



CCTV Camera

The home automation market-place currently growing at around 15-20% CAGR is set to grow further in near future as companies are aggressively working towards the development of products for budget consumers as well.

from different brands, then it becomes difficult to synchronize and connect all the products at a particular point which is again by another brand. Another difficulty, the consumer faces is in operating one particular product at a single time after synchronizing/connecting all the products. Also for many of the products, one needs separate wireless adapters as some devices may work on a different kind of wireless network than Wi-Fi. In addition, different products maybe using different technology platforms like Zigbee, Zwave, Insteon itron, RadioRa2, etc. Other challenges usually faced by the consumers are:

- High initial cost: Includes programming, and installation costs
- Consumer Mind-set: People are still conservative about technology use in residential buildings
- Lack of Awareness: End users may not have up-to-date knowledge of new technologies and their benefits in the long term.

Potential of Indian home automation market

The home automation market in India rests on two factors- lifestyle and functionality, with each playing upon the other or coming together in



My Home Legrand - Ipad HD

different markets. In metro cities like Delhi or Mumbai, the home automation market is driven by an affluent lifestyle whereas, in a market like Bangalore, it is driven by the functional aspects of the solution. Tier II and Tier III cities in India like Surat, Vadodara, Jaipur, Surat, Kochi, Coimbatore, and Indore which have a high percolation of HNIs too are witnessing demand for lifestyle automation products.

The automation solutions have gained popularity among luxury property developers who are now providing automation like automatic

gates, surveillance system and automated switches as value added proposition. The user has the option of scaling it based on his further requirement and desire.

With the rapidly increasing purchasing power clubbed with the exposures to technology and lifestyles' experiences, HNI are increasingly experimenting with various available forms of home automation - stand-alone/completely integrated/mixed. These are the opportunities where we see growth coming from in the future.

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No lifestyle project is complete without a home automation system. It is becoming a standard offering for high end projects. There are several technologies and platforms available in the market. There are Chinese and local products also available and then there are some products of questionable sources masquerading as a European or American product. The builder must be careful in selection of the technology as well as the vendor.

Every home requires ELV systems like Cable TV, Satellite TV, Internet, Wifi, Telephone land lines, security systems etc. Usually it is recommended that the builder provides only lighting and curtain controls and Smart wires the home for expansion, based on personal requirement design, style and taste. This means that the installed product should be easily upgradable without chiselling of walls or breaking of ceiling. So if a buyer wants to add his AC and Audio Video system to the home automation controls, it should



be easily possible. In case, the project is not Smart wired, the Smart Home Box allows for easy management of smart wiring and future expansion or changes. This is a new introduction and can be utilized by developers for their projects.

Automation for residential buildings

While commercial buildings install sophisticated BMS systems that are manned by trained technical manpower, residential buildings have a very different requirement. Unlike

commercial buildings, there is no centralised HVAC system in residential complexes. Also, residential buildings require automation systems that are economical and easy to maintain by semi-literate security personnel.

Moreover, developers though are incorporating home automation solutions in high-end residential buildings, many don't take this very seriously. Automation and energy saving techniques, if not built into the design results in higher running costs and dependency on security manpower further reduces efficiency and adds to running costs leading to complaints from residents.

The Secured Automated Building (SAB) system consisting of a distributed network of systems addresses these concerns. It provides smooth flow of information & alarms to the Central Monitoring station (CMS) and the interface is simple to use for semi-skilled personnel. The SAB system manages, including but not limited to CCTV, Visitor Tracking system, Access Control system, Video & Audio door phone system, Sensors, Alarms, Intercom, Energy saving etc. The CMS controls & monitors all functions including message management and alarm management.

- Access Control – To begin with, the entry gate is equipped with a boom barrier or a motorized gate. A long-range reader reads the car tag and opens the boom barrier for the resident's vehicle. All transactions are stored away in the computer of the CMS. Visitors are screened at the main gate and guided to the parking after checking vacancy on the CCTV system. A proximity card

is used to open the lobby door, use the lift or access the gym and other facilities. Owners can also use fingerprint in lieu of the proximity card.

- CCTV Surveillance - Cameras are usually installed at all exit/ entry points and also around the common areas, parking zones and perimeter. A high-resolution monitor will display images from each camera selectively or automatically in sequence to the Central Monitoring Station. It is possible for a resident to see the cameras on his laptop/ tablet/smartphone either from the house or remotely from anywhere if required.
- Single unit security - The video door phone system integrated with the SAB system provides the interface between the CMS and the apartment for visitor screening, gas and fire alarms and intrusion alarms. The system also double screens the visitor at the front door through a porch camera. An intercom connects all residents, security and common areas. The main door of each apartment can be controlled by a biometric reader which communicates wirelessly to the controller to open the door. The lock can also be opened by means of a mechanical key and from the inside in the usual manner by turning the thumb-turn.
- Fire Alarm - A fire Alarm system either conventional or addressable type is installed and is monitored by the CMS. It is recommended to have smoke detectors in every lift lobby and a manual call point. Alerts are received by the CMS. A fully integrated Public Address (PA) system for residents to page chauffeurs from their own intercom in the flat is utilized for announcements by the Security in case of an emergency. Integration
- Energy Conservation - Common lights in the premises are controlled zone wise at preset times. Staircase and lobby lights on every floor



Legrand 3.5 inch Touch Screen

function only at 50% capacity from midnight to morning. In case of anyone coming in or leaving the apartment PIR motion detectors automatically switch on the additional porch light for two minutes. Likewise the garden lights can be reduced to save energy.

What is a Smart Home?

A smart home is not to be confused with home automation. Lights and curtains being controlled by remotes and smartphones is home automation while, a smart home will have different eco systems talking to each other. In a smart home the lighting, appliances, AV, AC and Security systems talk to each other and function intelligently and the professional design is critical to the end result.

For example, a smart home recognizes owners fingerprint when used to open the door and depending on the time of the day will switch on pre-set lights, favourite music,

bedroom air-conditioning and water heater for a warm shower. Likewise, while turning in for the night you press a button "Good night" and this triggers a series of actions. All house lights turn off, the foot lights get switched on, curtains, closes, alarm systems gets armed, the kitchen gas valve turns itself off and the status of every door and window is available to the owner.

Indian home automation market scenario

The scenario in India is currently in a state of flux. Till a year back it was dominated by European and American brands but now Chinese and local products are entering the market with unreliable products. These companies not only failed and have disappeared from the market but, have given home automation a bad name. Some builders stopped offering automation systems because of their experience with cheap products. Reliability is a key factor in this segment and it remains

Companies such as Apple, Samsung and Google will take over the home automation space fuelled by IoT. Philips has already launched HUE that consists of Wi-Fi LED bulbs, a bridge and an app.

to be seen how the new entrants will fare on this count over the years. Meanwhile it is safe to stick with established brand names.

What are the various automation platforms?

Home Automation systems are largely classified into BUS systems and Wireless Systems. A bus system has various platforms for communication such as C Bus, SCS Bus, RS 485, TCP/IP, KNX and various proprietary bus protocols. Bus based systems are more robust and better suited for new installations. In KNX it is possible to put together a system by sourcing different products from different manufacturers. While this may offer the customer a wider range of options, the drawback is that there is no single manufacturer who is responsible for system and the system integrator is your only bet.

Wireless systems are based on RF, Wi-Fi, Zigbee or Zwave technologies. RF technologies in the 433 MHz range are quite over crowded. The RF 868 is a better option. Z Wave and Zigbee have the advantage of mesh type networks bringing greater reliability to the installation. Hundreds of companies are on the Zigbee and Zwave platform though they are not necessarily compatible with each other. Many Indian and Chinese products have emerged using the humble Wi-Fi. It is very cost effective but we all know the reliability and security issues related to Wi-Fi. Wireless systems are best suited for retro-fits.

The Internet of Things (IOT)

British entrepreneur Kevin Ashton first coined the term in 1999 while working at the Auto-ID Labs. Typically, IoT is expected to offer advanced connectivity of devices, systems, and services that goes beyond machine-to-machine communications (M2M) and covers a variety of protocols, domains, and applications. The interconnection of these embedded devices (including smart objects), is expected to usher in automation in nearly all fields, while also enabling advanced applications like a Smart Grid and expanding to the areas such as smart homes and smart cities]

"Things," in the IoT sense, can refer to a wide variety of devices such as heart monitoring implants, biochip transponders on farm animals, electric clams in coastal waters, automobiles with built-in sensors, or field operation devices that assist firefighters in search and rescue operations. These devices collect useful data with the help of various existing technologies and then autonomously flow the data between other devices. Current market examples include smart thermostat systems and washer/dryers that use Wi-Fi for remote monitoring.

Home automation is an appealing context for the Internet of Things (IoT). We envisage future home environments with self-configured embedded sensors and actuators (e.g., in consumer electronic products and systems) that can be controlled remotely through the Internet, enabling a variety of monitoring and control applications. Manufacturers will produce their own IP gateways so that proprietary domotic systems can be interfaced with an IPv4 enabled Ethernet socket. By connecting the IP gateway directly to the Internet or through a home/residential gateway, the domotic system can be managed remotely using a PC, Smartphone or Tablet.

The future of home automation

One of the major problems in the home automation area is that different systems are neither interoperable nor interconnected. So, one has to open one app to control the AC, another to control the lighting and yet another to control the music system. What is needed is a gateway that interfaces and interacts via IPv6 network protocol to all the devices in a home on a single app. This has thrown open a new and huge market for home automation players to enter and expand.

In future of home automation will largely shift to simple DIY type of systems or one that can be set up by the technician who maintains your home PC and network. For instance, one can simply screw in the light bulbs to existing holders and start controlling the bulbs from the smartphone app including creating moods, dimming lights and changing colours from the colour spectrum in their app.

Challenges and Potential of the home automation industry in India

Everyone sees tremendous growth in this industry but to harness the full potential of the smart home automation, disparate manufacturers will have to develop technologies based on common open standards. Very few, if any, firms produce every device found in a household, and it is unlikely that consumers would be brand loyal enough to buy every household device, or even a majority of them, from a single manufacturer.

So if manufacturers want to ensure that their devices talk to others, they will have to be developed under common standards – standards also shared between software companies. This level of collaboration may take some time – many of these firms are direct competitors after all, but it is necessary. As of now, it is best to go in for professional installs that give you wide integration and reliability. ➤