user training are essential services. The ultimate objective of a maintenance process is to keep the system at an acceptable standard. Maintenance involves a set of actions that are employed during the inspection, repair, planned maintenance, and replacement tasks. A repair usually entails the major amount of effort involved in a maintenance process comprising restoring equipment to its operating condition. HID Global (US), Johnson Controls International plc (Ireland), dormakaba Holding AG (Switzerland), Allegion plc (Ireland), Stanley Security Solutions, Inc. (US), and Brivo, Inc. (US) are among a few of the major providers of access control services.

TABLE 103 COMMERCIAL ACCESS CONTROL SERVICE MARKET, BY OFFERING, 2017–2020 (USD MILLION)

Offering	2017	2018	2019	2020
ACaaS	283	322	365	363
Installation and Integration	313	330	347	321
Support and maintenance	573	608	646	603
Total	1,170	1,259	1,359	1,287

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 104 POST-COVID-19 COMMERCIAL ACCESS CONTROL SERVICE MARKET, BY OFFERING, 2021–2026 (USD MILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
ACaaS	406	460	521	587	657	732	12.5%
Installation and Integration	333	353	372	391	410	427	5.1%
Support and maintenance	633	677	722	768	814	858	6.3%
Total	1,373	1,489	1,614	1,746	1,880	2,017	8.0%

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 105 PRE-COVID-19 COMMERCIAL ACCESS CONTROL SERVICE MARKET, BY OFFERING, 2021–2026 (USD MILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
ACaaS	463	518	577	641	708	779	11.0%
Installation and Integration	380	397	412	427	442	454	3.6%
Support and maintenance	722	761	800	839	877	914	4.8%
Total	1,565	1,676	1,790	1,907	2,027	2,147	6.5%

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 106 COMMERCIAL ACCESS CONTROL SERVICE MARKET, BY REGION, 2017–2020 (USD MILLION)

Region	2017	2018	2019	2020
North America	535	555	598	566
Europe	261	318	335	311
APAC	272	295	328	319
RoW	102	92	98	92
Total	1,170	1,259	1,359	1,287

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 107 POST-COVID-19 COMMERCIAL ACCESS CONTROL SERVICE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	603	653	708	764	823	882	7.9%
Europe	324	344	364	385	404	423	5.5%
APAC	349	388	431	477	525	576	10.6%
RoW	97	104	112	120	128	136	7.0%
Total	1,373	1,489	1,614	1,746	1,880	2,017	8.0%

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

TABLE 108 PRE-COVID-19 COMMERCIAL ACCESS CONTROL SERVICE MARKET, BY REGION, 2021–2026 (USD MILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	691	740	790	841	894	947	6.5%
Europe	373	390	407	423	439	453	4.0%
APAC	392	430	471	513	558	605	9.0%
RoW	109	116	122	129	136	143	5.5%
Total	1,565	1,676	1,790	1,907	2,027	2,147	6.5%

Source: Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

The growing implementation of security solutions will boost the demand for installation and integration services. Along with it, the rising demand for support services offered in the access control market includes real-time monitoring of access control systems, scheduled backup of data, and advisory and consulting. All these services are equally important, thereby accelerating the growth of the market for access control services.

9.6.2 INSTALLATION AND INTEGRATION

Installation services include the deployment of door locks, controllers, readers, exit switches, emergency switches, and PCs. Integration includes enabling these devices to connect and provide communication access. The communication interface technologies include TCP/IP, RS-232, RS-485, and 24- or 32-bit Wiegand. Integration services also include integrating access control systems with other security systems such as video surveillance solutions, intruder alarm management systems, and entrance control systems.

9.6.3 SUPPORT AND MAINTENANCE

Support and maintenance services include periodical upgrading of software and hardware components. There are 2 types of maintenance services offered for access control systems—preventive and reactive. Reactive maintenance services are adopted after the sudden breakdown of access control systems, whereas preventive maintenance services help reduce future breakdowns or unplanned downtime.

9.6.4 ACCESS CONTROL AS A SERVICE

Increased concerns regarding safety and security in the workplace have led to the deployment of better security systems at industrial facilities. With the rising demand for cloud- and IoT-based systems, numerous market players are integrating advanced technology-based physical access control systems. This chapter describes the market for Access Control as a Service (ACaaS)—a cloud service platform for access control. The market for ACaaS has been subsegmented into hosted, managed, and hybrid services. The ACaaS market is dominated by HID Global (US), Johnson Controls International PLC (Ireland), dormakaba Holding AG (Switzerland), Allegion Plc (Ireland), Stanley Security Solutions, Inc. (US), and Brivo, Inc. (US).

Cloud computing has become the focus of attention in almost all industries; several enterprises and organizations today outsource operational services and workflows to service providers who offer cloud-based services through a variety of service models, such as Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS). ACaaS applies the principles of SaaS to access control. These services are built on an open-source platform. It removes the need to purchase expensive software and provides the freedom to pay based on consumption. ACaaS enables customers from small and medium-sized businesses (SMBs) to pay for specific features according to their requirements.

Traditional access control systems have some limitations, such as the software being compatible only with certain equipment, which compels users to purchase whatever the provider recommends. Consequently, traditional access control systems increase the cost of ownership as a user needs to purchase both software and hardware (which need periodic maintenance and upgrades). However, the ACaaS platform assigns the right access to the right people in real time. Also, it can be deployed from 2 doors to as many as the physical infrastructure can support. The major reasons behind the increasing adoption of ACaaS include the growing use of mobile devices as authentication checkpoints and the increasing number of connected devices.

Brivo, Inc. (US) and Cloudstructure, Inc. (US) are the leading providers of cloud-based access control and video surveillance products for physical security and Internet of Things (IoT) applications. ACaaS providers offer services based on the number of doors and schedule services at regular intervals (monthly or yearly). To capture the significant market share, Brivo, Inc. (US) has launched a digital credential solution called the Mobile Pass that locks/unlocks doors using a smartphone. The popularity of mobile credentials is expected to grow as mobile phones allow the convenience of not carrying any cards and updating any existing hardware.

Different types of hosted ACaaS software are maintained by the owner of the solutions; therefore, users need not pay for the maintenance of the servers. This has been the key driving factor for the growth of the market for hosted services. The ability of a third party to update the access rights of the user saves the time and cost spent on monitoring and managing all access control activities. Also, users have to pay only for the opt-out services. The benefits offered by the hosted and managed services, such as reduced labor cost and minimized capital expenditure, as well as the freedom given to companies to stay focused on core business areas, contribute most to the growth of the market for ACaaS. The demand for these services is expected to be driven by manufacturing & residential, government, healthcare, and commercial verticals. The market is evolving with new technologies constantly replacing traditional access control systems. Many companies are introducing new technologies that can be integrated with access control systems and delivered as a service.

9.6.4.1 Hosted ACaaS

In hosted services, the servers holding access control data are placed at third-party locations. A user receives complete control over the access rights but is exempted from maintaining the infrastructure. A hosted ACaaS is enabled with online management of remote access and control. With hosted services, multiple facilities can be networked. As the solution is web-based, it does not require any client software for supporting access control systems and is nearly maintenance-free.

The high rate of adoption of access control systems to ensure high safety and security and prevents unauthorized individuals from gaining access to commercial and corporate infrastructure; this has been the major factor driving the demand for hosted services. The increased need to protect people and properties across the manufacturing plants of industries such as oil & gas, chemicals, pharmaceuticals, metal & mining, power, automotive, water treatment, cement, and textiles is expected to boost the growth of the hosted ACaaS market.

The growth of the market for hosted services is attributed to the rapid industrialization and increased security concerns in APAC countries. The high adoption of advanced mechanical and electronic security services has been the key driving factor for the market's growth in North America.

9.6.4.2 Managed ACaaS

In managed ACaaS, a user pays a third party to administer the access control platform. The third party manages the services, including adding/deleting access rights, changing/assigning schedules, printing badges and credentials, and door ajar/proped monitoring. All the above third-party services are managed by the servers located at the third-party location. Managed services are handled by third-party servers, reducing the user's burden of adding and deleting access rights. This is one of the key factors driving the market for managed access control as a service market.

In managed access control as a service, any kind of changes or updates done in the security system are done by the service provider. This benefit of the managed access control where everything is administered by trained security professionals off-site is one of the key reasons driving market growth.

9.6.4.3 Hybrid ACaaS

Hybrid ACaaS is a combination of both hosted and managed access control services. In this type of access control, a certain part of the access control system is handled by the user, while the remaining functions are outsourced to a third party. In this model, access permissions are not associated directly with the attributes or the roles. These attributes are adopted for dynamically assigning and authenticating user roles.

Hybrid ACaaS' flexibility of use depends on computing needs and dynamic or highly changeable workloads, which gives a lot of data deployment options. Its flexibility and scalability eliminate the need for a company to invest in resources and only pay for the resources it consumes. This cost saving for companies is likely to contribute significantly to the growing adoption of hybrid ACaaS.

10 COMMERCIAL SECURITY SYSTEM MARKET, BY VERTICAL

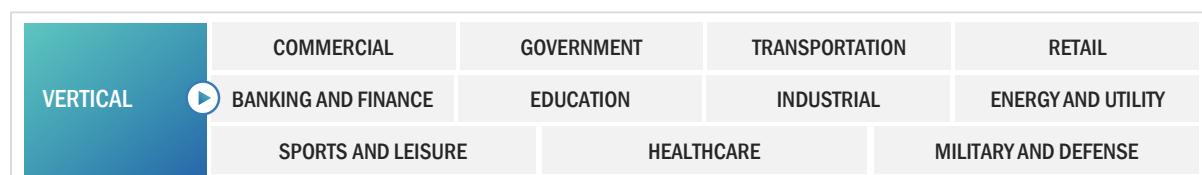
KEY FINDINGS

- The overall commercial security system market, based on vertical, is expected to grow at a CAGR of 8.9% from 2021 to 2026.
- The commercial security system market for the commercial vertical was valued at USD 62.5 billion in 2020 and is expected to reach USD 110.2 billion by 2026, at a CAGR of 10.1% from 2021 to 2026.
- The largest size of the commercial segment is attributed to the increasing incidences of robbery and theft in commercial buildings.
- The commercial security system market for the energy and utility vertical is expected to be valued at USD 21.2 billion by 2026, growing at the highest CAGR of 10.2% from 2021 to 2026.
- A high level of fire protection is an integral part of responsible risk management strategies; oil and gas facilities require the best protection available, which is driving the adoption of commercial security systems in the energy and utility vertical.

10.1 INTRODUCTION

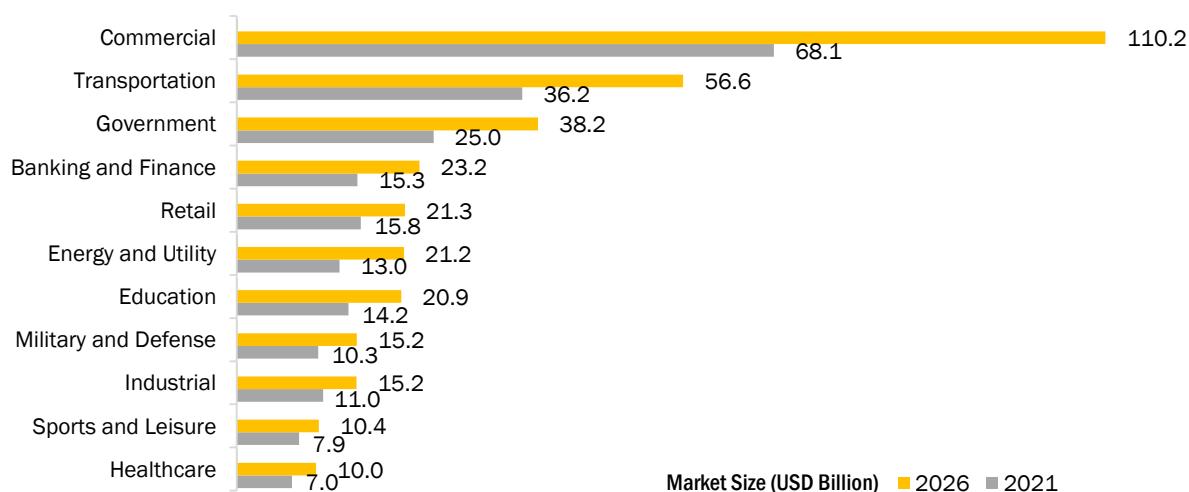
This chapter focuses on the various verticals in which security solutions are used. This includes commercial, government, military & defense, transportation, retail, banking and finance, education, industrial, energy and utility, sports and leisure, and healthcare. Video surveillance applications were previously limited to national and standalone security applications. Nowadays, the implementation of video surveillance systems is increasing in every area to provide security, protect infrastructure (buildings, areas, and historical places) from damages, and reduce violent activities such as robberies and terrorist attacks. With increasing crime rates and reducing the cost of IP cameras, video surveillance systems have started penetrating various applications as mentioned above.

FIGURE 32 COMMERCIAL SECURITY SYSTEM MARKET, BY VERTICAL



Source: Press Releases, Expert Interviews, and MarketsandMarkets Analysis

FIGURE 33 COMMERCIAL VERTICAL TO GROW AT HIGHEST CAGR DURING FORECAST PERIOD



Source: Annual Report, National Fire Protection Association (NFPA) (US), Fire Protection Association (UK), The International Biometric Society (US), Electronic Security Association (US), Federal Aviation Administration (FAA) (US), Expert Interview, and MarketsandMarkets Analysis

TABLE 109 COMMERCIAL SECURITY SYSTEM MARKET, BY VERTICAL, 2017–2020 (USD BILLION)

Vertical	2017	2018	2019	2020
Commercial	50.9	56.6	62.8	62.5
Government	19.8	21.6	23.6	23.2
Transportation	28.5	31.2	34.1	33.6
Retail	13.7	14.6	15.6	15.0
Banking and Finance	12.4	13.4	14.6	14.3
Education	11.6	12.6	13.6	13.3
Industrial	9.3	10.0	10.8	10.4
Energy and Utility	9.8	10.9	12.0	12.0
Sports and Leisure	7.0	7.4	7.9	7.6
Healthcare	5.8	6.3	6.8	6.6
Military and Defense	8.4	9.1	9.9	9.7
Total	177.3	193.8	211.7	208.1

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 110 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET, BY VERTICAL, 2021–2026 (USD BILLION)

Vertical	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Commercial	68.1	75.4	83.4	91.9	100.8	110.2	10.1%
Government	25.0	27.3	29.8	32.5	35.3	38.2	8.9%
Transportation	36.2	39.7	43.6	47.7	52.1	56.6	9.3%
Retail	15.8	16.8	17.9	19.1	20.2	21.3	6.3%
Banking and Finance	15.3	16.7	18.2	19.8	21.4	23.2	8.6%
Education	14.2	15.4	16.7	18.0	19.4	20.9	8.0%
Industrial	11.0	11.8	12.6	13.5	14.3	15.2	6.7%
Energy and Utility	13.0	14.4	16.0	17.6	19.4	21.2	10.2%
Sports and Leisure	7.9	8.4	8.9	9.4	9.9	10.4	5.7%
Healthcare	7.0	7.6	8.2	8.8	9.4	10.0	7.4%
Military and Defense	10.3	11.2	12.2	13.2	14.2	15.2	8.1%
Total	223.9	244.7	267.4	291.4	316.5	342.6	8.9%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

The largest size of this market for the commercial segment is attributed to the increasing incidences of robbery and theft in commercial buildings. To protect commercial assets, property owners are buying security systems. Also, robberies and crimes pertaining to information security are major concerns nowadays. Corporates invest millions of dollars in security technology with the intention of increasing security, protecting people, and solving security issues. Moreover, corporate companies are very sensitive toward data and information protection, which has led to many data companies adopting access control systems for their server rooms. Huge companies use biometric security systems to protect against

unauthorized access to data centers. Further, in business process outsourcing (BPOs), door access control systems based on finger veins are used to protect the data and server rooms. Door access controls are physical security systems that assure the security of a server room by means of limiting access to authorized persons only. Such advanced security needs further propel the demand for security systems in the commercial sector.

TABLE 111 COMMERCIAL SECURITY SYSTEM MARKET FOR HARDWARE AND SOFTWARE OFFERING, BY VERTICAL, 2017–2020 (USD BILLION)

Vertical	2017	2018	2019	2020
Commercial	16.6	18.7	21.0	20.1
Government	6.4	7.1	7.9	7.5
Transportation	9.2	10.3	11.4	10.9
Retail	4.5	4.9	5.2	4.9
Banking and Finance	4.0	4.4	4.9	4.6
Education	3.7	4.1	4.5	4.2
Industrial	3.1	3.4	3.7	3.4
Energy and Utility	3.2	3.6	4.1	3.9
Sports and Leisure	2.3	2.4	2.6	2.4
Healthcare	1.9	2.1	2.3	2.1
Military and Defense	2.7	3.0	3.3	3.1
Total	57.6	64.1	70.8	67.2

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 112 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR HARDWARE AND SOFTWARE OFFERING, BY VERTICAL, 2021–2026 (USD BILLION)

Vertical	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Commercial	21.9	24.4	27.1	30.0	33.1	36.3	10.7%
Government	8.1	8.9	9.8	10.8	11.9	13.0	10.1%
Transportation	11.8	13.1	14.5	16.1	17.7	19.5	10.6%
Retail	5.1	5.5	6.0	6.4	6.9	7.3	7.4%
Banking and Finance	5.0	5.5	6.1	6.7	7.4	8.0	10.0%
Education	4.5	4.9	5.4	5.9	6.4	6.9	8.8%
Industrial	3.6	3.9	4.2	4.5	4.9	5.2	7.6%
Energy and Utility	4.3	4.8	5.3	5.9	6.6	7.3	11.2%
Sports and Leisure	2.5	2.7	2.9	3.1	3.3	3.5	6.3%
Healthcare	2.3	2.5	2.7	2.9	3.1	3.4	8.2%
Military and Defense	3.3	3.7	4.0	4.4	4.8	5.1	9.0%
Total	72.4	79.8	88.0	96.8	106.0	115.5	9.8%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

The market for energy and utility is expected to grow at the highest CAGR primarily due to an increase in compliance with government regulatory requirements, the necessity to prevent and investigate thefts, unauthorized access or other uncontrolled damages to critical infrastructure, and the need for remote monitoring of utility sites. The American government formed the Nuclear Regulatory Commission (US), a separate agency for protecting nuclear power plant safety, which has set rules and regulations for security and safety at nuclear power plants in the US. For instance, the strict screening of a person entering protected areas needs to be done with the help of advanced security systems such as x-ray machines, metal and explosive detectors, and fire barrier materials such as Thermo-lag, Hemyc/MT, Kaowool, and FP-60, which have to be available to prevent the fire emergency situation.

TABLE 113 COMMERCIAL SECURITY SERVICE MARKET, BY VERTICAL, 2017–2020 (USD BILLION)

Vertical	2017	2018	2019	2020
Commercial	34.31	37.90	41.81	42.40
Government	13.42	14.53	15.77	15.75
Transportation	19.27	20.86	22.69	22.71
Retail	9.27	9.78	10.38	10.13
Banking and Finance	8.37	8.99	9.71	9.66
Education	7.89	8.48	9.14	9.08
Industrial	6.26	6.65	7.10	6.96
Energy and Utility	6.59	7.24	7.96	8.06
Sports and Leisure	4.72	4.97	5.27	5.13
Healthcare	3.93	4.21	4.52	4.46
Military and Defense	5.65	6.08	6.58	6.54
Total	119.67	129.70	140.93	140.87

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 114 POST-COVID-19 COMMERCIAL SECURITY SERVICE MARKET, BY VERTICAL, 2021–2026 (USD BILLION)

Vertical	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Commercial	46.26	51.05	56.25	61.82	67.70	73.88	9.8%
Government	16.91	18.39	19.97	21.65	23.40	25.21	8.3%
Transportation	24.46	26.68	29.07	31.62	34.31	37.12	8.7%
Retail	10.63	11.29	11.97	12.66	13.34	14.01	5.7%
Banking and Finance	10.33	11.19	12.11	13.08	14.09	15.13	7.9%
Education	9.70	10.48	11.31	12.19	13.09	14.01	7.6%
Industrial	7.35	7.85	8.37	8.91	9.44	9.97	6.3%
Energy and Utility	8.77	9.66	10.63	11.67	12.77	13.93	9.7%
Sports and Leisure	5.37	5.69	6.01	6.34	6.65	6.96	5.3%
Healthcare	4.75	5.10	5.48	5.88	6.28	6.69	7.1%
Military and Defense	6.99	7.56	8.17	8.80	9.45	10.12	7.7%
Total	151.52	164.93	179.36	194.61	210.53	227.03	8.4%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

The rise in the adoption rate of security products, such as video surveillance systems, fire protection systems, and access control systems, is high as they protect assets and human life. To maintain the flawless performance of such systems, regular maintenance services are required, which is driving the demand for the commercial security service market globally.

10.2 COMMERCIAL

10.2.1 USE OF SECURITY SYSTEMS MINIMIZES RISK OF ANY SECURITY BREACH IN ANY SPACE

In this segment, the following commercial areas: office spaces, data centers, hospitality centers, and warehouses have been considered. With the growing adoption of electronic locks and mobile access control systems, the hospitality sector also provides growth opportunities to the access control market. These systems provide convenience and enhance security. Mobile access control systems provide convenience to users by offering credentials over mobile phones. Major players in the access control market providing access control solutions for the commercial vertical are Johnson Controls (Ireland), Bosch Security Systems (Germany), Allegion (Ireland), HID Global (US), and dormakaba Holding (Switzerland).

Video surveillance systems are also adopted in the commercial sector. For instance, in warehouses, material and product losses occur because of ignorance or theft, which can seriously impact the bottom line of a production setup. Video surveillance has been proven to reduce theft and vandalism. Moreover, it has been observed that employees become more conscious and productive in their work when they are monitored. To safeguard people and buildings, various governments enforce the installation of fire protection devices in commercial premises. This includes fire protection systems such as flame detectors, smoke detectors, and water sprinklers.

TABLE 115 COMMERCIAL SECURITY SYSTEM MARKET FOR COMMERCIAL VERTICAL, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Hardware & Software	16.6	18.7	21.0	20.1
Service	34.3	37.9	41.8	42.4
Total	50.9	56.6	62.8	62.5

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 116 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR COMMERCIAL VERTICAL, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware & Software	21.9	24.4	27.1	30.0	33.1	36.3	10.7%
Service	46.3	51.0	56.2	61.8	67.7	73.9	9.8%
Total	68.1	75.4	83.4	91.9	100.8	110.2	10.1%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 117 COMMERCIAL SECURITY SYSTEM MARKET FOR COMMERCIAL VERTICAL, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	22.3	25.3	28.4	28.7
Europe	12.6	13.9	15.1	14.6
APAC	9.9	11.0	12.1	12.1
RoW	6.1	6.5	7.1	7.1
Total	50.9	56.6	62.8	62.5

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 118 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR COMMERCIAL VERTICAL, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	31.7	35.5	39.6	44.1	48.9	54.0	11.2%
Europe	15.6	17.0	18.5	20.0	21.5	23.1	8.1%
APAC	13.2	14.7	16.3	18.0	19.9	21.9	10.5%
RoW	7.6	8.3	9.0	9.7	10.5	11.3	8.3%
Total	68.1	75.4	83.4	91.9	100.8	110.2	10.1%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

Commercial areas require various security solutions such as access control, fire protection, and video surveillance systems. Manned security for all physical locations is difficult and expensive. The demand for access control systems is increasing since they reduce the need for manned security significantly, thereby reducing security expenditure. These factors are encouraging commercial and service organizations to adopt access control systems to protect people and property.

10.3 GOVERNMENT

10.3.1 DEMAND FROM GOVERNMENTS OF VARIOUS COUNTRIES TO RESTRICT UNAUTHORIZED ENTRY AND SAFEGUARDING ITS ASSETS

The government segment includes all government or municipal buildings, offices, government agencies and institutions, government organizations, courthouses, customhouses, fire stations, post offices, legislative buildings, city or visit centers and halls, historical buildings, immigration offices, and embassies. These are always occupied and contain important assets. Automated fire detectors, fire alarm systems, video surveillance systems, and smoke and heat detectors are a few of the products that are extensively used in the government sector.

Government organizations have many important assets and valuable private information. Therefore, there is a huge demand for access control systems by the governments of various countries to restrict unauthorized entry in government buildings and also to safeguard its assets. The demand for biometric technologies in the government sector has increased significantly in recent times, particularly in national IDs and law enforcement applications such as cross-border control and criminal and forensic investigation. Increased security threats and the growing inclination of governments toward the adoption of access control systems has helped generate significant demand for these systems for government applications.

Major access control solution providers for the government vertical include Honeywell International Inc. (US), ASSA ABLOY AB (Sweden), Johnson Controls International plc (Ireland), 3M Company (US), and Cloudastructure Inc. (US).

TABLE 119 COMMERCIAL SECURITY SYSTEM MARKET FOR GOVERNMENT VERTICAL, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Hardware & Software	2017	2018	2019	2020
Service	6.4	7.1	7.9	7.5
Total	13.4	14.5	15.8	15.7

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 120 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR GOVERNMENT VERTICAL, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware & Software	8.1	8.9	9.8	10.8	11.9	13.0	10.1%
Service	16.9	18.4	20.0	21.6	23.4	25.2	8.3%
Total	25.0	27.3	29.8	32.5	35.3	38.2	8.9%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 121 COMMERCIAL SECURITY SYSTEM MARKET FOR GOVERNMENT VERTICAL, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	6.3	6.8	7.4	7.2
Europe	3.3	3.5	3.7	3.5
APAC	8.6	9.6	10.6	10.7
RoW	1.6	1.7	1.9	1.8
Total	19.8	21.6	23.6	23.2

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 122 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR GOVERNMENT VERTICAL, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	7.7	8.3	9.0	9.7	10.4	11.1	7.7%
Europe	3.7	3.9	4.2	4.4	4.7	4.9	5.7%
APAC	11.7	13.0	14.5	16.1	17.8	19.6	10.9%
RoW	1.9	2.0	2.2	2.3	2.5	2.6	6.3%
Total	25.0	27.3	29.8	32.5	35.3	38.2	8.9%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

Protection of government buildings is vital and the business opportunity in the government sector, across federal, state, and local government agencies, is huge. The demand for fire protection services and access control systems from infrastructure, government-owned businesses, and various government institutions has increased.

10.4 TRANSPORTATION

10.4.1 RISE IN CRIMES AND VANDALISM-RELATED THREATS INCREASES NEED FOR SURVEILLANCE

This segment includes all general public transport such as mass transit systems, railways, subways, city buses, seaports, airports, and train stations. Sea and inland ports are important transportation centers for international goods trading. Huge container ships lay anchor, discharge their consignments, and go out for new cargos. Video cameras can be fixed across the port for monitoring all activities. Genetec Inc. (Canada) and Seon (Canada) are providing security systems and solutions in the transportation sector. SecurEye, a blast-resistant surveillance system, from Visual Defense Inc. (Canada), is used in the transportation sector with mobile and fixed installations in buses, trains, light rails, trolleys, and other vehicles or in stations, platforms tunnels, and bridges. This system monitors captured videos for the investigation of terrorist or criminal activities within the camera's area of view. Biometric techniques are also used in the transportation sector. For instance, for identity confirmation of each driver, the biometric identity card is issued. This type of ID card allows for tracking of lost or stolen properties by tying them to a geographical position and tying a vehicle to a specific driver. This not only reduces inventory loss but also maximizes car-carrying safety.

Access control systems play a critical role in air transport for providing security to passengers and staff and also ensure a smooth flow of passengers in airports. Other public transportation application areas for access control systems include ports, railway networks, terminals, and freight and distribution centers. However, airport security has been of prime concern across the world, and it is imperative to undertake various initiatives to safeguard these facilities from vulnerabilities; this has led to the wider adoption of access control systems at airports.

TABLE 123 COMMERCIAL SECURITY SYSTEM MARKET FOR TRANSPORTATION VERTICAL, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Hardware & Software	9.2	10.3	11.4	10.9
Service	19.3	20.9	22.7	22.7
Total	28.5	31.2	34.1	33.6

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 124 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR TRANSPORTATION VERTICAL, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware & Software	11.8	13.1	14.5	16.1	17.7	19.5	10.6%
Service	24.5	26.7	29.1	31.6	34.3	37.1	8.7%
Total	36.2	39.7	43.6	47.7	52.1	56.6	9.3%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 125 COMMERCIAL SECURITY SYSTEM MARKET FOR TRANSPORTATION VERTICAL, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	8.5	9.0	9.5	9.1
Europe	5.4	5.8	6.2	5.9
APAC	12.0	13.6	15.4	15.7
RoW	2.6	2.7	2.9	2.9
Total	28.5	31.2	34.1	33.6

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 126 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR TRANSPORTATION VERTICAL, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	9.5	10.1	10.7	11.2	11.8	12.3	5.3%
Europe	6.2	6.7	7.1	7.6	8.0	8.5	6.3%
APAC	17.5	19.7	22.3	25.2	28.3	31.7	12.7%
RoW	3.0	3.2	3.5	3.7	3.9	4.1	6.5%
Total	36.2	39.7	43.6	47.7	52.1	56.6	9.3%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

With the rise in crime, harassment, liability suits, vandalism-related and terrorism-related threats, the need for providing surveillance for the general transportation system has increased recently. Fault tolerance and maximum system uptime are critical in application and storage systems that are the key pre-requisites for surveillance in the transportation system. These are some of the key factors driving the adoption of security systems in the transportation vertical.

10.5 RETAIL

10.5.1 INVESTING IN VIDEO SURVEILLANCE CAMERAS FOR SECURITY NEEDS PROVIDES NUMEROUS LONG-TERM BENEFITS

In the retail vertical, which includes shops, supermarkets, and petrol stations, the major concerns are to ensure commercial and industrial workplace safety, prevent business interruption, and avoid financial loss. Fire protection systems involve fire alarm and monitoring systems, fire and smoke detectors, emergency voice and alarm communication systems, and video surveillance and monitoring, and primary fire extinguishing devices such as fire sprinklers and extinguishers.

The demand for video surveillance is growing in the retail sector. This is mainly because of the fact that retail shops are more prone to security risks such as theft, robbery, and inventory loss compared to other business properties. Investing in video surveillance cameras as a solution for security needs provides numerous long-term benefits such as reduced retail losses, maximized store profits, lowered insurance rates, and—most importantly—a decrease in the number of theft cases.

TABLE 127 COMMERCIAL SECURITY SYSTEM MARKET FOR RETAIL VERTICAL, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Hardware & Software	4.5	4.9	5.2	4.9
Service	9.3	9.8	10.4	10.1
Total	13.7	14.6	15.6	15.0

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 128 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR RETAIL VERTICAL, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware & Software	5.1	5.5	6.0	6.4	6.9	7.3	7.4%
Service	10.6	11.3	12.0	12.7	13.3	14.0	5.7%
Total	15.8	16.8	17.9	19.1	20.2	21.3	6.3%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 129 COMMERCIAL SECURITY SYSTEM MARKET FOR RETAIL VERTICAL, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	4.6	4.7	4.9	4.6
Europe	3.0	3.2	3.4	3.2
APAC	4.7	5.2	5.7	5.7
RoW	1.4	1.5	1.5	1.5
Total	13.7	14.6	15.6	15.0

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 130 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR RETAIL VERTICAL, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	4.7	4.8	4.9	5.0	5.1	5.1	1.7%
Europe	3.3	3.5	3.7	3.8	4.0	4.1	4.5%
APAC	6.2	6.9	7.6	8.4	9.3	10.2	10.3%
RoW	1.5	1.6	1.7	1.8	1.9	1.9	4.6%
Total	15.8	16.8	17.9	19.1	20.2	21.3	6.3%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

The number of retail shops and malls in urban areas has increased dramatically over the last few years. This vertical is expected to have a huge opportunity for fire protection and video surveillance service providers in the coming years, as there will be a rise in the use of AI-integrated video surveillance techniques to understand customer behavior. These factors will drive the adoption of security systems in the commercial vertical.

10.6 BANKING AND FINANCE

10.6.1 GOVERNMENT POLICIES AND REGULATIONS TO DRIVE MARKET GROWTH

The banking and finance sector includes bank buildings and stock exchanges. Banking and financial services and insurance buildings are the busiest places during peak hours. The solutions required by the BFSI segment include safety from fire not only of occupants but also of physical assets and infrastructure. It is mandatory for banking and financial institutes to ensure the installation of high safety and security equipment because of government policies and regulations. Smoke and fire detectors, heat detectors, intrusion detection systems, video surveillance systems, fire risk analysis and assessment software, and monitoring systems are the solutions covered within this segment.

In the banking and finance vertical, video surveillance systems are widely adopted. With technological innovations in digital technology and IP surveillance, many banks are looking to increase the effectiveness of their security systems by investing in new technology. Considering the amount of risk involved in these properties, the demand for video analytics and video management software has increased recently.

TABLE 131 COMMERCIAL SECURITY SYSTEM MARKET FOR BANKING AND FINANCE VERTICAL, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Hardware & Software	4.0	4.4	4.9	4.6
Service	8.4	9.0	9.7	9.7
Total	12.4	13.4	14.6	14.3

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 132 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR BANKING AND FINANCE VERTICAL, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware & Software	5.0	5.5	6.1	6.7	7.4	8.0	10.0%
Service	10.3	11.2	12.1	13.1	14.1	15.1	7.9%
Total	15.3	16.7	18.2	19.8	21.4	23.2	8.6%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 133 COMMERCIAL SECURITY SYSTEM MARKET FOR BANKING AND FINANCE VERTICAL, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	3.36	3.49	3.64	3.43
Europe	2.25	2.43	2.59	2.45
APAC	5.73	6.44	7.22	7.30
RoW	1.03	1.08	1.15	1.11
Total	12.38	13.43	14.61	14.30

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 134 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR BANKING AND FINANCE VERTICAL, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	3.51	3.65	3.78	3.90	4.00	4.07	3.0%
Europe	2.57	2.74	2.91	3.09	3.26	3.42	5.9%
APAC	8.07	9.06	10.17	11.39	12.72	14.15	11.9%
RoW	1.17	1.24	1.32	1.39	1.47	1.54	5.7%
Total	15.32	16.69	18.18	19.77	21.44	23.18	8.6%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

The need to protect investments, critical data, and enterprise-wise business data in the banking segment and the importance of preventing the loss of lives and resources to increase the safety of employees, customers, and facilities will drive the adoption of security systems in the banking and financial vertical.

10.7 EDUCATION

10.7.1 FIRE PROTECTION SYSTEMS WITNESSING RISING ADOPTION IN EDUCATIONAL AND ACADEMIC BUILDINGS

The education sector includes universities, colleges, schools, universities, and college buildings. Security systems such as video surveillance in schools are important to maintain the health, welfare, and safety of the students, staff, and visitors, along with the school property. They also provide surveillance solutions for school buses. Schools and colleges constitute ideal environments for the deployment of video surveillance systems to control problems such as violence, rivalries, or vandalism.

Fire protection systems (FPSs) have significant applications in educational and academic buildings. Colleges and libraries require protection from fire hazards. These buildings are occupied with masses for a very long duration every day; therefore, FPSs are installed to minimize the risk of numerous lives.

TABLE 135 COMMERCIAL SECURITY SYSTEM MARKET FOR EDUCATION VERTICAL, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Hardware & Software	3.7	4.1	4.5	4.2
Service	7.9	8.5	9.1	9.1
Total	11.6	12.6	13.6	13.3

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 136 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR EDUCATION VERTICAL, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware & Software	4.5	4.9	5.4	5.9	6.4	6.9	8.8%
Service	9.7	10.5	11.3	12.2	13.1	14.0	7.6%
Total	14.2	15.4	16.7	18.0	19.4	20.9	8.0%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 137 COMMERCIAL SECURITY SYSTEM MARKET FOR EDUCATION VERTICAL, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	6.27	6.73	7.24	7.02
Europe	2.00	2.18	2.35	2.25
APAC	2.27	2.54	2.82	2.84
RoW	1.05	1.11	1.20	1.18
Total	11.59	12.56	13.62	13.29

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 138 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR EDUCATION VERTICAL, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	7.44	7.99	8.59	9.20	9.82	10.45	7.0%
Europe	2.39	2.57	2.77	2.97	3.17	3.36	7.1%
APAC	3.11	3.47	3.87	4.30	4.77	5.27	11.1%
RoW	1.26	1.36	1.46	1.57	1.68	1.79	7.3%
Total	14.19	15.40	16.69	18.04	19.45	20.88	8.0%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

Considering the rise in potential threats, many schools and colleges across the world have formulated strict video surveillance policies to ensure the safety of employees, students, and property. These policies are further expected to become stringent over time and will gradually be implemented across the world, driving the market for security systems in the education vertical.

10.8 INDUSTRIAL

10.8.1 INCREASE IN TERROR THREATS AND INCIDENTS OF THEFT OF RAW MATERIALS DRIVING NEED FOR VIDEO SURVEILLANCE SYSTEMS

Access control systems have applications in industries such as oil & gas, chemicals, pharmaceuticals, metal, textiles, paper, and machinery and mining, power, automotive, water treatment, cement, and textile industries. The protection of facilities such as refineries, tank farms, and transportation pipelines in chemical, oil and gas, and water treatment is a crucial task. To protect these facilities, they need to provide access to authorized personnel.

Increasing terror threats and incidents of theft of raw materials have propelled the need for video surveillance systems. The installation of CCTV cameras at manufacturing facilities improves business operations, monitors plant machinery and production process, and ensures the safety of personnel.

A video surveillance solution needs to be comprehensive as well as digitalized with proper networking. It should be cost-effective, easy to manage through a remote office to ensure plant safety with proper internal control and production condition, and compatible with other systems.

TABLE 139 COMMERCIAL SECURITY SYSTEM MARKET FOR INDUSTRIAL VERTICAL, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Hardware & Software	3.1	3.4	3.7	3.4
Service	6.3	6.6	7.1	7.0
Total	9.3	10.0	10.8	10.4

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 140 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR INDUSTRIAL VERTICAL, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware & Software	3.6	3.9	4.2	4.5	4.9	5.2	7.6%
Service	7.4	7.9	8.4	8.9	9.4	10.0	6.3%
Total	11.0	11.8	12.6	13.5	14.3	15.2	6.7%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 141 COMMERCIAL SECURITY SYSTEM MARKET FOR INDUSTRIAL VERTICAL, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	2.7	2.9	3.0	2.8
Europe	2.6	2.8	3.0	2.9
APAC	2.7	2.9	3.2	3.2
RoW	1.3	1.4	1.5	1.5
Total	9.3	10.0	10.8	10.4

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 142 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR INDUSTRIAL VERTICAL, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	2.9	3.1	3.2	3.3	3.4	3.5	3.6%
Europe	3.0	3.3	3.5	3.7	4.0	4.2	6.5%
APAC	3.4	3.7	4.1	4.5	4.9	5.3	9.3%
RoW	1.6	1.7	1.8	1.9	2.1	2.2	6.8%
Total	11.0	11.8	12.6	13.5	14.3	15.2	6.7%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

Increased need for protecting people and properties across industrial and manufacturing sites provides opportunities for security systems. Hence, there has been a continuous increase in the demand for these systems in the industrial sector. In addition, technological developments in these systems encourage the industrial sector to upgrade its security systems with new technologies.

10.9 ENERGY AND UTILITY

10.9.1 REAL-TIME VIDEO SURVEILLANCE OF POWER SUBSTATIONS PROVIDES AUTOMATIC MONITORING AND CONTROL CAPABILITIES

Energy and utility includes production and distribution facilities such as gas, electricity, and water treatment plants. The energy generation sector is more prone to fire accidents because of the involvement of highly flammable materials such as oil, gasoline, and other combustible substances. Suitable fire detection and prevention systems such as smoke detectors, alarm systems, sprinklers, and water spray systems are required to avoid fire accidents.

Power substations are widely distributed in huge areas and are unmanned. Therefore, remote monitoring is very critical. The real-time video surveillance of power substations provides automatic monitoring and control capabilities. In addition to that, it increases remote monitoring applications with visual management. Such capabilities not only save management costs for manpower but also realize complete network automation. Video surveillance systems play an important role in monitoring equipment, detecting intruders, and responding to emergency situations. For instance, video surveillance systems can be used to monitor the appearance of power transformers and relays, flammable equipment, and the status of the isolation switch.

TABLE 143 COMMERCIAL SECURITY SYSTEM MARKET FOR ENERGY & UTILITY VERTICAL, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Hardware & Software	3.2	3.6	4.1	3.9
Service	6.6	7.2	8.0	8.1
Total	9.8	10.9	12.0	12.0

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 144 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR ENERGY & UTILITY VERTICAL, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware & Software	4.3	4.8	5.3	5.9	6.6	7.3	11.2%
Service	8.8	9.7	10.6	11.7	12.8	13.9	9.7%
Total	13.0	14.4	16.0	17.6	19.4	21.2	10.2%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 145 COMMERCIAL SECURITY SYSTEM MARKET FOR ENERGY & UTILITY VERTICAL, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	2.70	2.93	3.19	3.13
Europe	2.37	2.62	2.88	2.80
APAC	3.54	3.99	4.50	4.58
RoW	1.21	1.32	1.46	1.47
Total	9.82	10.87	12.03	11.97

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 146 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR ENERGY & UTILITY VERTICAL, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	3.35	3.64	3.95	4.28	4.62	4.97	8.2%
Europe	3.02	3.30	3.61	3.93	4.26	4.59	8.7%
APAC	5.09	5.74	6.48	7.29	8.18	9.14	12.4%
RoW	1.59	1.75	1.93	2.11	2.31	2.50	9.4%
Total	13.05	14.44	15.97	17.61	19.37	21.21	10.2%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

Fire systems are an essential component of effective business, allowing operations to quickly recover from a fire incident. A high level of fire protection is an integral part of responsible risk management strategies; oil and gas facilities require the best protection available. These factors, coupled with the rising need to install video surveillance, remote monitoring, and access control, is driving the adoption of security systems in the energy & utility vertical.

10.10 SPORTS AND LEISURE

10.10.1 VIDEO SURVEILLANCE—INVALUABLE TOOL IN ENHANCING SAFETY OF PEOPLE AND FACILITIES

Large crowds congregate in places such as stadiums, public swimming pools, amusement parks, casinos, fitness centers, and playgrounds, making such places potential targets of crime. Amusement parks are typically spread out over vast areas and include a variety of sites, from remote parking lots and distributed points of sale to several public, employee, and supplier entrances. Video surveillance is an invaluable tool in enhancing the safety of the people and their respective facilities.

Live video monitoring is the ideal process to minimize crime and vandalism and help ensure safe recreation. Skilled professional operators proactively watching live feeds have proven to speed up the response time of law enforcement officials because they can react to an incident in progress with immediate effect. This type of surveillance approach is used widely in developed countries; however, the use of video surveillance for public recreation is still at its nascent stage in developing countries.

TABLE 147 COMMERCIAL SECURITY SYSTEM MARKET FOR SPORTS AND LEISURE VERTICAL, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Hardware & Software	2.3	2.4	2.6	2.4
Service	4.7	5.0	5.3	5.1
Total	7.0	7.4	7.9	7.6

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 148 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR SPORTS AND LEISURE VERTICAL, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware & Software	2.5	2.7	2.9	3.1	3.3	3.5	6.3%
Service	5.4	5.7	6.0	6.3	6.7	7.0	5.3%
Total	7.9	8.4	8.9	9.4	9.9	10.4	5.7%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 149 COMMERCIAL SECURITY SYSTEM MARKET FOR SPORTS AND LEISURE VERTICAL, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	3.32	3.48	3.66	3.48
Europe	1.61	1.73	1.84	1.74
APAC	1.20	1.31	1.43	1.40
RoW	0.86	0.90	0.96	0.93
Total	6.99	7.42	7.90	7.56

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 150 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR SPORTS AND LEISURE VERTICAL, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	3.61	3.80	3.98	4.17	4.34	4.49	4.4%
Europe	1.82	1.93	2.05	2.17	2.28	2.39	5.6%
APAC	1.50	1.63	1.77	1.92	2.08	2.23	8.2%
RoW	0.98	1.04	1.11	1.18	1.25	1.31	6.0%
Total	7.91	8.41	8.92	9.44	9.94	10.42	5.7%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

Congested with enormous crowds, the sports and leisure vertical present significant challenges for both on-site guards and traditional surveillance systems. Therefore, it is imperative for authorities to take adequate precautions to ensure that such places are safe, the crowd remains in check, and any threat of a large-scale disturbance, such as terrorism, is nullified, thereby driving the market for security systems in this vertical.

10.11 HEALTHCARE

10.11.1 HEALTHCARE INCREASINGLY ADOPTING BIOMETRICS FOR PATIENT IDENTIFICATION, PATIENT SECURITY, AND STAFF ATTENDANCE TRACKING

Healthcare is the most crucial industry in which fire protection systems are used. Labs, hospitals, medical centers, and research facilities require complex security measures and management systems. From expensive medical equipment to patient medical records—everything should always be protected from threats. Access control systems provide high-level security to hospital belongings and patients. The healthcare sector has a significant growth opportunity for the biometrics technology. This sector is increasingly adopting biometrics for applications such as patient identification, patient security, and staff attendance tracking. Healthcare is a highly regulated and automated sector. Face recognition and iris scanning are the main types of biometrics preferred in the clinical environment as there is the risk of contracting contagious diseases via fingerprint and palm recognition. The biometric system market has a sustainable future in the healthcare sector as efforts are being made to provide medical care while maintaining the confidentiality of patient information to avoid mishaps caused by human errors. The lack of patient identity safeguards increases concerns for patients' data privacy. For instance, patients can become victims of medical identity theft, which could result in false medical and health data of these patients; this could also put them at risk of false or incorrect treatments. Biometric systems improve and secure the use and exchange of personal health information. Further, ACaaS can be used in the healthcare vertical to ensure that only authorized users get access to resources. It is adopted in the healthcare vertical for ensuring patient privacy as well as providing the best possible patient care. CCTVs, digital doors, and alarm systems are a few of the access control systems used in the healthcare vertical.

TABLE 151 COMMERCIAL SECURITY SYSTEM MARKET FOR HEALTHCARE VERTICAL, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Hardware & Software	1.9	2.1	2.3	2.1
Service	3.9	4.2	4.5	4.5
Total	5.8	6.3	6.8	6.6

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 152 POST COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR HEALTHCARE VERTICAL, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware & Software	2.3	2.5	2.7	2.9	3.1	3.4	8.2%
Service	4.7	5.1	5.5	5.9	6.3	6.7	7.1%
Total	7.0	7.6	8.2	8.8	9.4	10.0	7.4%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 153 COMMERCIAL SECURITY SYSTEM MARKET FOR HEALTHCARE VERTICAL, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	2.39	2.56	2.75	2.66
Europe	1.43	1.55	1.66	1.58
APAC	1.25	1.38	1.52	1.51
RoW	0.77	0.81	0.87	0.85
Total	5.84	6.30	6.80	6.60

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 154 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR HEALTHCARE VERTICAL, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	2.81	3.01	3.23	3.45	3.67	3.90	6.8%
Europe	1.66	1.78	1.90	2.03	2.15	2.27	6.4%
APAC	1.64	1.81	1.99	2.19	2.41	2.63	9.9%
RoW	0.90	0.97	1.04	1.11	1.18	1.25	6.7%
Total	7.01	7.57	8.16	8.78	9.41	10.05	7.4%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

Hospitals, clinics, physician offices, pharmacies, and laboratories are continuously renovating and expanding and have a huge demand for fire detection and suppression products. This is because this sector demands the most critical services, such as designing and installation, servicing and maintenance, and safety services of fire protection systems.

10.12 MILITARY & DEFENSE

10.12.1 ACCESS CONTROL WIDELY USED IN MILITARY & DEFENSE VERTICAL

Security and safety are major concerns in the defense sector. Access control is widely used in the military & defense segment for applications such as protecting defense personnel, preventing theft and damage to assets and infrastructure, and preventing unauthorized access to physical security zones. Biometrics has proven to be one of the ground-breaking technologies for identification and verification. In April 2018, the US Army Research Laboratory developed an AI and machine learning technique that produces visible face images from thermal images captured in low-light conditions or at night. This technology aids in matching thermal face images with the existing biometric face databases or watch lists that only contain visible face imagery. Technologically advanced countries such as the US and the UK are using biometric technology to assist in identifying detainees in war zones. In the military & defense sector, the most commonly used types of biometric technologies are iris, fingerprint, and face recognition.

Several rules and regulations concerning the use of access control systems are formulated by government bodies to maintain the privacy of important data. According to these regulations, only a few authorized personnel can have access to security data and monitoring rooms. In addition, this data cannot be shared through web services directly without gaining permission from the regulatory authorities. In the US, the Department of Defense (DoD) provides a few standards for the protection of resources used in surveillance systems. Major players in the access control market providing access control solutions for the military & defense vertical are Honeywell International Inc. (US), UTC Fire & Security (US), and Johnson Controls International plc (Ireland), among others.

Video surveillance is widely used in the military & aerospace industry for applications such as patrolling national borders (border security) and search and rescue missions. In addition, video surveillance systems control the entry of refugees in crucial areas, such as military base camps and border areas, monitor peace treaties, provide security parameters around base camps and embassies (perimeter security), and ensure resource exploration and target tracking, among others. The use of fixed and PTZ cameras, fence sensors, and motion sensors, among other technologies, helps ensure the security of military bases.

TABLE 155 COMMERCIAL SECURITY SYSTEM MARKET FOR MILITARY & DEFENSE VERTICAL, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Hardware & Software	2.7	3.0	3.3	3.1
Service	5.6	6.1	6.6	6.5
Total	8.4	9.1	9.9	9.7

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 156 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR MILITARY & DEFENSE VERTICAL, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware & Software	3.3	3.7	4.0	4.4	4.8	5.1	9.0%
Service	7.0	7.6	8.2	8.8	9.5	10.1	7.7%
Total	10.3	11.2	12.2	13.2	14.2	15.2	8.1%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 157 COMMERCIAL SECURITY SYSTEM MARKET FOR MILITARY & DEFENSE VERTICAL, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	2.66	2.89	3.17	3.13
Europe	1.58	1.72	1.86	1.77
APAC	3.44	3.75	4.07	3.99
RoW	0.66	0.71	0.77	0.76
Total	8.35	9.08	9.87	9.65

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 158 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET FOR MILITARY & DEFENSE VERTICAL, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	3.38	3.70	4.05	4.42	4.81	5.21	9.0%
Europe	1.88	2.02	2.17	2.32	2.48	2.63	7.0%
APAC	4.26	4.63	5.02	5.42	5.84	6.26	8.0%
RoW	0.81	0.87	0.94	1.01	1.08	1.15	7.4%
Total	10.33	11.22	12.18	13.18	14.20	15.25	8.1%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

The use of access control to manage the entry of refugees, monitor peace treaties, provide security perimeters across base camps and embassies (perimeter security), and ensure resource exploration and target tracking is driving the demand for security systems in the military & defense vertical.

11 GEOGRAPHIC ANALYSIS

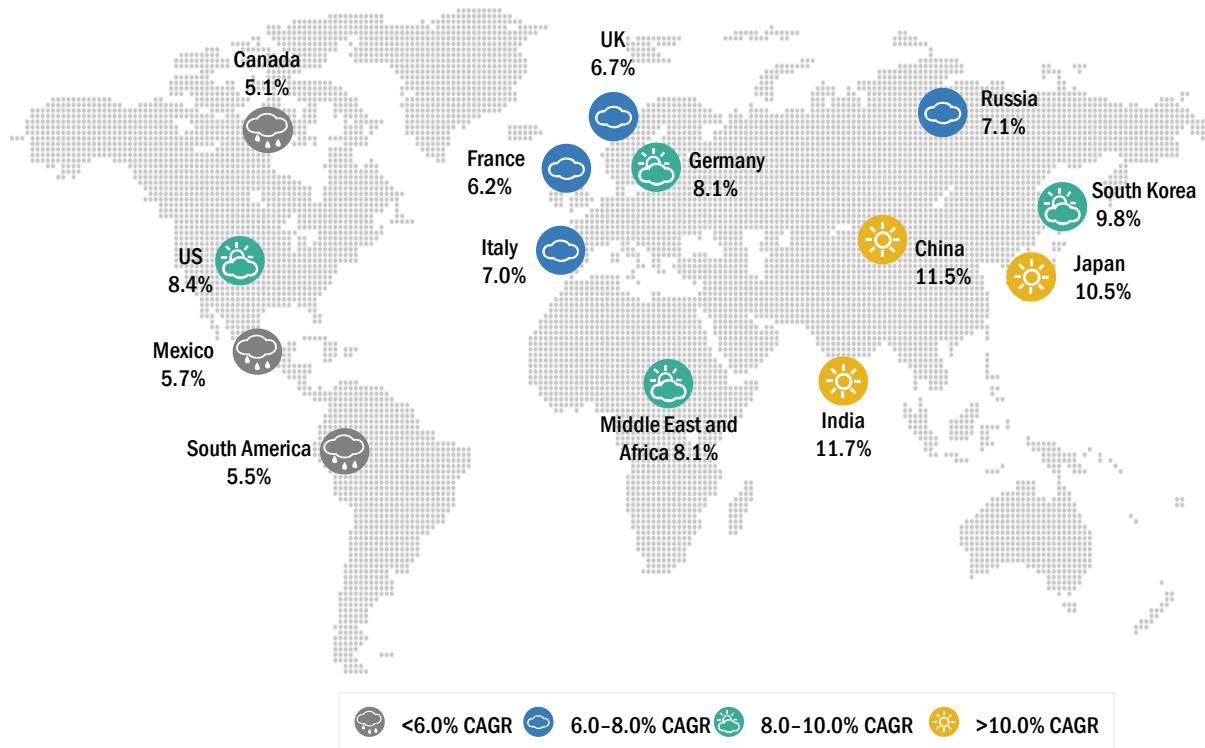
KEY FINDINGS

- North America is expected to lead the commercial security system market owing to the increasing demand from the commercial, government, and industrial verticals in this region.
- The commercial security system market in APAC is expected to grow at the highest CAGR of 10.7% from 2021 to 2026.
- The commercial security system market in the RoW region is expected to witness the second-highest CAGR in the commercial security system market from 2021 to 2026 owing to the substantial need for security solutions in the Middle East & Africa.
- The commercial security system market in North America is expected to be worth USD 126.2 billion by 2026.
- The commercial security system market in Europe was valued at USD 42.7 billion in 2020 and is projected to reach USD 63.4 billion by 2026; it is estimated to grow at a CAGR of 7.0% from 2021 to 2026.

11.1 INTRODUCTION

The commercial security system market has been segmented on the basis of region into 4 regions—North America, Europe, APAC, and RoW. All these regions have been further segmented on the basis of their respective countries. The commercial security system market analysis has been conducted for each region and its corresponding countries for the forecast period (2021–2026). This market shows tremendous potential for growth globally, especially for solutions such as access control systems and video surveillance systems.

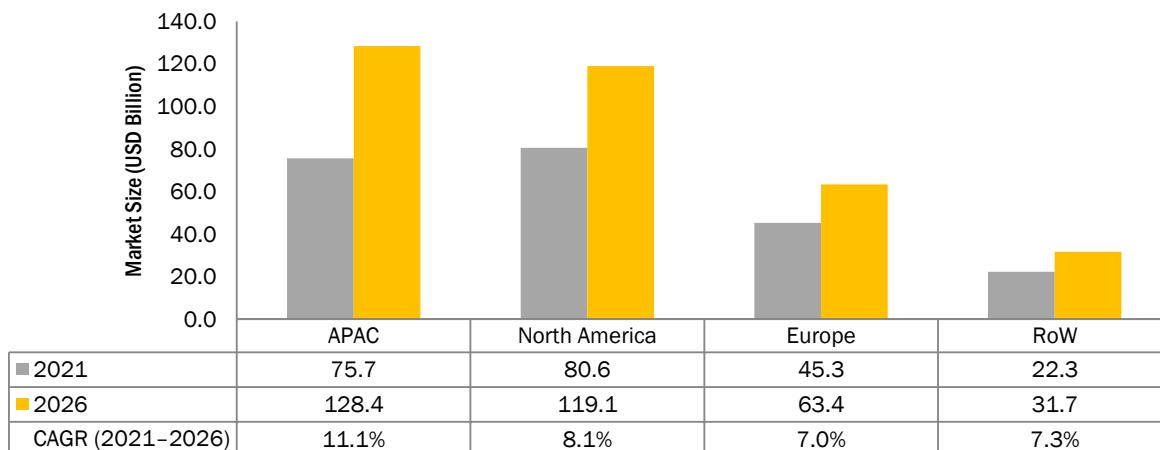
FIGURE 34 REGIONAL SNAPSHOT: INDIA TO REGISTER HIGHEST CAGR IN GLOBAL COMMERCIAL SECURITY SYSTEM MARKET DURING FORECAST PERIOD



Note: The CAGR has been calculated for the period 2021–2026. The CAGR for Rest of Europe and Rest of APAC has not been given in the image provided above.

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

FIGURE 35 COMMERCIAL SECURITY SYSTEM MARKET IN APAC TO GROW AT HIGHEST CAGR DURING FORECAST PERIOD



Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 159 COMMERCIAL SECURITY SYSTEM MARKET, BY REGION, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
North America	65.2	70.8	76.9	75.3
Europe	38.1	41.5	44.8	42.7
APAC	55.3	61.6	68.7	69.0
RoW	18.6	19.8	21.4	21.0
Total	177.3	193.8	211.7	208.1

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 160 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	80.6	87.5	94.9	102.8	110.9	119.1	8.1%
Europe	45.3	48.7	52.4	56.1	59.8	63.4	7.0%
APAC	75.7	84.4	94.1	104.7	116.1	128.4	11.1%
RoW	22.3	24.1	25.9	27.8	29.8	31.7	7.3%
Total	223.9	244.7	267.4	291.4	316.5	342.6	8.9%

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 161 PRE-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET, BY REGION, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
North America	90.4	97.6	105.1	112.9	120.7	128.6	7.3%
Europe	51.7	55.4	59.0	62.6	66.2	69.7	6.1%
APAC	84.7	93.8	103.5	113.9	124.8	136.3	10.0%
RoW	24.8	26.5	28.3	30.2	32.0	33.8	6.4%
Total	251.6	273.3	296.0	319.5	343.7	368.5	7.9%

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

Countries such as the US and Canada are the early adopters of security solution technologies, which is a key factor contributing to the growth of the security solutions market in the Americas. The APAC region is developing, and countries such as China, Japan, and South Korea are driving the overall growth of the security solutions market. The technological and economic advancements in the APAC region are expected to drive the overall demand for security systems. In this region, many governments have laid down safety norms for various sectors; the execution of these policies is expected to create a significant demand for security systems in the future. For instance, fire security is a major concern in this region, and the rapid development of the construction and real estate sector is expected to drive the commercial fire protection system market in the coming years. Also, the increasing terror threats and criminal cases in APAC countries, coupled with the low police officer-to-population ratio is expected to lead to a higher demand for security systems in the region.

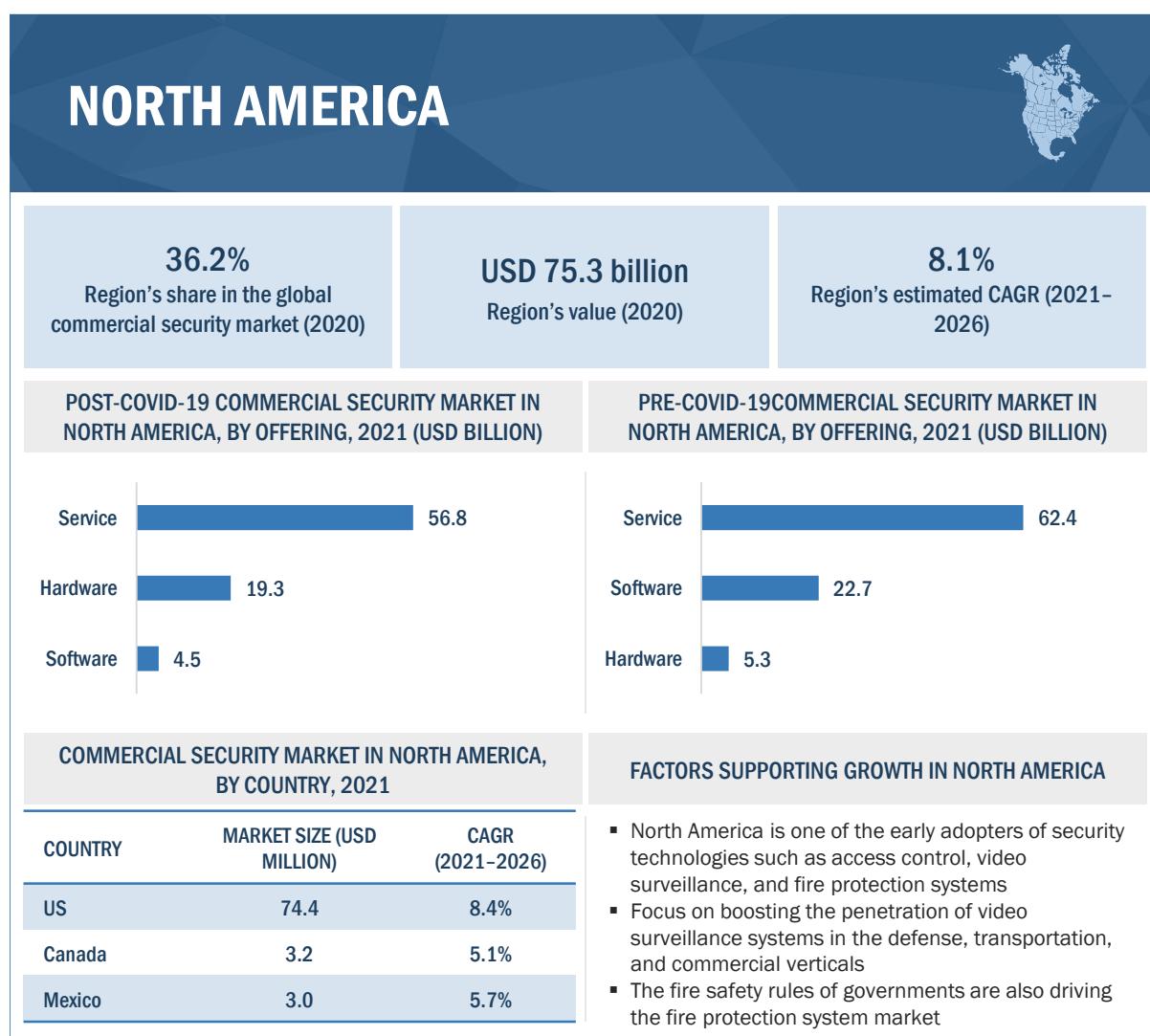
11.2 NORTH AMERICA

11.2.1 NORTH AMERICA TO ACCOUNT FOR LARGEST MARKET IN 2021

North America is one of the early adopters of security technologies such as access control, video surveillance, and fire protection systems. The region is at the forefront of implementing access control systems to improve safety measures and security. Countries such as the US, Canada, and Mexico are increasing their expertise in access control systems to drive innovations in the technology and services of these systems to gain a competitive advantage and increase their shares in the access control system market in the region.

Due to the mandatory fire protection and safety regulations in North America, most building structures are fixed with fire protection systems. Several fire protection systems and equipment manufacturers in this region offer different fire protection systems such as smoke detectors, flame detectors, heat detectors, sprinklers, extinguishers, fire alarms, sirens, control panels & interfaces, and fire analysis software.

North America is a pioneer in the adoption of video surveillance in public safety. Also, there is constant progress in adopting new technologies, such as the transition to IP-based video surveillance. In North America, the main focus is on boosting the penetration of video surveillance systems in the defense, transportation, and commercial verticals.

FIGURE 36 SNAPSHOT: COMMERCIAL SECURITY SYSTEM MARKET IN NORTH AMERICA

Source: Annual Reports, Press Releases, Expert Interviews, Company Websites, and MarketsandMarkets Analysis

TABLE 162 COMMERCIAL SECURITY SYSTEM MARKET IN NORTH AMERICA, BY COUNTRIES, 2017-2020 (USD BILLION)

Country	2017	2018	2019	2020
US	59.6	64.9	70.6	69.3
Canada	2.8	3.0	3.2	3.0
Mexico	2.7	2.9	3.0	2.9
Total	65.2	70.8	76.8	75.3

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 163 COMMERCIAL SECURITY SYSTEM MARKET IN NORTH AMERICA, BY COUNTRIES, 2021–2026 (USD BILLION)

Country	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
US	74.4	80.9	88.0	95.4	103.1	111.0	8.4%
Canada	3.2	3.4	3.5	3.7	3.9	4.1	5.1%
Mexico	3.0	3.2	3.4	3.6	3.8	4.0	5.7%
Total	80.6	87.5	94.9	102.8	110.9	119.1	8.1%

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 164 COMMERCIAL SECURITY SYSTEM MARKET IN NORTH AMERICA, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Hardware	16.3	17.9	19.5	18.2
Software	3.3	3.7	4.2	4.1
Service	45.6	49.2	53.2	53.0
Total	65.2	70.8	76.9	75.3

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 165 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET IN NORTH AMERICA, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware	19.3	20.9	22.7	24.4	26.2	28.0	7.7%
Software	4.5	5.1	5.7	6.4	7.2	8.0	12.2%
Service	56.8	61.5	66.6	71.9	77.4	83.1	7.9%
Total	80.6	87.5	94.9	102.8	110.9	119.1	8.1%

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 166 PRE-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET IN NORTH AMERICA, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware	22.7	24.4	26.0	27.7	29.3	30.9	6.3%
Software	5.3	5.9	6.5	7.2	7.9	8.6	10.2%
Service	62.4	67.4	72.6	78.0	83.5	89.2	7.4%
Total	90.4	97.6	105.1	112.9	120.7	128.6	7.3%

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 167 COMMERCIAL SECURITY SYSTEM MARKET IN NORTH AMERICA, BY VERTICAL, 2017–2020 (USD BILLION)

Vertical	2017	2018	2019	2020
Commercial	22.35	25.29	28.38	28.70
Government	6.29	6.83	7.39	7.21
Transportation	8.51	8.99	9.53	9.12
Retail	4.61	4.74	4.91	4.58
Banking and Finance	3.36	3.49	3.64	3.43
Education	6.27	6.73	7.24	7.02
Industrial	2.75	2.87	3.00	2.84
Energy and Utility	2.70	2.93	3.19	3.13
Sports and Leisure	3.32	3.48	3.66	3.48
Healthcare	2.39	2.56	2.75	2.66
Military and Defense	2.66	2.89	3.17	3.13
Total	65.21	70.80	76.87	75.29

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 168 COMMERCIAL SECURITY SYSTEM MARKET IN NORTH AMERICA, BY VERTICAL, 2021–2026 (USD BILLION)

Vertical	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Commercial	31.68	35.46	39.61	44.11	48.91	53.98	11.2%
Government	7.68	8.31	8.99	9.69	10.41	11.14	7.7%
Transportation	9.52	10.08	10.66	11.24	11.80	12.33	5.3%
Retail	4.66	4.79	4.91	5.00	5.06	5.08	1.7%
Banking and Finance	3.51	3.65	3.78	3.90	4.00	4.07	3.0%
Education	7.44	7.99	8.59	9.20	9.82	10.45	7.0%
Industrial	2.92	3.05	3.18	3.30	3.40	3.49	3.6%
Energy and Utility	3.35	3.64	3.95	4.28	4.62	4.97	8.2%
Sports and Leisure	3.61	3.80	3.98	4.17	4.34	4.49	4.4%
Healthcare	2.81	3.01	3.23	3.45	3.67	3.90	6.8%
Military and Defense	3.38	3.70	4.05	4.42	4.81	5.21	9.0%
Total	80.57	87.50	94.94	102.77	110.85	119.10	8.1%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

The US is expected to hold the largest share of the North American fire protection system market during the forecast period. This can be attributed to increased consumer awareness about the installation of fire protection systems. The fire safety rules of governments are also driving the fire protection system market in the US. The growth in the North American oil, gas, and mining industry is also one of the factors contributing to the highest growth rate of the fire protection system market in this region.

The growing penetration of cloud-based services, mobile access control technology, and management software among the users of access control systems is expected to drive the growth of this market. The market is driven by the growing adoption of biometrics and multi-technology readers in the commercial and government verticals. The US Defense and Homeland Security departments have been using fingerprint biometrics to facilitate physical and digital access and combat security issues.

11.2.2 US

The US is a leading provider of advanced access control systems for security and maintenance purposes. The rise in the crime rate has resulted in a growing focus on providing effective and efficient electronic security solutions. The growing demand for a secure and reliable form of identification for all federal employees and contractors largely drives the access control market in the US. The US holds the largest share of the access control systems market. Many US-based companies, such as Honeywell International and Allegion have a strong presence in the access control systems market.

The US is playing a vital role in the growth of the video surveillance market as it is the most advanced country technologically. In the US, the current market is led by IP video surveillance systems due to increased criminal activities and terrorist attacks, which have led to the high demand for intelligent video surveillance systems. Increasing terrorist threats and violent attacks in public spaces have played a major role in the rising installation of surveillance cameras in recent years. Enterprises and data centers are the leading applications in the commercial vertical for which video surveillance systems are deployed in the US. The presence of a large number of enterprises, lucrative retail and hospitality segments, well-developed transportation sector, high requirement for city surveillance, and well-established banks and financial institutions drive the video surveillance market growth.

Supportive government regulations, the adoption of advanced fire protection technologies, and increasing concerns related to fire protection are driving the growth of the fire protection system market in the US. The US government has laid down certain norms for the installation of fire protection systems in buildings, and it is obligatory for real estate developers and construction companies to follow these regulations. This factor is propelling the fire protection system market in the US.

11.2.3 CANADA

In Canada, the market for electronic security equipment, such as sophisticated motion detectors, video cameras, and automatic lighting controls, is expected to witness rapid growth in the next 4–5 years. Security systems are distributed through short marketing channels in this region owing to the limited availability of large distributors who control this market.

The adoption of access control systems is driven by the high demand for security in the industrial and government verticals as well as growing public awareness toward security. The commercial and industrial verticals are the major end users in the Canadian market. The Canadian government has recommended the implementation of advanced security technologies in corporations, airports, hospitals, and other organizations for enhanced safety, thereby driving the growth of the access control market in the country. Furthermore, the growing economy of Canada has led to an increasing focus on securing assets in commercial and industrial areas. For instance, Dove Capital (Ontario, Canada) is a real estate firm that was challenged by the limitations of its legacy systems and required immediate access to its data to make quick and informed decisions. The firm chose Honeywell Security Group's (US) MAXPRO Cloud, a cloud-based service, to simplify the process of managing multiple sites and allow users to access all locations in a single view. Canada is home to a number of private military and security companies. Security screening for passengers and their belongings is mostly done at airports to ensure safety. The number of domestic and international passengers is increasing rapidly due to the reduced prices of air transportation. Card- and biometrics-based access control systems are widely used at airports for security purposes. All these factors are expected to boost the growth of the access control market in Canada.

In Canada, a growing number of cities are installing CCTV cameras on open streets in which most of the cameras are mounted on walls, street lamps, fences, and roofs. Major companies such as Hikvision, Dahua, and Arecont Vision have begun operations in Canada. Upgrading old systems or replacing analog systems with IP systems are the major driving factors in the video surveillance systems market in Canada.

11.2.4 MEXICO

The market for access control systems, among other security equipment, is growing at a high rate in Mexico because of the growing need to prevent attacks or security threats. Over the last few years, the major security risk faced in Mexico is the high crime rate, which is further accelerated by the drug cartels in the country, which leads to an increased range of crimes in addition to drug offenses, affecting the general public and travelers. With increasing government focus on security, there is a growing demand to authenticate access to public and private places. Thus, public and private institutions in the country are installing and integrating security systems, including access control systems, in the country.

The adoption rate of video surveillance security is also growing. The northern part of Mexico was considered a higher threat area due to illegal engagements and drug trafficking. These crimes in Mexico have been now decreased due to the installation of video surveillance systems throughout the state to allow officials to assess the situation and take appropriate decisions. Mexico is developing as a manufacturing hub for various industries, such as automobiles, electronics, and pharmaceuticals. Manufacturing industries in Mexico are investing heavily in improving their warehouse infrastructure. Thus, companies are adopting fire protection systems to protect their warehouses from fire. Also, government regulations in Mexico are supporting the adoption of fire protection systems.

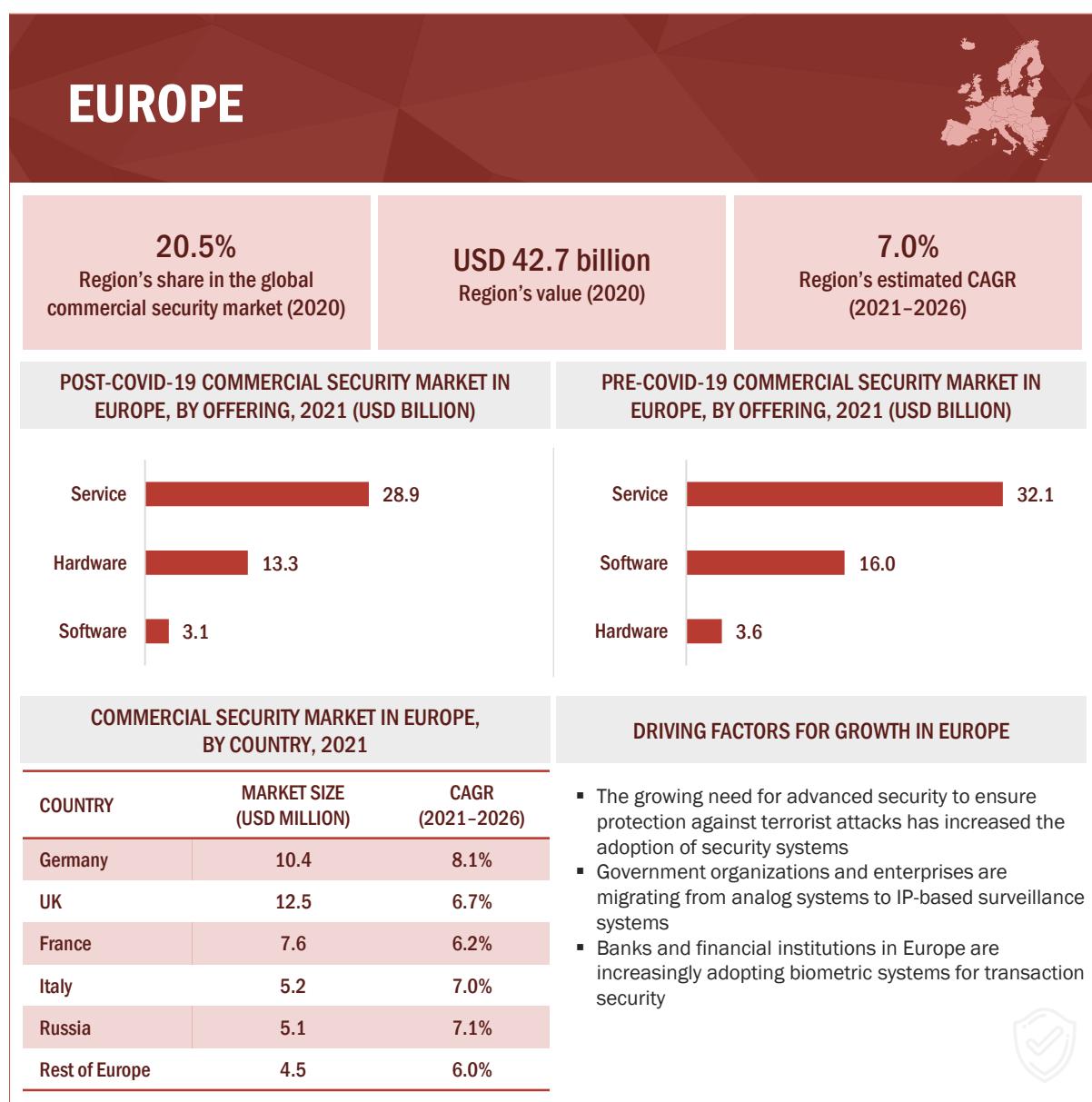
11.3 EUROPE

11.3.1 GROWING NEED FOR ADVANCED SECURITY TO ENSURE PROTECTION AGAINST TERRORIST ATTACKS

Germany, the UK, France, and Italy play a significant role in the European commercial security system market and is expected to continue to do so in the coming years. The major security challenges in this region include the proliferation of weapons of mass destruction, regional conflicts, organized crimes, and terrorism. The European Union has devised strategies to counter such threats, and various companies are also taking initiatives to provide security solutions in the region.

The growing need for advanced security to ensure protection against terrorist attacks has increased the adoption of biometric technologies in Europe. The deployment of national IDs, e-passports, and e-visas is expected to be the main driver for the growth of the European biometric system market. The UK government has adopted biometric technologies in airports and ports to strengthen security systems. The EU government is also supporting the deployment and R&D for biometric systems to be used in border control across the region. ABC4EU (Europe), or Automated Border Control Gates for Europe, is a project supported by 15 partners, including Indra Sistemas and Cognitec Systems, to standardize the working of all the European automated border control (ABC) systems equipped with biometric technology.

Increased terror attacks in recent times in the European region have led to the crucial value of video surveillance and video analytics, which gave security forces time-critical information, enabling them to evade several such incidents. A large number of analog video surveillance systems are already being installed in this region; therefore, replacing analog systems with IP systems and analog HD systems provides growth opportunities.

FIGURE 37 **SNAPSHOT: COMMERCIAL SECURITY SYSTEM MARKET IN EUROPE**


Source: Annual Reports, Press Releases, Expert Interviews, Company Websites, and MarketsandMarkets Analysis

TABLE 169 **COMMERCIAL SECURITY SYSTEM MARKET IN EUROPE, BY COUNTRIES, 2017–2020 (USD BILLION)**

Country	2017	2018	2019	2020
Germany	8.4	9.3	10.1	9.8
UK	10.6	11.6	12.4	11.8
France	6.5	7.1	7.6	7.2
Italy	4.3	4.7	5.1	4.9
Russia	4.3	4.7	5.0	4.8
Rest of Europe	3.9	4.2	4.5	4.3
Total	38.1	41.5	44.7	42.7

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 170 COMMERCIAL SECURITY SYSTEM MARKET IN EUROPE, BY COUNTRIES, 2021–2026 (USD BILLION)

Country	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Germany	10.4	11.4	12.3	13.3	14.4	15.4	8.1%
UK	12.5	13.4	14.4	15.4	16.3	17.3	6.7%
France	7.6	8.1	8.6	9.2	9.7	10.2	6.2%
Italy	5.2	5.6	6.0	6.4	6.8	7.3	7.0%
Russia	5.1	5.5	5.9	6.3	6.8	7.2	7.1%
Rest of Europe	4.5	4.8	5.1	5.4	5.7	6.0	6.0%
Total	45.3	48.7	52.4	56.1	59.8	63.4	7.0%

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 171 COMMERCIAL SECURITY SYSTEM MARKET IN EUROPE, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Hardware	11.7	13.0	14.0	12.7
Software	2.3	2.6	2.9	2.8
Service	24.1	25.9	27.8	27.3
Total	38.1	41.5	44.8	42.7

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 172 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET IN EUROPE, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware	13.3	14.2	15.3	16.3	17.3	18.2	6.5%
Software	3.1	3.4	3.8	4.2	4.7	5.1	10.9%
Service	28.9	31.1	33.3	35.6	37.8	40.1	6.7%
Total	45.3	48.7	52.4	56.1	59.8	63.4	7.0%

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 173 PRE-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET IN EUROPE, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware	16.0	17.1	18.1	19.0	20.0	20.8	5.4%
Software	3.6	4.0	4.3	4.7	5.1	5.5	9.0%
Service	32.1	34.3	36.6	38.9	41.1	43.3	6.2%
Total	51.7	55.4	59.0	62.6	66.2	69.7	6.1%

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 174 COMMERCIAL SECURITY SYSTEM MARKET IN EUROPE, BY VERTICAL, 2017–2020 (USD BILLION)

Vertical	2017	2018	2019	2020
Commercial	12.61	13.87	15.12	14.60
Government	3.26	3.51	3.74	3.54
Transportation	5.39	5.83	6.25	5.93
Retail	3.04	3.25	3.43	3.20
Banking and Finance	2.25	2.43	2.59	2.45
Education	2.00	2.18	2.35	2.25
Industrial	2.60	2.82	3.03	2.88
Energy and Utility	2.37	2.62	2.88	2.80
Sports and Leisure	1.61	1.73	1.84	1.74
Healthcare	1.43	1.55	1.66	1.58
Military and Defense	1.58	1.72	1.86	1.77
Total	38.14	41.52	44.75	42.75

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

**TABLE 175 COMMERCIAL SECURITY SYSTEM MARKET IN EUROPE, BY VERTICAL,
2021–2026 (USD BILLION)**

Vertical	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Commercial	15.64	17.01	18.47	19.98	21.53	23.07	8.1%
Government	3.70	3.94	4.18	4.42	4.65	4.88	5.7%
Transportation	6.24	6.68	7.13	7.59	8.04	8.47	6.3%
Retail	3.32	3.49	3.67	3.84	4.00	4.14	4.5%
Banking and Finance	2.57	2.74	2.91	3.09	3.26	3.42	5.9%
Education	2.39	2.57	2.77	2.97	3.17	3.36	7.1%
Industrial	3.04	3.26	3.49	3.72	3.95	4.18	6.5%
Energy and Utility	3.02	3.30	3.61	3.93	4.26	4.59	8.7%
Sports and Leisure	1.82	1.93	2.05	2.17	2.28	2.39	5.6%
Healthcare	1.66	1.78	1.90	2.03	2.15	2.27	6.4%
Military and Defense	1.88	2.02	2.17	2.32	2.48	2.63	7.0%
Total	45.29	48.74	52.35	56.05	59.76	63.40	7.0%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

The European norm DIN 14676 states that smoke detectors must be installed in bedrooms and children's rooms, living rooms, basements, workspaces, and hallways (escape routes). They must also be installed in all living and hobby rooms, heating and workspaces, as well as the basement and attic. Such guidelines are fueling the demand for fire protection systems in the UK. The presence of large finance companies in the European region leads to the development and maintenance of commercial buildings, thus driving the fire protection system market in this region.

Banks and financial institutions in Europe are increasingly adopting biometric systems for transaction security, network security, physical and logical access control, and background check. For instance, according to Mastercard, by April 2019, European banks have installed biometric systems to authenticate and verify consumers. The market is driven by the growing demand for biometric and smart card readers from the commercial verticals.

Most of the surveillance systems installed in Europe are analog, and government organizations and enterprises are migrating from these analog systems to IP-based surveillance systems, which has boosted the requirement for surveillance solutions and services. Hospitality, city surveillance, and transportation segments also play a significant role in the video surveillance market as Europe is one of the most visited destinations by tourists. In addition, in most European cities, increasing incidences of terror attacks and criminal activities are leading to a high demand for video surveillance systems.

11.3.2 UK

Industries in the UK have undertaken various initiatives to enhance security. The government has taken many initiatives to make the country a safe place; to that end, it has increased its spending on security equipment, including identification systems. The demand for enhanced security in enterprises and industrial sectors further propels the growth of the access control market in the UK. Some of the prominent industries in the UK are automotive, aerospace, construction, energy, and telecom, which contribute significantly to the country's GDP. In these industries, there is a high requirement for security systems, which is a major factor driving the access control market. Some other sectors which are gaining importance in the UK include banking & finance, infrastructure, and education. The demand for enhanced

security in enterprises and industrial sectors further propels the growth of the access control market in the UK. Automotive, aerospace, construction, energy, and telecom are among a few of the noteworthy sectors in the UK that contribute significantly to the country's GDP. In these sectors, there is a high requirement for security systems, which is a major factor accelerating the growth of the access control market in the UK.

Given the rise in the instances of terror attacks worldwide, stringent security measures have been implemented in the UK. These include the installation of security systems, identification systems, and surveillance cameras to ensure the safety of citizens. Thus, the increasing rate of crime and terrorism is expected to create a high demand for security products, including access control systems.

The UK had set up a mass surveillance program. The UK government introduced the Protection of Freedoms Act, 2012 (PoFA), which provides the protection of biometric and personal data due to the use of CCTV and automatic number plate recognition (ANPR) systems. City surveillance is the major application area in the UK market as the government has taken many initiatives in terms of making the country one of the safest places in the world during the last few years. Hence, the government has increased its spending on security equipment, including security cameras, and the demand from enterprises and industrial segments is also leading to the growth of the video surveillance market in the UK.

The fire protection system market in the UK is growing owing to the construction of commercial buildings and government regulations and investments in fire safety measures. Buildings in the UK need to follow Building Regulations 2013 to ensure the safety of building occupants. There is a high demand for wireless fire detection systems in the UK due to increased emphasis on esthetics and design, along with the number of heritage buildings and old constructions for which wireless technology is preferred.

11.3.3 GERMANY

Germany contributes significantly to the security solutions market in Europe. In the past few years, the world has witnessed several instances of terrorist attacks, aircraft hijacking, and other security threats. Thus, there is an increasing need for airport security and border control. The biometrics database of Germany is among the most forgery-proof databases in the world. When it comes to electronic documents, Germany is at the forefront of striving to achieve the best identity protection possible. Biometric recognition systems based on fingerprints, hand geometry, iris, and face verification, as well as signature verification systems, are used to screen passengers and their belongings at airports to prevent terrorism and smuggling.

Germany had suffered 2 terrorist attacks in 2017 (one on a train and another at a music festival). Instances of sexual assaults in 2015 New Year's Eve also raised concerns about security on Germany's streets. To overcome such security concerns, many German enterprises and businesses have started deploying different types of biometric access control systems. Biometrics is facilitating the building of new applications, especially in the retail, banking, and healthcare sectors. Though fingerprint recognition is a prominent technology in the biometric system market, other technologies such as facial recognition, iris recognition, and gait recognition are also expected to gain traction in the market. In November 2017, Germany passed a law allowing the government to use facial recognition software for public safety.

The German government is also proactive in implementing several laws for the development of video surveillance infrastructure. Some of these laws will relax restrictions on video surveillance across shops, shopping centers, football stadiums, parking lots, and stations, while others will permit law enforcement officials and the police to wear body cams and to read the license plates on cars to facilitate searches for wanted persons. For instance, the Federal Ministry of Germany has announced plans to install video surveillance technology, integrated with facial recognition capabilities, across major train stations by 2024.

11.3.4 FRANCE

France has large and diversified industrial and agricultural bases. France has become the epicenter of terror attacks in Europe in recent years. For instance, on July 14, 2017, 84 people died in a truck attack during the Bastille Day celebrations in Nice, and on November 13, 2015, 130 people were killed in a gun attack on restaurants and the Bataclan concert hall in Paris. Hence, France has increased its security operations. With the increasing number of tourists every year, the government and travel authorities are focusing on providing secure and automated authentication and identification solutions across all port facilities. In June 2020, BNP Paribas released a VISA bank card that will let consumers pay for their transactions using their fingerprint on the card. In February 2020, FC Metz, a football club based in France, launched its pilot initiative facial recognition system for major events to be held at its stadium. This pilot project tested the facial recognition technology using a video content analysis software developed by Two-i.

In France, the demand for video surveillance is increasing due to the high risk of terrorism, illegal immigration, and drug trafficking. According to the United Nations World Tourism Organization (UNWTO) data, the tourism industry is a major component of the economy as France is the most visited destination in the world. In the past few years, the growing number of hotels, restaurants, casinos, and clubs has led to an increased demand for video surveillance systems in hospitality applications. The transportation sector is also well developed, with an extensive rail network requiring video surveillance systems.

Wireless technologies contribute significantly to the fire protection system market's growth in France. The French government exercises the law to install smoke detectors in new constructions and refurbished and existing buildings. Thus, government initiatives for fire safety are driving the fire protection system market in France.

11.3.5 ITALY

Security is a primary area of focus for Italian private and public sectors. In Italy and across Europe, the major challenges with regard to security are enhancing homeland security and combating illegal immigration and crime. The security solutions market has several opportunities in the field of aviation, naval, supply chain, and rail security areas because of the various security measures mandated by regulatory bodies. The products that are likely to witness high demand in this market include iris and face recognition biometrics-based access control systems. The suppliers providing new, technologically advanced solutions in the access control systems market would have a competitive edge in the country. However, the major challenge for the market in Italy is the lack of awareness regarding access control.

11.3.6 RUSSIA

The government of Russia is one of the key users of safety and security equipment. Crime and terrorism pose a threat to stability in the central and southern regions of Russia, leading to the demand for security products in the region. Moreover, Russia is actively engaged in modernizing its border security system. The government border control agency "Rosgranitza" is undergoing a significant transformation, which could present additional opportunities for the security solutions market in the country.

11.3.7 REST OF EUROPE

The market in Rest of Europe primarily comprises Austria, Denmark, Sweden, Spain, Finland, Hungary, Belgium, and the Czech Republic. Security is a primary area of focus for the industrial sector in these countries. For instance, the European Program for Critical Infrastructure Protection (EPCIP) has been implemented for improving infrastructure protection against terrorism, criminal activities, natural disasters, and other dangers. There is a high demand for security equipment and services in Italy, where the major challenges include crime, breaches in homeland security, and illegal immigration. The products that are likely to witness high demand in these countries include biometric access control systems (iris and face recognition). Suppliers offering new and advanced access control solutions are expected to have a competitive edge in these countries.

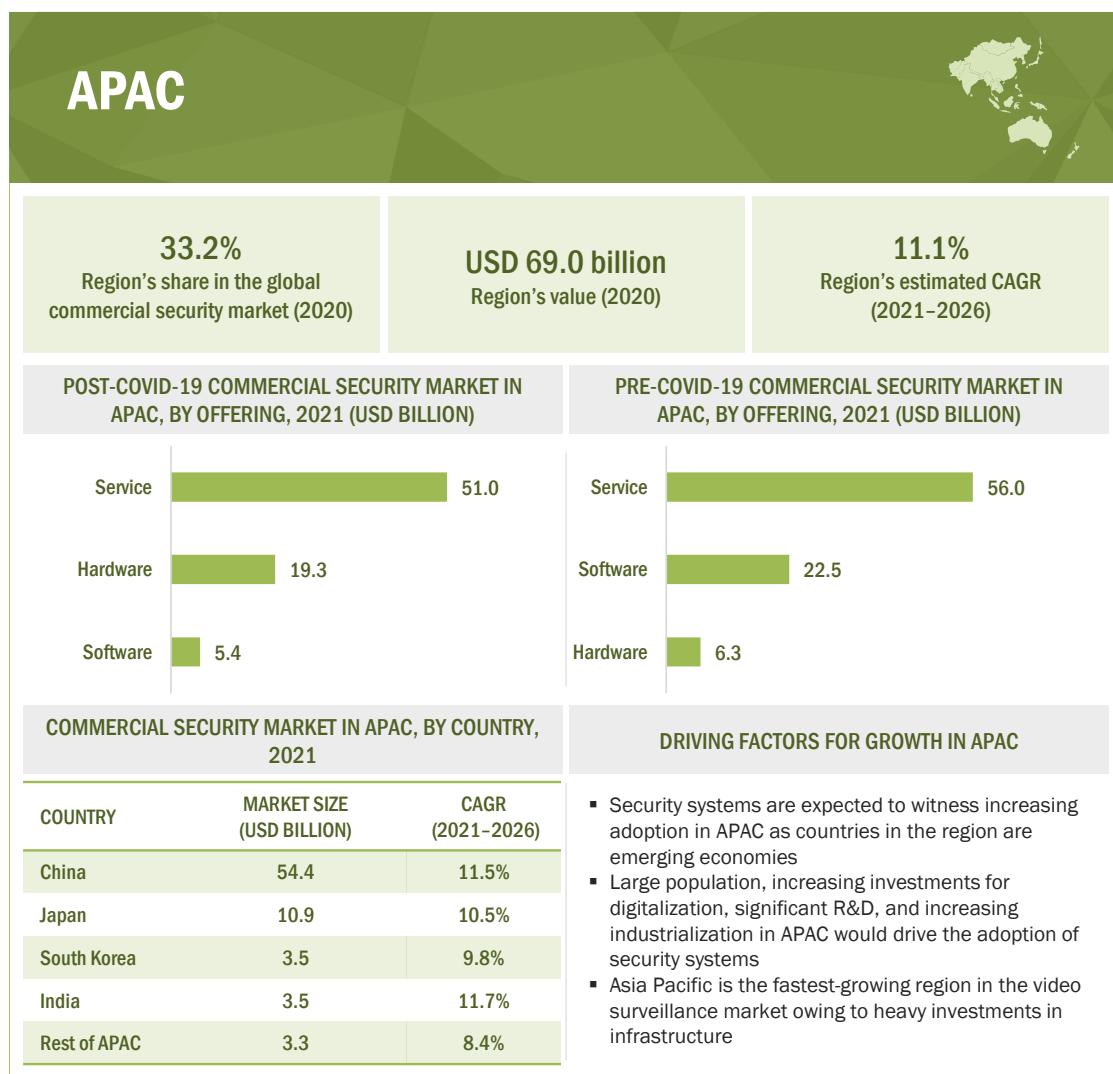
11.4 APAC

11.4.1 SECURITY SYSTEMS TO WITNESS INCREASING ADOPTION IN APAC

The countries considered in the commercial security system market in APAC include China, Japan, India, South Korea, and the Rest of APAC. Security systems are expected to witness increasing adoption in APAC as the countries in the region are emerging economies with a growing number of manufacturing bases; there is also a constant risk of terror threats in the region. The market in APAC has a high growth potential owing to increased security concerns, especially in India and China; the governments in the 2 countries have started investing heavily in security. Furthermore, emerging economies are working toward improving their infrastructure, which is expected to contribute to the growth of the access control system and solution market. The rising adoption of access control systems in small- and medium-sized enterprises, hospitality businesses, airports, ATMs, banks, and religious places is expected to drive the access control market. The access control market in APAC is mainly driven by the commercial, military & defense, government, and industrial verticals.

Large population, increasing investments for digitalization, significant R&D, and increasing industrialization in APAC would drive the adoption of security systems to protect industrial areas. Multi-technology readers enable legacy access control systems to upgrade to new technologies to increase security levels. This region has become a global focal point for investments and business expansion opportunities.

FIGURE 38 SNAPSHOT: COMMERCIAL SECURITY SYSTEM MARKET IN APAC



Source: Annual Reports, Press Releases, Expert Interviews, Company Websites, and MarketsandMarkets Analysis

TABLE 176 COMMERCIAL SECURITY SYSTEM MARKET IN APAC, BY COUNTRIES, 2017–2020 (USD BILLION)

Country	2017	2018	2019	2020
China	39.3	44.0	49.2	49.5
Japan	8.2	9.1	10.1	10.0
South Korea	2.7	2.9	3.2	3.2
India	2.5	2.8	3.2	3.2
Rest of APAC	2.7	2.9	3.2	3.1
Total	55.4	61.7	68.8	69.0

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 177 COMMERCIAL SECURITY SYSTEM MARKET IN APAC, BY COUNTRIES, 2021–2026 (USD BILLION)

Country	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
China	54.4	60.9	68.1	76.0	84.5	93.7	11.5%
Japan	10.9	12.1	13.5	14.9	16.4	18.0	10.5%
South Korea	3.5	3.8	4.2	4.6	5.1	5.5	9.8%
India	3.5	4.0	4.4	5.0	5.5	6.1	11.7%
Rest of APAC	3.3	3.6	3.9	4.3	4.6	5.0	8.4%
Total	75.7	84.4	94.1	104.7	116.1	128.4	11.1%

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 178 COMMERCIAL SECURITY SYSTEM MARKET IN APAC, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Hardware	14.0	16.0	18.1	17.6
Software	3.4	4.0	4.7	4.7
Service	37.9	41.6	45.9	46.7
Total	55.3	61.6	68.7	69.0

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 179 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET IN APAC, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware	19.3	21.7	24.4	27.4	30.6	34.1	12.1%
Software	5.4	6.4	7.5	8.7	10.2	11.8	16.8%
Service	51.0	56.4	62.3	68.6	75.3	82.5	10.1%
Total	75.7	84.4	94.1	104.7	116.1	128.4	11.1%

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 180 PRE-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET IN APAC, BY OFFERING, 2021–2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Hardware	22.5	24.9	27.5	30.2	33.1	36.1	9.9%
Software	6.3	7.2	8.3	9.5	10.8	12.3	14.4%
Service	56.0	61.7	67.7	74.1	80.9	87.9	9.4%
Total	84.7	93.8	103.5	113.9	124.8	136.3	10.0%

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 181 COMMERCIAL SECURITY SYSTEM MARKET IN APAC, BY VERTICAL, 2017–2020 (USD BILLION)

Vertical	2017	2018	2019	2020
Commercial	9.88	10.96	12.15	12.14
Government	8.59	9.56	10.63	10.66
Transportation	12.02	13.61	15.39	15.68
Retail	4.68	5.19	5.74	5.73
Banking and Finance	5.73	6.44	7.22	7.30
Education	2.27	2.54	2.82	2.84
Industrial	2.65	2.92	3.20	3.16
Energy and Utility	3.54	3.99	4.50	4.58
Sports and Leisure	1.20	1.31	1.43	1.40
Healthcare	1.25	1.38	1.52	1.51
Military and Defense	3.44	3.75	4.07	3.99
Total	55.27	61.65	68.68	68.99

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

**TABLE 182 COMMERCIAL SECURITY SYSTEM MARKET IN APAC, BY VERTICAL,
2021–2026 (USD BILLION)**

Vertical	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Commercial	13.25	14.69	16.29	18.03	19.89	21.86	10.5%
Government	11.68	13.00	14.46	16.06	17.78	19.61	10.9%
Transportation	17.45	19.74	22.32	25.17	28.30	31.70	12.7%
Retail	6.24	6.91	7.65	8.44	9.30	10.20	10.3%
Banking and Finance	8.07	9.06	10.17	11.39	12.72	14.15	11.9%
Education	3.11	3.47	3.87	4.30	4.77	5.27	11.1%
Industrial	3.41	3.74	4.10	4.49	4.89	5.31	9.3%
Energy and Utility	5.09	5.74	6.48	7.29	8.18	9.14	12.4%
Sports and Leisure	1.50	1.63	1.77	1.92	2.08	2.23	8.2%
Healthcare	1.64	1.81	1.99	2.19	2.41	2.63	9.9%
Military and Defense	4.26	4.63	5.02	5.42	5.84	6.26	8.0%
Total	75.69	84.43	94.12	104.71	116.15	128.36	11.1%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

Asia Pacific is the fastest-growing region in the video surveillance market owing to heavy investments in infrastructure and smart city projects. The market for video surveillance systems and services in Asia Pacific is likely to continue to grow at a high rate in the near future. The increase in terrorist activities has forced governments to adopt IP surveillance systems for high-security and government buildings. Asia Pacific has also adopted video surveillance technology in the retail sector.

The growing deployment of cloud-based services and cloud management software is expected to drive demand for access control systems to ensure data confidentiality and authentication. Consumers in APAC are highly adaptive toward biometrics, especially for financial transactions. Biometrics adds an extra level of security during transactions. This is expected to eliminate the need for traditional security techniques such as pins, passwords, security questions, or different ID cards. This technology has also attracted other industries (such as healthcare and banks).

China is expected to account for the largest share of the fire protection system market in the APAC region during the forecast period. New construction and real estate projects are driving the demand for fire protection systems and equipment. The government is expected to come up with strict laws and regulations that would make the installation of fire protection systems mandatory in buildings. These factors are fueling the growth of the fire protection system market in China.

11.4.2 CHINA

China is one of the fastest-growing economies in the world. The country's large-scale industrialization has led to the growing need for security systems. Moreover, continuous spending on R&D has resulted in the development of advanced systems that can fulfill varying user demands. Many small players are entering the market in China with low-cost solutions, which is boosting the adoption of security systems. Access control systems are installed in government buildings to enhance security and enable real-time response to imminent threats. China is mainly focusing on installing precise biometric systems. For instance, in January 2018, facial recognition and artificial intelligence firm Shenxing Tech (China) raised funds to expand its business in the public sector and provide better facial recognition and artificial intelligence solutions to users. Shenxing Tech provides facial recognition technologies to a range of sectors including

real estate, public security, schools, and hospitals. Its main customers include the Aviation Industry Corporation of China, PetroChina Company (China), and China Railway Construction Co., Ltd (China). Further, in February 2018, the Chinese police started using LLVision's (China) face-scanning smart glasses to identify criminals in public spaces. The system's software scans the faces captured in video feeds and compares them with an offline database in a synced, mobile device.

China is home to video surveillance players such as Dahua (China) and Hikvision (China) that dominate the video surveillance hardware market. Also, the Chinese government is taking various initiatives such as city surveillance and smart city projects for infrastructure development, which leads to an increase in the use of video surveillance systems in China. Moreover, continuous spending on R&D activities that result in the development of advanced systems, which can satisfy the varying demands of end users, propels the growth of the video surveillance market in China. Also, there are many small players in China entering the market to provide low-cost solutions, thereby increasing the adoption of surveillance systems in various applications.

The fire protection system market in China comprises many companies, including multinational and local companies that provide a comprehensive range of products and services. The government is expected to come up with strict laws and regulations that would make the installation of fire protection systems mandatory in buildings. New construction and real estate projects are driving the demand for fire protection systems and equipment in China.

11.4.3 JAPAN

The Japanese government has put a great deal of emphasis on spreading public awareness about fire safety measures. There are many fire safety initiatives in the country, such as the deployment of ample human resources in firefighting and public awareness initiatives in schools through radio, TV, and other media. Fire extinguishers are widely used in Japan and training for using fire extinguishers is provided in schools and workplaces. The market for fire extinguishers, sprinklers, and fire alarms is well developed in Japan, and the growth trend is expected to continue in the coming years.

Japan is a vibrant market for biometrics-based access control, having experimented with different applications of biometrics. Biometrics technology has been widely adopted in the banking and financial sector on a large scale. Since 2005, Japanese banks have been adopting biometric ATMs at key locations.

The Japanese government is installing several network and IP cameras at public places, subway cars, and metros ahead of the Tokyo 2021 Olympic Summer Games to be held in July–August 2021. Japan's ministry of land, infrastructure, transport, and tourism also announced the installation of new video surveillance cameras at several airports as part of security measures for the Olympic Games; this will boost the market for video surveillance products. Other important applications in the Japanese market include city surveillance and transportation, retail, hospitality, and healthcare.

11.4.4 SOUTH KOREA

South Korea is also experiencing significant growth in the security solutions market because of growing security concerns, which create a need for security systems. In South Korea, there is also a growing need for advanced video surveillance, which creates enormous opportunities for video surveillance system manufacturers and distributors. The Ministry of Public Administration and Security of Korea has announced a plan to build integrated CCTV monitoring centers in all parts of South Korea. Therefore, local governments are planning to build additional integrated CCTV monitoring centers in the region, which is resulting in the installation of a large number of additional surveillance cameras.

The South Korean government leads in promoting the adoption of fire protection systems among other governments in APAC. Consumers are well aware of the need for fire safety systems and their installation in this country. The fire protection system market in South Korea is mainly dominated by products such as fire suppression systems, sprinklers, alarms, voice evacuation systems, and fire extinguishers. This is ascribed to the government initiatives to minimize fire damages to human lives and properties.

11.4.5 INDIA

In India, to combat the threat of terrorist attacks and other security breaches, there is a high demand for advanced security products. This facilitates the integration of products and solutions from various vendors, thus offering a flexible solution for end users. The security concerns in government, defense, and commercial complexes have increased in the recent past. The technological breakthroughs such as the emergence of wireless technologies, advanced cameras, and advancements in sensing technologies have largely helped bring down costs. This has led to an increase in the demand for these products in this sector as well.

The access control market in India is still in its developing stage and has a lot of scope for development. The rise in terrorist activities, crime rates, remote monitoring, and data and security breaches have increased the need for security and safety in all sectors in India. The access control market in India is primarily driven by the rapid industrialization and technological developments in access control systems. Increasing awareness regarding the safety and security of people and growing government security expenditure are some other factors driving the high growth of the access control market in India. Moreover, India has been making significant investments in R&D. The Indian government plans to build 250 operational airports and 50 low-cost airports through a public and private partnership by 2030. The growing airport infrastructure would further provide growth opportunities for access control market players owing to the high demand for stringent security measures to prevent terrorist activities, illegal immigration, smuggling, etc.

India pioneered the mega-project, unique identification (UID) or “Aadhaar” for its citizens. Under the UID project, all citizens would be assigned one UID number. The Unique Identification Authority of India (UIDAI) has enrolled over a billion Indians to date. The initiatives by the government to provide advanced and upgraded services to citizens, along with developing smart cities, would offer huge opportunities for the growth of the biometric system market. Biometrics technology is also being applied at airport terminals across the country.

11.4.6 REST OF APAC

The market in Rest of APAC primarily comprises Australia, Malaysia, Singapore, Hong Kong, New Zealand, Indonesia, and Taiwan. Owing to rising security concerns and increasing need for automation, the governments in Rest of APAC are investing heavily in access control systems. The Australian Taxation Office (ATO) uses voice recognition technology to provide an easier interface to the Australian public. The governments of Australia and New Zealand have adopted the technology to secure their borders and manage tourist inflow. The Singaporean government has mandated the submission of fingerprint data for foreign visitors. Singapore, Malaysia, Indonesia, Australia, and New Zealand are implementing biometrics and smart locks in their banking and financial infrastructure.

11.5 ROW

11.5.1 INCREASING USE OF DIGITAL TECHNOLOGY TO DRIVE MARKET GROWTH

The market in the RoW region has been further classified into South America and Middle East & Africa. The security solutions market in this region is driven by the increasing demand for security to check burglary, terrorist attacks, chemical explosions, and drug trafficking.

TABLE 183 COMMERCIAL SECURITY SYSTEM MARKET IN ROW, BY COUNTRIES, 2017–2020 (USD BILLION)

Region	2017	2018	2019	2020
Middle East and Africa	11.8	12.8	13.8	13.7
South America	6.8	7.0	7.6	7.3
Total	18.7	19.8	21.4	21.0

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 184 COMMERCIAL SECURITY SYSTEM MARKET IN ROW, BY COUNTRIES, 2021–2026 (USD BILLION)

Region	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Middle East and Africa	14.7	16.0	17.3	18.7	20.2	21.7	8.1%
South America	7.7	8.1	8.6	9.1	9.6	10.0	5.5%
Total	22.3	24.1	25.9	27.8	29.8	31.7	7.2%

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 185 COMMERCIAL SECURITY SYSTEM MARKET IN ROW, BY OFFERING, 2017–2020 (USD BILLION)

Offering	2017	2018	2019	2020
Hardware	5.7	5.9	6.4	6.1
Software	0.8	1.0	1.1	1.0
Service	12.1	13.0	14.0	13.9
Total	18.6	19.8	21.4	21.0

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 186 POST-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET IN ROW, BY OFFERING, 2021-2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021-2026)
Hardware	6.4	6.9	7.3	7.8	8.2	8.6	5.9%
Software	1.1	1.2	1.4	1.5	1.7	1.9	10.9%
Service	14.8	16.0	17.2	18.6	19.9	21.3	7.5%
Total	22.3	24.1	25.9	27.8	29.8	31.7	7.3%

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 187 PRE-COVID-19 COMMERCIAL SECURITY SYSTEM MARKET IN ROW, BY OFFERING, 2021-2026 (USD BILLION)

Offering	2021	2022	2023	2024	2025	2026	CAGR (2021-2026)
Hardware	7.2	7.6	8.0	8.4	8.7	9.0	4.6%
Software	1.3	1.4	1.5	1.7	1.8	2.0	8.9%
Service	16.3	17.5	18.8	20.1	21.5	22.8	7.0%
Total	24.8	26.5	28.3	30.2	32.0	33.8	6.4%

Source: Secondary literature, Expert Interview, and MarketsandMarkets Analysis

TABLE 188 COMMERCIAL SECURITY SYSTEM MARKET IN ROW, BY VERTICAL, 2017-2020 (USD BILLION)

Vertical	2017	2018	2019	2020
Commercial	6.07	6.52	7.11	7.06
Government	1.65	1.74	1.86	1.81
Transportation	2.59	2.73	2.93	2.86
Retail	1.42	1.47	1.55	1.49
Banking and Finance	1.03	1.08	1.15	1.11
Education	1.05	1.11	1.20	1.18
Industrial	1.34	1.42	1.53	1.49
Energy and Utility	1.21	1.32	1.46	1.47
Sports and Leisure	0.86	0.90	0.96	0.93
Healthcare	0.77	0.81	0.87	0.85
Military and Defense	0.66	0.71	0.77	0.76
Total	18.64	19.80	21.40	21.03

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

**TABLE 189 COMMERCIAL SECURITY SYSTEM MARKET IN ROW, BY VERTICAL,
2021–2026 (USD BILLION)**

Vertical	2021	2022	2023	2024	2025	2026	CAGR (2021–2026)
Commercial	7.58	8.25	8.98	9.73	10.51	11.30	8.3%
Government	1.91	2.04	2.18	2.32	2.46	2.60	6.3%
Transportation	3.02	3.23	3.46	3.69	3.92	4.14	6.5%
Retail	1.54	1.62	1.70	1.78	1.86	1.93	4.6%
Banking and Finance	1.17	1.24	1.32	1.39	1.47	1.54	5.7%
Education	1.26	1.36	1.46	1.57	1.68	1.79	7.3%
Industrial	1.58	1.70	1.82	1.95	2.07	2.20	6.8%
Energy and Utility	1.59	1.75	1.93	2.11	2.31	2.50	9.4%
Sports and Leisure	0.98	1.04	1.11	1.18	1.25	1.31	6.0%
Healthcare	0.90	0.97	1.04	1.11	1.18	1.25	6.7%
Military and Defense	0.81	0.87	0.94	1.01	1.08	1.15	7.4%
Total	22.34	24.09	25.93	27.84	29.78	31.72	7.3%

Source: Secondary Literature, Expert Interview, and MarketsandMarkets Analysis

The video surveillance market is growing at a substantial rate in the Middle Eastern region. Government efforts to fight terrorism are driving the market. The increase in government initiatives pertaining to smart security systems due to upcoming events such as the FIFA World Cup 2022 in Qatar is expected to lead to an increase in the demand for video surveillance systems. Video surveillance also plays an important role in boosting people's sense of security in situations of political unrest. In the Middle East, video surveillance systems have penetrated applications such as defense, infrastructure, commercial, and industrial.

In the Middle Eastern region, fire protection systems are used in various verticals, such as oil, gas, and mining and energy & power. As these industries are more developed in the Middle East than in South America, the fire protection system market is more developed in the Middle East than in South America.

The increasing use of digital technology is expected to drive the growth of this market. The market would be driven by utilities and aerospace applications in the industrial vertical (with the growing adoption of electronic locks and multi-technology readers). The region holds significant opportunities for access control product and service providers. Developing countries such as Brazil and Argentina are expected to drive the growth of the access control market in South America in the near future.

11.5.2 MIDDLE EAST & AFRICA

The Middle East is developing rapidly in terms of the adoption of advanced technologies. Oil & gas and medical are the major verticals in this region. Access control systems have a significant demand in Middle Eastern countries as governments focus on providing efficient security solutions. Rising security spending by governments, the growing number of tourists, increasing number of government projects, the upcoming World Expo 2020 in the UAE, and increasing spending on IT are some of the factors driving the demand for security equipment. The growth is primarily expected from the UAE, Saudi Arabia, Turkey, and Israel. In Saudi Arabia, biometric technology has been implemented for airport security and tourist monitoring. In June 2017, the Dubai-based Emirates airline launched the “Together” initiative in collaboration with Dubai Customs, Dubai General Directorate of Residency and Foreigners Affairs (GDRFA), Dubai Police, and Dubai Airports. This initiative is likely to include the deployment of automated border control gates and biometric technology to accelerate traveler processing time and increase operational efficiency.

The growing public and private sector construction infrastructure projects and continued political and security threats are leading to increasing demand in the Middle Eastern and North African (MENA) surveillance system market. In Qatar, large infrastructure and leisure projects linked to the 2022 FIFA World Cup, coupled with local regulations, are important factors for the growth of the video surveillance system market. Government initiatives such as Saudi Vision 2030 and UAE Vision 2021 have come up with different ventures in infrastructural developments. These construction activities require fire safety products, which is expected to result in the adoption of fire protection systems in the coming years.

The African market mainly comprises South Africa, Nigeria, Zimbabwe, Namibia, Angola, and Sudan. The security solutions market in Africa is changing rapidly, with owners of retail and commercial properties, among others, adopting different security technologies and solutions for increased safety. This is mainly due to the rise in crime rates as well as their violent nature. Real estate developers emphasize greatly on the reputation of the security company they sign contracts with. Hence, it is essential for companies to keep themselves abreast of the emerging trends as well as maintain consistent performance to obtain contracts in this region.

The African access control market is mainly driven by the increasing investments by transport authorities and growth in government spending to strengthen border security. The governments of Congo, Rwanda, and other African countries are actively registering their citizens' biometric data.

The African video surveillance market, which includes analog and IP systems, is still growing. Africa, Nigeria, and Kenya are expected to witness significant growth, and technological advancements have benefited the video surveillance market, which is expected to result in an increase in the installation of video surveillance systems.

11.5.3 SOUTH AMERICA

The key states in Brazil—Rio de Janeiro, Minas Gerais, Sao Paulo, and Espirito Santo—offer potential opportunities for electronic security equipment, including CCTVs and alarm systems as well as access control equipment.

Rest of South America includes Brazil, Argentina, Chile, and Colombia. The most common crimes occurring in Argentina are theft, burglary, bag snatching, armed robberies, and kidnapping. Therefore, various companies such as Johnson Controls (US), Honeywell International, Inc. (US), and Risco Group (Israel) are operating in the country to provide a wide range of security products and solutions to customers.

12 COMPETITIVE LANDSCAPE

12.1 OVERVIEW

This chapter describes the dynamics of the commercial security system market from the key players' perspectives. This section includes the market share of key market players, which is analyzed based on several factors, such as the overall revenue, business revenue mix, R&D investments, regional presence, product offerings, current market share, consumer perception index, and strategic developments (product launches, partnerships, and expansions) of the company. Moreover, this report analyzes strategies adopted by the profiled market players (from 2018 to 2020) to maintain their position, ensure long-term growth and profitability, expand their global presence, and increase their market share. Key strategies include product launches/developments, partnerships, and acquisitions.

FIGURE 39 KEY DEVELOPMENTS IN COMMERCIAL SECURITY SYSTEM MARKET (2018-2020)

COMPANY NAME	ORGANIC	INORGANIC	
	PRODUCT LAUNCHES AND DEVELOPMENTS	PARTNERSHIPS	ACQUISITIONS
JOHNSON CONTROLS	Johnson Controls launched the smart fire sprinkler monitoring solution. This system continuously collects data and alerts building managers to a potential problem before it becomes a dangerous situation.	Johnson Controls entered a partnership with EAGL Technology and Anixter to deliver a comprehensive security portfolio for customers, enabling faster emergency response times in crisis situations. This partnership will expand the company's emergency preparedness and response portfolio and will also play a crucial role in the company's response to COVID-19.	Johnson Controls acquired the remaining stake in Qolsys Inc., a leading residential and commercial security and smart-home manufacturer. This acquisition is expected to enhance long-term opportunities for broad cloud-enabled IoT solutions in its fire safety business. 
HIKVISION	Hikvision launched new ColorVu offerings for a vivid 24X7 colorful imaging. It includes a 4K and varifocal camera in the full-color range. This is expected to help in identifying details of events, especially at night.		
CARRIER	LenelS2 announced the launch of the interface between OnGuard access control system and DMP intrusion detection systems. This new interface expands functionality and increases compliance in highly regulated markets and simplifies administration and deployment.	Carrier's subsidiary LenelS2 entered a 10-year agreement with Milestone Systems to distribute Milestone products globally. This agreement allows for the joint offering of LenelS2 OnGuard access control and Milestone XProtect video management software which will lower the overall cost of ownership for end users and integrators. 	
HONEYWELL INTERNATIONAL	Honeywell launched first cloud-based solution that provides end-to-end connectivity and visibility to fire safety systems. This tool is a part of its new suite of Connected Life Safety Services (CLSS) product portfolio, an all-in-one cloud platform for fire safety systems.		
DAHUA TECHNOLOGY	Dahua upgraded its open application platform with the launch of Application Marketplace and DHOP Community onto its new Dahua Hardware Open Platform (DHOP) website. This initiative will bring together technology partners, resellers, system integrators, and end users under one platform.	Dahua Technology announced the addition of a built-in Ivideon service for its IPC-HD4140X-3D dual-lens visitor counter. Ivideon (US) offers cloud-based video surveillance services and develops video analytics tools for businesses worldwide. This collaboration will improve the scope for video surveillance as well as video analytics for sustainable development. 	

Note:  indicates events that are expected to have a significant impact on the market.

Source: Press Releases, Expert Interviews, and MarketsandMarkets Analysis

12.2 MARKET SHARE ANALYSIS: COMMERCIAL SECURITY SYSTEM MARKET

This section provides a detailed market share analysis of the key players covered in this report. The market share of key players is the outcome of the qualitative and quantitative analyses of various factors related to these companies, such as product portfolios, technological innovations, market presence, and overall revenue, along with the opinions of primary respondents. The following chart provides the market share of key players for the year 2020.

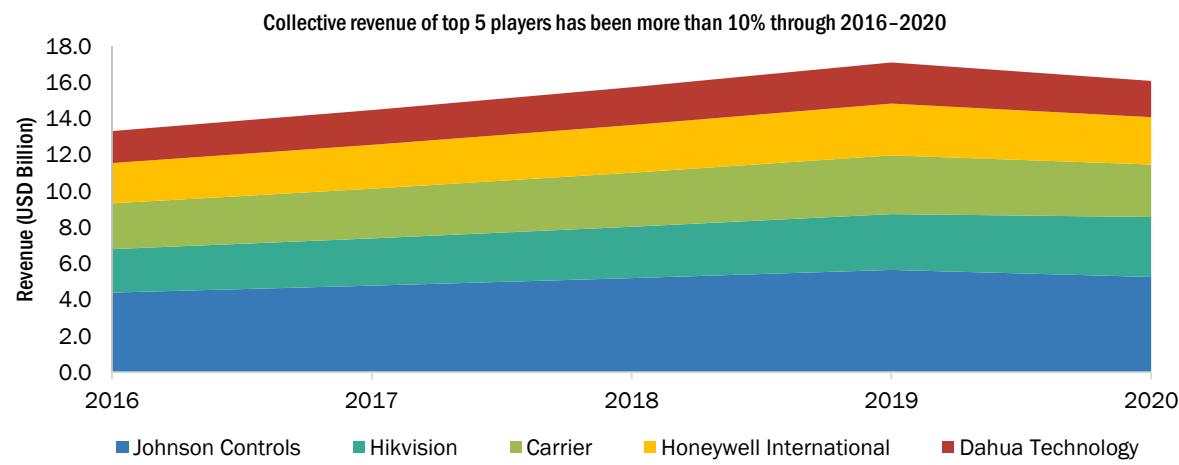
TABLE 190 MARKET SHARE OF KEY PLAYERS IN COMMERCIAL SECURITY SYSTEM MARKET, 2020

Key players	Market share (2020)
Johnson Controls	2.3-2.7%
Hikvision	1.4-1.8%
Carrier	1.2-1.6%
Honeywell International	1.1-1.5%
Dahua Technology	0.8-1.2%
Other Companies	91.0-93.0%

Source: Annual Reports, SEC Filings, Press Releases, Investor Presentations, Expert Interviews, and MarketsandMarkets Analysis

12.3 REVENUE ANALYSIS OF TOP 5 PLAYERS IN COMMERCIAL SECURITY SYSTEM MARKET

This section provides a detailed market share analysis of the key players covered in this report. The market share of key players is the outcome of the qualitative and quantitative analyses of various factors related to these companies, such as product portfolios, technological innovations, market presence, and overall revenue, along with the opinions of primary respondents. The following chart provides the market share of key players during the period 2016–2020.

FIGURE 40 REVENUE ANALYSIS OF TOP FIVE PLAYERS IN COMMERCIAL SECURITY MARKET (2016–2020)

Source: Annual Reports, SEC Filings, Press Releases, Investor Presentations, Expert Interviews, and MarketsandMarkets Analysis

The top 5 players in the commercial security system market have witnessed consistent growth in their revenue from 2016 to 2019, with a dip in revenue in 2020 due to the ongoing COVID-19 pandemic. Since the acquisition of Tyco by Johnson Controls in 2015, this company has been leading the commercial security system market with a market share of ~2.5%. With a diversified market presence and global reach, the company is driving sales growth by introducing competitiveness and differentiation in products and services. To accomplish this, the company invests heavily in enhancing its R&D capabilities. It has R&D centers in many countries, which allow it to serve customers with innovative solutions and products.

The players in the market are primarily employing organic strategies of product launch to enhance their products as well as increase their geographic reach and grow their business. The top players do not adopt too many inorganic growth strategies, such as partnerships, collaborations, and acquisitions. The ranks of the top 5 players are expected to remain the same for the next 2-3 years.

12.4 COMPANY EVALUATION MATRIX

The company evaluation matrix provides information about key players that offer commercial security systems, as well as outlines the findings and analysis on how well each market vendor performs within the predefined competitive leadership mapping criteria. Vendor evaluations are based on 2 broad categories—strength of product portfolio and business strategy excellence. Each category carries various criteria based on which the vendors have been evaluated.

12.4.1 STARS

Stars are the leading players in the market, having a robust product portfolio, strong market presence, and effective business strategies. Through their robust portfolio of products, these players meet the demands of customers across the world. Stars primarily focus on acquiring the leading market position through their strong financial capabilities and well-established brand equity. Johnson Controls, Hikvision, Carrier, Honeywell International, Dahua Technology, Bosch Security Systems, dormakaba Holding, Axis Communications, and SECOM are the star players in the commercial security system market.

12.4.2 EMERGING LEADERS

Allegion, STANLEY Convergent Security Solutions, Avigilon, FLIR Systems, Gunnebo AB, Minimax Viking, and Hanwa Techwin are emerging leaders in the commercial security system market. They possess innovative solutions to cater to future commercial security system demands. These companies are concerned about their product portfolio and have the potential to build strong growth strategies to expand their businesses and stay on par with the stars operating in the market.

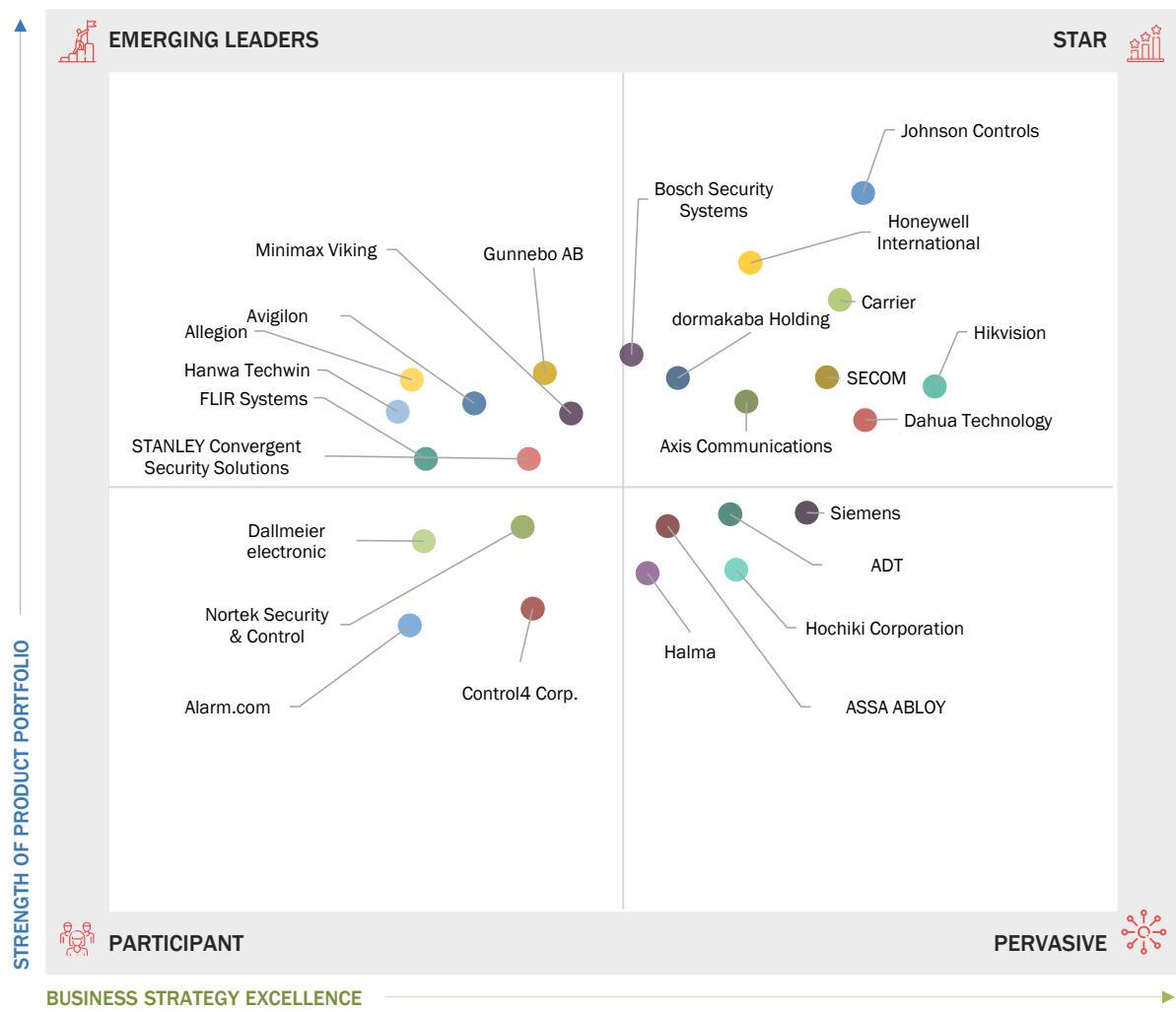
12.4.3 PERVERSIVE

ADT, ASSA ABLOY, Siemens, Hochiki Corporation, and Halma are among a few pervasive players in the commercial security system market. They offer innovative solutions, services, and hardware portfolios and have an extensive network of channel partners and resellers to increase the deployment of their solutions across a multitude of vertical markets. Pervasive players have been consistently generating positive revenue growth in the commercial security system market, and their market position is boosted by the organic and inorganic ventures they undertake.

12.4.4 PARTICIPANTS

Alarm.com, Dallmeier electronic, Nortek Security & Control, and Control4 Corp. are the participants in the commercial security system market. These companies are the vendors with niche product offerings that have started gaining a foothold in the market. Their business strategies are not as strong as other established vendors. They will require some time to gain significant traction in the market.

FIGURE 41 COMMERCIAL SECURITY SYSTEM MARKET: COMPANY EVALUATION MATRIX, 2020



Source: Press Releases, Expert Interviews, and MarketsandMarkets Analysis

12.5 STARTUP/SME EVALUATION MATRIX, 2020

The startup/SME evaluation matrix provides information about the major players who offer commercial security systems, as well as outlines the findings and analyses on how well each market vendor performs within the predefined competitive leadership mapping criteria. Vendor evaluations are based on 2 broad categories—strength of product portfolio and business strategy excellence.

12.5.1 PROGRESSIVE COMPANIES

Wyze Lab and Smartfrog are the progressive companies in the commercial security system market. They offer strong solution portfolios in the commercial security system market. These vendors have been marking their presence in the market by offering solutions according to customer requirements and adopting growth strategies to expand their regional footprint in the commercial security system market.

12.5.2 RESPONSIVE COMPANIES

MachineSense LLC and Ring Labs are considered the responsive companies in the commercial security system market. They possess innovative solutions to meet future commercial security system demands. These companies are concerned about their product portfolios and have the potential to build robust business strategies so that they can expand their business and stay on par with progressive companies.

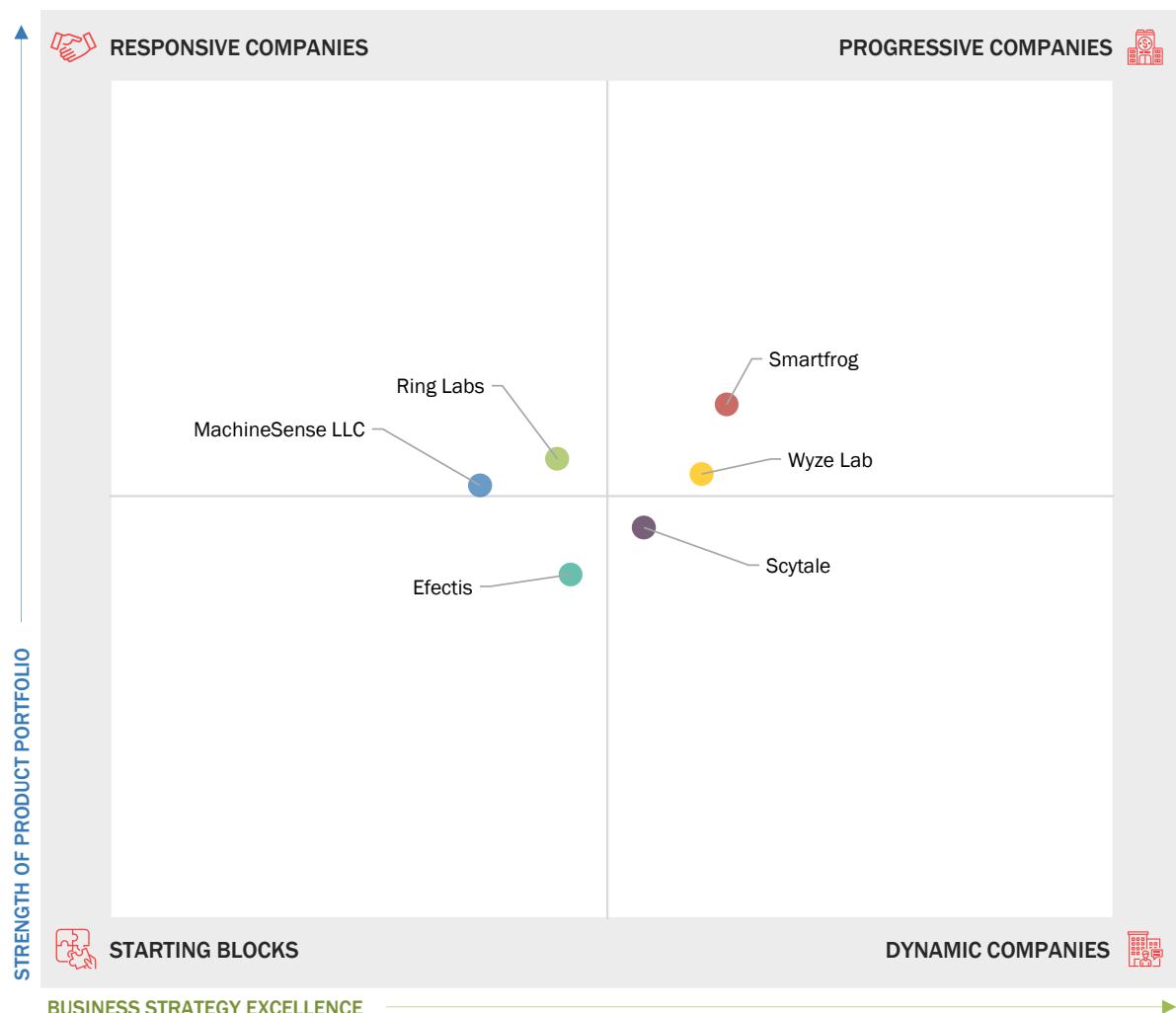
12.5.3 DYNAMIC COMPANIES

Scytale offers innovative solution portfolios and has an extensive network of channel partners and resellers to increase the deployment of their solutions across a multitude of vertical markets. Dynamic companies have been consistently generating positive revenue growth in the commercial security system market, and their market position is boosted by the organic and inorganic ventures they undertake.

12.5.4 STARTING BLOCKS

Efectis is recognized as a starting block in the commercial security system market. Most of the starting block companies in this market have been undertaking multiple acquisitions to boost their sales capabilities across regions by offering integrated solutions and services to a wide range of clients.

FIGURE 42 COMMERCIAL SECURITY SYSTEM MARKET: STARTUP/SME EVALUATION MATRIX, 2020



Source: Press Releases, Expert Interviews, and MarketsandMarkets Analysis

13 COMPANY PROFILES

13.1 KEY PLAYERS

13.1.1 JOHNSON CONTROLS

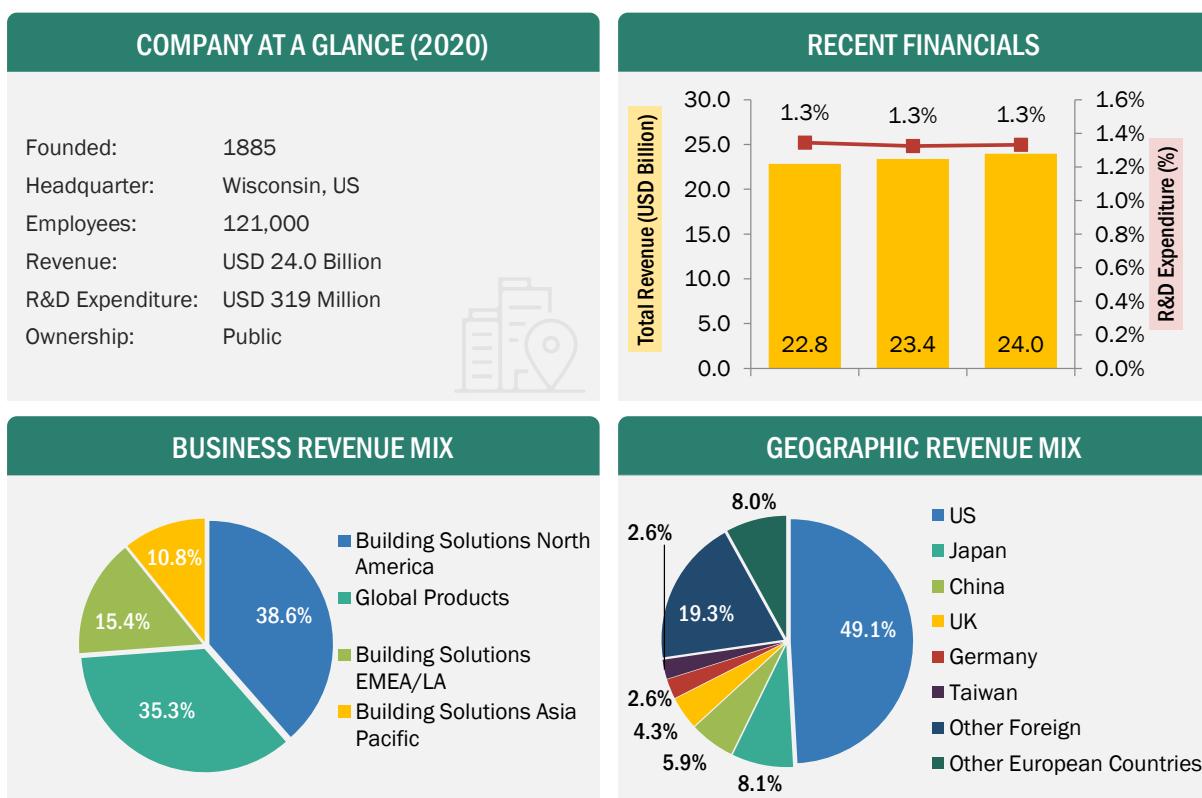
13.1.1.1 Business overview

Johnson Controls offers security, fire detection, suppression, and life safety products and services. Its products are sold under the following brand names: Tyco, Simplex, Grinnell, Sensormatic, Ansul, Simplex, Scott and ADT, Software House, Visonic, Chemguard, and Exacq. In September 2016, the company merged with Tyco to move into the home security system business, with ~56% equity in delivering advanced home security systems.

Johnson Controls operates through 4 major segments—Building Solutions North America, Global Products, Building Solutions EMEA/LA, and Building Solutions Asia Pacific. The company sells its commercial security products through all of its 4 business segments. The company sells its integrated control systems, security systems, fire detection systems, equipment and services in more than 150 countries, primarily through the company's extensive global network of sales and service offices, with operations in approximately 65 countries.

ADT Security Services S.A. (Argentina), Tyco Fire & Security Pty Ltd. (Australia), and Exacq Technologies, Inc. (US) are among a few of the key subsidiaries of the company that are actively operating in the commercial security market.

FIGURE 43 JOHNSON CONTROLS: COMPANY SNAPSHOT



Note: The fiscal year of the company ends on September 31. In the “recent financials” block, the R&D expenditure has been considered as a percentage of the company’s total revenue.

Source: Company Website and Annual Reports

13.1.1.2 Products/solutions/services offered

CATEGORY	PRODUCT/SOLUTION
Security	<ul style="list-style-type: none"> ▪ Access Control ▪ Intrusion Detection ▪ Video Surveillance ▪ Converged Solutions ▪ Wireless Security Systems ▪ Wired and Wireless Security Systems ▪ Devices
Fire Detection and Fire Suppression	<ul style="list-style-type: none"> ▪ Control Panels ▪ Sensors and Initiating Devices ▪ Notification and Audio Devices ▪ Networks and Workstations ▪ Emergency Communications ▪ Fire Sprinklers ▪ Fire Sprinkler Systems ▪ Fire Sprinkler System Design and Software
Services	<ul style="list-style-type: none"> ▪ System Integration ▪ Managed Services ▪ Fire Maintenance and Support ▪ Fire Detection Services ▪ Fire Suppression Services

Source: Company Website

13.1.1.3 Recent developments

MONTH & YEAR	APPROACH	DESCRIPTION
November 2020	Product Launch	Johnson Controls launched the smart fire sprinkler monitoring solution. This system continuously collects data and alerts building managers to a potential problem before it becomes a dangerous situation.
October 2020	Product Launch	Johnson Controls launched intelligent frictionless access control for high-security environments that comes engineered with AI, deep learning algorithms, and robust cybersecurity protocols. This system combines the functionality of access control management software and facial recognition camera.
August 2020	Acquisition	Johnson Controls acquired the remaining stake in Qolsys Inc., a leading residential and commercial security and smart-home manufacturer. This acquisition is expected to enhance long-term opportunities for broad cloud-enabled IoT solutions in its fire safety business.
July 2020	Acquisition	Johnson Controls acquired EuroPAC to expand its reach in the monitoring and telephone services in the BENELUX region. The acquisition will strengthen its Video as a Service (VaaS) capabilities.

July 2020	Partnership	Johnson Controls entered a partnership with EAGL Technology and Anixter to deliver a comprehensive security portfolio for customers, enabling faster emergency response times in crisis situations. This partnership will expand the company's emergency preparedness and response portfolio and will also play a crucial role in the company's response to COVID-19.
June 2020	Product Launch	Johnson Controls launched new TYCO pressure control valves—TYCO Model RV-1A Pressure Relief Valve and the TYCO Model PRV-1A Pressure Reducing Valve—for fire protection systems. It is a pressure reducing and pressure relief valve designed for the simple and efficient installation and operation of a commercial fire protection system.
October 2019	Product Launch	Johnson Controls has added WaveLynx Technologies' Ethos Multi-Tech readers to its access control portfolio. These readers work simultaneously with old and new credentials. It comes integrated with the Tyco Software House C•CURE 9000 event and security management system, which can provide 24x7 mission-critical security and safety protection to assets, people, and buildings.
April 2019	Acquisition	Johnson Controls' New Zealand subsidiary acquired Focus Fire & Security. This acquisition will help the company develop and expand its presence in the Tauranga area.
April 2019	Acquisition	Johnson Controls' New Zealand subsidiary acquired based Fire & Mechanical Contracting Ltd, a company offering testing, installation, and servicing of fire protection systems. This acquisition will help the company provide a wide range of services to its customers in the Otago and Southland regions looking for a one-stop place for its security product-related services.
August 2019	Product Launch	Johnson Controls launched Tyco Cloud, a new cloud-based security suite developed to help customers move costly and complex security infrastructure for access control and video surveillance to the cloud. With Tyco Cloud, organizations can reduce costs, improve enterprise security management, and scale security operations on demand, providing unlimited possibilities to deliver security services over the internet.
May 2019	Product Launch	Johnson Controls launched EN Grade 3-compliant Tyco DSC PowerSeries Pro intrusion security alarm system. It provides a feature-rich intrusion detection solution for commercial properties of any size, from small shops to large office buildings, factories, healthcare facilities, and educational campuses.
May 2019	Product Launch	Johnson Controls announced that its flagship access control and event management system Tyco Software House C•CURE 9000 is supported on Infrastructure as a Service (IaaS), enabling customers to take advantage of the many benefits of cloud computing with the choice of best-suited service providers.
July 2018	Product Launch	Johnson Controls launched CEM Systems AC2000 v10.0, which offers users a modernized look and feel along with new features such as enhanced enterprise capabilities that increase the performance and scope of the AC2000 access control system suite from CEM Systems.
June 2018	Product Launch	Johnson Controls launched 2 new camera models to the Illustra Pro line, with the Pro Compact Mini-Domes in 2MP and 3MP resolution, which is ideal for applications such as retail stores, healthcare facilities, and banks where low profile and aesthetics are important.

Source: Company Website and Press Releases

13.1.1.4 SWOT analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> Wide distribution network to sell its products to customers across 150 countries Focused on product launches and developments to expand its portfolio of commercial security solutions 	<ul style="list-style-type: none"> High dependence on the US for revenue generation
JOHNSON CONTROLS	
<ul style="list-style-type: none"> Increasing focus on expanding global market reach and sales from markets outside the US Growing utilization of commercial security systems in smart buildings and smart cities across the world 	<ul style="list-style-type: none"> Adverse impact of COVID-19 on revenue growth due to supply chain disruptions
OPPORTUNITIES	THREATS

Source: Company Website, Annual Reports, Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

13.1.1.5 MNM view

With a diversified market presence and global reach, Johnson Controls is driving sales growth by introducing competitive and differentiated products and services. To accomplish this, the company invests heavily in enhancing its R&D capabilities. It has R&D centers in many countries, which allows it to serve customers with innovative solutions and products. The company focuses on further enhancing the existing portfolio of Tyco in the security solutions market. Tyco and Johnson Controls focus on business expansion through cross-selling and channel network selling. In the future, the company could focus on further increasing its direct and indirect distribution channels in the APAC region to reap the benefits of the opportunities present in this region.

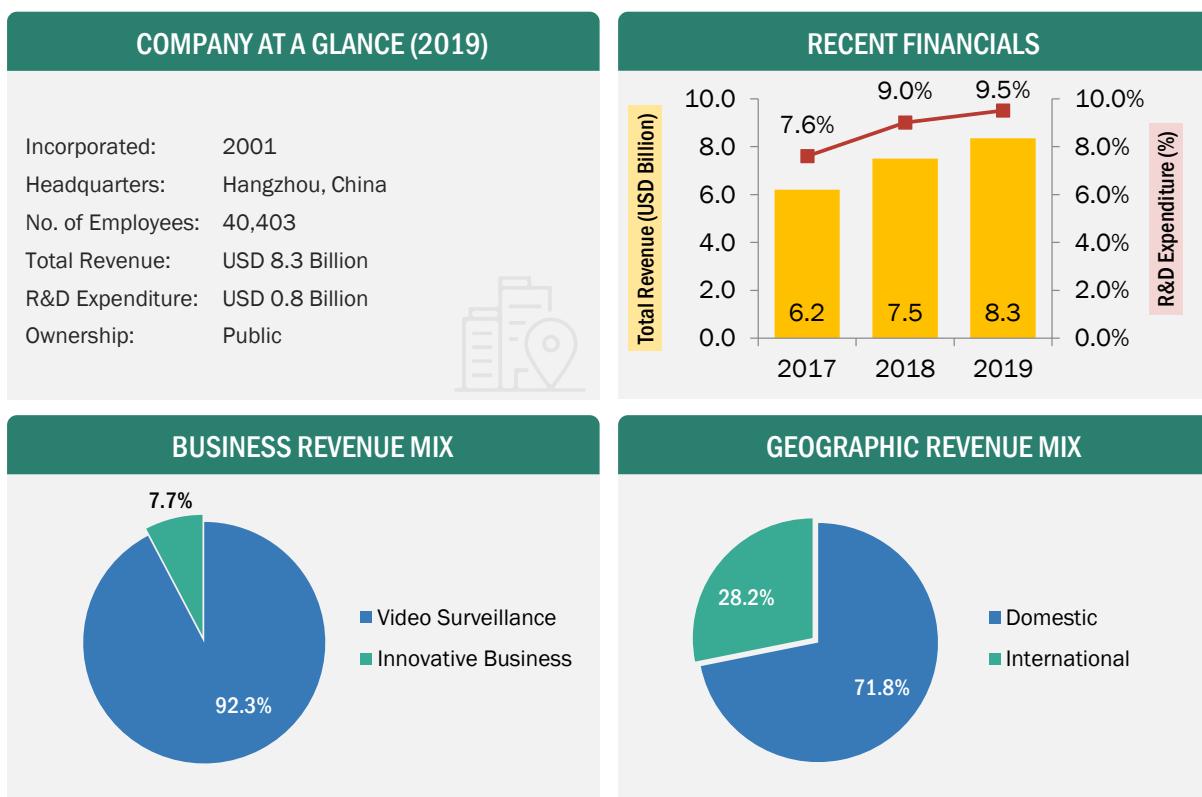
13.1.2 HIKVISION

13.1.2.1 Business overview

Hikvision is one of the world's leading suppliers of video surveillance products and solutions. The company has state-of-the-art manufacturing facilities for innovative CCTV and video surveillance products across 20 locations worldwide. Hikvision also offers security, visual management, video content, and Big Data services. The company operates in 2 major business segments—Video Surveillance and Innovative Business—which cater to markets such as public security, transportation, judicial systems, education, healthcare, financial institutions, energy, and intelligent buildings. Consequently, it provides professional and customized products and Intelligent Visual Management (IVM) solutions to meet diverse market requirements. The company supplies its video encoder products through its Video Surveillance business segment.

Hikvision's product portfolio includes smart IP cameras, HD analog cameras, speed domes, NVRs, DVRs, video management software, access control and alarm systems, encoders, decoders, and other elements of sophisticated security systems. Hikvision's product portfolio serves various verticals such as retail, banking and finance, transportation, education, commercial, government, and residential.

FIGURE 44 HIKVISION: COMPANY SNAPSHOT



Note: The fiscal year of the company ends on December 31. In the “recent financials” section, the R&D expenditure has been considered as a percentage of the company’s total revenue. The currency conversion rates considered for 2017, 2018, and 2019 are RMB 1 = USD 0.142, RMB 1 = USD 0.151, and RMB 1 = USD 0.145, respectively

Source: Company Website and Annual Reports

13.1.2.2 Products/solutions/services offered

CATEGORY	PRODUCT
Network Products	<ul style="list-style-type: none"> ▪ Network Camera ▪ PTZ Camera ▪ Explosion-proof & Anti-corrosion Series ▪ Storage ▪ Network Video Recorder ▪ Kit
Turbo HD Products	<ul style="list-style-type: none"> ▪ Turbo HD Camera ▪ DVR ▪ PTZ Camera
Transmission and Display Products	<ul style="list-style-type: none"> ▪ Monitors ▪ Network Switches ▪ Decoders ▪ Cables ▪ Controllers & Transmission
Mobile Products	<ul style="list-style-type: none"> ▪ Mobile Digital Video Recorders ▪ Mobile Network Video Recorders ▪ Mobile Enforcement Systems ▪ Portable Products ▪ Mobile Network Cameras
ITS Products	<ul style="list-style-type: none"> ▪ Entrance and Exit Management ▪ Traffic Flow Systems ▪ Checkpoint Systems ▪ Traffic Cameras ▪ Intersection Violation Systems ▪ Smart Surveillance Systems ▪ Parking Guidance
Thermal Products	<ul style="list-style-type: none"> ▪ Security Thermal Cameras ▪ Thermography Thermal Cameras ▪ Commercial Vision Thermal Cameras
HiLook	<ul style="list-style-type: none"> ▪ HiLook IP ▪ HiLook Turbo HD Products ▪ HiLook Transmission Products
CCTV Accessories	<ul style="list-style-type: none"> ▪ Brackets ▪ Camera Testers ▪ Housings ▪ Junctions ▪ Lens

Software	<ul style="list-style-type: none"> ▪ Protectors ▪ HikCentral ▪ Hik-Connect ▪ iVMS-4200
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Source: Company Website

13.1.2.3 Recent developments

MONTH & YEAR	APPROACH	DESCRIPTION
October 2020	Product Development	Hikvision launched new ColorVu offerings for vivid 24X7 colorful imaging. It includes a 4K and varifocal camera in the full-color range. This is expected to help in identifying details of events, especially at night.
September 2020	Product Development	Hikvision launched a new generation of wireless alarm systems—AX PRO—delivering comprehensive alarm solutions for commercial applications. This system has a compact panel hub for a wide range of detectors and peripherals, including intrusion detection, video authentication, smoke detection, flood detection, and home automation.
July 2020	Product Development	Hikvision launched a new product to its DeepinView camera line—the Dedicated Subseries. It comes equipped with multiple dedicated algorithms that can be selected and engaged discretely based on installation needs and is switched as the security needs change.
February 2020	Product Development	Hikvision launched a new generation of AcuSense products engineered with an upgraded deep learning algorithm that can analyze live video streams and label them as human, vehicle, or other events. Only those labeled as human and vehicle will trigger an alarm at an accuracy of around 98%.
December 2019	Product Development	Hikvision released its new generation of IP Villa Door Stations, which provides simpler video intercom solutions at a cost-effective rate. The camera offers sharp and clear images, thus providing better security. The product is targeted at small houses and buildings.
November 2019	Product Launch	Hikvision introduced its Video & Audio Convergence Solution to the market, featuring an innovative real-time intrusion deterrent feature. With Hikvision's new Video & Audio Convergence Solution, IP speakers can now be linked with cameras, access control systems, and alarm devices.
July 2019	Product Launch	Hikvision released a new Thermal Bi-spectrum Deep Learning Turret Camera, which will have enhanced capabilities of indoor fire detection, including an advanced temperature anomaly alarm and visual warning. This new cost-effective camera (DS-2TD1217/V1 Series) reduces the risks of fire and property loss.
May 2019	Product Launch	Hikvision launched the latest generation Turbo HD Series—Turbo HD X. It is a complete system to help stop intruders in real-time and avoid damage and loss of property.
March 2019	Product Launch	Hikvision released its second-generation IP video intercom system, which provides high-definition image quality, an easy operation interface, and flexible combination.

Source: Company Website and Press Releases

13.1.2.4 SWOT analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> Wide array of secure and reliable products for the commercial video surveillance market Increased focus on innovative video surveillance products through significant investment in R&D in order to keep up with industry trends and end-user demands Strong and well-established sales and distribution channels that ensure its commercial security products reach its customers in a timely manner 	<ul style="list-style-type: none"> Overdependence on the domestic market may hamper customer growth in international markets
HIKVISION	
<ul style="list-style-type: none"> Technological advancements such as IoT, AI, and Big Data will pave the way for the expansion of the company's presence in the commercial video surveillance market Expansion of Hikvision's commercial video surveillance products across emerging markets of South America, Africa and Middle-East 	<ul style="list-style-type: none"> Intense competition amongst overseas high-end manufacturers and Chinese manufacturers in the commercial security market Ban in the US market may affect the company's position in the international market
OPPORTUNITIES	THREATS

Source: Company Website, Annual Reports, Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

13.1.2.5 MNM view

Hikvision has years of experience in manufacturing and marketing products and has developed several innovative products. To maintain its leadership position in the market, the company is focusing on investing in products and solutions related to the security business. Hikvision is one of the important players offering AI-based products for video surveillance, such as the DeepView series. Its AI cloud software platform adoption will promote the growth of IoT, advance the integration of IoT with information networks, and develop the company's Big Data business. The company can strengthen its market position by offering advanced products.

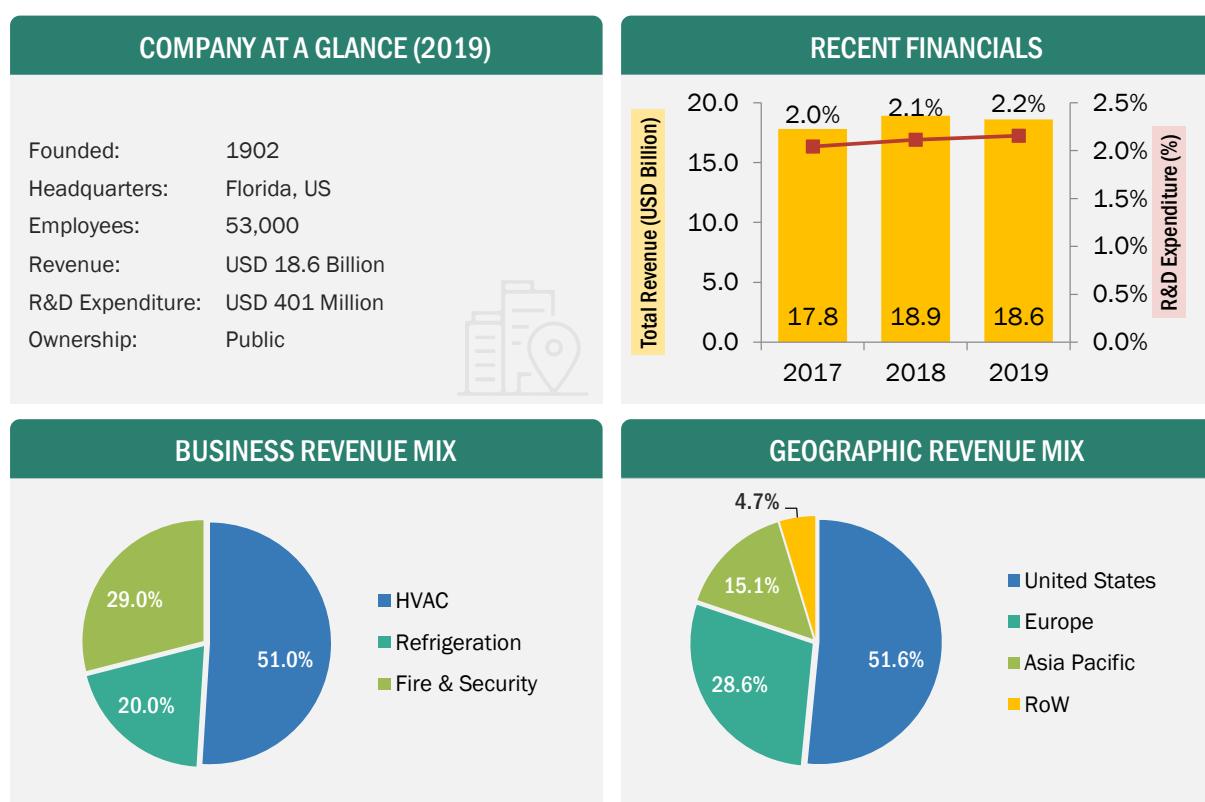
13.1.3 CARRIER

13.1.3.1 Business overview

Carrier is a leading provider of heating, ventilating, air conditioning (HVAC), refrigeration, fire, security, and building automation products, solutions, and services. Carrier used to operate as a part of United Technologies Corporation; however, in March 2020, it was set up as an independent company. The company has operations spread across 160 countries. Carrier also provides a broad array of related building services, including audit, design, installation, system integration, repair, maintenance, and monitoring services. The company's products are used for commercial, government, infrastructure, and residential property applications and refrigeration and transportation applications.

Carrier operates through 3 business segments—HVAC, Refrigeration, and Fire & Security. It provides a wide range of fire and security products, including fire, flame, gas, and smoke detection, portable fire extinguishers, fire suppression, intruder alarms, access control systems, video surveillance, and building control systems. Carrier's fire and security safety products and services are used by governments, financial institutions, architects, building owners and developers, security, and fire consultants, homeowners, and other end users requiring a high level of security and fire protection for their businesses and residences. Carrier provides its fire and security safety products and services under Chubb, Kidde, and other brand names and sells directly to customers as well as through manufacturer's representatives, distributors, dealers, value-added resellers, and retail distribution.

FIGURE 45 CARRIER: COMPANY SNAPSHOT



Note: The fiscal year of the company ends on December 31. In the “recent financials” block, the R&D expenditure has been considered as a percentage of the company's total revenue.

Source: Company Website and Annual Reports

13.1.3.2 Products/solutions/services offered

Fire Safety Equipment	<ul style="list-style-type: none"> ▪ Fire Detection ▪ Integrated Fire and Gas Detection ▪ Voice Alarm ▪ Emergency Light
Fire Detection	<ul style="list-style-type: none"> ▪ Flame Detection ▪ Gas Detection ▪ Smoke Detection
Fire Extinguishing	<ul style="list-style-type: none"> ▪ Water Mist
Fire Safety Equipment	<ul style="list-style-type: none"> ▪ Smoke Alarms ▪ CO Alarms ▪ Combination Smoke/CO Alarms ▪ Fire Extinguishers ▪ Escape Ladders ▪ Auxiliary Devices
Security Products	<ul style="list-style-type: none"> ▪ Access Controls ▪ Alarms ▪ Communication Systems ▪ Control Panels/Systems ▪ Intrusion Barriers ▪ Intrusion Detection Systems ▪ Key Cards ▪ Key Management ▪ Key Pads ▪ Locking Solutions
Services	<ul style="list-style-type: none"> ▪ Security Management Services ▪ Monitoring Patrol Services

Source: Company Website

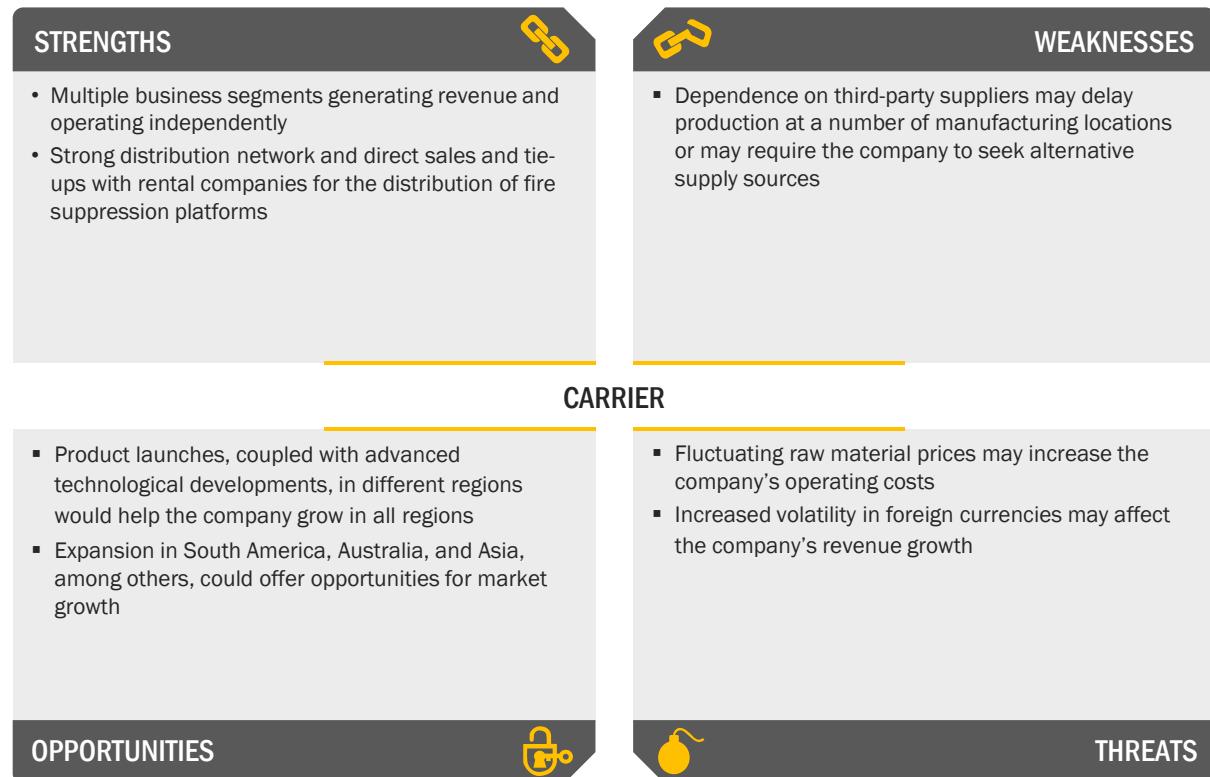
13.1.3.3 Recent developments

MONTH & YEAR	APPROACH	DESCRIPTION
October 2020	Agreement	<p>Carrier's subsidiary LenelS2 entered a 10-year agreement with Milestone Systems to distribute Milestone products globally. This agreement allows for the joint offering of LenelS2 OnGuard access control and Milestone XProtect video management software, which will lower the overall cost of ownership for end users and integrators.</p>
October 2020	Product Launch	<p>LenelS2 announced the launch of the interface between the OnGuard access control system and DMP intrusion detection systems. This new interface expands functionality and increases compliance in highly regulated markets and simplifies administration and deployment.</p>

September 2020	Product Launch	Carrier's subsidiary Kidde Fire Systems launched its new IntelliSite remote monitoring system, a remote monitoring solution used for gaseous fire suppression systems. This system allows users to monitor the status of a portfolio of fire control units in real time across multiple locations.
January 2018	Contract	Carrier's subsidiary Chubb is helping protect employees, visitors, and property through a new contract with Cheshire Fire and Rescue Service to install, upgrade, maintain and monitor fire alarm systems throughout its entire estate.

Source: Company Website and Press Releases

13.1.3.4 SWOT analysis



Source: Company Website, Annual Reports, Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

13.1.3.5 MNM view

Carrier has been offering a broad portfolio of fire protection products for various applications. It focuses on enhancing its technology business through product launches, partnerships, and acquisitions. The company aims to improve its production of fire suppression and detection solutions. It has a research and design center in India and has opened a center of excellence in France. These R&D centers focus on the development of new products to strengthen its customer base.

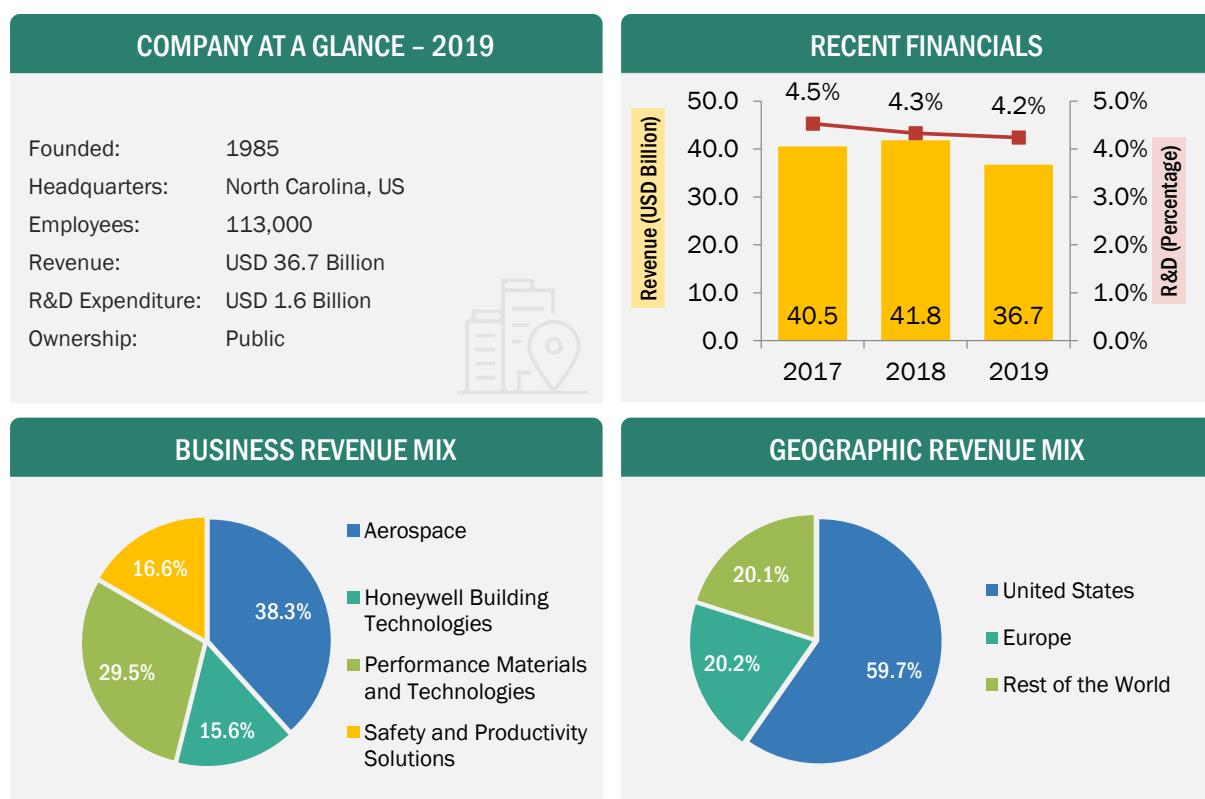
13.1.4 HONEYWELL INTERNATIONAL

13.1.4.1 Business overview

Honeywell International's Honeywell Security Group, founded in 1929, is a provider of security and automation solutions for residential and commercial applications. The company offers intrusion, access control, and video surveillance products and systems in the Americas, APAC, Europe, the Middle East, and Africa.

Honeywell International operates through 4 business segments—Aerospace, Honeywell Building Technologies, Performance Materials and Technologies, and Safety and Productivity Solutions. The company sells its commercial security systems under its Honeywell Building Technologies and Safety and Productivity Solutions business segments. Through these 2 segments, Honeywell offers products, software, solutions, and technologies that enable commercial building owners and occupants to ensure that their facilities are safe, energy efficient, sustainable, and productive. Its products and services include advanced software applications for building control and optimization; sensors, switches, control systems, and instruments for energy management; access control; video surveillance; fire products; remote patient monitoring systems; and installation, maintenance, and upgrades of systems that keep buildings safe, comfortable, and productive.

FIGURE 46 HONEYWELL INTERNATIONAL: COMPANY SNAPSHOT



Note: The fiscal year of the company ends on December 31. In the “recent financials” block, the R&D expenditure has been considered as a percentage of the company’s total revenue.

Source: Company Website and Annual Reports

13.1.4.2 Products/solutions/services offered

CATEGORY	PRODUCT/SOLUTION/SERVICE
Commercial Security	<ul style="list-style-type: none"> ▪ Intrusion ▪ Integrated Security ▪ Video Systems ▪ Access Control Systems

Source: Company Website

13.1.4.3 Recent developments

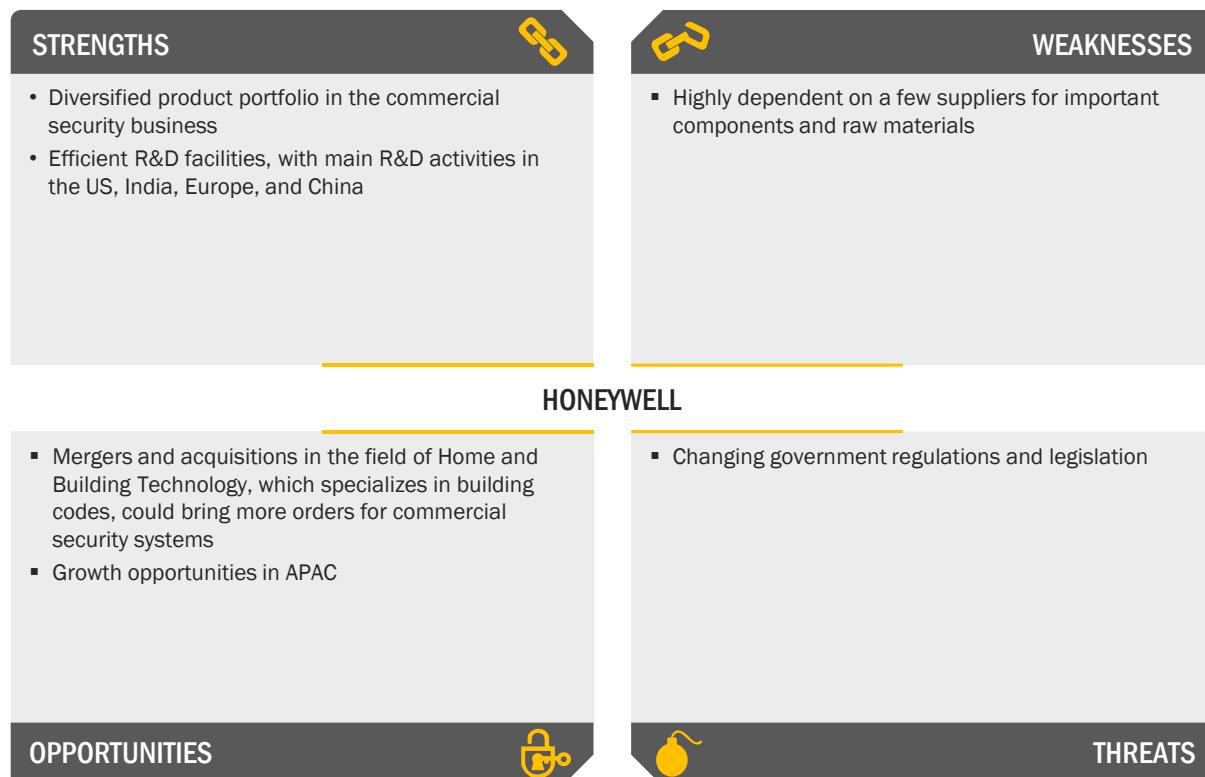
MONTH & YEAR	APPROACH	DESCRIPTION
October 2020	Product Launch	Honeywell launched the first cloud-based solution that provides end-to-end connectivity and visibility to fire safety systems. This tool is a part of its new suite of Connected Life Safety Services (CLSS) product portfolio, an all-in-one cloud platform for fire safety systems.
August 2019	Product Launch	Honeywell launched its VESDA-E VES aspirating smoke detectors. As part of the VESDA-E line of advanced smoke detection technology, VESDA-E VES aspirating smoke detectors allow users to divide protected areas into 4 distinct sectors to help ensure early detection and warning of a potential threat. The detectors also help reduce the total cost of ownership by decreasing installation, commissioning, and operating expenses.
July 2019	Product Launch	Honeywell announced the release of 30 Series IP Cameras, a new suite of video cameras that strengthens building safety and security through advanced analytics and secure channel encryption. The Honeywell 30 Series IP cameras are designed for use as part of video systems that comply with US government procurement standards instituted under the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (NDAA Section 889). With the new cameras, end users can also benefit from the lower total cost of ownership and lower risk as well as improved picture quality without increased storage needs.
June 2018	Product Launch	Honeywell announced a new connected gas detector that listens for leaks ultrasonically, complementing fixed gas detectors, to better protect workers and facilities against deadly toxic and explosive gas leaks.
May 2018	Product Launch	Honeywell launched a new connected portable gas detector designed to keep workers safe in dangerous confined spaces while featuring a simple and easy-to-use design.
March 2018	Product Expansion	Honeywell expanded its line of Fire-Lite addressable fire alarm control panels to give safety professionals more options for designing small to medium-sized fire systems. The Fire-Lite Endurance Series offers 2 new fire alarm control panels—the ES-50X and ES-200X—that feature dual-path communications, programmable buttons, and support for combined fire and CO addressable detection.

February 2018 Product Launch

Honeywell announced the availability of MAXPRO Cloud platform—the integrated security offering designed specifically for small-to-medium-sized (SMB) businesses. MAXPRO Cloud is hosted on Microsoft Azure and integrates access, intrusion, and video surveillance data into a single user interface. With support for single or multiple locations, MAXPRO Cloud provides a new tool to secure facilities while simplifying security operations.

Source: Company Website and Press Releases

13.1.4.4 SWOT analysis



Source: Company Website, Annual Reports, Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

13.1.4.5 MNM view

Honeywell's major focus is on the development of newer security solutions, including hardware as well as software. It launched products with newer technologies, such as cloud-based and Amazon Alexa-integrated solutions. Honeywell has succeeded in the security solutions market owing to its extensive portfolio of high-quality and high-performance products. The company invests significantly in R&D activities to drive profitable growth and optimize manufacturing capability. The company follows favorable global megatrends—including energy efficiency, infrastructure investment, urbanization, and safety—to ensure value to its customers through its portfolio. To further grow in the security solutions market, Honeywell consistently improves its distribution network through partnerships. In the future, the company can focus on acquiring companies or have partnerships with companies in the APAC region to expand its product offerings in this region.

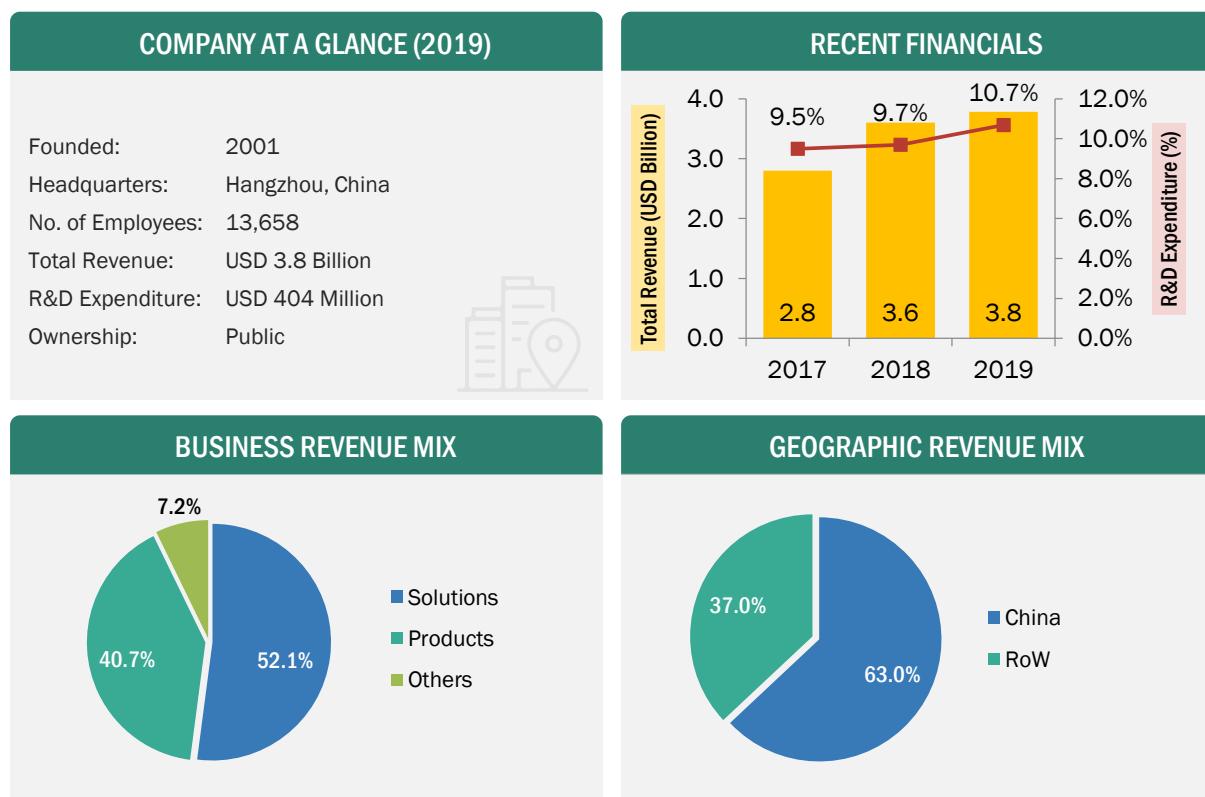
13.1.5 DAHUA TECHNOLOGY

13.1.5.1 Business overview

Dahua Technology is one of the leading designers and manufacturers of video-centric smart IoT solutions. The company specializes in video surveillance technology, in addition to its established businesses in machine vision, video conferencing systems, professional drones, electronic license plates, RFID, and robotics. Dahua Technology operates in 3 primary business segments—Solutions, Products, and Others. The company provides security and surveillance solutions, advanced series of front-end and back-end display control systems, and intelligent transportation solutions. It also provides services with customized features and offers professional security and surveillance systems, applicable across public security, finance, transportation, energy, communications, and many other industries.

Dahua operates through 200 domestic branches in China and 54 overseas regional branch offices covering Asia Pacific, North America, Europe, Africa, and other regions. Some of its subsidiaries are Zhejiang DahuaZwan Technology Co., Ltd. (China), Zhejiang Dahua Digital Technology Co., Ltd. (China), Zhejiang Dahua Technology Co., Ltd. (China), Dahua Technology USA Inc. (US), and Dahua Europe BV (Netherlands).

FIGURE 47 DAHUA TECHNOLOGY: COMPANY SNAPSHOT



Note: The fiscal year of the company ends on December 31. In the “recent financials” section, the R&D expenditure has been considered as a percentage of the company’s total revenue. The currency conversion rates considered for 2017, 2018, and 2019 are RMB 1 = USD 0.142, RMB 1 = USD 0.151, and RMB 1 = USD 0.145, respectively.

Source: Company Website and Annual Reports

13.1.5.2 Products/solutions/services offered

CATEGORY	PRODUCT
Network Camera	<ul style="list-style-type: none"> ▪ Ultra-AI Series ▪ Pro-AI Series ▪ Lite-AI Series ▪ Ultra Series ▪ Pro Series ▪ Lite Series ▪ Special Series ▪ Panoramic Series ▪ Consumer Series
HDCVI Camera	<ul style="list-style-type: none"> ▪ Pro 4K&6MP Series ▪ Pro Starlight Series ▪ Lite Plus Series ▪ Lite Series ▪ Cooper Series ▪ PIR & IOT Series ▪ Panorama Series ▪ PoC Series ▪ Micro-size Series ▪ HDCVI Accessories
PTZ Camera	<ul style="list-style-type: none"> ▪ Network PTZ Cameras ▪ HDCVI PTZ Cameras ▪ Positioning Systems ▪ Anti-Corrosion Cameras ▪ Explosion-Proof Cameras
Thermal Camera	<ul style="list-style-type: none"> ▪ Ultra Series ▪ Pro Series ▪ Lite Series ▪ Anti-Corrosion Series
Network Recorder	<ul style="list-style-type: none"> ▪ Ultra-AI Series ▪ Pro-AI Series ▪ Lite-AI Series ▪ Ultra Series ▪ Pro Series ▪ Lite Series
HDCVI Recorder	<ul style="list-style-type: none"> ▪ Pro AI Series ▪ Lite AI Series ▪ Pro H.265 4K Series ▪ Lite H.265 4K Series

	<ul style="list-style-type: none"> ▪ Lite H.265 1080P Series ▪ Lite H.265 720P Series ▪ Cooper Series ▪ PoC Series ▪ ATM & Encoder & X86 Series
EZ-IP	<ul style="list-style-type: none"> ▪ Network Cameras ▪ Network Recorders
Mobile & Traffic	<ul style="list-style-type: none"> ▪ Traffic Enforcement Products ▪ Entrance & Exit Control Products ▪ Parking Products ▪ Mobile ▪ MPT
Transmission	<ul style="list-style-type: none"> ▪ PoE Switches ▪ ePoE Switches ▪ Access Switches ▪ Aggregation Switches ▪ Core Switches ▪ Wireless Devices ▪ Accessories
Displays	<ul style="list-style-type: none"> ▪ Monitors ▪ Control
Storage	<ul style="list-style-type: none"> ▪ IP Storage ▪ Cloud Storage
Software	<ul style="list-style-type: none"> ▪ DSS ▪ Easy4ip ▪ DMSS ▪ IVS

Source: Company Website

13.1.5.3 Recent developments

MONTH & YEAR	APPROACH	DESCRIPTION
October 2020	Product Development	Dahua upgraded its open application platform with the launch of Application Marketplace and DHOP Community onto its new Dahua Hardware Open Platform (DHOP) website. This initiative will bring together technology partners, resellers, system integrators, and end users under one platform.
August 2020	Product Launch	Dahua launched a three-in-one camera solution (TiOC) that integrates 24X7 color monitoring, active deterrence, and AI in one solution, which saves time and financial costs for distributors and installers. It helps enhance the ability to identify suspects while simultaneously increasing the video evidence quality.

July 2020	Product Launch	Dahua launched 2 intelligent building solutions—Fingerprint Access Control Terminal and Face Recognition Access Control & Time Attendance Terminal—offering larger face image capacity and an enhanced recognition speed.
December 2019	Product Development	Dahua Technology launched its latest Hunter SD T5X Series Camera, specially designed and optimized for large-screen applications. The camera offers special capabilities, including smart tracking, perimeter protection, video metadata, face recognition, and many other intelligent functions, to provide flexible solutions for multi-scene surveillance needs.
December 2019	Product Launch	Dahua Technology released the Dahua Open Platform (DHOP) for AI series and Thermal series camera modules, which enables its partners to develop their own applications on Dahua hardware. This platform will take smart video surveillance systems to a new level of convenience and cost-effectiveness.
October 2019	Product Launch	Dahua Technology's consumer brand Imou launched V8i Smart Lock, the first AI-powered IoT camera and smart lock with 3D AI facial recognition. This product will ensure more secure unlocking of doors and improve the convenience level of end users.
September 2019	Collaboration	Dahua Technology announced the addition of a built-in Ivideon service for its IPC-HD4140X-3D dual-lens visitor counter. Ivideon (US) offers cloud-based video surveillance services and develops video analytics tools for businesses worldwide. This collaboration will improve the scope for video surveillance as well as video analytics for sustainable development.
August 2019	Product Launch	Dahua launched its new series of IP cameras with Smart Motion Detection (SMD) Plus. This latest addition will provide real-time monitoring and surveillance solutions with added alarm systems for enhanced security across residential and corporate areas.
August 2019	Partnership	Dahua Technology entered a strategic partnership with Pepper (US), an IoT platform-as-a-service, to allow the integration of its intelligent solutions into Dahua hardware. Dahua devices will be preconfigured to operate seamlessly on the Pepper IoT platform. For Dahua products distributed in the US, all data and video communications will be contained in the US and held to Pepper's stringent cybersecurity and data privacy standards.
August 2019	Product Launch	Dahua Technology launched its new series of IP Camera (IPC HX3X41 Series, SD49425XB-HNR, SD49225XA-HNR, SD1A404XB-GNR, SD1A404XB-GNR-W) with SMD Plus. Combined with Dahua NVR4XXX-4KS2, as well as the upcoming NVR2XXX-4KS2, NVR5XXX-4KS2, NVR4XXX-I, and NVR5XXX-I, the new series can effectively provide real-time monitoring and send out alarm push notifications to users when unauthorized people enter the core area, offering a powerful AI-enabled IP solution for museums, shopping malls, factories, villas, and other similar scenarios.
August 2019	Product Launch	Dahua Technology launched the mini PT/PTZ series. These are small-sized IP cameras with various pan and tilt ranges. Boasting a compact design and excellent product performance, the mini PT/PTZ series offers a cost-effective solution for various small and medium-sized applications such as retails, hotels, casinos, supermarkets.

June 2019	Product Development	Dahua Technology developed "Starlight Technology" with a comprehensive camera portfolio including PTZ, IPC, and HDCVI to serve various needs of low-light environments. Compared to traditional video monitoring cameras, Dahua Starlight cameras feature high light sensitivity to provide a brighter view under low-light environments. Offering a clear image with rich details and ultra-high definition from 1080P to 4K, the Starlight cameras guarantee 24/7 reliable and detailed monitoring of public places such as parking lots, streets, campuses, and stores.
April 2019	Product Launch	Dahua Technology launched 2 new multi-sensor cameras. These 2 cameras are built for flexibility and evolving customer change-requirements. The unique, future-proof platform of the Multi-flex provides organizations of all sizes the ability to deploy a security system that truly matches their video surveillance needs.
March 2019	Product Launch	Dahua Technology launched the AI NVR4000-I Series. The Dahua AI NVR Series integrates perimeter protection and face recognition, providing customers cost-effective AI transformation and upgrading with high-precision safety guarantee. This product can significantly reduce false alarms and bring higher accuracy performance to end users.
November 2018	Product Launch	Dahua Technology launched Fortress Series wired alarm products, which include the ARC3008C control panel, the ARA58-G-EN GSM/GPRS Module for ARC3008, the ARK30C LCD keypad, and supporting software such as DMSS APP and Alarm Config software for PCs. Offering comprehensive and advanced functionalities, the series can be applied in villas, houses, and small-to-medium-sized facilities.
September 2018	Expansion	Dahua opened its European Supply Centre in Zalaegerszeg (Hungary). Dahua Technology European Supply Centre will supply European markets with better customer service and faster delivery through local assembling and centralized logistics services.
July 2018	Product Launch	Dahua Technology launched deepsense series IP Cameras consisting of AI-powered face detection network cameras and face recognition network cameras. Driven by AI deep-learning algorithms, the cameras enable accurate face capture and face attributes analysis for real-time monitoring, mainly applied for business parks, schools, airports, banks, and shopping malls.

Source: Company Website and Press Releases

13.1.5.4 SWOT analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> Efficient provider of smart IoT solutions and services based on core competency in video and AI technology Strong focus on product innovation capabilities has helped the company to establish and maintain a competitive position in the commercial security market Strong manufacturing and distribution presence in China, with increased focus on overseas markets 	<ul style="list-style-type: none"> Overdependence on the domestic market
DAHUA TECHNOLOGY	
<ul style="list-style-type: none"> Development and expansion portfolio for smart city, smart traffic, smart retail, and other key commercial industries Substantial increment in R&D investments for video surveillance products to facilitate technological innovation in AI, cloud computing, Big Data, chip, and other future core technologies 	<ul style="list-style-type: none"> Ban in the US market may affect the company's position in the international market
OPPORTUNITIES	THREATS

Source: Company Website, Annual Reports, Secondary Research, Expert Interviews, and MarketsandMarkets Analysis

13.1.5.5 MNM view

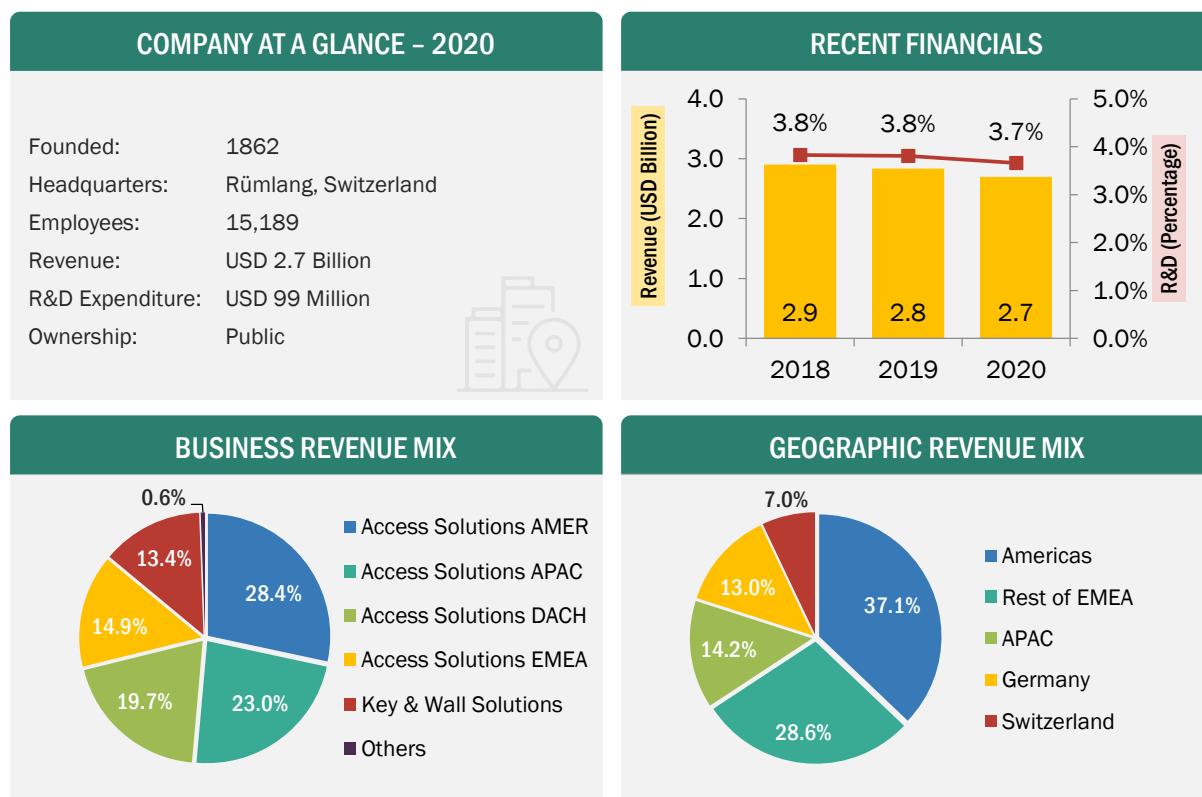
Dahua Technology has maintained a strong position in the commercial security market with a wide array of products in the Chinese market. The well-established Chinese brand is concentrating on overseas expansion into North America, Europe, Asia Pacific, and Africa. The company is focusing on product launches and developments to expand its commercial security product portfolio, especially in emerging segments such as smart cities, smart homes, and smart parking. It is also committed to increasing investments in R&D in an effort to use upcoming technologies such as AI, big data, and cloud computing to develop smart video surveillance products for the urban market.

13.1.6 DORMAKABA HOLDING

13.1.6.1 Business overview

dormakaba Holding's portfolio includes locking systems, ranging from cylinders, keys, and locks to fully networked electronic access solutions such as physical access systems and automatic door systems, as well as a comprehensive range of door hinges and fittings and door controls. The company offers door controls/door closers, swing door operators, automatic sliding and special doors, manual sliding door systems, revolving doors, glass fittings for interior swing doors and toughened glass assemblies, architectural pulls and handles, locks, panic hardware and exit devices, electronic access control, glass partitions, movable partitions, and horizontal sliding walls. dormakaba also offers cylinders, locks, access management solutions, workforce management solutions, lodging products, safe locks, safes, keys, key cutting machines, and automotive solutions. It is a leading provider of key blanks, key cutting machinery, and products for the automotive industry. It offers transponder keys and programmers under brands such as Silca, Ilco, and Advanced Diagnostics. The company has production sites and distribution and service offices in over 50 countries.

FIGURE 48 DORMAKABA HOLDING: COMPANY SNAPSHOT



Note: The company's financial year ends on June 30. In the "recent financials" block, the R&D expenditure has been considered as a percentage of the company's total revenue. The currency conversion rates considered for 2018, 2019, and 2020 are CHF 1 = 1.021, 1.006, and 1.061, respectively.

Source: Company Websites and Annual Reports

13.1.6.2 Products/solutions/services offered

The company offers the following products:

CATEGORY	PRODUCT/SOLUTION/SERVICE
Electronic Access Systems	<ul style="list-style-type: none"> ▪ Physical Access Systems ▪ Automatic Door Systems ▪ Locks and Lock Accessories ▪ Entrance Systems ▪ dormakaba Terminal 97 00 ▪ Exivo

Source: Company Website

13.1.6.3 Recent developments

MONTH & YEAR	APPROACH	DESCRIPTION
March 2020	Product Launch	dormakaba launched the Switch Tech platform that extends electronic access control by offering a digital replacement for mechanical keys.
February 2020	Collaboration	dormakaba and everis collaborated to develop solutions that will enable travelers to access security checkpoints at airports using their own biometric facial recognition profile, without using any ID or boarding pass.
February 2020	Product Launch	dormakaba launched Entrivo, a new digital IoT services for automatic door operators, which will track the performance and operating information of connected doors from anywhere in the world.
June 2019	Acquisition	dormakaba acquired Alvarado, a leading North American manufacturer of physical access solutions, to strengthen its entrance system business in North America. This acquisition will complement its existing customer base by offering suitable local product offerings.
May 2018	Acquisition	dormakaba acquired Klaus Group (Peru), a specialist in brass keys and products. This acquisition enabled dormakaba's Key and Wall Solutions business unit to strengthen its presence in South America.
April 2018	Acquisition	dormakaba China Ltd. (China) acquired the Commercial Building Physical Access Solutions (PAS) business unit of Beijing-based Cambaum Group. The integration of Cambaum Group's product and solution offerings strengthened dormakaba's position in the smart commercial buildings market.
February 2017	Acquisition	dormakaba acquired the mechanical security business from Stanley Black & Decker, Inc. (US), a provider of security products and locks. With this acquisition, dormakaba expanded its presence in the North American market.

Source: Press Releases

13.1.7 BOSCH SECURITY SYSTEMS

13.1.7.1 Business overview

Bosch Security Systems designs and supplies security equipment for communications, video surveillance, access control, intrusion, and fire detection applications. The company is a subsidiary of Robert Bosch GmbH (Germany).

Bosch's product portfolio encompasses video-surveillance, intrusion detection, fire detection, and voice alarm systems, as well as access control and professional audio and conference systems. The company offers access control solutions including analog cameras, IP cameras, digital video recorders, monitors, accessories, and video software; conference systems including discussion systems, wireless discussion systems, and wireless language distribution systems; and fire alarm systems including fire panels, smoke detectors, and notification appliances and accessories. Bosch Security offers access modular controllers, readers and cards, Access Professional Edition (APE), building integration systems, security escort systems, access easy control systems, and access control software.

Bosch Security Systems' products are used in banking, gaming, residential, city center monitoring, transportation, and healthcare applications; schools and universities, government agencies, correctional facilities, retail stores, sports and entertainment facilities, and casinos; and public places, hazardous locations, and other commercial and industrial environments. The company has its manufacturing facilities in Mexico, the US, China, Germany, and Portugal. A few of the subsidiaries of Bosch active in the security market are Bosch Security Systems S.p.A. (Italy), Bosch Security Systems France S.A.S. (France), Bosch Security Systems B.V. (Netherlands), Bosch Security Systems, S.A. (Portugal), Bosch Security Systems S.A.U. (Spain), Bosch Security Systems Ltd. (UK), Bosch Security Systems Ltd. (Hong Kong), Bosch Security Systems Inc. (Japan), Robert Bosch Security Solutions Pte. (Singapore), Bosch Security Systems Pty. Ltd. (Australia), and Bosch Security Systems Ltd. (New Zealand).

13.1.7.2 Products/solutions/services offered

CATEGORY	PRODUCT/SOLUTION
Products	<ul style="list-style-type: none"> ▪ Video systems ▪ Intrusion alarm systems ▪ Access control systems ▪ Fire alarm systems ▪ Paging and Mass Notification ▪ Conference systems
Services	<ul style="list-style-type: none"> ▪ Professional services ▪ Installer Services ▪ Monitoring Services

Source: Company Website

COMPANY AT A GLANCE - 2019

Founded: 1968
 Headquarters: Munich, Germany
 Ownership: Private



Note: This is a privately held company. Hence, no financial information is available in the public domain.

Source: Company Website

13.1.7.3 Recent developments

MONTH & YEAR	APPROACH	DESCRIPTION
November 2020	Product Launch	Bosch's FLEXIDOME starlight 8000i delivers up to 4K resolution with a dramatic decrease in installation and maintenance time and related costs.
November 2020	Product Launch	Bosch launched BIS 4.8 which will come integrated with access control, intrusion detection, and a video surveillance platform. It also comes equipped with touchless entry possibilities via face recognition, touchless fingerprint, or mobile access.
June 2020	Product Launch	Bosch launched the Access Management System 3.0, and it comes in 3 pre-configured software bundles—Lite, Plus, and Professional. All these versions are fully functional and can be used directly out of the box. It can administer up to 200,000 cardholders and up to 10,000 doors.
May 2020	Product Launch	Bosch launched new turret cameras in the IP 3000i series. With this addition, Bosch now has a full line of cameras with built-in Essential Video Analytics. The first camera in this series was introduced in 2019, followed by the domes and microdomes, the launch of bullet cameras, and now turret cameras.
October 2019	Product Launch	Bosch launched the Bosch Video Management System (BVMS) version 10.0. By taking extra security measures, BVMS 10.0 ensures all communication channels and stored information is secured using state-of-the-art IT technologies.
September 2019	Product Launch	Bosch announced its latest addition to the video-based fire detection solution—the AVIOTEC IP starlight 8000. This camera minimizes the risk of car accidents in tunnels through continuous video surveillance and provides reliable fire detection solutions even in challenging lighting conditions.

Source: Company Website and Press Releases

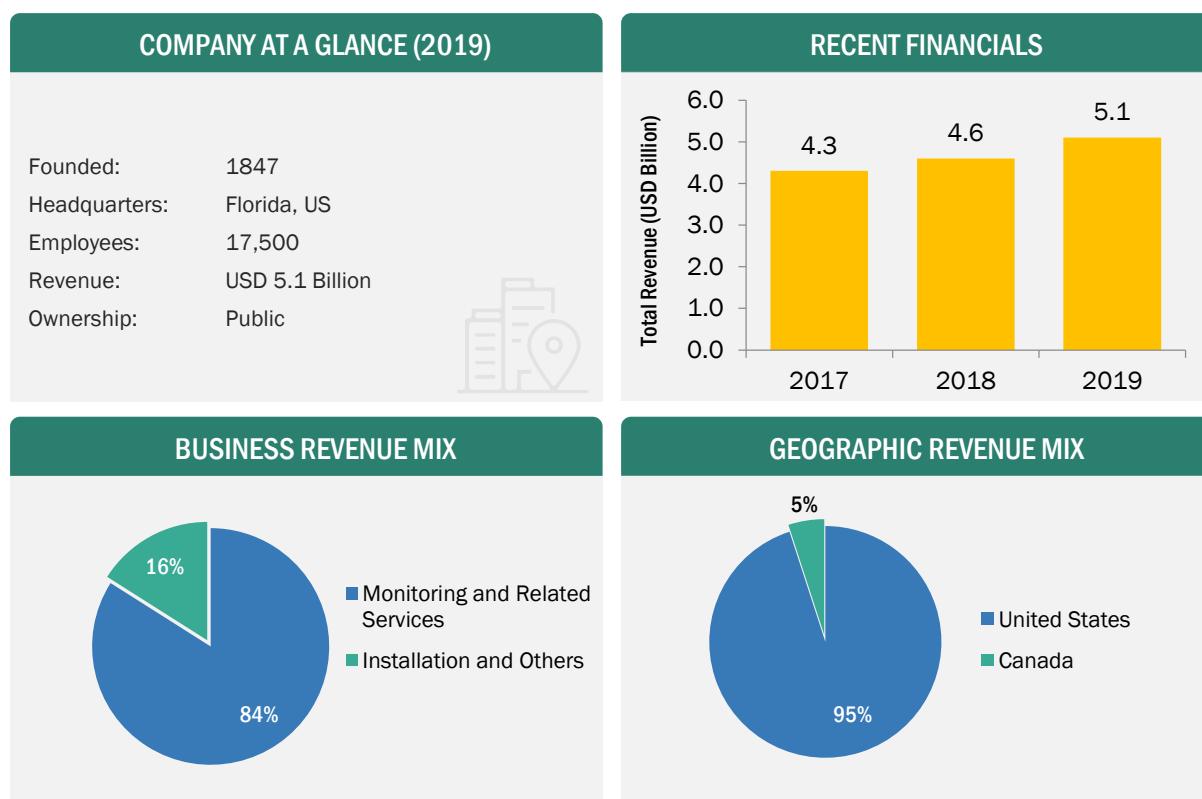
13.1.8 ADT

13.1.8.1 Business overview

ADT is one of the leading providers of sophisticated security solutions, automation, and smart home solutions, serving consumer and business customers through more than 200 locations, 12 owned and operated monitoring centers, and the largest network of security professionals in the US. The company offers many ways to help protect customers by delivering lifestyle-driven solutions via professionally installed, do-it-yourself, mobile, and digital-based offerings for residential, small business, and larger commercial customers.

ADT offers security solutions specifically designed for intrusion detection, access control, fire and smoke detection, and others, which respond to various factors such as movement, smoke, carbon monoxide, flooding, and temperature, along with other environmental conditions and hazards. The company also offers security solutions that immediately react to personal emergencies. The company operates in the US and Canada, with a strong presence in the US.

FIGURE 49 ADT: COMPANY SNAPSHOT



Note: The fiscal year of the company ends on December 31. In the “recent financials” block, the R&D expenditure data is not available.

Source: Company Website and Annual Reports

13.1.8.2 Products/solutions/services offered

CATEGORY	PRODUCT/SOLUTION
Small Business	<ul style="list-style-type: none"> ▪ Intrusion Detection ▪ Interactive Security ▪ Access Control ▪ Video Surveillance ▪ Video Verification ▪ Fire Protection & Monitoring
Commercial	<ul style="list-style-type: none"> ▪ Access Control ▪ Analytics and Reporting ▪ eSuite Account Management ▪ Fire and Life Safety ▪ Integrated Solutions ▪ Intrusion Alarms ▪ Video Solutions
Services	<ul style="list-style-type: none"> ▪ Installation, Inspections, and Maintenance ▪ Managed Services ▪ Monitoring

Source: Company Website

13.1.8.3 Recent developments

MONTH & YEAR	APPROACH	DESCRIPTION
November 2020	Acquisition	ADT acquired Deterrent Technologies, a New Jersey-based systems integrator, to expand the company's geographic footprint and enhance its ability to serve mid-and large-scale base of commercial customers in the northeast part of the US.
January 2020	Acquisition	ADT acquired independent dealer Defenders for USD 380 million. This acquisition will provide ADT with numerous strategic, financial, and operational advantages. This acquisition will also improve the combined company's go-to-market operations and deliver an improved customer experience.
November 2019	Acquisition	ADT acquired Critical Systems, a commercial security integration specialist. This acquisition will expand the range of services the commercial division of ADT can offer customers in and around Atlanta.
October 2019	Acquisition	ADT acquired I-View Now, a provider of video alarm verification services. I-View Now's verification technology, paired with the core monitoring strengths of ADT, will help reduce false alarms and optimize priority response from emergency services.
September 2019	Agreement	ADT entered 2 asset purchase agreements with Systems Group (US) and Fusion Fire Protection (US). These agreements will continue to enhance technical capabilities and expand the organization's geographic reach to commercial and enterprise-level customers across the US.

June 2019	Partnership	ADT entered a partnership with BH Management Services, LLC (US), a leading multifamily property management company, to offer smart technology integration and convenience services. Through the partnership with ADT, BH Management Services will outfit residences with ADT security, automated smart door locks, and smart thermostats.
February 2019	Acquisition	ADT acquired LifeShield, LLC (US), a pioneer in advanced wireless home security systems. The addition of LifeShield's innovative technology to ADT's leading security and automation solutions and expertise increases ADT's ability to address the approximately 80% of US households who do not have professionally installed and monitored home security.
December 2018	Acquisition	ADT acquired Red Hawk Fire & Security (US). This acquisition strengthens ADT's growth in the commercial security market and meaningfully expands the company's product portfolio with the introduction of commercial fire safety-related solutions.

Source: Company Website and Press Releases

13.1.9 AXIS COMMUNICATIONS

13.1.9.1 Business overview

Axis Communications is one of the market leaders in developing and marketing video surveillance and access control solutions. The company is continuously engaged in developing and launching innovative network products to retain its position as a market leader. Axis Communications mainly operates in 2 business segments—Video and Others. The company provides security and surveillance solutions, advanced series of front-end and back-end display control systems, and intelligent transportation solutions. It also provides services with customized features and offers professional security and surveillance systems, applicable across public security, finance, transportation, energy, communications, and many other industries.

Axis Communications' products are used across various applications in the retail, banking and finance, transportation, government, and healthcare sectors. Axis Communications drives the video surveillance market through continuous innovation and delivering high value to end users through a global network of more than 90,000 partners spread across 179 countries in the Americas, Europe, Asia, the Middle East, and Africa.

13.1.9.2 Products/solutions/services offered

CATEGORY	PRODUCT/SOLUTION
Security	<ul style="list-style-type: none"> ▪ Access Control ▪ Network Cameras ▪ Video Encoders ▪ Network video recorders ▪ Network Audio Systems ▪ Video management software ▪ Axis Security Apps ▪ Accessories

Source: Company Website

COMPANY AT A GLANCE (2019)

Founded: 1984
 Headquarters: Lund, Sweden
 Ownership: Private



Note: This is a privately held company. Hence, no financial information is available in the public domain.

Source: Company Website

13.1.9.3 Recent developments

MONTH & YEAR	APPROACH	DESCRIPTION
November 2020	Product Launch	Axis Communications launched AXIS Q6100-E, a high-resolution multidirectional camera specially designed for operation with any AXIS Q61 PTZ Network Camera. It allows total situational awareness in large open spaces or narrow streets and zoomed-in details.
November 2020	Product Launch	Axis Communications launched the AXIS Object Analytics application, offering detection and classification of humans and vehicles tailored to the surveillance need. It will be ideal for various installations, including public buildings, warehouses, and parking lots. It will be offered pre-installed on compatible Axis network cameras, adding value at no extra cost.
September 2020	Product Launch	Axis Communications launched the AXIS P1455-LE Network Camera, a feature-rich bullet camera offering HDTV 1080p resolution at up to 60 fps. It will be ideal for a wide range of surveillance scenarios. It is particularly suitable for capturing scenes with lots of motion.
July 2020	Product Launch	Axis Communications launched ExCam XPT Q6075, a high-performance PTZ camera for potentially combustible environments. It features a new-generation chip, offering improved imaging, enhanced security features, extended capabilities for analytics, and significantly more efficient video compression.
April 2020	Product Development	Axis Communications announced support for its range of audio products and network speakers in the AXIS Companion video management software. This enhancement brings the benefits of audio in security and incident deterrent to the broadest range of customers.
March 2020	Product Launch	Axis Communications announced its first body-worn camera solution designed to be used by law enforcement and private security. This solution, including a robust camera, docking station, and system controller, has been designed on an open system architecture. It can be integrated with a broad range of video management systems (VMS) and evidence management systems (EMS).
January 2020	Product launch	Axis Communications launched a new stainless-steel camera with ATEX/IECEx/EAC Ex/IA/PESO certifications, which is best suited for potentially hazardous and combustible areas. This lightweight camera delivers quality images with a wide field-of-view of up to 30 frames per second (FPS).
January 2020	Product launch	Axis Communications launched its new range of AXIS P13 and AXIS M30 Network Camera Series, which are free of hazardous brominated and chlorinated flame retardants. These new product developments are an important step in setting an industry standard for sustainability and green design.
October 2019	Product launch	Axis Communications launched AXIS Companion, a new software for secure and reliable video management solutions. This easy-to-operate software is optimized for small systems with up to 16 cameras and is ideal for small businesses requiring video surveillance solutions.
September 2019	Product launch	Axis Communications launched its one-of-a-kind AXIS Q1798-LE Network Camera, which comes equipped with 4K resolution and an ultra-high image processing sensor. It also includes AXIS Lightfinder 2.0 technology, which produces vibrant color and increased light sensitivity.

August 2019	Product launch	Axis Communications launched AXIS P5655-E PTZ, a new range of versatile PTZ cameras, specially designed for versatile surveillance applications. They come with a new-generation chip offering improved imaging, enhanced security features, extended capabilities for analytics, and radically more efficient video compression.
June 2019	Product launch	Axis Communications launched a new camera series, specially designed for capturing clear license plate images for vehicles moving at a speed of up to 81 mph. AXIS Q1700-LE License Plate Camera is robust and weatherproof and can be used with server-based or edge analytics from most third-party vendors to perform further analysis of recorded or live material.
May 2019	Product launch	Axis Communications launched a new range of Network cameras, AXIS M42, which offers flexible field-of-view with a varifocal lens. These cameras have a compact dome design and are constructed with 40% recycled plastics; they are meant for easy and cost-effective installation and integration.
April 2019	Product launch	Axis Communications announced AXIS P3719-PLE, a new multidirectional, four-channel camera, equipped with quad HD resolutions. Using WDR and 360-degree IR illumination, the camera is capable of capturing images with exceptional clarity and sharpness, making it ideal for video surveillance solutions.
March 2019	Product Launch	Axis Communications launched the new AXIS A8207-VE Network Video Door Station, an all-in-one product combining video surveillance, door communication, and an integrated RFID reader for access control in a single, easy-to-manage device.
June 2018	Product Launch	Axis Communications launched AXIS Guardian, which is designed to allow security service providers and alarm monitoring companies to offer an end-to-end managed service with remote monitoring. AXIS Guardian has been created in close collaboration with a number of alarm and security service companies to specifically meet the needs of their customers.
June 2018	Product Launch	Axis Communications launched advanced AXIS Q35 cameras. Developed for solid performance in challenging light conditions and rough environments, the new models are perfect for surveillance in a wide range of areas such as critical infrastructure, city surveillance, airports, railway stations, harbors, healthcare, pharmaceutical, and food industries.
June 2018	Product Launch	Axis Communications launched the AXIS A1601 Network Door Controller. It is a smart, independent device installed by each door, which gives ultimate scalability in access control. The flexibility of AXIS A1601 allows easy integration with additional hardware and software from partners, which makes it ideal for organizations in numerous sectors, from business to education and retail.
April 2018	Product Launch	Axis Communications launched a comprehensive range of IR-enabled cameras. By launching several new cameras, which feature built-in IR illumination, the company aims to deliver the benefits of IR in the most cost-efficient, easily installed way to almost any indoor or external surveillance need.

Source: Company Website and Press Releases

13.1.10 SECOM

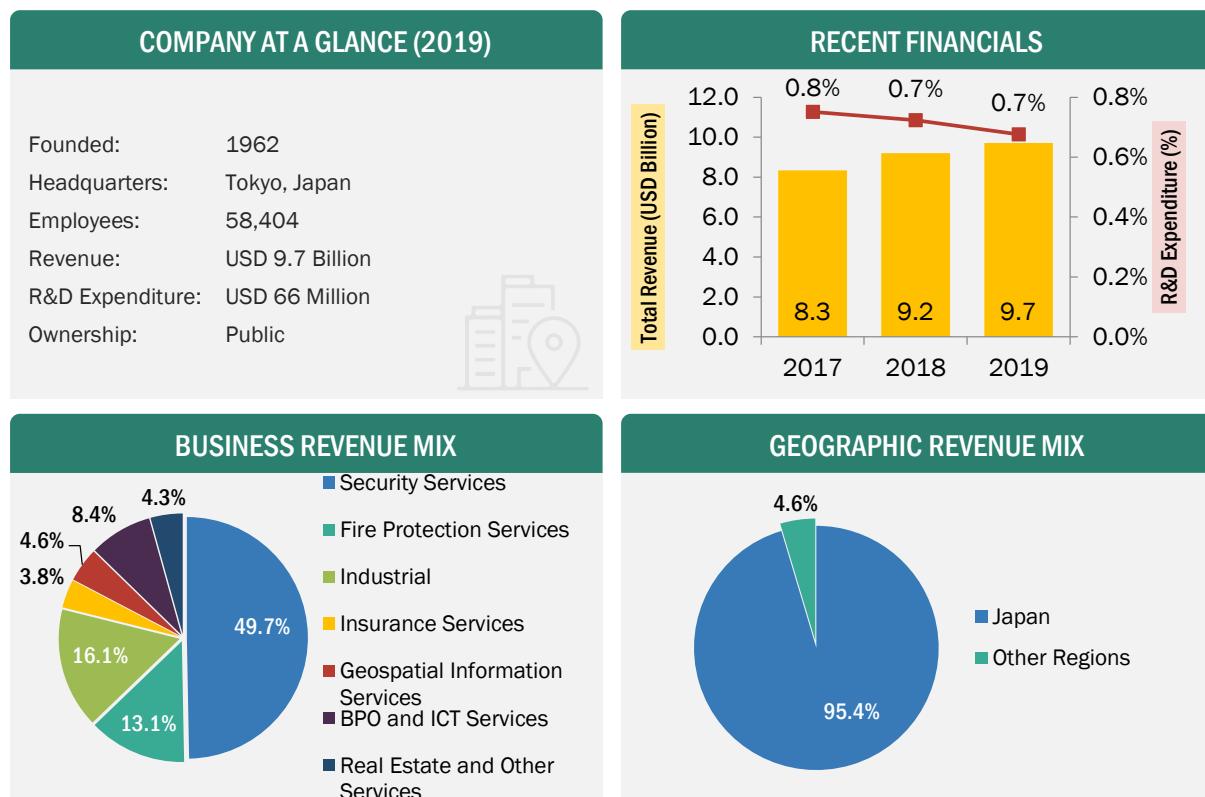
13.1.10.1 Business overview

SECOM provides customized security and fire solutions. It operates through the following segments: Security Services, Fire Protection Services, Medical Services, Insurance Services, Geographic Information Services, Information and Communication Related Services, and Real Estate and Others.

The Security Services segment provides centralized online commercial, home security, and large-scale proprietary security systems. The Fire Protection Services segment focuses on fire protection equipment such as automatic fire alarms and fire extinguishing systems for office buildings, plants, tunnels, ships, residences, and cultural properties.

SECOM has its operations in 17 countries worldwide. As of March 31, 2020, the company operated through 183 group companies and has a total of about 3,410,000 security service subscribers.

FIGURE 50 SECOM: COMPANY SNAPSHOT



Note: The fiscal year of the company ends on March 31. In the “recent financials” block, the R&D expenditure has been considered as a percentage of the company’s total revenue. The currency conversion rates considered for 2017, 2018, and 2019 are JPY 1 = USD 0.00859, JPY 1 = USD 0.00907, and JPY 1 = USD 0.00916, respectively.

Source: Company Website and Annual Reports

13.1.10.2 Products/solutions/services offered

CATEGORY	PRODUCT/SOLUTION
Security Products	<ul style="list-style-type: none"> ▪ Security Lights ▪ Security Products for Windows ▪ Security Products for Doors ▪ Intercoms ▪ Fire Extinguish Systems ▪ Safe Evacuation Systems ▪ Fire Alarms ▪ Intruder Alarms ▪ Access Control
Security Services	<ul style="list-style-type: none"> ▪ Centralized (on-line) Security Systems ▪ Self-contained (off-line) Security Systems

Source: Company Website

13.1.10.3 Recent developments

MONTH & YEAR	APPROACH	DESCRIPTION
October 2020	Acquisition	SECOM acquired Kuala Lumpur-based ADT Services (M) Sdn. Bhd. and Singapore-based ADT Integrated Security Solutions Pte. Ltd. These two companies offer security systems primarily to homes and small and mid-size businesses. Its major clientele base includes banks and government agencies.
May 2019	Partnership	SECOM entered a partnership with financial technology company Aktif Bank (Turkey). This partnership would help SECOM enter the Turkish market.

Source: Company Website and Press Releases

13.1.11 ASSA ABLOY

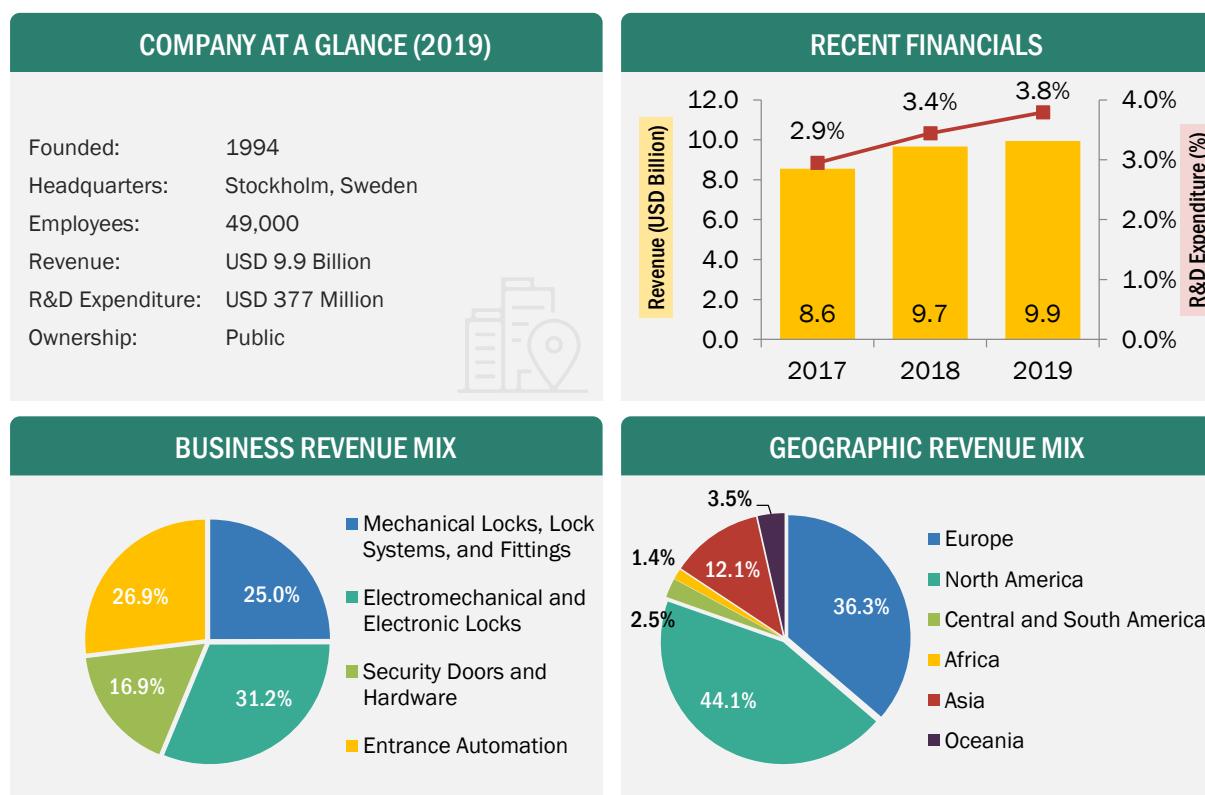
13.1.11.1 Business overview

ASSA ABLOY manufactures and sells opening solutions such as locks, doors, gates, and entrance automation solutions. Along with it, the company's product portfolio of trusted identities includes keys, tags, cards, and mobile and biometric identity verification systems. It has a presence in 70 countries spread across Europe, North and South America, and Asia and Oceania.

ASSA ABLOY classifies its business operations into 3 regional and 2 global divisions. Its regional divisions include EMEA, the Americas, and APAC, while the global divisions include Global Technologies and Entrance Systems. The Global Technologies division operates worldwide, offering access control systems, secure card issuance solutions, identification technology, and hotel locks. The Entrance Systems division is a global supplier of entrance automation products and services. HID Global, a subsidiary of ASSA ABLOY, is in the business of developing mobile access control solutions, which are constantly improved by adding new features and making them adaptable to different mobile platforms.

ASSA ABLOY offers an extensive range of mechanical and electromechanical locks, digital door locks, security doors, entrance automation (primarily in identity and access management), and hotel security and secure identity solutions, as well as several other related products and services. The company manufactures and sells electronic access control systems, identification products, and entrance automation systems. It also offers identity and access management tools, biometric systems, and government IDs for authenticity and protection. The company's major series of access control system platforms include CLIQ, Seos, Aperio, and Accentra.

FIGURE 51 ASSA ABLOY: COMPANY SNAPSHOT



Note: The fiscal year of the company ends on December 31. In the "recent financials" block, the R&D expenditure has been considered as a percentage of the company's total revenue. The currency conversion rates considered for 2017, 2018, and 2019 are SEK 1 = USD 0.1124, SEK 1 = USD 0.1149, and SEK 1 = USD 0.1057, respectively.

Source: Company Website, Annual Reports, and MarketsandMarkets Analysis

13.1.11.2 Products/solutions/services offered

CATEGORY	PRODUCT
Security Solutions	<ul style="list-style-type: none"> ▪ Mechanical and Electromechanical Locking ▪ Access Control ▪ Identification Management ▪ Entrance Automation ▪ Security Doors ▪ Hotel Security ▪ Mobile Access

Source: Company Website

13.1.11.3 Recent developments

MONTH & YEAR	APPROACH	DESCRIPTION
September 2020	Divestiture	ASSA ABLOY has closed the sale of agta record and its own businesses to Italy-based FAAC Group to address competition concerns of the EU Commission related to the acquisition of agta record. The divested business includes agta record's operations in Netherlands, Austria, Hungary, and Slovenia; ASSA ABLOY's automatic pedestrian door business in France and the UK; and agta record's high-speed door business in France.
August 2020	Acquisition	ASSA ABLOY acquired UK-based Access-IS to reinforce its current offering within the extended access technologies and provide complementary growth opportunities. This acquisition is expected to be a good fit for ASSA ABLOY'S subsidiary HID.
February 2020	Acquisition	ASSA ABLOY acquired Biosite (UK), one of the leading providers of biometric access control solutions, for the construction industry in the UK. This acquisition is likely to enhance the company's portfolio of biometric access control products.
November 2019	Acquisition	ASSA ABLOY acquired AM Group (Australia), one of the leading companies in entrance automation products and solutions, to broaden its commercial network, as well as to improve its portfolio of access control solutions and related services.
September 2019	Acquisition	ASSA ABLOY acquired Placard (Australia), one of the leading manufacturers of secure cards, to strengthen its position in the smart card market in APAC.
September 2019	Acquisition	ASSA ABLOY acquired LifeSafety Power (US), a leading supplier of smart integrated access control power solutions for OEMs, integrators, and end users, to reinforce its position in the market for access control solutions.
August 2019	Organization Development	ASSA ABLOY, HID, NXP, Samsung, Bosch, Sony, LitePoint, and Telecommunications Technology Association (TTA) launched a fine ranging (FiRa) consortium, which has been formed to drive ultra-wideband (UWB) technology for accurate wide-ranging applications. This organization is expected to access the control market seamlessly.
June 2019	Acquisition	ASSA ABLOY acquired the Citizen Identity Business of De La Rue, a leading passport manufacturer based in the UK. This acquisition is intended to significantly enhance ASSA's position within citizen ID and provide complementary growth opportunities.

March 2019	Acquisition	ASSA ABLOY signed an agreement to acquire a 93% stake in agta record ag (Switzerland), intending to generate more than 40% of total revenue from the services of agta record and create a strong base for recurring revenue and good profitability.
March 2019	Acquisition	ASSA ABLOY acquired Spence Doors (Australia), one of the leading manufacturers of commercial doors in Australia, to expand its portfolio of door opening solutions, which would help accelerate its growth in the APAC market using its existing footprint in Australia.
January 2019	Acquisition	ASSA ABLOY acquired KEYper Systems (US), a key supplier of electronic and mechanical key management systems, primarily for the automotive market. This acquisition helped the company expand its portfolio of intelligent key and asset management solutions offered by Traka, a subsidiary of ASSA ABLOY.
December 2018	Acquisition	ASSA ABLOY acquired Pacific Door Systems (New Zealand), one of the leading manufacturers of commercial doors and window systems. With this acquisition, the company plans to expand its existing portfolio of door opening solutions and accelerate its growth potential in New Zealand.
September 2018	Acquisition	ASSA ABLOY acquired Crossmatch (US), one of the leading providers of biometric identity management and secure authentication solutions, to become one of the leading biometric companies across the world and grab complementary growth opportunities.
July 2018	Acquisition	ASSA ABLOY acquired Planet GDZ (Switzerland), a major provider of door drop down seals and finger protection covers. This acquisition helped ASSA strengthen its market position by adding complementary products and solutions.
July 2018	Acquisition	ASSA ABLOY acquired Door Systems (US), a distributor of commercial doors, residential sectional doors, high-speed doors, and docking solutions, to enhance its portfolio of commercial door and docking solutions.
June 2018	Acquisition	ASSA ABLOY acquired HKC Security (Ireland), a manufacturer of alarms and cloud-based monitoring solutions. HKC's comprehensive portfolio of wired and wireless alarm products and monitoring solutions supplement ASSA ABLOY's offerings in the Irish market.
February 2018	Acquisition	ASSA ABLOY acquired Phoniro (Sweden), one of the providers of integrated digital key management solutions and alarm (homecare and nursing homes) systems in the Nordic region. This acquisition helped ASSA to strengthen its position in the Nordic region.

Source: Company Website and Press Releases

13.2 RIGHT TO WIN

COMPANY NAME	PRODUCT FOCUS	GEOGRAPHIC FOCUS	SALES MODEL	VALUE PROPOSITION	GROWTH STRATEGY
Johnson Controls	Access control, fire protection, video surveillance, and intrusion detection	Strong presence in the US, followed by Europe, Japan, and China	Both direct channels and through partners	Focused on product launches and developments to improve its footprint in the access control market	The company focuses on maintaining a multi-segment business platform to enhance the predictability and sustainability of its earnings and growth.
Hikvision	Video surveillance, access control, and intrusion detection	Strong base in China	Both direct channels and through partners	Strong leadership position in the market for video surveillance	The company focuses on distribution through distributors, system integrators, and installers to expand its presence to grow in the market.
Carrier	Access control, fire protection, video surveillance, and intrusion detection	Strong presence in the US, followed by Europe, APAC, and RoW	Both direct channels and through partners	Strong leadership position in the market for fire protection	The company focuses on enhancing its technology business through product launches, partnerships, and acquisitions.
Honeywell International	Access control, fire protection, video surveillance, and intrusion detection	Strong presence in the US, followed by Europe	Both direct channels and through partners	Focused on expanding its portfolio of high-quality and high-performance products	The company uses both organic strategies to increase its share in the access control market.
Dahua Technology	Video surveillance, access control, and intrusion detection	Strong presence in China	Both direct channels and through partners	Focused on expanding its global footprint in North America, Europe, Asia Pacific, and Africa	The company is focusing on product launches and developments to expand its commercial security product portfolio.

Source: Company Website, Annual Reports, Press Releases, and MarketsandMarkets Analysis

13.3 OTHER PLAYERS

13.3.1 SIEMENS

Founded	1847
Headquarters	Berlin, Germany
Ownership	Public
Revenue	USD 65.0 Billion (As of September 30, 2020)
Employees	293,000 (As of September 30, 2020)
Business Overview	<p>Siemens is engaged in the manufacturing of products for power generation, power transmission, automation, and medical diagnosis. It operates through 9 reportable business segments—Power and Gas, Siemens Healthineers, Energy Management, Digital Factory, Mobility, Process Industries and Drives, Building Technologies, and Siemens Gamesa Renewable Energy and Financial Services (SFS). The Building Technologies segment offers products, solutions, services and software for fire safety, security, building automation, and energy management. Its major customers include owners, operators, and tenants for both public and commercial buildings; general contractors; and value-added partners.</p>
Products	<p>Fire Safety: Fire Protection Systems, Fire Control Panels and Terminals, Automatic Detectors, Special Detectors, and Fire Alarm Devices</p> <p>Security: Video Management, Access Control, and Mass Notification Systems</p>
Software	<p>Fire Safety: Cerberus DMS and Cerberus Portal</p> <p>Security: Siveillance Vantage, Siveillance Viewpoint, and Desigo CC</p>
Geographic Presence	Asia, Australia, Americas, Europe, C.I.S., Africa, and Middle East

Source: Annual Reports, Company Website, and Press Releases

13.3.2 HALMA

Founded	1894
Headquarters	Buckinghamshire, US
Ownership	Public
Revenue	USD 1.7 Billion (As of March 31, 2020)
Employees	7,554 (As of March 31, 2020)
Business Overview	<p>Halma Plc is a holding company that engages in the development, production, and sale of hazard and life protection products. It operates through the following segments: Process Safety, Infrastructure Safety, Medical, and Environmental and Analysis. The Infrastructure Safety segment offers life protection in infrastructure and for safe movements such as fire detection systems, smoke detectors, fire suppression, people and vehicle flow solutions, security solutions, and elevator safety products.</p>
Products	Industrial Access Control, Fire Suppression, Security Sensors, and Fire Detection
Geographic Presence	US, Europe, UK, APAC, Middle East, and Africa

Source: Annual Reports, Company Website, Press Releases

13.3.3 HOCHIKI CORPORATION

Founded	1918
Headquarters	Tokyo, Japan
Ownership	Public
Revenue	USD 754 Million (As of March 31, 2020)
Employees	2,105 (As of March 31, 2020)
Business Overview	Hochiki Corporation engages in the manufacture, sale, construction, and maintenance of fire alarms, smoke control, fire extinguishing, security, and network systems. It operates through the Fire Prevention and Information and Communications segments. The Fire Prevention segment offers fire alarm systems and fire extinguishing systems.
Products	Fire Prevention: Fire Alarm Systems and Fire Extinguishing Systems Security Systems: Access Control Systems, Key Management Systems, and Electrical Locks Control Systems
Geographic Presence	North America, South America, Japan, APAC, Europe, Middle East, and Africa

Source: Annual Reports, Company Website, and Press Releases

13.3.4 FLIR SYSTEMS, INC.

Founded	1978
Headquarters	Oregon US
Ownership	Public
Revenue	USD 1.9 Billion (As of December 31, 2019)
Employees	4,265 (As of December 31, 2019)
Business Overview	FLIR Systems, Inc. develops technologies that enhance perception and awareness. It designs, develops, markets, and distributes solutions that detect people, objects, and substances that may not be perceived by human senses and improve the way people interact with the world around them. The company operates through the following segments: Industrial business unit, Government & Defense business unit, and Commercial business unit. The Industrial business unit segment develops and manufactures thermal and visible-spectrum imaging camera cores and components that are utilized by third parties to create thermal, industrial, and other types of imaging systems. The Government and Defense business unit segment develops and manufactures enhanced imaging and recognition solutions for a wide variety of military, law enforcement, public safety, and other government customers across the world for the protection of borders, troops, and public welfare. The Commercial business unit segment develops and manufactures cameras, video recording systems, and video management systems for use in commercial and critical infrastructure, electronics and imaging instruments for the recreational and commercial maritime market, intelligent traffic monitoring and signal control systems, and hand-held and weapon-mounted thermal imaging systems for use in a variety of applications.
Products and Solutions	Security: Thermal Security Cameras, Mobile & Wearable Solutions, Visible Security Cameras, Video Management Systems, Encoders, Servers, and Command and Control Software
Geographic Presence	US, Canada, Latin America, Europe, Asia, Middle East, and Africa

Source: Annual Reports, Company Website, and Press Releases

13.3.5 ALLEGION PLC

Founded	1908
Headquarters	Dublin, Ireland
Ownership	Public
Revenue	USD 2.9 Billion (As of December 31, 2019)
Employees	11,000 (As of December 31, 2019)

Business Overview Allegion plc provides security products and solutions worldwide. It offers electronic products and access control systems, including time, attendance, and workforce productivity, under multiple brand names, such as aptiq, Schlage, Von Duprin, xceedID, Bricard, CISA, interflex, pegasys, Simions Voss, FSH, and Milre. It operates through the following 3 geographic segments: Americas; Middle East, India, and Africa (EMEIA); and APAC. The Americas segment sells a range of products and solutions such as locks, locksets, portable locks, key systems, door closers, exit devices, doors and door systems, electronic products, and access control and time and attendance systems. The EMEIA segment offers the same portfolio of products as the Americas segment as well as time and attendance and workforce productivity solutions. The Asia Pacific segment also provides the same product portfolio in addition to video analytics solutions.

Products and Solutions	Door closers, controls and exit devices; locks, locksets, portable locks and key systems and services; and electronic security products and access control systems
Geographic Presence	North America, South America, APAC, Europe, Middle East, and Africa

Source: Annual Reports, Company Website, and Press Releases

13.3.6 NORTEK SECURITY AND CONTROL

Founded	1961
Headquarters	California, US
Ownership	Subsidiary
Parent Company	Melrose Industries PLC (UK)
Business Overview	Nortek Security & Control (NSC) provides smart connected systems and devices for residential and commercial security, home control/automation, and personal digital health markets. NSC develops, manufactures, and markets its products under its own brands Linear, 2GIG, GoControl, and Numera as well as private label products (OEM and ODM services) for sale by leading security/home automation service providers, dealers, and several other leading security manufacturers. NSC has more than 4 million commercial, residential, and personal systems deployed and more than 20 million connected wireless devices.
Products and Solutions	Access Control, eMerge Access, Security Solutions, Video Surveillance, and Entry Solutions
Geographic Presence	North America, South America, Europe, APAC, and Middle East & Africa

Source: Company Website and Press Releases

13.3.7 ALARM.COM

Founded	2000
Headquarters	Ontario, Canada
Ownership	Private
Business Overview	Alarm.com Holdings, Inc. engages in the provision of wireless and web-enabled security system technology. The company offers security, video monitoring, and energy management solutions. It operates through the Alarm.com and Other segments. The Alarm.com segment represents a cloud-based platform for connected home and related connected home solutions. The Other segment focuses on the R&D of home and commercial automation as well as energy management products and services.
Products and Solutions	Interactive Security Systems, Video Monitoring Systems, and Access Control Systems
Geographic Presence	North America, South America, Europe, APAC, and Africa

Source: Company Website and Press Releases

13.3.8 AVIGILON

Founded	2004
Headquarters	Vancouver, Canada
Ownership	Subsidiary
Parent Company	Motorola Solutions, Inc. (US)
Business Overview	Avigilon designs, develops, and manufactures video analytics, network video management software and hardware, surveillance cameras, and access control solutions. The company's products are applicable in areas such as airports, banks, casinos, city surveillance, commercial, public transit, education, healthcare, retail, and stadiums.
Products and Solutions	Video Security, Acess Control, and Analytics
Geographic Presence	US, Canada, Latin America, Europe, APAC, Middle East, and Africa

Source: Company Website and Press Releases

13.3.9 DALLMEIER ELECTRONIC GMBH & CO.KG

Founded	1984
Headquarters	Regensburg, Germany
Ownership	Private
Business Overview	Dallmeier electronic GmbH & Co. KG manufactures digital video surveillance systems. Dallmeier develops and manufactures all components in Germany. This includes the entire product range, from cameras to picture storage and transmission to intelligent video analysis and even individually adjusted management software.
Products and Solutions	Panomera Cameras, Single-Sensor Cameras, Recording, Software, and Video Analytics & AI
Geographic Presence	North America, South America, Europe, APAC, and Middle East & Africa

Source: Company Website and Press Releases

13.3.10 STANLEY CONVERGENT SECURITY SOLUTIONS, INC.

Founded	2004
Headquarters	Alberta, Canada
Ownership	Private
Business Overview	STANLEY Convergent Security Solutions, Inc., a division of STANLEY Black & Decker (US), is a provider of integrated security solutions. The company provides security solutions for applications in industries such as finance, education, healthcare, retail, and government.
Products and Solutions	System Integration, Intrusion Solutions, Access Control Systems, Video Surveillance Solutions, and Fire Detection Systems
Services	Professional Services, Installation and Service, Monitoring, Managed Services, and eServices
Geographic Presence	North America, South America, Europe, APAC, and Middle East & Africa

Source: Company Website and Press Releases

13.3.11 GUNNEBO AB

Founded	1889
Headquarters	Gothenburg, Sweden
Ownership	Public
Revenue	USD 578 Million (As of December 31, 2019)
Employees	4,256 (As of December 31, 2019)
Business Overview	Gunnebo AB is a global provider of security products, services, and software. The company serves banks, retail, mass transit, public & commercial buildings and industrial & high-risk sites with offerings covering safe storage, entrance control, and integrated security.
Products and Solutions	Entrance Control: Tripod Turnstiles, Speed Gates, Full Height Turnstiles, Airport Security Gates, Metro Ticket Gates, Entrance Gates, Retail Gates, and Security Revolving Doors Integrated Security: Access control, Intrusion Detection, Video Surveillance, and Fire Safety
Geographic Presence	Americas, Europe, APAC, and Middle East & Africa

Source: Company Website and Press Releases

13.3.12 CONTROL4 CORPORATION

Founded	2003
Headquarters	Draper, US
Ownership	Private
Business Overview	Control4 Corp. engages in the provision of automation and control solutions. It offers networking systems to control lighting, entertainment, security, energy, and other connected devices. The company builds secure infrastructure that provides cloud-based services, including remote customer system access.
Product	Arm and Disarm, Locks and Alerts, Mockupancy (Occupancy simulation), Video Monitoring Systems, Wireless Keypads, Locks, In-wall Touch Sensors, Cameras, Door Stations, and Wired Keypads
Service	Video Monitoring
Geographic Presence	US, UK, Germany, Switzerland, Serbia, Australia, China, and India

Source: Company Website and Press Releases

13.3.13 MINIMAX VIKING

Founded	2009
Headquarters	Ramat Hasharon, Israel
Ownership	Private
Business Overview	In 2009, the merger of the two internationally renowned fire protection companies Minimax and Viking resulted in one of the world's largest companies in fire protection. Minimax Viking specializes in fire protection products, system integration, and service operations, especially for industrial and special hazards. In 2018, Minimax Viking Group achieved revenues of more than USD 1.8 billion and employs more than 9,000 people worldwide.
Solutions	Minimax Fire Detection and Suppression: Fire Detection Systems and Suppression Control, Water-based Suppression Systems, Minifog Water Mist Systems, Gas-based Suppression Systems, Compact Suppression Systems, Spark Extinguishing Systems, Foam Extinguishing Systems, and Fire Prevention Systems
Geographic Presence	North America, South America, Europe, APAC, and Middle East & Africa

Source: Company Website and Press Releases

14 APPENDIX

14.1 INSIGHTS FROM INDUSTRY EXPERTS



The rising number of terrorist attacks and organized crimes across the world are one of the major factors driving the growth of the commercial security system market.



The commercial vertical will be a major market for commercial security systems during the forecast period.



North America will account for the largest share of the commercial security system market throughout the forecast period.



The video surveillance segment will record the highest CAGR in the commercial security hardware market during the forecast period.

14.2 DISCUSSION GUIDE – COMMERCIAL SECURITY SYSTEM MARKET

- Q. 1.** Could you provide a brief introduction to your company and its role in the commercial security system market?

Primary's Viewpoint: _____

- Q. 2.** What are your views on the growth prospects of the commercial security system market? What is the current scenario, and how will it be in the near future? Any further inputs/suggestions will be helpful.

Primary's Viewpoint: _____

- Q. 3.** What was the overall size of the commercial security system market in 2020? Mention the market size and share of the following regions in 2020, in terms of value. Also, what would be the CAGR for each region in the next 5 years?

REGION	MARKET SIZE (USD MILLION)/ MARKET SHARE (%), 2020	CAGR % (2021–2026)
North America		
Europe		
Asia Pacific (APAC)		
Middle East & Africa		
South America		

HARDWARE	MARKET SHARE (%), 2020	CAGR% (2021–2026)
Fire Protection System		
Video Surveillance		
Access Control System		
Entrance Control System		

- Q. 4.** What were the percentage contributions of the following hardware types in the commercial security hardware market in 2020? What would be the CAGR for each of these segments in the next 5 years? Kindly validate the market segments and let us know if we are missing anything.

Primary's Viewpoint: _____

Q. 5. What were the percentage contributions of the following software types in the commercial security software market in 2020? What would be the CAGR for each type from 2021 to 2026? Kindly validate the market segments and let us know if we are missing anything.

SOFTWARE	MARKET SHARE % (2020)	CAGR % (2021–2026)
Fire Analysis Software		
Video Surveillance Software		
Access Control Software		
Fire Analysis Software		

Q. 6. What were the percentage contributions of the following service offerings in the commercial security service market in 2020? What would be the CAGR for each offering during 2021–2026? Kindly validate the market segments and let us know if we are missing anything.

SERVICE	MARKET SHARE % (2020)	CAGR % (2021–2026)
Security System Integration Services		
Remote Monitoring Services		
Fire Protection Services		
Video Surveillance Services		
Access Control Services		

Q. 7. What were the percentage contributions of the following verticals in the commercial security system market in 2020? What would be the CAGR for each vertical during 2021–2026? Kindly validate the market segments and let us know if we are missing anything.

VERTICAL	MARKET SHARE % (2020)	CAGR % (2021–2026)
Commercial		
Transportation		
Government		
Retail		
Banking and Finance		
Education		
Energy and Utility		
Industrial		
Military and Defense		
Sports and Leisure		
Healthcare		

Q. 8. Mention the top 5 players in the commercial security system market and their approximate market share in 2020.

TOP 5 PLAYERS	MARKET SHARE % (2020)
1.	
2.	
3.	
4.	
5.	

Q. 9. Kindly provide your views on the drivers, restraints, opportunities, and challenges pertaining to the commercial security system market.

MARKET DYNAMICS

Drivers

Restraints

Opportunities

Challenges

Q. 10. What are the upcoming technologies/products that would have a significant impact on market growth?

Primary's Viewpoint: _____

Q. 11. What would be the revenue pockets for the market players in the next 5 years?

Primary's Viewpoint: _____

Q. 12. What key strategies should players adopt to achieve growth in the commercial security system market in the coming years?

Primary's Viewpoint: _____

Q. 13. What are the latest trends across the commercial security system value chain?

Primary's Viewpoint: _____

14.3 KNOWLEDGE STORE: MARKETSANDMARKETS' SUBSCRIPTION PORTAL

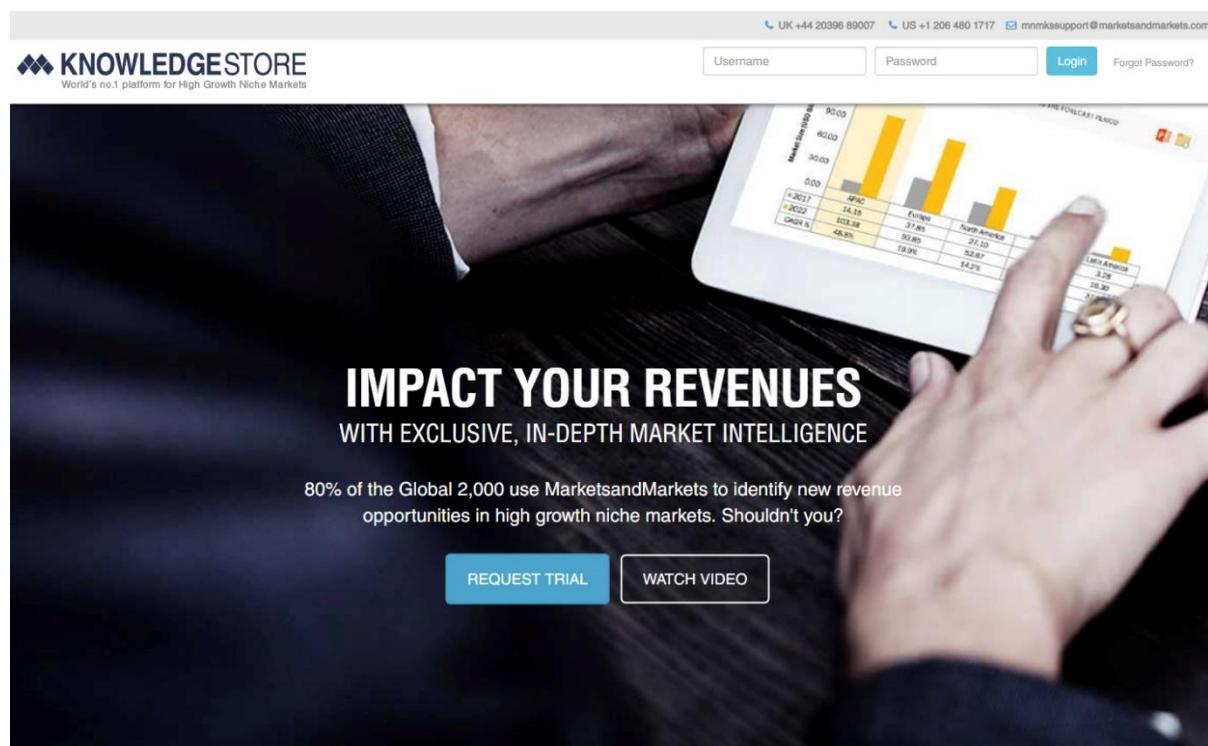
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MARKETSANDMARKETS KNOWLEDGE STORE: SEMICONDUCTOR & ELECTRONICS INDUSTRY SNAPSHOT

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Industry Trends

-  Aerospace & Defence
-  Agriculture
-  Automotive & Transportation
-  Banking & Financial Services
-  Chemicals & Material
-  Energy & Power
-  Food & Beverage
-  Healthcare
-  Information & Communications Technology
-  Packaging, Construction, Mining & Gases
-  Retail & eCommerce
-  Semiconductor & Electronics


Augmented/Virtual Reality


Battery & Wireless Charging


Communication & Connectivity Technology


Display Technology


Drones & Robotics


Electrical System & Components


Electronics System & Components


Industrial Automation


Information System & Analytics


Security & Surveillance


Semiconductor Materials & Components


Sensors and Control


Smart Home


Smart Lighting


Testing, Inspection & Certification

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HIGH GROWTH MARKETS

Industries

- Aerospace & Defence (285)
- Agriculture (210)
- Automotive & Transportation (270)
- Chemicals & Material (1119)
- Energy & Power (363)
- Food & Beverage (309)
- Healthcare (928)
- Information & Communications Technology (852)
- Packaging, Construction, Mining & Gases (158)
- Semiconductor & Electronics (915)
 - Battery & Wireless Charging (13)
 - Communication & Connectivity Technology (81)
 - Display Technology (72)
 - Drones & Robotics (22)
 - Electrical System & Components (56)
 - Electronics System & Components (161)
 - Industrial Automation (104)
 - Information System & Analytics (40)
 - Internet of Things & M2M (34)
 - LED & Lighting (Optoelectronics) (50)
 - Security & Surveillance (71)
 - Semiconductor Materials & Components (81)
 - Sensors and Control (89)
 - Testing, Inspection & Certification (41)

Subscription Status

- Subscribed
- Not Subscribed

CAGR in % (2018 - 2023):
28.20%
20.55%
20.30%
19.02%
16.40%
16.39%
14.29%
14.28%
13.34%
11.28%

REPORT TITLE	DOMAIN	MARKET SIZE (USD BN - 2018)	CAGR %	PUBLISH DATE
LTE Advanced Pro Market by Communication Infrastructure (Small Cell, Macro Cell, Ran Equipment, DAS), Core Network Technology (SDN, NFV), Deployment Location (Urban Areas, Public Spaces, Rural Areas, Residential) and Geography - Global Forecast to 2023	Semiconductor & Electronics	0.15	121.6	Oct 2018
G.Fast Chipset Market by Deployment Type (DPU and CPE), End User (Residential, and Enterprise/Commercial), Copper-Line Length (Lines Shorter Than 100 Meters, Lines Of 100 Meters–150 Meters, Lines Longer Than 250 Meters) - Global Forecast to 2022	Semiconductor & Electronics	0.19	116.5	Nov 2016
5G Fixed Wireless Access (FWA) Market by Offering (Hardware: Access Units & CPE, Services), Demography (Urban, Semi-Urban, Rural), Application (Residential, Commercial, Industrial, Government), and Region - Global Forecast to 2026	Semiconductor & Electronics	0.2	97.47	Feb 2019
Free Space Optics (FSO) and Visible Light Communication (VLC)/Light Fidelity (Li-Fi) Market by Component (LED, Photodetector, Microcontroller, and Software), Transmission Type, Application, and Geography - Global Forecast to 2023	Semiconductor & Electronics	2.83	93.34	Sep 2018
Neuromorphic Computing Market by Offering (Hardware, Software), Application (Image Recognition, Signal Recognition, Data Mining), Industry (Aerospace & Defense, IT & Telecom, Automotive, Medical & Industrial) and Geography - Global Forecast to 2022	Semiconductor & Electronics	0.03	86	Sep 2016
Micro-LED Market by Application (Display (Smartwatch, NTE Devices (AR, VR), Smartphone, Television, HUD, Digital Signage, Laptop & Monitor) and Lighting (General, Automotive)), Display Panel Size, Vertical, and Geography - Global Forecast to 2025	Semiconductor & Electronics	0.33	80.1	May 2018
Blockchain in Manufacturing Market by Application (Business Process Optimization, Logistics and Supply Chain Management, Counterfeit Management), End Use (Automotive, Energy & Power, Industrial, Pharmaceuticals), and Region - Global Forecast to 2025	Semiconductor & Electronics	0.01	80	Sep 2018

14.4 AVAILABLE CUSTOMIZATIONS

COMPANY INFORMATION

- Detailed analysis and profiling of additional market players (Up to 5)
- Country-level market analysis for the Middle East, Africa, and South America

14.5 RELATED REPORTS

SR.NO	REPORT TITLE	PUBLISHED DATE
SECURITY SOLUTIONS MARKET - GLOBAL FORECAST TO 2024		
1	By Offering (Products (Fire Protection, Video Surveillance, Access Control) and Services (System Integration, Remote Monitoring, Fire Protection, VSaaS, ACaaS)), Vertical, and Geography https://www.marketsandmarkets.com/Market-Reports/home-security-solutions-market-701.html	DEC 2019
VIDEO SURVEILLANCE MARKET - GLOBAL FORECAST TO 2025		
2	By System, Offering (Hardware (Camera, Storage Device, Monitor), Software (Video Analytics, Video Management System) & Service (VSaaS)), Vertical (Commercial, Infrastructure, Residential), and Geography https://www.marketsandmarkets.com/Market-Reports/video-surveillance-market-645.html	APR 2020

14.6 AUTHOR DETAILS

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Semiconductors and
Electronics

Sachin is a Management & Engineering professional with more than 11 years of experience in Electronics & Semiconductor business of different applications like Consumer Electronics, Automotive, Healthcare, Industrial etc. He has worked with the leading IT & Semiconductor companies like STMicroelectronics Pvt Ltd, NXP Semiconductor Pvt Ltd & Cognizant Technology Solutions. He has worked in projects related to System on Chip, Smart Things, Internet of Things, Augmented and Virtual Reality, Wireless Power, Power Management ICs, Product Miniaturization Technologies Nodes for Industry Analysis, Market Sizing, Go-to-market strategy, Growth strategy, Business planning and strategic analysis.

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