Need for govt policy to attract investments in Indian security and surveillance sector

Despite huge demand and various applications of security products, India is still not a commanding player in this segment. The picture on the manufacturing front doesn't seem positive either. The government has to come forward with a specific policy to attract investments in this sector with a comprehensive package of incentives

By Richa Chakravarty

From physical security personnel to the era of biometrics, who would have ever thought that virtual eyeballs (lens) would one day keep a check on our daily activities. Replacing traditional security measures, technology today has smoothly swept into our personal domain, keeping a check on our movements, restraining our access and verifying the authenticity of our identity. Growing terrorist activities, increasing crime rates and intrusion on protected information has led to the growth of the security and surveillance industry across the globe.

Security and surveillance is a vast segment that can be broadly divided into three categories—video surveillance or closed circuit cameras (CCTVs), access control systems (ACS) and identification devices (use of biometrics). According to Frost & Sullivan report, video surveillance equipment market in India is valued at Rs 18 billion. This fast growth is due to the demand from various sectors such

as urban or city security, educational campuses, public transport, hospitality, harbours and airports, entertainment outlets, etc.

Currently, the government is the biggest spender on physical security or surveillance solutions. In this regard, use of CCTVs or video surveillance, in particular, has emerged as the most viable solution and has gained significant momentum in the country. This is followed by access control devices, and the latest upsurge in the security domain has been in biometrics based security solutions.

Enormous demand

The Frost & Sullivan report shows that the video surveillance segment is growing at a CAGR of 25 to 30 per cent. Two years ago, the US and Europe accounted for 86 per cent of the security camera market. Today, the Asia-Pacific region is also catching up and India registered a double digit growth rate. By extending its application to airports, railways, metro stations, malls, corporate houses, hotels, liquor shops and residences, security cameras have become an integral part of vigilance today.

"Following the November 2008 attacks in Mumbai, government, business houses and individuals are investing significant amounts in installing and upgrading their security infrastructure. This heightened awareness is providing an added boost to the security and surveillance systems industry," informs Sanjeev Sehgal, managing director, Sparsh. The company is one of the few Indian manufacturers of all types of CCTV cameras, DVRs and CCTV accessories.

Apart from CCTV cameras, the demand for access control devices is also growing. According to Srikanth Pisapati, national sales manager, security products, Matrix Comsec,

SECURITY AND SURVEILLANCE INDUSTRY

Three Sectors
▶ **CCTV**
▶ **Access control systems (ACS)**
▶ **Biometrics devices**

Total Market Size

Rs **18** bn **(approx)**

Annual Growth Rate

30 % CCTV

120 % ACS

27 % Biometrics devices

Growth Drivers
▶ Govt and public sector units
▶ Banking sector
▶ Educational sector
▶ Corporate sector
▶ Retail and residential sector

Challenges
▶ Lack of manufacturing facilities
▶ Lack of investment in R&D
▶ High end products at nascent stage
▶ Imports of cheap products
▶ Huge unorganised segment

companies in security and surveillance sector are expected to register a growth rate of 120 per cent in this current year. "High quality devices with the complete range of features and backed by high quality service are in demand, and this will remain so for a very long time. During the global recession, this was the only segment that remained unaffected. According to a survey, this industry managed to register an average growth of approximately 80 per cent," he adds. With its manufacturing unit in Vadodra, Matrix Comsec is one of the leading manufacturers of security products and access control devices.

Access control devices include magnetic stripe or wiegand cards, key cards, motion sensors, push-buttons and switches, flap barriers, boom barriers, catrax, etc. These devices are mainly used at railway platforms, passenger terminals, in corporate houses, premium hotels, stadiums, hospitality industry, gated communities, malls, etc.

The third category—biometrics-based devices—has also experienced stupendous demand. This industry is growing at a CAGR of 23-27 per cent. Today, biometric technologies are being used everywhere. One can see them in operation in posh apartments, hotels, offices, factories, banks, and even in temples. Thanks to improved awareness, the advances in scanning technology leading to cost reduction, and favourable government regulations, biometric technologies have truly arrived and are here to stay.

Though the biometrics market in India is still in its nascent stage, the rapid adoption of this technology for providing enhanced security by both the government and the private sector has opened the floodgates of opportunities for this segment. The Indian biometrics market is currently dominated by devices that use fingerprint recognition technology. Civic bodies have issued fingerprint enabled ration cards, schools have installed devices that read/recognise fingerprints to keep a check on staff absenteeism, and several corporate houses use fingerprint biometric systems for physical access control, all of which has led to

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Sanjeev Sehgal,
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a huge demand for biometric devices. However, the most ambitious and supposedly the world's largest biometric project—the Unique Identification Authority of India (UIDAI)—undertaken by the government, has triggered tremendous demand and opportunity within this segment.

Developing technology

Video surveillance: The concept of modern security systems has changed drastically with the advent of high technology security cameras. Today, surveillance is not merely about getting information 24 × 7, but getting relevant information at the right time. With technological advancements, today's network video can pro-actively monitor rather than being merely reactive, as these cameras have inbuilt intelligence that enables them to alert security personnel or activate recording if an untoward incident takes place. However, when compared to countries like the US, Japan and Korea, India is still far behind in this technology.

The surveillance industry is now undergoing a major technology shift—the older analogue based CCTVs are now giving way to IP based (digital), Open Source and fully integrated systems. "The IP based surveillance camera market is gaining good momentum because of superior technology features and affordability. These

devices are, therefore, preferred over the legacy analogue systems. In India, the surveillance market, which comprises about 30 per cent of the entire security industry, predominantly consists of analogue based installations. However, a sudden shift from analogue to IP based surveillance is being observed," adds Oh Tee Lee, regional director, South Asia Pacific region, Axis Communications, a Swedish company that installs network video solutions for commercial establishments.

Although analogue cameras are giving way to IP cameras, IP surveillance is still at an early stage in India. IP based cameras are well equipped with audio/video monitoring features that are directly connected to the Web browser with high performance H.264/MPEG4/JPEG compression. They offer the best solutions for remote applications. Transmission of images is quicker and sharper because of wireless technologies such as WiMax and GPRS.

New innovative products have come up especially in the CCTV sector. Integrated systems working on the IP mode of communication is likely to see a significant growth in coming years. "Our latest solutions and innovations include end-to-end IP security management platform HUS3.1 together with a new pioneer series IP cameras, the latest version visitor management system lobbyworksTM

4.0 and brand new IP based video door phone system," shares Vikas Chadha, director, South Asia, Honeywell Security Group. The company has a rich experience in the field of intrusion, access control, CCTVs, home systems and integrated solutions.

Autocop, a leading manufacturer in security and fire safety domain, has introduced 360 degree panoramic view and 3 megapixel fish eye camera from Vivotek. This supreme series camera with its high storage capacity can withstand extreme climatic conditions (-40 to 55˚). Other advance features in the video surveillance products offered by the compny includes highlight compensation, colour rolling supression, advanced OSD, high resistant glass, etc.

IP technology is moving ahead with a variety of cameras available in the market, including thermal network, infrared (IR) LED and pan-tilt-zoom (PTZ) cameras. These cameras have advanced features like complementary metal oxide semiconductors (CMOS), which use H.264 compression technology for reduced bandwidth during transmission, and automatic white balance (AWB) and selective backlight compensation (BLC) to ensure colour compensation and enhanced specific zones in the picture. Three dimensional digital noise reduction (3D DNR) is yet another advanced

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feature that removes noise from an image signal. The videoscan facial recognition system (FRCS) is the latest feature being added to the list of functions available. This scans an incoming video feed and compares any incoming human face with records stored in the system, in real time.

The entry of 3G is giving new directions to surveillance segment, and Prama Hikvision is one of the key manufacturers to have introduced this in India. "Our latest innovation offers 3G based IP camera and video server which is not only easy and flexible but also provides cable free option for interior designing. This is very useful for applications where cable network or Wi Fi connectivity is not possible or too expensive," informs Ashish P Dhakan, managing director and CEO, Prama Hikvision India Pvt Ltd. With its manufacturing facility in China, this company is a major contender in CCTV surveillance and DVR domain.

"The new approach to security is about bringing all security systems on to a common platform where they can exchange information and communicate with each other, aiding in the quicker identification of incidents, faster response to threats and in communicating across channels, sectors and boundaries," adds Shrikant Shitole, vice president, transformation business, Cisco India

and SAARC. The company provides a security solutions to secure networks and services with context based access for a borderless network.

Access control system: Like in video surveillance, the technology in this segment is also evolving at a fast pace. The latest transmission control protocol/Internet protocol (TCP/IP) has outsmarted the older access control devices that used RF cards or numeric keypads. The latest trend is to install TCP/IP based devices that are connected to a PC based server. These can be integrated with IT security and maintained from a common point. Magnetic stripe/proximity cards utilise a magnetic strip that is swiped through a reader to convey the information necessary to grant access into a particular area. Smart cards, on the other hand, allow extra data such as biometric information or key codes, to be stored on the card itself. These cards are not required to be removed from the wallet or purse to activate the reader.

From swiping a debit card in an ATM machine to metro travel cards, from paying toll charges to using key cards instead of metal keys to unlock doors, RFID technology has opened avenues for technological upgradation. Owing to these developments, shopping and travelling have become hassle free. These ACSs have not only helped in managing excess traffic and crowds, but the

sensors and push buttons used in malls, corporate houses and hotels help in restricting the movement of unauthorised people.

The three types of sensors used in the motion detection spectrum are passive infrared (PIR), ultrasonic and microwave sensors. These sensors send out pulses that measure the reflection of a moving object. Buttons can be used to release a lock or activate a door-opening sequence based on the situation.

One of the latest innovations from Honeywell is LobbyWorksTM 4.0. This device is well suited for commercial and office building visitor management, which acts as the first line of security and access control. "Having the ability to screen and track the large footfall on a day-to-day basis contributes substantially to the access management and safety of personnel and property. With this device, the user can enhance lobby and security desk productivity by scanning business cards or drivers' licenses to quickly register visitors and provide voice coaching to guide visitors during the registration process. It also captures photos for new visitors and identifies returning visitors, thereby creating a bank of historical data for future use," informs Vikas Chadha.

However, the key trend is the movement to TCP/IP based devices, which work directly with the existing infra-

structure. "Today, buyers look for complete access control solutions. They want fully functional and completely adaptable software with simple installation methods that are user friendly. We have recently launched our security products with access control and fire alarm systems and have received encouraging response from the market," explains Srikanth Pisapati.

Biometrics: Biometrics is the method of recognising a person based on his/her physiological and behavioural characteristics. Recognition of fingerprints, the iris, retina, face and hand geometry are the commonly

A fingerprint scanner

used physiological characteristics for verification. Signature verification and voice verification use behavioural characteristics for authentication. This is the latest technological innovation in the personal domain.

The Indian biometrics market is currently dominated by fingerprint technology, while iris recognition is expected to be the technology of the future. Despite having vast potential, it is disheartening to know that India does not have many players in this segment. The technology is generally borrowed from other leading countries. The launch of the UIDAI project has opened new avenues in this segment, as international players are now entering the domestic market

and helping in deploying and installing biometric devices.

Manufacturing—a distant area

Despite tremendous demand and various applications of security products, it is sad that the major players in this segment are international firms who have their manufacturing facilities outside the country. The picture on the manufacturing front doesn't seem positive. While the demand for security and surveillance devices is increasing rapidly, the country has just a handful of players who manufacture

fingerprint machines, CCTV cameras and ACS devices.

"Manufacturing of security products in India is a big challenge as none of the components are available locally. We source 70 per cent of the components from other countries. Moreover, the grey market is another deterrent to our growth. Despite the demand, however, there is negligible manufacturing of CCTVs within the country. The industry seems to be oblivious to the enormous potential of this sector and is content to source components from foreign countries like China. Instead of manufacturing, people prefer importing because the product is available at cheap rates outside India," says Sanjeev Sehgal.

One of the biggest reasons hampering domestic manufacturing of biometrics devices is that it is a high-end technology product, and India is at a nascent stage of exploring it. Moreover, the investment in research and development (R&D) for high-end devices is not well supported by favourable government policies.

"There is a lot of perennial research and technological upgradation that has happened over the years in the West, especially the technological advancements that have been pioneered by homeland security and law enforcement departments. Hence, the lead, with respect to product development and its technology, still rests with the West. However, once we get close to these high level accurate algorithms as well as the financial investments that are required for R&D in this domain, we could be self-sufficient in manufacturing and delivering end-to-end biometric solutions for different applications," states Mohsin Syed, vice president, sales and marketing, BioMoRF Systems. Launched by Infronics Group, BioMoRF is an innovative combination of three robust technologies—biometrics, mobile technology and radio frequency.

With imports on the rise, countries like China and Taiwan are dumping products without any set specifications and standards. This, too, hampers the growth of manufacturing within the country. Players prefer to import and sell cheap and low quality products rather than take the trouble to manufacture them. The government should set some standards for these products so that unorganised players and the grey market can be curbed. "We have not come across any product made in India yet in this segment. The biggest obstacle is that most components would need to be imported and Indian customs' rules

make it extremely difficult to import components, thus making supply chain availability extremely unpredictable,'' says Oh Tee Lee.

Echoing the same view, Sanjeev Sehgal says, "The manufacturing industry in India can only grow if there are some major benefits for locally manufactured products, which could be in the form of customs duty relief or tax benefits. India should develop a strong raw material and components base, too. The government has to come forward with a specific policy to encourage investments in this sector. A comprehensive package of incentives is required to attract investments in this sector so that the industry becomes viable and lucrative."

Manufacturing also requires huge investments in terms of acquiring machinery, space, manpower, resources (raw material) and design capabilities. However, technological advances are more in software based solutions than in hardware. "Manufacturing companies source about 70 per cent of the components from other countries. The real fact is that sometimes complete dependence on imports can lead to logistical problems that might affect manufacturing schedules,'' explains Srikanth Pisapati. Players, therefore, prefer to import the devices and integrate them into complete solutions.

Business potential

With the demand for security devices and solutions rising by the day, there is tremendous business potential for all players in this segment. "There is ample opportunity for R&D houses that develop innovative technologies; for manufacturers that launch high quality products; and distributors, dealers and systems integrators that can provide complete security solutions to customers," explains Anand Jain, director, strategic marketing, Enterprise Software

Solution Labs (eSSL), a leading solutions provider for access control devices.

With increasing investments in government sectors like airports, seaports, metros and other greenfield projects, the infrastructure sector looks quite promising. The retail sector also offers immense potential for surveillance solutions with the advent of intelligent capabilities in cameras, which can help analyse customer behaviour that can be mapped for business efficiencies. With the mushrooming of numerous self-service kiosks and ATMs in the country, remote monitoring solutions for the banking sector also assume importance. "Security systems have immense potential in various industry verticals. In terms of target industry verticals, Axis is betting big on the transportation segment, which according to Frost & Sullivan, is estimated to spend $3.6 billion on security solutions by 2017," informs Oh Tee Lee.

According to Shrikant Shitole, "The main challenge for the video surveillance segment is to convert the already existing installations onto an IP network. In order for physical security to become a mission critical application that operates on the IP network, both physical security and IT groups must work together for maximum benefit. However, with the end users becoming increasingly aware of the multiple benefits that IP based or network based solutions offer, the technology gap between analogue and IP networks is reducing."

The road to success is not always smooth. There are several issues that could inhibit growth. The technical dependence on a foreign partner may prevent the domestic players from developing security solutions customised to the Indian market. This dependence has also resulted in Indian customers paying a higher price due to the high import duties levied on them. Despite the great potential, poor awareness,

lack of a unified standard for security products as well as inadequate expertise and investments are all restraining the growth of the market. "India has immense potential but unfortunately we are not sucessful in manufacturing the products in India. Domestic manufacturers are still dependent on international companies for major components. Currently, 80 per cent of the market is still occupied by international players," shares Jatin Mehta, CEO, Abacus Infotech. The company is one of the key players providing solutions in access and attendance systems.

Though there are Indian manufacturers of video surveillance and ACSs, we have not yet started manufacturing biometric devices because the sensors have to be imported. "Indian products can challenge the imported products on quality and specifications, but they lose in a big way on the pricing front. These imported products not only offer less price but also has a variety of options. However, this scenario will change in the next few years as major players have started manufacturing quality and cost effective products. Though the stiff competition from Europe and Asia-Pacific players cannot be ruled out, India manufactures have started exporting their quality products to the rest of the world," shares Chandran Krishnan, chief technology officer and executive director, Autocop Facility Security Division.

Owing to a surfeit of imports, the market is flooded with low cost, low quality devices. As these devices often fail to meet quality standards, customers' confidence in the technology is fast eroding. It is necessary for the government to establish certain norms and standards for security devices, as well as offer some tax benefits, so that Indian manufacturers can enter and prosper in this segment. ▱